STATE STRATEGIES TO PREVENT AND MITIGATE THE CONSEQUENCES OF TOXIC STRESS IN CHILDHOOD

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Adverse childhood experiences (ACEs) can interfere with a child's brain development, especially if the child lacks a supportive adult to turn to in times of stress. Over time, continuous stress can become particularly toxic and interfere with a child's long-term health and well-being, and lead to increased costs to state health care, education, child welfare, and correctional systems. However, efforts to build healthy families early in the child's life are particularly effective at preventing ACEs and reducing their damaging effects. States across the country have implemented various strategies to prevent or address the impact of ACEs and toxic stress, such as expanding health screening and treatment, strengthening family protective factors to increase children's resilience, and investing in high-quality early childhood care and education. Recent state initiatives have allowed school-based health centers to provide services to students who do not reside in the school district, supported treatment programs for pregnant women and women with young children, and implemented a statewide home visiting system using evidence-based models.

INTRODUCTION

Decades of research in neurobiology underscores the importance of children's early experiences in laying the foundation for their growing brains. The quality of these early experiences shape brain development, which impacts future social, cognitive, and emotional competence. Adverse childhood experiences (ACEs), defined as potentially traumatic events that occur before the age of 18, 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. Moreover, ACEs can be cyclical. For example, research suggests that children who experience physical abuse may be more likely to commit violence (including abusing or neglecting their own children) and be revictimized in the future.

As a result, 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 chapter presents research on ACEs and highlights state strategies to prevent and reduce their occurrence and negative effects. These strategies include efforts to increase health screening and treatment, build resilience in children and families, and help parents reduce stress.

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WHAT IS TOXIC STRESS?

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.

As discussed in the first chapter by Sarah Enos Watamura, 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 DNA. Furthermore, when a child lacks a supportive adult to turn to in times of adversity, this continuous stress activation becomes particularly toxic.[1]

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

ADVERSE CHILDHOOD EXPERIENCE (ACE): A potentially traumatic experience that 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 child's stress response system without the presence of adult support.

STRATEGIES TO PREVENT AND MITIGATE ADVERSE CHILDHOOD EXPERIENCES (ACES)

The association of ACEs with various negative outcomes can be costly for states; however, there is evidence of effective strategies to prevent and manage the consequences of ACEs. Efforts that focus on building healthy families early in the child's life are cited as among the most influential means of preventing ACEs and reducing their damaging effects.[2,3]

Early Intervention: Health Screening and Treatment for Children and Parents

Between 14 percent and 20 percent of children in the United States experience a diagnosable mental, emotional, or behavioral disorder, such as depression, anxiety, or obsessive-compulsive disorder.[4] However, for people with ACEs, 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.[5] 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.[6] 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.

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Schools and child care centers are uniquely positioned to detect these issues early and link children to formal assessments and supportive services. Early interventions may mitigate the most dire consequences of childhood trauma and frequently demonstrate positive effects on long-term health.[7,8] 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.[9,10] 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.[11] Wisconsin is among the states leading the development of trauma-informed principles and their implementation in schools, communities, and government systems.[12]

Additionally, children who grow up in households with family members who have 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 United States withdrawing from opioids.[13] 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, among others, have programs designed specifically for mothers combatting an SUD.[14,15,16] Such efforts to provide comprehensive health services may support better SUD treatment, mental health, and child welfare outcomes.[17]

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Recent state actions:

- In 2015, **Iowa** enacted a law allowing existing community mental health centers and other local service partners to use state block grants to develop a range of youth and family services in schools and clinical settings. These services include school-based mental health projects, mobile crisis intervention services, and mental health assessment capacity building.[18]
- 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. 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.

Strengthen Family Protective Factors and Build Children's Resilience

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.[20,21] Protective factors are important because they increase a family's ability to effectively cope and adapt to hardship and change.

This ability to recover and grow from adverse experiences is called resilience.[22] 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.[23] 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 build resilience, prevent violence, improve mental health, and support health across the lifespan.[24,25,26]

Home Visiting

Developing strong family bonds is a teachable skill, and high-quality home visiting programs are one way to do so.[27] Home visiting is a two-generation, or whole family, prevention strategy that aims to promote infant and child health, foster educational development and school readiness, and prevent child abuse and neglect (see Joshua Mersky's chapter in this report). 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. Home visits focus on linking pregnant women with prenatal care, promoting strong parent-child attachment, coaching parents on learning activities that foster their child's development, and supporting parents' role as their child's first and most important teacher. Home visitors also conduct regular screenings to identify possible health and developmental issues.

Rigorous evaluations of high-quality home visiting programs have shown positive results. These include improved child school readiness, higher-quality parenting, more positive child-parent interactions, improvements in parents' mental health, and a reduction in child abuse and neglect. For families facing added challenges, such as substance use disorder, maternal depression, or limited social or financial support, home visiting programs may be especially beneficial. Cost-benefit analyses show that high-quality home visiting programs offer returns on investment ranging from $1.75 to $5.70 for every dollar spent. The financial returns result from reductions in spending on child protective services, K-12 special education and grade retention, and criminal justice.

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Today, home visiting programs operate in all 50 states, each with its own goals. Approximately 40 percent of U.S. counties have at least one home visiting agency that offers an evidence-based program.

States rely on a mix of state, private, and federal funds to support home visiting programs. Since 2010, Congress has invested billions of dollars through the Maternal, Infant and Early Childhood Home Visiting (MIECHV) program to help states, territories, and tribes expand and implement evidence-based home visiting (see Legislative Fiscal Bureau chapter in this report).

Other federal funds are available to pay for home visiting, including Title V of the Maternal and Child Health Block Grant Program, Temporary Assistance for Needy Families, Project LAUNCH, Medicaid, Healthy Start, Early Head Start, Child Abuse Prevention and Treatment Act, and the Community-Based Child Abuse Prevention Program. Home visiting enjoys mostly bipartisan support. This is due, in part, to the evidence behind the programs and the return on investment.

Recent state actions:

- In 2015, **Oklahoma** lawmakers enacted the Family Support Accountability Act, which mandates that home visiting programs work in partnership to maximize the opportunities for families to receive services that best fit their needs. It also sets minimum outcomes programs must achieve.[28]
- 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.[29]
- 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.[30]
- Building on its existing home visiting program, **Connecticut** is using a state innovation grant to redirect unused funds from the federal Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program to help home visiting clients find and retain jobs, a service not typically provided by home visiting programs.[31]

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. These activities develop children's 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. 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 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 2018 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.[32] Additionally, high-quality early childhood education may contribute to long-term benefits, including higher earnings, better health, and less criminal activity.[33] Research by James Heckman, a Nobel Prize-winning economics professor at the University of Chicago, found a 13 percent return on investment for high-quality, birth-to-5 early childhood education for each year of a child's life.[34] 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.

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Recent state actions:

- In 2017, **Washington** state established a state-supported early childhood education and assistance program. [35]
- In 2017, state lawmakers in **Louisiana** created a special fund to support early childhood education. [36]
- 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.[37]

KEY TAKEAWAYS AND NEXT STEPS

This chapter highlighted the substantial impact adverse childhood experiences (ACEs) can have on the health and well-being of children and families.

- ACEs are potentially traumatic events that occur before the age of 18. Such experiences can result in toxic stress, which has been shown to interfere with a person's health and other life outcomes. It can even affect future generations.
- ACEs are common across the United States. Approximately two in every three adults report having experienced at least one ACE, while a quarter of adults report experiencing three or more ACEs.
- The impacts of ACEs and toxic stress are not predetermined. State strategies to intervene early can prevent and mitigate the negative impacts.

As discussed in this chapter, states have implemented various strategies designed to prevent, or address the impact of, ACEs and toxic stress. These strategies include supporting early intervention through health screening and treatment, increasing caregiver education through home visiting, and investing in high-quality early childhood care and education. Other strategies not discussed include:

- Identifying existing evidence-based prevention efforts. Learning about initiatives already underway can prevent duplication of efforts.
- Supporting evaluation and needs assessment. Data enables state leaders to identify policy gaps, target limited resources to populations most in need, and understand which strategies are most effective in specific contexts.
- Supporting efforts to increase family economic stability. Efforts to strengthen families' economic security may help reduce parental stress and increase household stability—two factors that can help protect children from abuse and neglect.[38] Policies such as full pass-through child support payments and earned income tax credits are potential mechanisms for reducing ACEs.[39,40,41]

- Increasing access to affordable and stable housing. Housing instability can be thought of as both a cause and a consequence of ACEs. Research suggests that the stress associated with housing instability can increase risk factors for child abuse and neglect, such as harsh parenting practices and maternal depression.[42,43,44]

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Bellazaire, A. (2018, August). *Preventing and mitigating the effects of adverse childhood experiences.* Denver, CO: National Conference of State Legislatures.

Harrison, C.L. & May, A. (2018, August). *Home visiting: Improving children's and families' well-being* [LegisBrief 26(31)]. Denver, CO: National Conference of State Legislatures.

National Conference of State Legislatures. (2018, April 26). *Home visiting: Improving outcomes for children* [Web page].

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REFERENCES

1. Center on the Developing Child. (2014). *Excessive stress disrupts the architecture of the developing brain: Working paper 3*. Cambridge, MA: Harvard University.

2. Banyard, V. et al. (2017). Health effects of adverse childhood events: Identifying promising protective factors at the intersection of mental and physical well-being. *Child Abuse and Neglect, 65*, 88-98.

3. Cohen, J. et al. (2015). Trauma-focused cognitive behavioral therapy for traumatized children and families. *Child and Adolescent Psychiatric Clinics of North America, 24*(3), 557–570.

4. U.S. National Research Council and U.S. Institute of Medicine, Committee on the Prevention of Mental Disorders and Substance Abuse Among Children, Youth, and Young Adults. (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities.* Washington, DC: National Academies Press.

5. Oral, R. et al. (2016). Adverse childhood experiences and trauma informed care: The future of health care. *Pediatric Research, 79*, 227-233.

6. Burke, N. et al. (2011). The impact of adverse childhood experiences on an urban pediatric population. *Child Abuse and Neglect, 35*(6), 408-413.

7. Karoly, L.A. et al. (2005). *Early childhood intervention: Proven results, future promise*. Santa Monica, CA: RAND Corp.

8. Reynolds, A.J. et al. (2011). School-based early childhood education and age-28 well-being: Effects by timing, dosage, and subgroups. *Science, 333*(6040), 360-364.

9. Interagency Working Group on Youth Programs. (n.d.) *School-based supports* [Web page]. Washington, DC: Youth.Gov.

10. Rones, M. et al. (2000). School-based mental health services: A research review. *Clinical Child and Family Psychology Review, 3*(4), 223-241.

11. U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA). (2018, April 27). *Trauma-informed approach and trauma-specific interventions* [Web page]. https://www.samhsa.gov/nctic/trauma-interventions

12. Wisconsin Department of Health Services. (n.d.) *Trauma-informed care efforts in Wisconsin*. www.dhs.wisconsin.gov/regulations/trauma-care-efforts-wi.pdf

13. Winkelman, T.N.A. et al. (2018). Incidence and costs of neonatal abstinence syndrome among infants with Medicaid: 2004–2014. *Pediatrics, 141*(4).

14. Adams, E. (2017, April 19). PATHways program demonstrates success of evidence-based, collaborative approaches to perinatal opioid treatment. *UKNow: University of Kentucky news*.

15. Ohio Maternal Opiate Medical Supports (MOMS). More information can be found at http://momsohio.org/moms/

16. Young, N.K. et al. (n.d.) *Opioid use in pregnancy: A community's approach, the Children and Recovering Mothers (CHARM) collaborative* [Presentation]. Washington, DC: National Center on Substance Abuse and Child Welfare.

17. Marsh, J.C. et al. (2011). Integrated substance abuse and child welfare services for women: A progress review. *Child Youth Services Review, 33*(3), 466-472.

18. Iowa Code § 225C.54

19. Center on the Developing Child. (2017, October). *Three principles to improve outcomes for children and families*. Cambridge, MA: Harvard University.

20. Banyard, V. et al. (2017). Health effects of adverse childhood events: Identifying promising protective factors at the intersection of mental and physical well-being. *Child Abuse and Neglect, 65*, 88-98.

21. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention. (2016). *Child abuse and neglect: Risk and protective factors* [Web page]. https://www.cdc.gov/violenceprevention/childabuseandneglect/riskprotectivefactors.html

22. Gillespie, R.J. (2015, August 5). *Early childhood development, toxic stress and supporting positive parenting: Implications for policy*. Presentation at the Legislative Summit of the National Conference of State Legislatures, Seattle, WA.

23. Fortson, B.L. et al. (2016). *Preventing child abuse and neglect: A technical package for policy, norm, and programmatic activities*. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

24. Merrick, M.T. et al. (2013). Examining the role of safe, stable, and nurturing relationships in the intergenerational continuity of child maltreatment [Introduction to special issue]. *Journal of Adolescent Health, 53*(4), S1-S3.

25. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2018). *CDC special supplement: Interrupting child abuse and neglect across generations through safe, stable, nurturing relationships* [Web page]. https://www.cdc.gov/violenceprevention/childabuseandneglect/interrupting-child-maltreatment.html

26. Conger, R.D. et al. (2013). Disrupting intergenerational continuity in harsh and abusive parenting: The importance of a nurturing relationship with a romantic partner. *Journal of Adolescent Health, 53*(4), S11-S17.

27. Garner, A. (2013). Home visiting and the biology of toxic stress: Opportunities to address early childhood adversity. *Pediatrics, 132*(supp 2), S65-S73.

28. Okla. Stat. tit. 10, § 10-601.80 et.seq.; 2015 Okla. Sess. Laws, Chap. 199

29. R.I. Gen. Laws § 23-13.7-1 et.seq.; 2016 R.I. Pub. Laws, Chap. 2016-28

30. N.J. Stat. § 30:4D-17.39 et.seq.; 2017 N.J. Laws, Chap. 2017-50

31. McCann, M. (2018). *Two-generation approaches to addressing poverty: A toolkit for state legislators*. Denver, CO: National Conference of State Legislatures.

32. Child Trends. (2018, April). *High-quality preschool can support healthy development and learning*. Bethesda, MD: Child Trends.

33. Executive Office of the President of the United States. (2014, December). *The economics of early childhood investments*. Washington, DC: Executive Office of the President.

34. Garcia, J.L. et al. (2017). *Quantifying the life-cycle benefits of a prototypical early childhood program* [Web page]. https://heckmanequation.org/resource/lifecycle-benefits-influential-early-childhood-program/

35. 2017 Wash. Laws, Chap. 178

36. La. Rev. Stat. § 17:407.30; La. Rev. Stat. § 17:3090; La. Acts 2017, #353

37. N.H. Rev. Stat. Ann. § 126-M:1 et.seq.; 2015 N.H. Laws, Chap. 2015-117

38. Rodriguez, C.M. et al. (1997). Parenting stress and anger expression as predictors of child abuse potential. *Child Abuse and Neglect*, *21*(4), 367-377.

39. Raissian, K.M. et al. (2017). Money matters: Does the minimum wage affect child maltreatment rates? *Children and Youth Services Review, 72*, 60-70.

40. Cancian, M. et al. (2013).The effect of additional child support income on the risk of child maltreatment. *Social Service Review, 87*(3), 417-437.

41. Klevens, J. et al. (2017). Effect of the earned income tax credit on hospital admissions for pediatric abusive head trauma, 1995- 2013. *Public Health Reports, 132*(4), 505-511.

42. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention. (2016). *Child abuse and neglect: Risk and protective factors* [Web page]. https://www.cdc.gov/violenceprevention/childabuseandneglect/riskprotectivefactors.html

43. Fortson, B.L. et al. (2016*). Preventing child abuse and neglect: A technical package for policy, norm, and programmatic activities*. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

44. Park, J.M. et al. (2015). Physical and psychological aggression toward a child among homeless, doubled-up, and other low-income families. *Journal of Social Service, 41* (3), 413-423.