ADDRESSING THE LINK BETWEEN TRAUMA AND ADDICTION

NATIONAL GOVERNORS ASSOCIATION

Many Americans have experienced traumatic events, toxic stress, and other types of adversity in childhood. However, repeated exposure to trauma and adversity in childhood predicts a variety of poor health outcomes, including the development of substance use disorder (SUD).

Population-level research, neuroscience, epigenetics, and other fields have established that the connection between childhood adversity and SUD, as well as risk for intergenerational transmission of both trauma and SUD, occurs through impacts of adverse experiences on brain development. There are various risk and protective factors at play that can exacerbate or mitigate this relationship. Many of the risk factors tend to cluster together and compound in predictable ways—for example, childhood poverty, housing insecurity, and community violence. On the other hand, positive childhood experiences, such as secure attachment and social support networks, can attenuate the relationship and increase resiliency even among children who experience significant adversity.

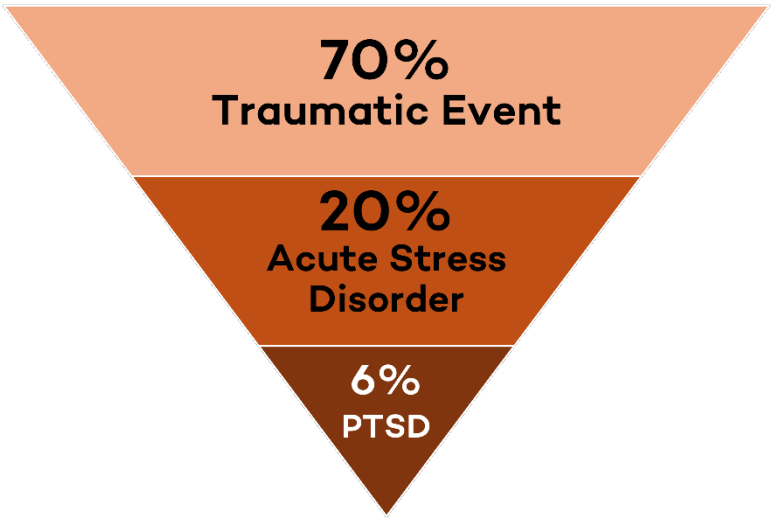
Given the variety of influential factors and the significant plasticity of the brain and behavior during child development, there are many opportunities to prevent adversity in childhood, disrupt the development of SUD, and support individuals with SUD who have histories of trauma and adversity. States and territories have a variety of policy levers at their disposal, as well as compendiums of evidence-based prevention programming and best practices. The NGA Center for Best Practices is committed to supporting Governors and their states and territories to expand Adverse Childhood Experiences (ACEs) prevention, address root causes of poor health outcomes, and mitigate the relationship between childhood adversity and SUD.

As part of this effort, the NGA Center launched a Policy Academy in February 2024 to strengthen state responses to SUD through a trauma-informed policy and practice lens . The NGA Center worked with teams from New Mexico and West Virginia to support their Governors' respective goals. New Mexico focused on improving SUD treatment for parents whose children are at risk for involvement with the Department of Children, Youth, and Families. West Virginia aimed to assess current practices and trauma-informed care training needs among SUD providers, promote positive messaging over ACEs, and pilot a form of trauma-informed therapy. These teams continue to make progress on improving trauma-informed SUD prevention and treatment in their states.

Childhood Adversity, Traumatic Events, and Long-Term Health Effects

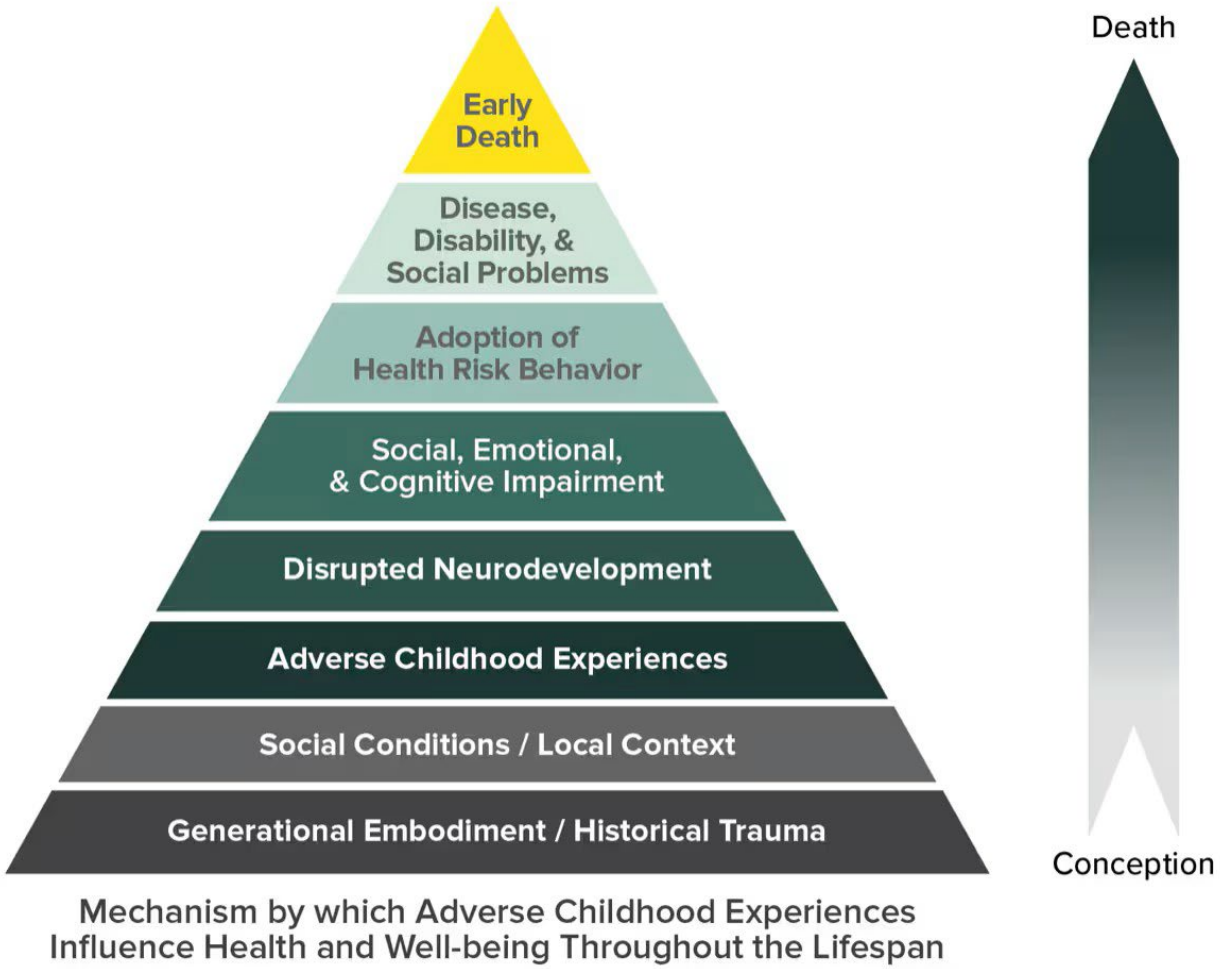
Trauma and Childhood Adversity

Traumatic events, trauma, and post-traumatic stress disorder (PTSD) are often conflated in popular culture and media; however, these terms are defined in the Diagnostic and Statistical Manual of Mental Disorders in ways that differentiate between normal responses and long-lasting harmful effects. Traumatic events are those in which a person is exposed to actual or threatened death, serious injury, or sexual violence.[1] This exposure may be direct, witnessed as it occurs to others, or through learning about a violent or accidental traumatic event that happened to a family member or close friend. Exposure to traumatic events may also be occupational, where individuals are closely and often repeatedly exposed to the details of events impacting others. Exposure to traumatic events is extremely common, with 7 out of 10 people in the United States experiencing at least one traumatic event in their lifetime.[2]



People have wide-ranging physical, cognitive, relational, and behavioral responses to traumatic events and are overwhelmingly resilient. The term "trauma" refers to an inherently disturbing, stressful or frightening event and is associated with varying physical and emotional responses, from an expectable reaction to those that are either extreme or, conversely muted. Most people who experience a traumatic event do not meet criteria for an acute diagnosis of a mental health condition and even fewer develop PTSD, a diagnosis which includes long-lasting physical and mental effects. Trauma responses can include self-damaging behaviors. Some people may react to traumatic events by engaging in impulsive, high-risk behavior or self-medicating with psychoactive substances.

Exposure to adversity in childhood, as well as traumatic events, can cause alterations in brain development, and function. Adverse experiences and traumatic events are increasingly harmful with repeated exposure, causing toxic stress which is associated with elevated fight-or-flight hormones over time. Adversity in childhood includes abuse, neglect, and household challenges such as divorce, parental mental illness, substance use in the home and witnessed violence; these are often referred to as Adverse Childhood Experiences, or ACEs.[3] The landmark study on ACEs published in 1998 described seven categories, including three categories of childhood abuse and four categories of household challenges.[4] Since this study, additional ACEs that occur outside the home and can equally influence health outcomes have been identified, such as bullying, racism, homelessness, and witnessing community or school violence.[5]



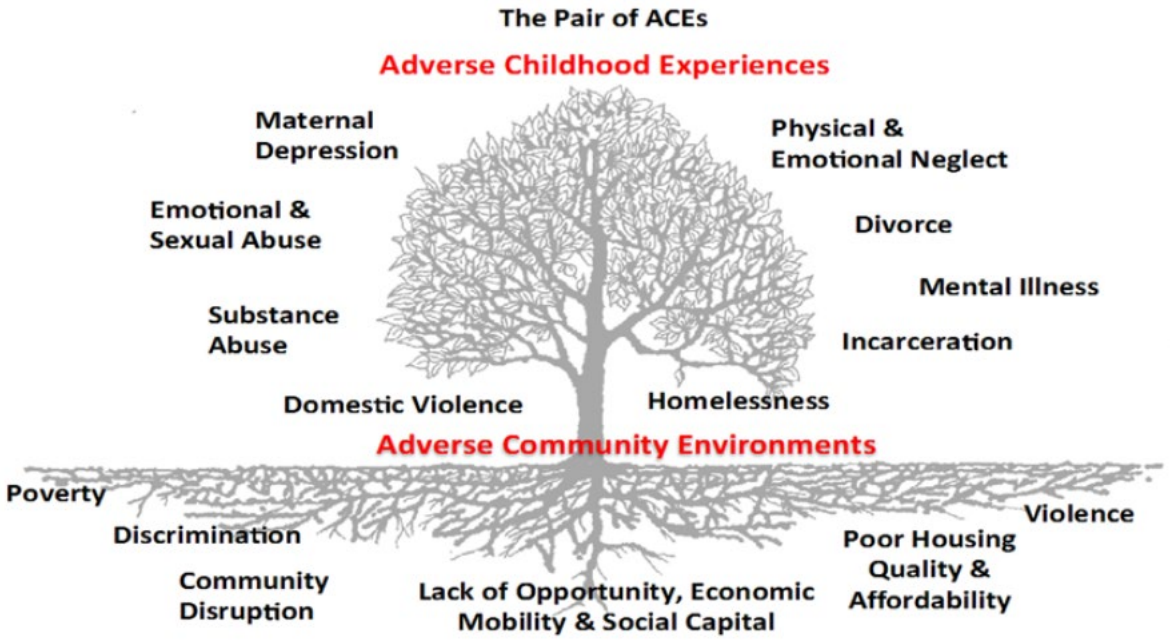
Centers for Disease Control and Prevention (2021). https://www.cdc.gov/violenceprevention/aces/about.html.

Relationship Between Childhood Adversity and SUD

SUD is often rooted in trauma, toxic stress, and childhood adversity, though there are several hypotheses describing the exact nature of the reciprocal relationship. Much research supports the self-medication theory that individuals with traumatic events in their history may use substances to manage trauma or PTSD symptoms.[6] In addition, some research suggests complex reciprocal relationships; for example, trauma may increase risk for substance use which, in turn, can increase the risk of exposure to further traumatic events.[7]

Regardless of the mechanism, the relationship between childhood adversity and substance use is evident in population-level research and data. Nearly half of people with PTSD also have a SUD.[8] About 3 out of 4 people with SUD have experienced trauma in their lives, and 60% of youth with PTSD eventually develop problems with substance use.[9] Research has demonstrated a graded relationship between childhood adversity and poor health outcomes, including illicit substance use; in a large population, as the number of ACEs increased, the odds of having ever used illicit drugs and having ever injected drugs also increased.[10]

The link between trauma, childhood adversity, and SUD also has multi-generational implications. Parental SUD may facilitate the transmission of trauma and SUD from parent to child through various complex mechanisms.[11] Children of parents with SUD are more likely to develop SUD themselves.[12] Parental substance use is considered an ACE—children whose parents have/had substance use problems are more likely to initiate substance use at an early age, use illicit substances, and misuse licit substances. [13] This link is particularly salient amid data showing that one in eight children in the US live with a parent who has SUD.[14]



Ellis, W., Dietz, W. (2017) A New Framework for Addressing Adverse Childhood and Community Experiences: The Building Community Resilience (BCR) Model. Academic Pediatrics. 17 (2017) pp. S86-S93. DOI information: 10.1016/j.acap.2016.12.011

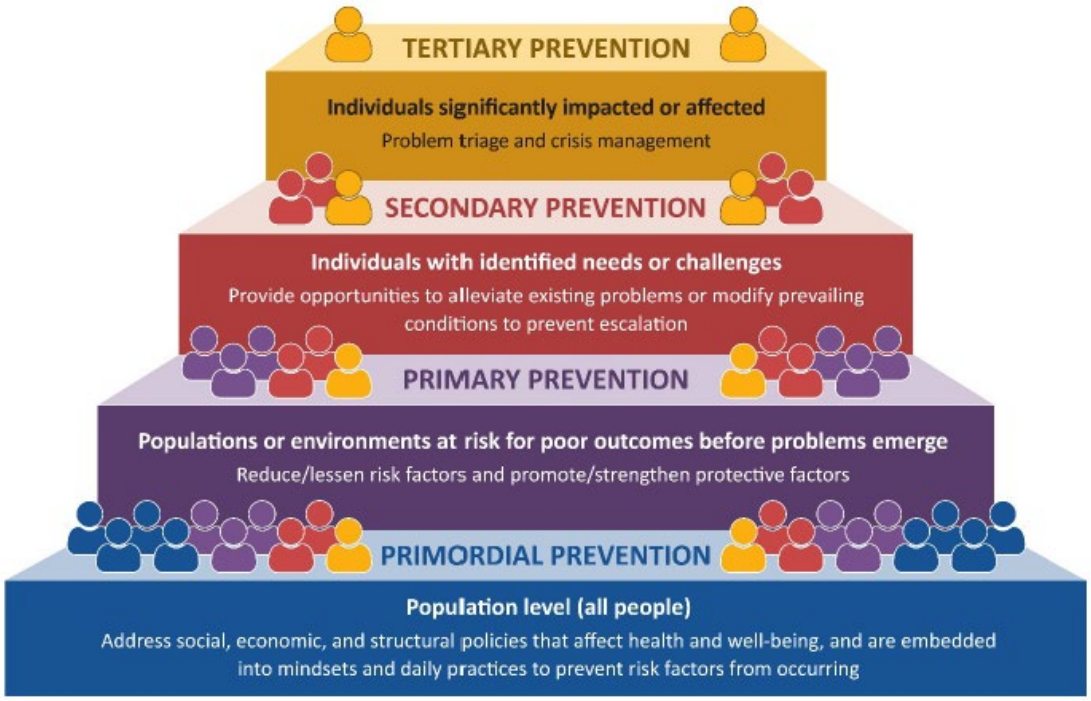
Individual, social, and environmental factors can either mitigate or exacerbate the impact of traumatic events or adversity on health and wellbeing. Those that mitigate are described as "protective" factors while those that exacerbate are considered risk factors. Given the accumulating impact of adversity and traumatic events, the risk and protective factors in social and community contexts to which individuals are exposed can be the difference between resilience and poor long-term health outcomes. Protective factors include experiences such as having healthy peer role models, connectedness in school, family communication, and adult role models. Risk factors may include exposures such as poverty, substance use in the home environment, community violence, parental mental illness, or early use of substances.[15] Research shows that protective factors mitigate the impact of multiple ACEs on health and mental distress, even among those who had experienced four or more ACEs.[16]

Positive Childhood Experiences, or PCEs, are a way of characterizing protective factors that influence health outcomes in the same way that ACEs describe risk factors in childhood. Dr. Bethell et al. delved further to define and measure the impact of specific PCEs, such as feeling a sense of belonging in high school, being able to talk to one's family about feelings, and participating in community traditions, among others. In direct contrast with the ACEs study result, greater numbers of PCEs were associated with greater mental and relational health in adulthood.[17]

Policy and Program Levers to Disrupt the Pathway to SUD

There are various policy levers that can be used to prevent childhood adversity, disrupt the pathway to SUD, and support individuals with co-occurring PTSD and SUD. Many states have sought to prevent childhood adversity through legislation, with 13 states enacting at least one bill into law on the topic between 2019 and 2021.[18] Governors can also leverage their executive order authority to champion trauma informed policies, such as making Delaware a trauma-informed state, or to implement policies that strengthen families, such as paid family medical leave for state employees in Tennessee. States also have the role of providing education resources and information about ACEs and the relationship with SUD to the public and across agencies. Many state agencies touch this issue—including health, education, Medicaid, and children, youth, and families. These agencies create policy, implement and evaluate programs, provide support for support community-based organizations, administer funding, and develop public-facing communications—all which can be leveraged to exact change.

Each policy and program approach may address one or several of the complex factors at play in the relationship between childhood adversity and SUD. Given the multitude of influencing factors, there are many opportunities for intervention to prevent the development of SUD and mitigate its impacts. Policies and programs may intervene at various stages of prevention—either preventing the occurrence of adversity, interrupting the development of SUD, or supporting people with SUD. Preventing the occurrences of adversity and traumatic events represents the earliest type of intervention. The next level of prevention includes strengthening protective factors and mitigating risk factors in at-risk populations before problems emerge. Supporting those individuals with problems that have already emerged and mitigating those problems is the next level. And finally, the focus is on individuals who are already impacted, managing crises and addressing challenges.



Fishbein, D. ASPE, Office of Human Services Policy. Brief, March 2023.
https://aspe.hhs.gov/sites/default/files/documents/8228e700f6e369df9382ac8e0d3976c1/primary-prevention-convening-brief.pdf

Interrupting the relationship between childhood adversity and SUD also requires interventions at multiple levels of influence from a socioecological lens—individual, family, school and community, and society. Risk factors, protective factors, and prevention opportunities exist at each of these levels. There are compendiums of evidence-based programs and interventions that improve overall wellbeing and disrupt the pathway to SUD across the lifespan and at each of these levels of influence and prevention. For example, the National Academies for Sciences, Engineering, and Medicine in 2019 published "Fostering Health mental, Emotional, and Behavioral Development in Children and Youth," which catalogs strategies and evidence across settings including familial, educational, health care, and policy.[19]

Given the intergenerational nature of trauma and SUD, supporting the family unit serves to support children and prevent adversity in childhood. Upstream prevention also includes supporting pregnant people and parents with SUD and keeping families together by reducing unnecessary removal of children. Policies and programs that keep families together, bolster child social and emotional skills, strengthen economic and social wellbeing, and support parents have implications for the long-term health and wellbeing of children. For example, home visitation programs have been shown to have positive outcomes for child academics and behavioral health.[20] Multicomponent interventions that build skills in teachers, parents, and children have shown positive outcomes across generations and improved behavioral health outcomes in children.[21] From a family economic wellbeing lens, state financial support programs for families—such as Supplemental Nutrition Assistance Programs (SNAP), earned income tax credits, and family income supplements—have demonstrated benefits in lower rates of substance use.[22] With a better understanding of the impact of adversity and protective factors, the child welfare system nationally has shifted toward a model that keeps families together and away from surveillance and punishment when possible.[23] In addition, Medicaid continues to explore new mechanisms for addressing the health related social needs that support healthy families.[24]

State Policy Levers

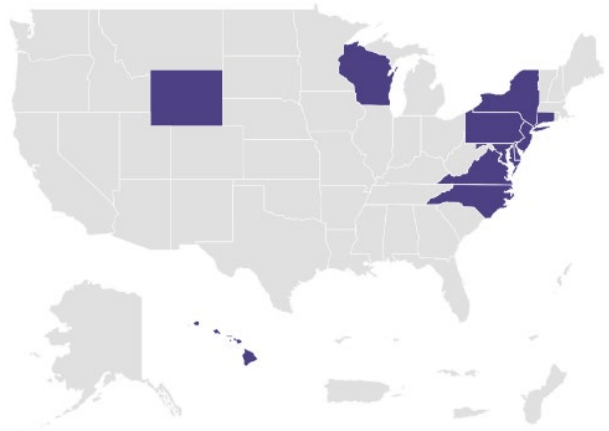
Levels of Influence and Opportunity		Levers	Policy and Program Examples:
Prevention level	Population/general At-risk Identified needs/challenges Significantly impacted	• Executive orders • Legislation • State agency policy-making • Communications and Governor's bully pulpit • Development of resources and training • Coordinating bodies • Funding • Implementation and evaluation of programs	• Universal home visitation programs (New Jersey) • Family-friendly workplace policies • Development of trauma-informed education resources for community organizations, state agencies, hospitals, etc. (Oregon, Pennsylvania) • Supplemental Nutrition Assistance Programs • Trauma-informed child welfare system • Integrated PTSD and SUD treatment • High-quality childcare • Handle With Care program (Alabama) • After-school and mentoring programs • School-based skills building programs • Medicaid coverage of health-related social needs • Education through data visualization (Arizona) • Family-centered SUD treatment programs • Paid family leave (Tennessee)
Socioecological Intervention Level	Individual Family Community/Schools Societal		
Life Stage	Prior to conception Prenatal Infancy Early Childhood Childhood Early adolescence Adolescence Young adulthood		

The prevalence of trauma among people with SUD also has implications for SUD treatment systems, which can inform improvements to service provision and subsequent outcomes. People with PTSD and SUD discontinue treatment at a higher rate and face internal as well as external barriers to treatment. In addition, most people who meet criteria for SUD do not seek or access treatment, and only about one-third of people with PTSD seek professional help.[25] This highlights the importance of integrated SUD and PTSD treatment that is high quality and evidence-based. At a basic level, provider understanding of the trauma and addiction link can inform greater empathy for the patient and more availability of evidence-based treatments for PTSD, including those specific to SUD systems—such as Concurrent Treatment of PTSD and SUD Using Prolonged Exposure (COPE) and Seeking Safety.[26] Treatment choice considerations are also important for this patient population. There are hurdles facing SUD treatment providers seeking to implement a trauma focus, including the research suggesting that patients "should not be required to abstain from substance use before engaging in trauma focused therapy."[27] This presents a significant challenge particularly for abstinence-based SUD treatment programs.

NGA Policy Academy and Other Work

State Trauma and Resilience Network

The National Governors Association Center for Best Practices (NGA Center) facilitates the State Trauma and Resilience Network (STRN), a group of Governors' advisors and leaders from 11 states who seek to prevent ACEs and trauma, and to bolster resilience in their states in the service of SUD prevention?. These state teams initially came together through a multi-state technical assistance project and then expanded through the addition of other interested state policy leaders. The network serves as a forum for states to share experiences, best practices, and ideas among peers.



NGA Center's previous publications related to ACEs prevention and the STRN include the following:

- State Actions to Prevent and Mitigate Adverse Childhood Experiences
- Resource Guide on State Actions to Prevent and mitigate Adverse Childhood Experiences and Trauma
- Adverse Childhood Experiences and Trauma
- State Efforts to Address ACEs and Trauma and Build Resilience

Trauma and Addiction Policy Academy

In 2024, the NGA Center kicked off a year-long intensive technical assistance opportunity with state teams from New Mexico and West Virginia, supported by the states' Governors' offices. Through this project, the NGA Center facilitated action planning with the states to identify concrete areas of work that mitigate the link between trauma and addiction. NGA worked to support these states in taking steps towards their goals, as well as provide education throughout the policy academy to increase their understanding of the relationship between trauma and SUD and of opportunities to make change. Highlights of the policy academy included state networking opportunities, expert presentations at two in-person meetings, several webinars, and connections with several experts, including Dr. Diana Fishbein of the National Prevention Science Coalition to Improve Lives and the University of North Carolina, Dr. Christina Bethell of Johns Hopkins Bloomberg School of Public Health, and Dr. Brian Bumbarger of Colorado State University.

STATE SPOTLIGHT: NEW MEXICO

New Mexico faces a high burden statewide of childhood adversity, along with high rates of SUD and SUD-related deaths. In addition, provider shortages and funding challenges present barriers. However, New Mexico also identified many strengths and foundations to propel the team's policy academy work forward, including the Behavioral Health Collaborative, a statewide behavioral health delivery system and cabinet-level group that brings together 15 state agencies and the Governor's office. This type of cross-agency collaboration is critical in addressing an issue that stretches across the lifespan and touches so many areas of work.

The New Mexico team's primary focus in the policy academy was to increase access to SUD services for parents of children involved in the child welfare system. The team began an investigation of the status of trauma informed care (TIC) training at the state level and among partners, hoping to identify opportunities to embed TIC training into existing trainings on SUD. The team also explored the availability of datasets on trauma and SUD in the state, hoping to identify gaps and areas of opportunity to better leverage existing data. The team included representatives from the Children, Youth and Families Department, state Medicaid, the Department of Health's Behavioral Health Services, and a university partner. The work of this team, and the state's overall focus on preventing and mitigating childhood adversity and SUD will continue far beyond this policy academy.

STATE SPOTLIGHT: WEST VIRGINIA

West Virginia also faces a high prevalence of childhood adversity, SUD, and overdose—along with the stigma of being one of the states that was most impacted early on by the opioid crisis. This stigma was an area of interest and focus for the policy academy team as they thought through how to shift the narrative from a deficit to an asset perspective. The West Virginia team identified several strengths coming into the policy academy, including strong partnerships and relationships with academic partners, as well as statewide support for screening and addressing ACEs. The team cited the new 2020 law passed in the state that created a workgroup on ACEs and developed recommendations and a publication about how to move forward.

The West Virginia team leveraged the policy academy to focus on assessing the provision of trauma therapies and the prevalence of TIC across SUD treatment providers overseen by the Department of Health. Given the prevalence of childhood adversity and trauma among people with SUD, the team was interested in improving TIC and trauma therapy availability with the end goal of improving treatment retention and outcomes. The team also used the policy academy as an opportunity to gain a better understanding of messaging strategies, particularly around shifting the public discourse and narrative from adverse childhood experiences to positive childhood experiences. And the team worked to lay the foundation for piloting a low-threshold trauma therapy at SUD treatment sites.

Efforts to prevent and mitigate childhood adversity and trauma are vast, cross-agency endeavors that require the cooperation of many players both internal to state government and external. The New Mexico and West Virginia policy academy teams laid the groundwork and build relationships to support new initiatives to disrupt the linkage between childhood adversity, trauma, and SUD.

Many state and territory Governors understand the value and potential benefits in addressing root causes and upstream factors that cause long-term and widespread health challenges for their constituents. The NGA Center for Best Practices is available to provide technical assistance that supports states and territories in developing upstream strategies and addressing the link between trauma and addiction.

Additional Resources

SAMHSA: Practical Guide for Implementing a Trauma-Informed Approach

CDC: Adverse Childhood Experiences Prevention, Resource for Action

ASTHO: State/Territorial Policy Considerations for Preventing Adverse Childhood Experiences

Frameworks: Reframing Childhood Adversity: Promoting Upstream Approaches

Funding & Disclaimer

This project is supported by the Centers for Disease Control and Prevention as part of Cooperative Agreement #6NU38OT000301. The positions and views expressed in these materials are solely the responsibility of the authors and do not necessarily represent the official views of, nor an endorsement by CDC/HHS, or the U.S. Government.

Project Team

- Dana Heilman, Senior Policy Analyst, Health, NGA
- Marianne Gibson, Program Director, Health, NGA
- Anna Heard, Senior Policy Analyst, Health, NGA
- Alex Entner, Policy Analyst, Health, NGA

Acknowledgements

NGA would like to thank the following individuals for their thought leadership with this project, including Dr. Diana Fishbein, University of North Carolina Chapel Hill, Dr. Christina Bethell, Johns Hopkins University and Dr. Brian Bumbarger, Science, Systems and Communities Consulting, LLC.

References

[1]Center for Substance Abuse Treatment (US). Trauma-Informed Care in Behavioral Health Services. Rockville (MD): Substance Abuse and Mental Health Services Administration (US); 2014. (Treatment Improvement Protocol (TIP) Series, No. 57.) Exhibit 1.3-4, DSM-5 Diagnostic Criteria for PTSD. https://www.ncbi.nlm.nih.gov/books/NBK207191/box/part1_ch3.box16/

[2] Degenhardt, L., et al. The associations between traumatic experiences and subsequent onset of a substance use disorder: Findings from the World Health Organization World Mental Health surveys, Drug and Alcohol Dependence, Volume 240, 2022,109574,ISSN 0376-8716, https://doi.org/10.1016/j.drugalcdep.2022.109574.(https://www.sciencedirect.com/science/article/pii/S0376871622003118)

[3] Centers for Disease Control and Prevention. 2024. “About Adverse Childhood Experiences.” U.S. Centers for Disease Control and Prevention. CDC. October 8, 2024. https://www.cdc.gov/aces/about/index.html.

[4] Vincent J Felitti, Robert F Anda, Dale Nordenberg, David F Williamson, Alison M Spitz, Valerie Edwards, Mary P Koss, James S Marks, Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study, American Journal of Preventive Medicine,Volume 14, Issue 4,1998, Pages 245-258, ISSN 0749-3797, https://doi.org/10.1016/S0749-3797(98)0001 (https://www.sciencedirect.com/science/article/pii/S0749379798000178)

[5] Peter F. Cronholm, Christine M. Forke, Roy Wade, Megan H. Bair-Merritt, Martha Davis, Mary Harkins-Schwarz, Lee M. Pachter, Joel A. Fein,
Adverse Childhood Experiences: Expanding the Concept of Adversity, American Journal of Preventive Medicine, Volume 49, Issue 3, 2015, Pages 354-361,
ISSN 0749-3797, https://doi.org/10.1016/j.amepre.2015.02.001.

[6] Ouimette, Paige & Brown, Pamela. (2003). Trauma and Substance Abuse: Causes, Consequences, and Treatment of Comorbid Disorders. American Journal of Psychiatry - AMER J PSYCHIAT. 161. 10.1037/10460-000; Stewart, S. H., and P. J. Conrod. "Psychosocial models of functional associations between posttraumatic stress disorder and substance use disorder In Ouimette PC & Brown PJ (Eds.), Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders (pp. 29–56)." *Washington, DC: APA.[Google Scholar]* (2003).

[7] van Dam D, Ehring T, Vedel E, Emmelkamp PM. Trauma-focused treatment for posttraumatic stress disorder combined with CBT for severe substance use disorder: a randomized controlled trial. BMC Psychiatry. 2013 Jun 19;13:172. doi: 10.1186/1471-244X-13-172. PMID: 23782590; PMCID: PMC3698199.

[8] Pietrzak RH, Goldstein RB, Southwick SM, Grant BF. Prevalence and Axis I comorbidity of full and partial posttraumatic stress disorder in the United States: results from Wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions. J Anxiety Disord. 2011 Apr;25(3):456-65. doi: 10.1016/j.janxdis.2010.11.010. Epub 2010 Nov 26. PMID: 21168991; PMCID: PMC3051041.

[9] Mills, K.L., Teesson, M., Ross, J., Peters, L. Trauma, PTSD, and substance use disorders: findings from the Australian National Survey of Mental Health and Well-Being. Am J Psychiatry. 2006 Apr;163(4):652-8. doi: 10.1176/ajp.2006.163.4.652. PMID: 16585440; Khoury L, Tang YL, Bradley B, Cubells JF, Ressler KJ. Substance use, childhood traumatic experience, and Posttraumatic Stress Disorder in an urban civilian population. Depress Anxiety. 2010 Dec;27(12):1077-86. doi: 10.1002/da.20751. PMID: 21049532; PMCID: PMC3051362.

[10] ibid iv.

[11] Isobel S, Goodyear M, Furness T, Foster K. Preventing intergenerational trauma transmission: A critical interpretive synthesis. J Clin Nurs. 2019 Apr;28(7-8):1100-1113. doi: 10.1111/jocn.14735. Epub 2019 Jan 7. PMID: 30556334.

[12] Hoffmann JP, Su SS. Parental substance use disorder, mediating variables and adolescent drug use: a non-recursive model. Addiction. 1998 Sep;93(9):1351-64. doi: 10.1046/j.1360-0443.1998.93913516.x. PMID: 9926541.

[13] Rhodes CA, Thomas N, O'Hara KL, Hita L, Blake A, Wolchik SA, Fisher B, Freeman M, Chen D, Berkel C. Enhancing the Focus: How Does Parental Incarceration Fit into the Overall Picture of Adverse Childhood Experiences (ACEs) and Positive Childhood Experiences (PCEs)? Res Child Adolesc Psychopathol. 2023 Dec;51(12):1933-1944. doi: 10.1007/s10802-023-01142-0. Epub 2023 Oct 25. PMID: 37875642; PMCID: PMC11008286.

[14] Lipari, R.N. and Van Horn, S.L. Children living with parents who have a substance use disorder. The CBHSQ Report: August 24, 2017. Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Rockville, MD.

[15] Substance Abuse and Mental Health Services Administration. 2014 “Risk and Protective Factors”

[16] Crouch E, Radcliff E, Strompolis M, Srivastav A. Safe, Stable, and Nurtured: Protective Factors against Poor Physical and Mental Health Outcomes Following Exposure to Adverse Childhood Experiences (ACEs). J Child Adolesc Trauma. 2018 May 25;12(2):165-173. doi: 10.1007/s40653-018-0217-9. PMID: 32318189; PMCID: PMC7163854.

[17] Bethell C, Jones J, Gombojav N, Linkenbach J, Sege R. Positive Childhood Experiences and Adult Mental and Relational Health in a Statewide Sample: Associations Across Adverse Childhood Experiences Levels. *JAMA Pediatr.* 2019;173(11):e193007. doi:10.1001/jamapediatrics.2019.3007

[18] National Academies of Sciences, Engineering, and Medicine. (2019). Fostering Healthy Mental, Emotional, and Behavioral Development in Children and Youth: A National Agenda. Washington, DC: The National Academies Press. doi: https://doi.org/10.17226/25201.

National Academies of Sciences, Engineering, and Medicine. 2019. Fostering Healthy Mental, Emotional, and Behavioral Development in Children and Youth: A National Agenda. Washington, DC: The National Academies Press. https://doi.org/10.17226/25201.

[19] Review of State/Territorial Policy Considerations for Preventing Adverse Childhood Experiences. 2022. *ASTHO*. Association of State and Territorial Health Officials: Association of State and Territorial Health Officials. https://www.astho.org/topic/report/state-territorial-policy-considerations-preventing-aces/.

[20] Olds DL, Eckenrode J, Henderson CR Jr, Kitzman H, Powers J, Cole R, Sidora K, Morris P, Pettitt LM, Luckey D. Long-term effects of home visitation on maternal life course and child abuse and neglect. Fifteen-year follow-up of a randomized trial. JAMA. 1997 Aug 27;278(8):637-43. PMID: 9272895.; Olds DL, Kitzman HJ, Cole RE, Hanks CA, Arcoleo KJ, Anson EA, Luckey DW, Knudtson MD, Henderson CR Jr, Bondy J, Stevenson AJ. Enduring effects of prenatal and infancy home visiting by nurses on maternal life course and government spending: follow-up of a randomized trial among children at age 12 years. Arch Pediatr Adolesc Med. 2010 May;164(5):419-24. doi: 10.1001/archpediatrics.2010.49. PMID: 20439792; PMCID: PMC3249758.

[21] Hill KG, Bailey JA, Steeger CM, Hawkins JD, Catalano RF, Kosterman R, Epstein M, Abbott RD. Outcomes of Childhood Preventive Intervention Across 2 Generations: A Nonrandomized Controlled Trial. JAMA Pediatr. 2020 Aug 1;174(8):764-771. doi: 10.1001/jamapediatrics.2020.1310. PMID: 32511669; PMCID: PMC7281355.

[22] https://www.ajpmonline.org/article/S0749-3797(23)00435-X/fulltext; Morgan ER, Hill HD, Mooney SJ, Rivara FP, Rowhani-Rahbar A. State earned income tax credits and depression and alcohol misuse among women with children. Prev Med Rep. 2022 Jan 19;26:101695. doi: 10.1016/j.pmedr.2022.101695. PMID: 35096518; PMCID: PMC8783139.; Copeland WE, Tong G, Gaydosh L, Hill SN, Godwin J, Shanahan L, Costello EJ. Long-term Outcomes of Childhood Family Income Supplements on Adult Functioning. JAMA Pediatr. 2022 Oct 1;176(10):1020-1026. doi: 10.1001/jamapediatrics.2022.2946. PMID: 35994270; PMCID: PMC9396462.

[23] "The State of America's Children 2021," Children's Defense Fund, accessed June 2023, https://www.childrensdefense.org/state-of-americas-children-2021/soac-2021-child-welfare/. "Family First Prevention Services Act," Child Welfare Information Gateway, accessed June 2023, https://www.childwelfare.gov/topics/systemwide/laws-policies/federal/family-first/

[24] https://www.medicaid.gov/medicaid/section-1115-demonstrations/health-related-social-needs/index.html

[25] Humphreys, Keith. Addressing addiction and trauma in the health and criminal justice systems. Presentation. Feb 2024; Wilkens, Carrie. Center for motivation and change. Presentation: The Impact of Trauma and Substance Use: Improving Our Treatments, Improving Our Outcomes. Feb 2024.

[26] Persson A, Back SE, Killeen TK, Brady KT, Schwandt ML, Heilig M, Magnusson Å. Concurrent Treatment of PTSD and Substance Use Disorders Using Prolonged Exposure (COPE): A Pilot Study in Alcohol-dependent Women. J Addict Med. 2017 Mar/Apr;11(2):119-125. doi: 10.1097/ADM.0000000000000286. PMID: 28079572; PMCID: PMC6223130.; https://www.samhsa.gov/resource/dbhis/seeking-safety

[27] Wilkens, Carrie. Center for motivation and change. Presentation: The Impact of Trauma and Substance Use: Improving Our Treatments, Improving Our Outcomes. Feb 2024.