

ADVERSE CHILDHOOD EXPERIENCES RESEARCH PRIORITIES

Problem Description

Adverse Childhood Experiences (ACEs) are preventable, potentially traumatic events that occur in childhood (birth-17 years). ACEs are associated with at least 5 of the 10 leading causes of death in the United States. They have been associated with a host of lifelong physical, mental, and behavioral health outcomes, which makes preventing ACEs and mitigating their consequences an essential component to promoting health and well-being among the United States population, particularly among high risk populations, such as those experiencing resource constraints (e.g., those living below the poverty line or experiencing chronic unemployment, those living in neighborhoods characterized by physical disorder).

ACEs include experiencing neglect, experiencing or witnessing violence, and having a family member attempt or die by suicide. Also included are aspects of a child's environment that can undermine their sense of safety, stability, and bonding, such as growing up in a household with substance use problems; unmanaged mental health problems; or instability due to parental separation or incarceration of a parent, sibling or other member of the household. Importantly, these examples do not comprise an exhaustive list of all childhood adversities, as there are other potentially traumatic experiences in childhood—such as experiencing racism, bullying, and housing and food insecurity—that can also impact health and well-being.

While ACEs are individual experiences, they are influenced by the contexts in which children and families live. The conditions in which people are born, grow, live, work, and age contribute to health. These societal and community factors can impact both risk for ACEs and their effect on long-term physical, mental, and behavioral health outcomes and life opportunities that can lead to some populations being at high risk, particularly in communities of color and under-resourced communities. Addressing the underlying root causes of why some groups are at high risk is an essential component of both preventing ACEs and intervening with those affected by ACEs to reduce and prevent negative consequences.

The mission of the Injury Center with respect to ACEs is to prevent ACEs before they happen, identify those who have experienced ACEs, and respond using trauma-informed approaches to create the conditions for strong, thriving families and communities where all children and youth are free from harm, and all people can achieve lifelong health and well-being. To advance this comprehensive approach to ACEs, the Injury Center has directed our efforts in achieving four goals, one of which identifies research as a critical component of our comprehensive strategy. Therefore, this document offers our research priorities for advancing our goal of expanding the ACEs evidence base by conducting and supporting innovative research and evaluation.

Research Gaps and Priorities



Refine the **concept, definition, and measurement of ACEs** to support the most effective and approaches to prevention and intervention.

Research that advances the conceptualization and measurement of ACEs is critical to measuring the impact of prevention, intervention, and response strategies, and is therefore an integral part of the Injury Center's research priorities. Revisiting the concept and measurement of ACEs through a lens of supporting the health of all communities is also a critical step in addressing the bias and differences that are inherent in the systems and structures that collect and generate data. ACEs have traditionally been conceptualized and measured as ten types of childhood adversity, including three forms of violence/abuse (physical, sexual, and emotional); two forms of neglect (physical and emotional); and 5 types of household challenges (growing up in a household where there is intimate partner violence (IPV), an incarcerated household member, adult substance misuse, adult mental health problems, or divorce/separation). However, several gaps in research on the definition and measurement of ACEs have emerged as ACEs research has evolved. Research designed to address the following questions would advance NCIPC's understanding of ACEs and contribute to greater clarity and precision in defining and measuring ACEs and their impact, and would help reveal how our data systems and approaches to measurement codify and perpetuate differences in risk.

Examples of research questions include:

- What other potentially traumatic experiences in childhood, when compared to the traditional ACEs, have 1) similar impacts on children's development and well-being and 2) similar impacts on subsequent negative outcomes and should therefore be included as (and measured as) ACEs? Which of these additional potentially traumatic experiences are more likely to be experienced by children affected by differences in social and health risk factors? How can we ensure that our scientific and research process for considering expanded ACEs reflects the experiences and contexts of all populations?
- How should measurement of ACEs also incorporate the measurement of differences in social and health, such as historical and intergenerational trauma, discrimination in multiple connected systems like housing and education factors, and poverty, which are risk factors within community and societal contexts that may increase the risk for experiencing ACEs and exacerbate their impact? How do we measure these contextual risks to better understand how to address them in terms of prevention of ACEs and mitigation of their impact?
- In which contexts should ACEs be measured as an accumulation of different types of adversity, and in which contexts should they be measured as unique individual adversities in a way that allows measurement of their chronicity, duration, frequency, severity, and developmental timing?
- What are the most reliable and valid assessment tools and methods to measure ACEs across developmental stages, and how can we best align constructs assessed, who we ask, and how we ask with developmental stage?
- How does the developmental timing of ACEs moderate their relationship with outcomes, and are there "critical periods" in which the effect of different adversities is magnified or intensified?
- Most ACE studies focus on adult health outcomes. What are the immediate- and short-term outcomes associated with ACEs in early childhood and adolescence, and how do these early childhood and adolescent outcomes mediate and serve as mechanisms or pathways to the more well-established long-term adult outcomes of ACEs?

- How can existing longitudinal datasets (both observational and experimental) containing data on individual and accumulated ACEs and other adversities be leveraged to enlighten the mechanisms and pathways that connect ACEs and their outcomes?



Advance research on **risk and protective factors for ACEs**, especially at the community and societal levels, to inform effective prevention and intervention strategies.

Research that advances our understanding of the conditions and experiences that both create risk for ACEs and protect against ACEs is critical to effective prevention and intervention for all communities. A fair amount of research on risk factors for individual ACEs exposures exists, but most of these risk factors are at the individual and family levels rather than at the community and societal levels; less is understood about how differences in social and health factors can create higher risk for experiencing ACEs and amplify the consequences of ACEs among certain communities. Protective factors for ACEs are not as well-researched as risk factors. Still, research is beginning to establish several protective factors at the individual and family levels, sometimes referred to as Positive Childhood Experiences (PCEs). As with risk factors, there is a dearth of research on protective factors at the community and societal levels. More research on risk and protective factors at the community and societal levels, as well as at the individual and family levels, will help identify the most salient and modifiable risk and protective factors for prevention and intervention strategies to target. Research designed to address the following questions will help advance NCIPC's understanding of risk and protective factors, especially those at the community and societal levels and those which relate directly to differences in social and health factors that heighten the likelihood of experiencing ACEs or PCEs. This will enable NCIPC to focus prevention and intervention in a way that can effectively address ACEs and their consequences in all communities.

Examples of research questions include:

- How do the persistent differences in social and health factors that families face across generations perpetuate risk for ACEs among parents/caregivers and their children? What mechanisms underlie the intergenerational transmission of ACEs, and which protective factors can be empirically established as critical for disrupting this risk across generations through prevention and intervention strategies?
- What are the most robust risk factors for ACEs at the individual and family levels, and among the empirically supported risk factors for *individual* ACE exposures, which risk factors are the strongest predictors across *multiple* ACE exposures?
- What are the most robust risk factors for ACEs at the community and societal levels? How do differences in social and health factors (e.g., poverty, discrimination in multiple connected systems like housing and education, historical and intergenerational trauma) increase risk for experiencing ACEs and amplify their impacts across the life span? Which are the most modifiable community/societal level risk factors for ACEs, and how can this knowledge inform policy-level and community-level interventions to reduce these risks?
- What are the most robust protective factors for ACEs at the individual and family levels (e.g., PCEs), and among the empirically supported protective factors for *individual* ACE exposures, which factors are protective across *multiple* ACE exposures?
- Does the accumulation of protective factors at the individual and family levels (e.g., PCEs) both prevent ACEs from occurring and mitigate the association between ACEs and empirically established outcomes?

- What are the most robust protective factors for ACEs at the community and societal levels? How does addressing societal and community factors (e.g., policies to promote access to resources for all communities) decrease risk for experiencing ACEs and interrupt their impacts across the life span? Which are the most modifiable community/societal level protective factors for ACEs, and how can this knowledge inform policy-level and community-level interventions to reduce these risks?
- What cultural and community strengths, which may be specific to certain racial/ethnic, religious, geographic, and other groups and communities, are most important in understanding protective factors for ACEs?
- How can existing longitudinal datasets (both observational and experimental), containing data on ACEs and related risk and protective factors, be leveraged to inform our understanding of risk and protective factors for ACEs at the individual, family, community and societal levels and of how we can leverage this empirical knowledge to reduce risk and promote protective factors at all levels, especially among those communities and multiple groups at greatest risk for experiencing ACEs?



Identify the most **effective strategies** for preventing ACEs and for mitigating their impacts, ensuring that these strategies address the differences in social and health factors that put some populations at high risk for ACEs.

Effective prevention, intervention, and response strategies are key to addressing ACEs and their impact on lifelong health outcomes. As such, all research priorities within this document are in service of the overall goal of preventing ACEs before they happen or mitigating their consequences if they have already occurred. Effective prevention, intervention, and identification of, and response to, ACEs must address differences in the social and health factors that increase risk for ACEs and exacerbate their lifelong health impacts. In particular, the critical priority is to identify strategies that are effective at closing the gap between those most at risk and those least at risk. CDC's prevention resource, "[Adverse Childhood Experiences Prevention: Resource for Action](#)" outlines six overarching strategies based on the best available evidence to prevent, intervene, and respond to ACEs. However, more research is needed to identify effective programs, policies, and practices that prevent ACEs and mitigate their consequences. More research is also needed at all levels of prevention, intervention, identification, and response, from policy-level approaches that address risk and protective factors at the societal and community level to individual screening and response at the individual and family levels. Research directed at answering the following questions would allow NCIPC to empirically address these gaps in ways that would advance the research on prevention, intervention, and response and effectively address ACEs and the differences in health and social factors that underlie and exacerbate them.

Prevention and Intervention Effectiveness Research

Examples of research questions include:

- To what extent does addressing differences in social and health factors that influence risk prevent the occurrence or mitigate the impact of ACEs? What social and economic policies can prevent ACEs, mitigate their consequences, and reduce differences in risk across communities? For example, are interventions that address discrimination in multiple connected systems like housing and education effective at preventing intergenerational transmission of trauma and risk for ACEs? Similarly, do these policies and interventions lead to more PCEs?

- Are ACEs prevention and intervention strategies with evidence of effectiveness among their original study samples equally effective for other populations, particularly among communities experiencing differences in social and health factors that put them at greater risk for ACEs? What prevention and intervention strategies need to be evaluated for effectiveness among communities not represented in original effectiveness trials, and what adaptation and implementation factors must be considered to address the underlying conditions that contribute to high risk for some communities?
- To what extent do policies, programs, and practices intended to prevent ACEs or mitigate achieve their intended outcomes and reach all populations they are intended to serve? Is there differential access, such that these approaches actually exacerbate the differences they were intended to address?
- Which evidence-based and evidence-informed policies, programs, and practices that have been shown to reduce risk for one specific ACE are effective for reducing risk for a broader range of ACEs? Are interventions focused on risk and protective factors that are shared across ACEs effective at reducing multiple ACEs?
- Are interventions conducted with an intergenerational ACEs prevention framework effective at simultaneously addressing the mitigation of the consequences of ACEs in one generation and achieving primary prevention of ACEs within future generations? For example, substance use interventions can take a family-based approach, simultaneously conducting intervention with the parent who uses substances through a trauma-informed approach and preventing their children from experiencing certain ACEs (e.g., growing up with a caregiver who experiences substance use problems). What innovative and new strategies that address intergenerational continuity of risk can be developed and rigorously evaluated?
- Which approaches effectively promote protective factors at the individual, family, community, and societal levels? Among these, which are most effective for creating the conditions for children and families to thrive?

Identification and Response

Examples of research questions include:

- Is screening for ACEs an effective tool for intervention to mitigate the consequences of ACEs? What does effective screening entail and how, and in what settings, is it best implemented? What are the benefits of screening for ACEs, and what potential unintended consequences might it have? For example, in jurisdictions that are implementing or considering universal screening in pediatric clinical care settings, how can research inform the process to ensure that unintended consequences (e.g., challenges regarding mandatory reporting to child welfare authorities, negative consequences for insurance coverage and eligibility) are avoided?
- What are the essential components of trauma-informed care that drive effectiveness for mitigating the impact of ACEs, particularly the impacts on violence, suicide, and overdose, as mitigation of the impact of ACEs functions as primary prevention of these outcomes?

Implementation Research

Examples of research questions include:

- What are the essential elements or core components of evidence-based ACEs prevention strategies?
- How can effective ACEs prevention and intervention strategies be scaled up to have community- or population-level impact? What adaptations need to be made to address barriers to implementation and fidelity to the prevention and intervention strategies? What systems/infrastructure issues need to be addressed?

- What are the cost-effectiveness and cost-benefits of evidence-based and evidence-informed ACEs prevention and intervention strategies?
- What contextual factors influence uptake, implementation, adaptation, and sustainability of evidence-based ACEs prevention strategies?

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CDC's National Center for Injury Prevention and Control (the Injury Center) advances research to prevent injuries and violence and reduce their consequences. Research includes identification of factors that increase or decrease risk and rigorous evaluation of innovative prevention strategies. The Injury Center translates science into effective policies and programs and guides how to adapt evidence-based strategies to community needs to increase widespread use. The research priorities strategically focus action on gaps to achieving public health impact and are updated as research and public health needs evolve.

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