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# Enhancing Fatality Review with Lessons from Brain Science

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*National Center and Child Safety Forward Guidance Report*

January 2021



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*Enhancing Fatality Review with Lessons from Brain Science was created with the following partners:*



Within Our Reach

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## Enhancing Fatality Review with Lessons from Brain Science

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### Introduction

The death of a child is a sentinel event that shakes a community to its core. Children are not supposed to die, and these preventable events impact communities' health, safety, and resilience. According to science, childhood is both the time of promise and risk. Positive experiences help set the foundation for a healthy life. However, a child's exposure to negative, risky, or harmful experiences can have lifelong consequences impacting the child's health, safety, and ability to thrive.<sup>1</sup>



Understanding the ways children interact with their environments, build resilience, and experience adversity and the impact these experiences have on brain development will provide CDR teams important insights that will guide community and state-level prevention efforts. By informing partners about the importance of these interactions and development and supporting conditions that build resilience and safety, fatality review teams can meaningfully contribute to reducing risk in their communities.

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1 Center for the Developing Child, Harvard University, Science [Online]. Available from URL: <https://developingchild.harvard.edu/science/> [2020 November 21].



## **This guidance will provide fatality review teams with:**

- ☐ *An overview of brain science, including key concepts like brain architecture, stress response, adverse childhood experiences (ACEs), positive childhood experiences (PCEs), and the interplay between them.*
- ☐ *Key questions to ask during the death scene investigation to identify the child, family, and community's exposure and experiences.*
- ☐ *Key questions to ask during the review team meeting to identify the context in which the child lived and died.*
- ☐ *Opportunities to improve data collection, entry, and analysis of variables that integrates what we know about brain science.*
- ☐ *Suggestions for incorporating brain science into fatality review findings, prevention, recommendations, and reporting that improves individual and community outcomes.*
- ☐ *Resources for building individual and community resilience to help mitigate the impact of being involved in fatality reviews.*
- ☐ *Examples of how organizations and communities use brain science to identify and address systems gaps.*



# Brain Science Overview

## Building Healthy Brain Architecture

*Early experiences affect brain architecture, which is the foundation for all learning, behavior, and health.*

The brain first develops essential skills and neural connections. Once these skills and neural connections are developed, the brain develops more advanced and complicated skills. Although the early years of life are the most active development period for the brain, new skills, and neural connections can be formed throughout life.

*The interactions of genes and experiences shape the developing brain.<sup>2</sup>*

One of the key factors in brain development is the [concept of serve and return](#). This can be observed when a child “serves” by crying, smiling, babbling, etc., and a caregiver “returns” by responding with appropriate communication, eye contact, or comfort. The cycle of serve and return is repeated to build and strengthen neural connections and skills. If the serve and return response is missing or inconsistent, brain development may be disrupted, resulting in physical, mental, and emotional impairments.<sup>3</sup> These impairments can impact success in school, work, and relationships.

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## RESOURCES:

- The Alberta Family Wellness Initiative (AFWI) has developed an online course to make Brain Story science available to professionals and the public. [Brain Story Certification](#) (URL: <https://bit.ly/39x55K3>) is designed for those seeking a deeper understanding of brain development and its consequences for lifelong health. The Brain Story synthesizes decades of research and reflects a body of knowledge that experts agree is useful for policy-makers and citizens to understand.
- Learn more about brain architecture by using [The Brain Architecture Game](#) (URL: <https://bit.ly/3nDZ832>) that has a remote and tabletop version. This game engages professionals in understanding how the early brain develops.

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2 Center for the Developing Child, Harvard University, Brain Architecture [Online]. Available from URL: <https://developingchild.harvard.edu/science/key-concepts/brain-architecture/> [2020 November 21].

3 Center for the Developing Child, Harvard University, Serve and Return [Online]. Available from URL: <https://developingchild.harvard.edu/science/key-concepts/serve-and-return/> [2020 November 21].

## Impact of Racism on the Developing Brain

*Children of color are more likely to experience systemic inequities, such as racism, poverty, and violence.<sup>4</sup>*

Inequities experienced through lack of access and opportunity have existed in the United States for hundreds of years and have always disproportionately impacted people of color. Quality housing, education, clean air and water, safe neighborhoods, access to healthcare and mental healthcare, and affordable and nutritious food are just a few examples of the social and environmental determinants of health that are essential for someone to reach their full potential. Sadly, many of these things are less likely to be available in neighborhoods of color and make significant contributions to health inequities.

While individuals and communities strive to be resilient, advancing neuroscience teaches that the physical and psychological impacts of constant stress levels become toxic through too much cortisol production. Brain science has shown that years of stress can contribute to negative physical and behavioral health outcomes, manifesting in chronic conditions and autoimmune disorders. Additionally, adverse childhood experiences are more common among people of color. *When compounded with the constant experience of subtle and explicit discrimination, they create an even greater risk for chronic disease.*

### COMMUNITY FOCUS

A community must focus on preventing and mitigating adverse childhood experiences (ACEs) and addressing the daily contexts in which people live.

Fatality review teams obtain information to provide context on an infant, child, or adolescent's death. Social factors such as geography, access to education, experience with discrimination, trauma (including historical trauma), and access to physical and behavioral healthcare can contribute to premature mortality. Residential, educational, and occupational segregation impacts access to high-quality education, employment opportunities, healthy foods, and physical and behavioral healthcare. These structural inequities have long-lasting health impacts, including adverse birth outcomes, infant mortality, as well as high rates of homicide, gun violence, and motor vehicle deaths.

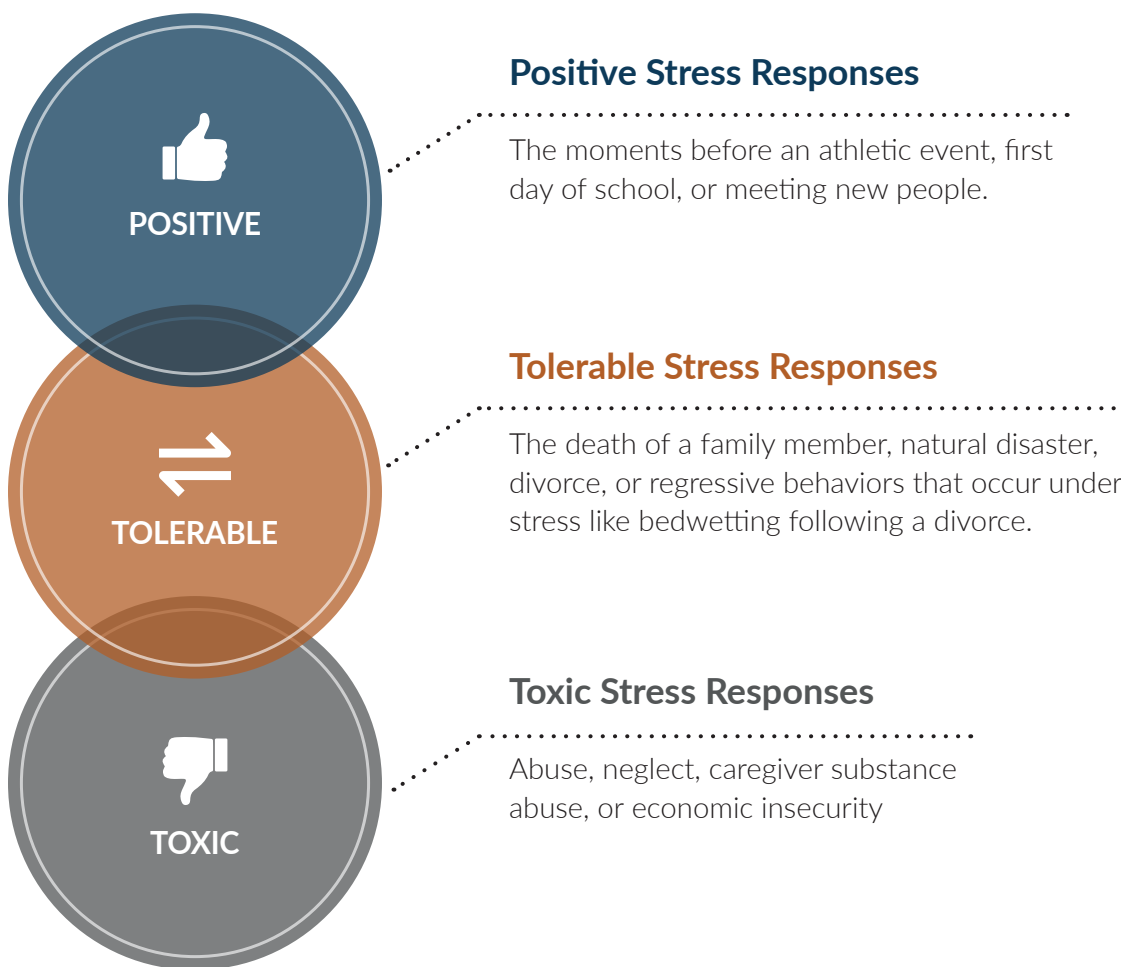
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4 Gee GC, Ford CL. Structural Racism And Health Inequities: Old Issues, New Directions. Du Bois Rev. 2011 Apr;8(1):115-132. doi: 10.1017/S1742058X11000130. PMID: 25632292; PMCID: PMC4306458.

## Stress Responses

Stress is a normal part of life. When a child's stress response system is activated, and a parent, caregiver, or another adult can offer a supportive response, the impacts of stress might not be harmful.<sup>5</sup> *Learning to respond to stress is an important part of development.* Although not all stress is harmful, if a child's stress response is activated for long periods, the brain architecture can be impacted, resulting in lifelong challenges. Conversely, if a child has positive, supportive relationships with adults or caregivers, it can reduce the negative impacts of toxic stress.

There are three types of stress responses:<sup>4</sup>



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<sup>5</sup> Center for the Developing Child, Harvard University, Toxic Stress [Online]. Available from URL: <https://developingchild.harvard.edu/science/key-concepts/toxic-stress/> [2020 November 21].





## Adverse Childhood Experiences (ACEs)

The landmark ACEs study released in 1998 by CDC-Kaiser Permanente investigated the relationship between experiences and physical and mental health.<sup>6</sup> ACEs are experiences that occur before age 18 that are potentially traumatic. These experiences impact more than 50% of adults surveyed across 25 states.<sup>7</sup> Someone who experiences ACEs is at risk for various negative outcomes throughout the lifespan, including early death.

**ACEs are often grouped into three categories:<sup>8</sup>**



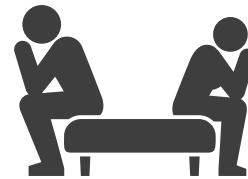
### Abuse

*Physical,  
Emotional, Sexual*



### Neglect

*Physical, Emotional*



### Household Dysfunction

*Mental Illness, Incarcerated  
Caregiver, Mother Treated  
Violently, Substance Abuse, Divorce*

The CDC-Kaiser study found that adults who had experienced four or more ACEs were at a greater risk for behavioral, physical, and mental health issues. Certain populations, such as women and racial/ethnic minorities, are at a greater risk of experiencing ACEs.

The Building Community Resilience Initiative created this Pair of ACEs tree to illustrate the relationship between adversity within a family and adversity within a community.

Adverse community environments such as a lack of affordable and safe housing, community violence, systemic discrimination, and limited access to social and economic mobility compound one another and further add to the stress of individual ACEs. ***It's essential and imperative to address the individual ACEs that people experience and the context in which they live.***

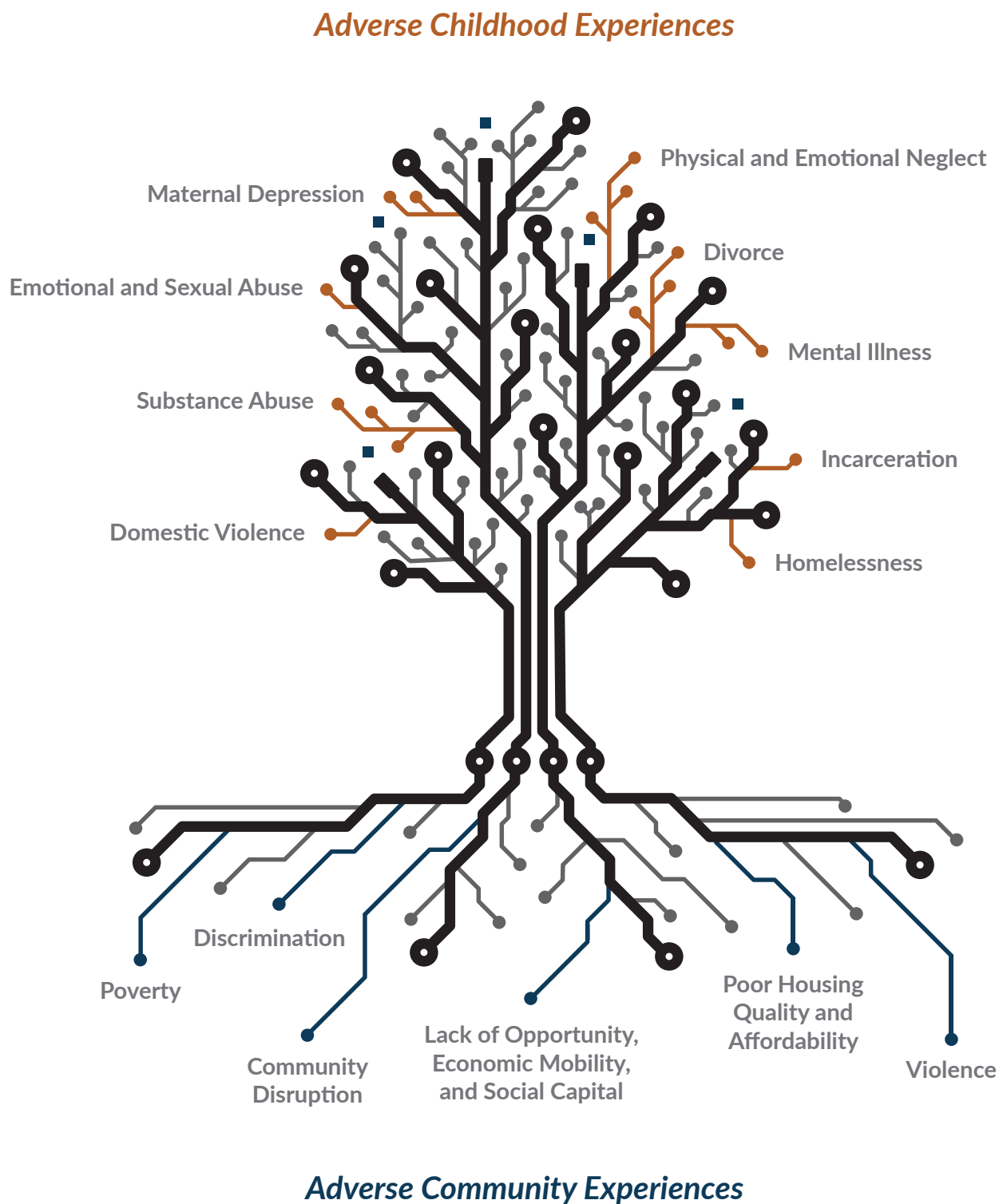
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6 Felitti, V.J., Anda, R.F., Nordenberg, D., Williamson, D.F., Spitz, A.M., Edwards, V., & Koss, M. P. (1998) Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. American journal of Preventive Medicine 14(4), 245-258.

7 Centers for Disease Control and Prevention, Preventing Adverse Childhood Experiences [Online]. Available from URL <https://www.cdc.gov/violenceprevention/aces/fastfact.html> [2020 [2020 November 21]].

8 Joining Forces for Children, Adverse Childhood Experiences [Online]. Available from URL: <https://www.joiningforcesforchildren.org/what-are-aces/> [2020 November 21].

Figure 1. *The Pair of ACEs - Adverse Childhood Experiences/Adverse Community Experiences<sup>9</sup>*



<sup>9</sup> 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.



## Positive Childhood Experiences (PCEs)

While there is a well-documented relationship between ACEs and adverse outcomes, there is less known about the impact of positive childhood experiences (PCEs). PCEs are opportunities for the child to feel safe, heard, and connected to their family and community.



Seven specific questions that can help identify PCEs are:<sup>10</sup>

- 1 *Did the child feel that they were able to talk to their family about their feelings?*
- 2 *Did the child feel that their family stood by them during difficult times?*
- 3 *Did the child enjoy participating in community traditions?*
- 4 *Did the child feel a sense of belonging in high school?*
- 5 *Did the child feel supported by friends?*
- 6 *Did the child have at least two non-parent adults who took a genuine interest in them?*
- 7 *Did the child feel safe and protected by an adult in their home?*

**PCEs are found to directly mitigate the impact of ACEs.**

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<sup>10</sup> Bethell, C, Jones, J., Narangerel, G.. et al. (2019) Positive Childhood Experiences and Adult Mental Health and Relational Health in a Statewide Sample. *JAMA Pediatr.* 2019;173(11):e193007.

## Resilience

Some children are like orchids, and others are like dandelions.<sup>11</sup> Children who fall into the category of an orchid must be in the right environment and experience supportive and caring relationships to thrive and can face challenges with the smallest exposure to stress. At the same time, children who are dandelions thrive despite the environment and relationships present. These children may have developed resilience that enables them to thrive.



"In the context of exposure to significant adversity, **resilience** is both the capacity of individuals to navigate their way to the psychological, social, cultural, and physical resources that sustain their well-being, and their capacity individually and collectively to negotiate for these resources to be provided in culturally meaningful ways."<sup>12</sup>

*Understanding why some children develop resilience and others do not is critical to improving resilience in all children.* Relationships with at least one adult, caregiver, or parent are the most crucial factor in developing resilience.<sup>9</sup> Relationships build critical behavior skills and help the child learn to respond to negative experiences. Children who thrive despite adverse experiences may have a biological resistance to adversity in addition to strong relationships with at least one adult.

**Researchers have identified a common set of factors that helps promote resilience:<sup>13</sup>**

- |  |  |
|--|--|
| <input type="checkbox"/> <i>Supportive adult-child relationships</i>           | <input type="checkbox"/> <i>Opportunities to strengthen self-regulatory skills</i> |
| <input type="checkbox"/> <i>A sense of self-efficacy and perceived control</i> | <input type="checkbox"/> <i>Cultural traditions</i>                                |

Although the brain is most adaptable during early childhood, resilience skills can be strengthened at any time.

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11 Pluess, M., Assary, E., Lionetti, F., Lester, K. J., Krapohl, E., Aron, E. N., & Aron, A. (2018). Environmental sensitivity in children: Development of the Highly Sensitive Child Scale and identification of sensitivity groups. *Developmental Psychology*, 54(1), 51–70. <https://doi.org/10.1037/dev0000406>.

12 Unger, M., Resilience Research Centre, Resilience [Online]. Available at URL: <https://resilienceresearch.org/> [2020 November 21].

13 Center for the Developing Child, Harvard University, Toxic Stress [Online]. Available from URL: <https://developingchild.harvard.edu/science/key-concepts/resilience/> [2020 November 21].

## HOPE Science

Hope and resilience are both stable psychological traits known to act as protective factors against trauma and adversity. Studies have demonstrated that hope serves as a buffer against adverse life events. *Hope is not simply an emotion.* There is a long measurable science based on Snyder's Hope Theory with sound, validated measures for adults and children.<sup>14</sup> More than 2,000 published studies have shown hope is the single best predictor of well-being compared to any other trauma recovery measures.<sup>15</sup> Hope theory is the idea that all behavior is goal-oriented. Hope is the belief that a person's future can be brighter than their past, and they play a role in creating it.<sup>16</sup>

*Hope has two fundamental processes: pathways and agency.*<sup>16</sup> Pathways are the mental strategies or the roadmap to desired goals. Agency thinking is the willpower or mental energy needed to sustain and reach those goals. According to research, hopeful children have the willpower to reach their goals and can persevere through challenges. They do this by self-regulating their thoughts, behaviors, and emotions toward their desired goals.

It is important for the pathways children identify to have small measurable benchmarks allowing them to experience small successes along the way.<sup>16</sup> These small successes result in increased willpower or mental energy, also known as agency. Alternatively, children who have repeated failed attempts at reaching their goals experience deficits in both creating pathways to goals and the willpower and motivation to achieve those goals. According to Snyder (1995),<sup>17</sup> some low hope children face future goals with negativity and focus on the failures. When a child has a blocked goal, the result can be anger and frustration. If the child cannot overcome an identified barrier, there can be a feeling of apathy or hopelessness.

*The process of hope can be learned and is directly connected to the child's social relationships and the environment.*<sup>16</sup> The research demonstrates that children who are hopeful thinkers have a perceived competence and higher self-worth as well as lower anxiety and or depression. Higher hope children have stronger problem-solving skills and are more optimistic about their future. High hope children are less likely to have behavioral problems or experience distress. Finally, when children are faced with stressful life events, hope acts as a driving force and pathway to resilience.<sup>18</sup>

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14 Snyder, C. R. (2000). *Hypothesis: There is hope*. In C. R. Snyder (Ed.), *Handbook of hope: Theory, measures, and applications* (p. 3–21). Academic Press. <https://doi.org/10.1016/B978-012654050-5/50003-8>.

15 Gwinn, J.D. and Hellman, C. (2018). *Hope Rising: How the Science of HOPE Can Change Your Life*. Morgan James Publishing.

16 Munoz, R. T., Hanks, H., & Hellman, C. M. (2020). Hope and resilience as distinct contributors to psychological flourishing among childhood trauma survivors. *Traumatology*, 26(2), 177–184. <https://doi.org/10.1037/trm0000224>.

17 Snyder, C.R., (1995). *Conceptualizing, Measuring, and Nurturing Hope*. *Journal of Counseling & Development*. <https://onlinelibrary.wiley.com/doi/abs/10.1002/j.1556-6676.1995.tb01764.x>.

18 Kwon, P. (2002). *Hope, defense mechanisms, and adjustment: implications for false hope and defensive hopelessness*. *Journal of Personality* (p.207-231). <https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-6494.05003>.





The evidence from this research offers promising information about an intervention to increase hope and strength of character among trauma-exposed children. This study's findings are entrenched in system-level interventions focused on strength and hope, thereby allowing a child who has been impacted by trauma and abuse to move forward in life and flourish.<sup>19</sup>

According to Dr. Vincent Felitti, "The potential benefit of implementing the science of hope throughout society is enormous if we truly want to meet the needs of currently unrecognized multitudes of trauma-exposed youth and children!" (Gwinn & Hellman, 2018, p.1).<sup>12</sup>

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19 Hellman, C. M., & Gwinn, C. (2017). Camp HOPE as an intervention for children exposed to domestic violence: A program evaluation of hope, and strength of character. *Child & Adolescent Social Work Journal*, 34(3), 269–276. <https://doi.org/10.1007/s10560-016-0460-6>.

## Reach Out and Read

Reach Out and Read uses well visits to talk with families about the benefits of reading. During the visit, children ages six months to three years are given a developmentally appropriate book in their primary language. The book is used to evaluate the child's development and the interactions between the child and caregivers. Reach Out and Read strives to ensure that all children arrive at kindergarten, ready to read. Approximately half of all children living in poverty do not have the skills needed to succeed in kindergarten. Since half of all children served by Reach Out and Read are low income, the program promotes overall success in children and families. [Find a Reach Out and Read clinic near you](https://reachoutandread.org/find-a-site/) (URL: <https://reachoutandread.org/find-a-site/>).

## Poverty and Brain Science

The effects of poverty on brain development are seen in infancy.<sup>20</sup> Experiencing poverty impacts how goals are set, problems are analyzed, and how challenges are navigated.<sup>21</sup> It is well documented that living in poverty has a negative impact on the developing brain. Several brain regions that are essential for cognitive and academic performance are smaller in children living in poverty.

As a result of living in poverty, children experience negative consequences, including elevated stress responses, changes in executive functioning skills such as self-regulation, ability to focus, mental flexibility, and primary caregivers who are unable to meet the child's needs due to system barriers.<sup>10</sup> Promoting resilience and interventions that support positive parenting behaviors can reduce the negative impacts of poverty.

**Communities must focus on reducing poverty, not just mitigating its impact.<sup>22</sup>**

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20 Blair, CB, Raver, CC (2016) Poverty, Stress, and Brain Development: New Directions for Prevention and Intervention Acad Pediatr. 2016 Apr; 16(3 Suppl): S30–S36.

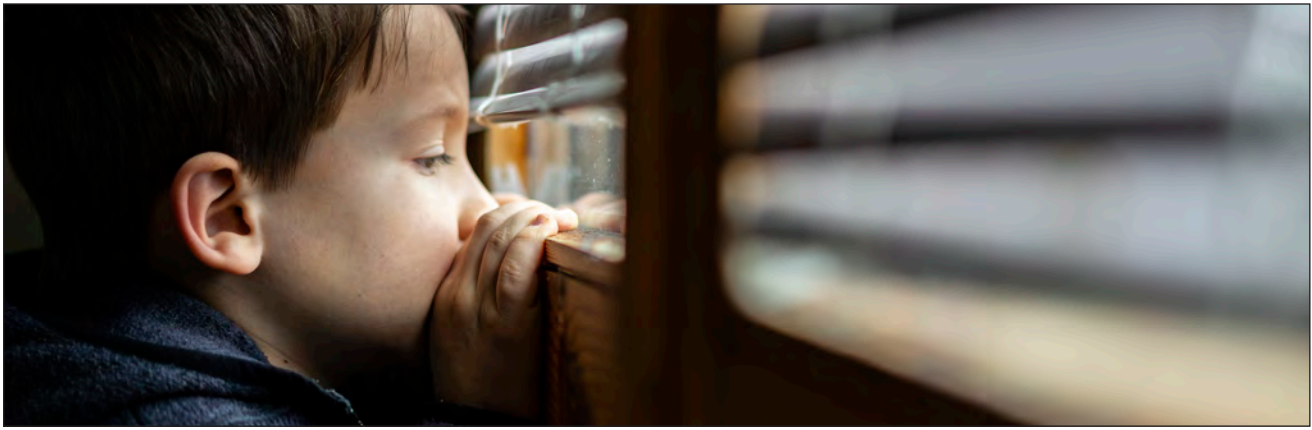
21 Economic Mobility Pathways, Poverty & Brain Science [Online]. Available from URL: <https://www.empathways.org/approach/poverty-brain-science> [2020 November 21].

22 US Partnership on Mobility from Poverty, Using Brain Science to Transform Human Services and Increase Personal Mobility from Poverty [Online]. Available at URL: [http://s3.amazonaws.com/empath-website/pdf/using\\_brain\\_science\\_to\\_transform\\_human\\_services\\_and\\_increase\\_personal\\_mobility\\_from\\_poverty\\_\(3\).pdf](http://s3.amazonaws.com/empath-website/pdf/using_brain_science_to_transform_human_services_and_increase_personal_mobility_from_poverty_(3).pdf) [2020 November 21].

## Connecting the Concepts

*Brain architecture is impacted by genes and experiences like toxic stress and ACEs.  
Resilience skills can lessen the impact of toxic stress and ACEs on brain architecture.*

Toxic stress and ACEs are connected. Experiences that result in an ACE can cause toxic stress by triggering a biological response. However, toxic stress can be minimized by healthy experiences such as therapy, physical exercise, and building relationships. Building life skills such as self-regulation and executive function (like planning, focus, judgment, and decision-making) can reduce the impact of toxic stress.



Epigenetics describes the way that the brain turns genes on and off based on environmental influences.<sup>23</sup> Instead of considering how nature or nurture impacts development, consider how both nature and nurture impact development. *While a child inherits genes from their biological parents, experiences may dictate gene expression.* Changes to genes may be temporary or permanent. Given the rapid development of brain architecture during infancy and early childhood, reducing ACEs and toxic stress will activate genetic potential.

### BUILDING CAPACITY

While caregivers and communities may not be able to eliminate the risk for ACEs or toxic stress, they can build capacity for increased health and resilience. Healthy, resilient infants and children become productive, healthy adults.

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<sup>23</sup> Center for the Developing Child, Harvard University, What is Epigenetics and How Does it Relate to Child Development [Online]. Available from URL: <https://developingchild.harvard.edu/resources/what-is-epigenetics-and-how-does-it-relate-to-child-development/> [2020 November 21].



## The Social-Ecological Model, Brain Science, and Fatality Review Findings and Recommendations

### The Social-Ecological Model

Fatality review is grounded in the Social-Ecological Model, which identifies the interplay between risk factors across the following four levels: individual, relationship, community, and society.<sup>24</sup> Those who have participated in fatality reviews can understand why: what often shows up in a case review is individual behavior. But a closer examination of the behavior in an effective review identifies the root causes and drivers of those behaviors, highlighting the complex interplay between social, community, and interpersonal factors that can influence individual choices. Intervening at an individual level will affect an individual and possibly the people they interact with. In contrast, intervening at the institutional level by changing policy or practice has the potential to influence the broader community. The most effective interventions have considerations that influence individuals, their relationships, the community, and society.



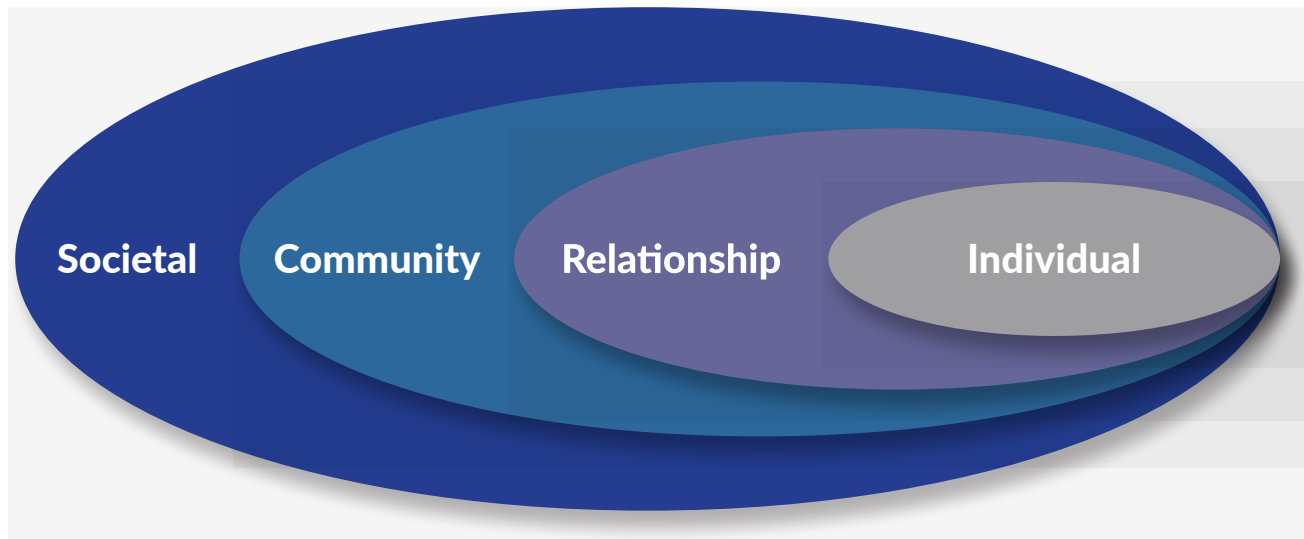
Using the **Social-Ecological Model** in fatality review, it is possible to identify interventions across multiple levels to reduce exposure to ACEs. By reducing ACEs, the likelihood of children experiencing toxic stress also decreases. Additionally, the Social-Ecological Model provides the opportunity to promote resilience at all levels.

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<sup>24</sup> Centers for Disease Control and Prevention, Social-Ecological Model [Online]. Available at URL: <https://www.cdc.gov/violenceprevention/publichealthissue/social-ecologicalmodel.html> [2020 November 21].



**Figure 2. *Individuals, Relationships, Community, and Society***



☐ ***Individual:***

This level is comprised of personal risk and protective factors, including experiences, behaviors, and genetic predispositions. Some of these factors are education, history of abuse, or age. Prevention strategies that focus on the individual level include: education about risk and protective factors, programs that promote positive relationships and interactions, and skill-building that builds resilience.

☐ ***Relationship:***

The second level examines close relationships that increase or reduce risk. This is often the individual's closest circle, such as peers, family members, and significant others. Prevention strategies focused on relationships include mentoring, family or group-focused education programs, or programs that strengthen resilience skills.

☐ ***Community:***

The third level explores the setting in which relationships exist. For children, this is commonly schools and neighborhoods. Prevention strategies at this level focus on improving the environment, both social and physical, within a school or neighborhood. Examples include improved housing programs, school policies directed at reducing bullying, or programs to reduce isolation.

☐ ***Societal:***

The fourth level considers broad social factors that help create or eliminate risk factors. This includes social, cultural, or religious norms. Prevention strategies at this level focus on policy and reducing inequities between groups of people.

## Fatality Review Findings and Prevention Recommendations

Identifying findings during the case review process is an essential part of fatality review. Findings are specific, objective facts about how systems interacted during the child's life and death. *A finding should focus on how the professional systems responded to the death.* Findings should identify the agency and department that can impact the identified problem. At least one finding documenting risk factors and one finding documenting protective factors should be documented for each case.

*Findings should be used to write recommendations.* Every 12-24 months, fatality review teams should gather their partners to review findings and key data to write recommendations. *These recommendations should focus on the solution.*

By using the Social-Ecological Model, findings and prevention recommendations can cross multiple levels. To have the most significant impact on a problem, a community should select interventions that target different levels of the model.

View the [National Center's Guidance on Findings and Recommendations](https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/Findings_Guidance.pdf) (URL: [https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/Findings\\_Guidance.pdf](https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/Findings_Guidance.pdf)).

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## Connecting the Concepts of the Social-Ecological Model, Brain Science, and Fatality Review Findings and Recommendations

The Social-Ecological Model is a theoretical framework that provides a way to understand the diverse personal and environmental factors and interplay between factors that drive behaviors and outcomes. It is also a well-established tool for driving health promotion and injury and violence prevention and interventions. This examination can provide teams a systematic way to think about individual and community needs and strategic intervention points.

### FUNDAMENTAL CONCEPTS

Connecting the fundamental concepts of brain science with the Social-Ecological Model and fatality review findings and recommendations provides a community with the opportunity to analyze the complex nature of how families build relationships, access services, and interact with their environment.



Given the importance of carefully examining current activities before making changes or identifying new interventions, completing a prevention matrix can help. This matrix modeled after the CDC's *The Social-Ecological Model: A Framework for Violence Prevention*<sup>25</sup> can help a community map out interventions. The most effective community interventions will have cross-cutting elements, addressing more than one of the social-ecological model levels. Please find a [fillable copy of the template](https://www.ncfrp.org/cdr/tools-for-cdr-teams/) (URL: <https://www.ncfrp.org/cdr/tools-for-cdr-teams/>).

| Level of the Social-Ecological Model        | Current Activity   | What ACEs/ PCEs are targeted?   | What are the resilience factors promoted?  | How should current activities be changed or new activities implemented?   |
|---|--|---|--|---|
| <b>Individual</b>                           | Screening families for ACEs upon admission                               | All ACEs  | Opportunities to strengthen self-regulatory skills                                   | Begin screening for PCEs, Snyder's Hope Scale, and resilience to create a complete assessment of the whole child.   |
| <b>Interpersonal/ Relationship</b>          | Children in child care settings experience typical child care activities | Possibly no ACEs; having another non-parental adult who genuinely cares; enjoyment in participating in community traditions | Supportive adult-child relationships; cultural traditions                            | Screen children and their parents for executive function scores using scales like the Minnesota Executive Function Scale. Target interventions/curriculum to improve executive function scores. |
| <b>Community</b>                            | Providing primary care services to low-income families                   | Having another non-parental adult who genuinely cares   | A sense of self-efficacy and perceived control                                       | Implement the Reach Out and Read program to provide families with tools to support reading.   |
| <b>Societal (Organizational and Policy)</b> | Family drug court  | Substance use   | Supportive adult-child relationships; a sense of self-efficacy and perceived control | Ensure court updates focus on promoting PCE in families.  |

25 Centers for Disease Control and Prevention, *The Social-Ecological Model: A Framework for Violence Prevention* [Online]. Available at URL: [https://www.cdc.gov/violenceprevention/pdf/sem\\_framework-a.pdf](https://www.cdc.gov/violenceprevention/pdf/sem_framework-a.pdf) [2020 November 21].

## Key Questions to Ask During the Investigation

The death scene investigation (DSI) is an opportunity to gather detailed information about the child, family, and circumstances surrounding the death. **A comprehensive DSI will help the community better understand the associated risk factors.** Consider using a standardized investigation form to ensure all relevant information is collected. Sample forms are available on the [National Center's website](http://www.ncfrp.org) (URL: [www.ncfrp.org](http://www.ncfrp.org)).



It is essential to have a **multi-agency approach** when reviewing deaths, including records from law enforcement, coroner/medical examiner, education, child welfare, and detailed medical history.

All these pieces put together create a picture of the events leading up to, during, and after a death.

**Potential data sources for accessing these details include:**

- |   |   |
|---|---|
| <input type="checkbox"/> <i>Medical records, including primary care and emergency treatment</i> | <input type="checkbox"/> <i>Law enforcement records</i>   |
| <input type="checkbox"/> <i>Health histories for biological parents (for infants)</i>           | <input type="checkbox"/> <i>Job/occupational records</i>  |
| <input type="checkbox"/> <i>Birth records (for infants)</i>                                     | <input type="checkbox"/> <i>Mental health records</i>   |
| <input type="checkbox"/> <i>Family and peer interviews</i>                                      | <input type="checkbox"/> <i>Substance use treatment records</i>   |
| <input type="checkbox"/> <i>Child welfare records</i>   | <input type="checkbox"/> <i>Social connections, including social media records, email records, texts, and other personal correspondence</i> |
| <input type="checkbox"/> <i>School records</i>  | <input type="checkbox"/> <i>ACE and PCE scores</i>  |







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**CDR teams must consider multiple data sources, including ACE and PCE scores, when discussing the death, identifying findings, and writing recommendations. When used appropriately, ACE and PCE scores provide part of the context for the child's life.**





**All agencies investigating the death should gather information on the child, including:**

-  *Medical history, including physical, behavioral, mental health, substance abuse history, and treatment, including any chronic or acute conditions, treatment, and barriers to accessing care.*
-  *Biological parents' and caregivers' (if different) medical histories, including their experiences with ACEs as children.*
-  *Family and social relationships including relationship(s) with primary caregivers, other adults such as teachers, childcare providers, coaches, siblings, peers, and significant others.*
-  *Living environment, including members of the household and those present at the time of the death.*
-  *School experience, academic history, peer and teacher relationships, and challenges.*
-  *Job or occupational history.*

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**View the [National Center's Death Scene Investigation \(DSI\) Learning Series](https://courses.mihealth.org/PUBLIC) (URL: <https://courses.mihealth.org/PUBLIC>) for additional information on conducting DSIs. This learning series contains ten training modules that focus on all aspects of the DSI process. Participants will have access to no-cost continuing education credits for completing at least one hour of the learning series.**

All agencies investigating the death should collect information on life stressors that may have impacted the death. The National Center has created [resources for assessing life stressors](https://www.ncfrp.org/wp-content/uploads/Completing-the-Life-Stressors-Section.pdf) (URL: <https://www.ncfrp.org/wp-content/uploads/Completing-the-Life-Stressors-Section.pdf>).

**Consider the following life stressors categories:**

☐

***Social/Economic:***

The decedent's and family's experience of racism, discrimination, poverty, neighborhood discord, job problems, money problems, food insecurity, housing instability, witnessing violence, pregnancy or pregnancy scare.

☐

***Relationships:***

Family discord, an argument with parents or caregivers, parents' divorce or separation, parents' incarceration, an argument with significant other, breakup with significant other, social discord, an argument with friends, bullying as a victim, bullying as a perpetrator, cyberbullying as a victim, cyberbullying as a perpetrator, peer violence as a victim, peer violence as perpetrator, isolation, stress due to sexual orientation or stress due to gender identity.

☐

***School:***

Failure, the pressure to succeed, extracurricular activities, or new school.

☐

***Technology:***

Negative impacts of electronic gaming, texting, restriction of technology or social media.

☐

***Transitions:***

Release from the hospital, a transition from one level of mental health care to another (e.g., outpatient to inpatient), juvenile justice facility, end of the school year or graduation, school break, to/from the child welfare system, or immigrant detention.

☐

***Trauma:***

Rape/sexual assault, previous abuse (emotional/physical) or family/domestic violence, current or previous conversion therapy (intended to change sexual orientation or transgender identity).

☐

***Other:***

Any other factor that may have increased suicide risk that is not captured in these categories.

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These life stressors should be documented in Section I7 in the NFR-CRS.  
See [page 27](#) for more information on NFR-CRS.



## Key Questions to Ask During the Review Meeting

Some questions to consider including in your review discussion, although not necessarily included in the NFR-CRS tool, can help inform prevention work.

- ☐ ***Did the child have at least one appropriate, healthy relationship with an adult?***  
Describe at least one healthy, primary relationship between the child and an adult.  
Did the adult predictably meet the child's needs and offer supportive, appropriate care?
- ☐ ***Describe the child's early childhood experiences.***  
Describe the child's living situation, key relationships, experiences that elicited a prolonged stress response, connections to religious or cultural traditions?
- ☐ ***Did the child experience any ACEs?***  
Did the child experience any **abuse**: physical, emotional, or sexual; **neglect**: physical or emotional; or **household dysfunction** such as mental illness, incarcerated caregiver, mother treated violently, substance abuse, divorce?
- ☐ ***Did the child experience any Positive Childhood Experiences?***  
Did the child feel able to talk to their family about their feelings? Did the child have a sense of belonging in school? Did the child feel safe and protected by adults?
- ☐ ***When did the child and family last access medical care?***  
Was this care provided by a primary care provider or in an emergency setting? Was the child screened or assessed for developmental, behavioral, or mental health treatment?
- ☐ ***What was the child's mental health or substance use treatment?***  
Describe the child's history of mental health or substance abuse treatment to include levels of care, medications, historical treatment, current treatment, barriers to care, and progress in care.
- ☐ ***Was there evidence of ACEs or toxic stress for the biological parents and caregivers?***  
Were there unhealthy patterns that may have developed in this family over time that increased this child's risk? What were community resources available to help build resilience in the family?
- ☐ ***What were services available to the community following the death?***  
Was there an appropriate crisis response to the death? Did first responders/other professionals have access to critical incident debriefing? Were outside providers brought in (if needed)?



## Data Collection

The goal of the CDR is to prevent future deaths. To do this, CDR teams rely on effective investigations that focus on relevant questions and effective, critical deliberation in the case review context. These allow teams to collect quality data. These data are entered into the National Fatality Review-Case Reporting System (NFR-CRS) in 48 states in the United States.

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### Documenting in the NFR-CRS

The quantitative variables collect information on life stressors and other variables that indicate toxic stress. While it can be challenging for CDR teams to gather the information in the NFR-CRS, it is critical for understanding how to prevent future deaths. These data points can be found in the [NFR-CRS](https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/CDR_CRS_v5-1.pdf) (URL: [https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/CDR\\_CRS\\_v5-1.pdf](https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/CDR_CRS_v5-1.pdf)).

*The narrative section allows teams to share summaries of salient points that inform prevention efforts.* In addition to the variables described in the NFR-CRS, it helps to include more detail in the narrative. Specifically, providing answers to the *Key Questions to Ask During the Investigation* outlined in the previous section can maximize the narrative's impact.

See an example narrative below.

A three-year-old female died from head trauma she sustained as a passenger in a motor vehicle crash. Autopsy findings were consistent with an unrestrained passenger being ejected from the car. The decedent was not restrained in a car seat as the family could not afford one for both cars used to transport the decedent. Family interviews indicated the decedent was very “close” to her father, her primary caregiver, and divorced from her mother. The deceased was enrolled full-time at a licensed childcare provider who reported no developmental, physical, or emotional concerns.

#### PERSONALLY IDENTIFIABLE INFORMATION

Do not include any personally identifiable information in the narrative, such as names, dates, or specific locations. This can be accomplished by using words like “the decedent” or “child” instead of the child’s name or “hospital” instead of the hospital name.

## Other Data Sources to Consider

In addition to the NFR-CRS, consider the following data sources as they provide information on the community, available services, and individuals' experiences. These data sources are population-based data sources that help provide broad information about an entire community. Pairing population data sources with local or state data can help inform prevention work.



### Behavioral Risk Factor Surveillance System (BRFSS)

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BRFSS is led by the Centers for Disease Control and Prevention. BRFSS is a three-part questionnaire that is used in all 50 states and the District of Columbia. Each year more than 400,000 adults are interviewed to collect behavioral health risk data. Module 22 of [BRFSS](https://www.cdc.gov/brfss/) (URL: <https://www.cdc.gov/brfss/>) is specific to ACEs. Most states collect this data through their state public health departments.



### Pregnancy Risk Assessment Monitoring System (PRAMS)

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PRAMS is a surveillance project of the Centers for Disease Control and Prevention that collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy. Approximately 83% of births are covered by PRAMS surveillance. [PRAMS](https://www.cdc.gov/prams/index.htm) (URL: <https://www.cdc.gov/prams/index.htm>) seeks to reduce infant morbidity and mortality by understanding maternal behaviors.



### Youth Risk Behavioral Surveillance System (YRBSS)

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YRBSS monitors six categories of health-related behaviors in youth. Those categories are behaviors that contribute to unintentional injuries and violence; sexual behaviors related to unintended pregnancy and sexually transmitted disease; alcohol and other drug use; tobacco use; unhealthy dietary behaviors; and inadequate physical activity. Led by the Centers for Disease Control and Prevention, [YRBSS](https://www.cdc.gov/healthyyouth/data/yrbs/index.htm) (URL: <https://www.cdc.gov/healthyyouth/data/yrbs/index.htm>) collects data from all 50 states and the District of Columbia. Most states collect this data through their state public education departments.









## National Survey of Children's Health (NSCH)

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NSCH provides rich data on multiple, intersecting aspects of children's lives—including physical and mental health, access to quality health care, and the child's family, neighborhood, school, and social context. *The National Survey of Children's Health* (URL: <https://www.childhealthdata.org/learn-about-the-nsch/NSCH>) is funded and directed by the Health Resources and Services Administration (HRSA) Maternal and Child Health Bureau (MCHB).



## National Survey of Child and Adolescent Wellbeing (NSCAW)

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NSCAW is a nationally representative, longitudinal survey of children and families who have been the subjects of investigation by Child Protective Services. There have been two cohorts of children enrolled in the survey, which makes available data drawn from first-hand reports from children, parents, and other caregivers and reports from caseworkers, teachers, and data from administrative records. *NSCAW* (URL: <https://www.acf.hhs.gov/opre/research/project/national-survey-of-child-and-adolescent-well-being-nscaw>) examines child and family well-being outcomes in detail and seeks to relate those outcomes to experience with the child welfare system and family characteristics, community environment, and other factors.

# Building Individual and Community Resilience

Building individual and community resilience can prevent the pair of ACEs described on [page 11](#). These traits, or buffers, build resilience at all levels of the social-ecological model.

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## Individual Resilience for Team Members

Case review and related activities can increase stress for team members. This stress can be cumulative, the more cases the team reviews, or it may be more acute due to a specific case's details. Consider ahead of time how team members may be personally impacted by the death and create space for a variety of reactions, including vicarious trauma.

1

*Take time to acknowledge what went well. Consider providing an opportunity for participants to highlight one strength they saw in the community or an agency in the face of the death and the associated challenges. If possible, focus on the agencies' strengths and individuals in the room, acknowledging their important contributions. View the [National Center's Guidance on Findings](https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/Findings_Guidance.pdf) (URL: [https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/Findings\\_Guidance.pdf](https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/Findings_Guidance.pdf)).*

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2

*Allow team members to opt out of reviews if they experienced a close connection, either personal or professional, to the youth who died. Additionally, team members who have personal experience with a child's death may want to opt out of review. These connections can be direct or indirect, such as a child at the same school, a neighbor, etc. Other stressors may impact a team member's ability to participate. Coordinators may provide an opt-out option when they send out the case information for the upcoming meeting.*

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3

*[The Resiliency Resource Center](https://counseling.temple.edu/helpful-apps) (URL: <https://counseling.temple.edu/helpful-apps>) offers an extensive list of apps that promote resiliency.*



The National Center offers these resources:

- [Guidance for CDR and FIMR Teams on Addressing Vicarious Trauma](http://bit.ly/2PbaJc0) (URL: <http://bit.ly/2PbaJc0>).
- [Webinar from November 2016, Recognizing and Responding to Vicarious Trauma in Fatality Review](https://vimeo.com/195844139) (URL: <https://vimeo.com/195844139>) [password: VT].
- [DSI Learning Series Module on Self-Care](https://courses.mihealth.org/PUBLIC) (URL: <https://courses.mihealth.org/PUBLIC>).

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## Community Resilience

Building community resilience increases the capacity of a community to adapt and succeed in changing or challenging circumstances. Resilient communities work to identify and address the root causes of adversity. Focusing on the six foundations of community resilience can help a community develop the complex, multifactorial responses necessary to manage change.<sup>26</sup> *These six foundations are people, systems thinking, adaptability, transformability, sustainability, and courage.* For the vision of community resilience to be realized, community



members must have the ability to envision the future and work toward resilience. The people must understand their systems' complexity, seeing the interplay between events and their impacts on the community. They need to have the motivation and capacity for adaptation and transformation—adjusting to communities' ever-changing nature in both small and larger, fundamental ways. As part of the systems approach, the community members must think of how resilience can both be built and maintained over time, one generation creating more resilient communities for the next. Every step in this endeavor asks courage of the community members who show up to examine the systems, adapt, transform, and work to create long-term resilience into the community ecosystem.

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<sup>26</sup> Resilience, Foundations for Community Resilience [Online]. Available at URL: <https://www.resilience.org/six-foundations-for-community-resilience/> [2020 November 21].

# Stories From the Field

## THE FAMILY PARTNERSHIP IN MINNEAPOLIS

The Family Partnership in Minneapolis (URL: <https://www.thefamilypartnership.org/media/national-pilots-begin-of-the-family-partnerships-brain-science-informed-curriculum/>) is implementing a two-generation approach to executive function coaching so that children in their therapeutic preschools have the support needed to build their executive function skills. In contrast, their parents, who have high ACE scores, are supported to build their executive function. The 2Gen Executive Function Across Generation program uses the Minnesota Executive Function Scale as a pre-posttest of children and their parents who take the curriculum. They are seeing significant improvements in executive function scores. The Family Partnership created this program as part of their involvement in the Alliance for Strong Families and Communities' Change in Mind Initiative (URL: <https://alliance1.org/web/Community/change-mind/web/resources/change-mind.aspx?hkey=e6857327-0c7c-484c-9b17-c05681b1c196>).

## CHILDREN'S WISCONSIN

Children's Wisconsin (URL: <https://childrenswi.org/childrens-and-the-community>) analyzed ACEs and housing data of the families in Milwaukee's child welfare system to understand the associations between housing instability and increased family vulnerability to child abuse and neglect. They found that 81% of parents with children entering foster care reported past or present housing instability. As a result, they created the Housing Opportunities Made to Enhance Stability (HOMES) initiative and are engaging community members, health, child welfare, housing, and other systems to develop collaborative solutions to support housing for families facing complex challenges. This effort was developed because of their involvement with the Alliance's Change in Mind Initiative (URL: <https://alliance1.org/web/Community/change-mind/web/resources/change-mind.aspx?hkey=e6857327-0c7c-484c-9b17-c05681b1c196>).







## More Stories From the Field

### THE CHILD FATALITY PREVENTION SYSTEM

The Colorado Department of Public Health and Environment (CDPHE) (URL: <https://cdphe.colorado.gov/>) created and released [An Equity Action Guide: Creating Thriving Communities in Colorado](https://drive.google.com/file/d/1BdKccaiccVw6XXddllmkGbW2ntMVS8DE/view) (URL: <https://drive.google.com/file/d/1BdKccaiccVw6XXddllmkGbW2ntMVS8DE/view>) to dive into the interwoven stories and complex relationships of economic, social, and environmental conditions that create health and well-being. [An Equity Action Guide](https://cdphe.colorado.gov/ohe) was created by the Office of Health Equity (<https://cdphe.colorado.gov/ohe>) alongside community partners. Released in 2018, An Equity Action Guide serves as a call to action to improve the quality of life so that all Coloradans can thrive.

### B'MORE FOR HEALTHY BABIES (BHB)

B'more for Healthy Babies (BHB) (URL: <https://health.baltimorecity.gov/maternal-and-child-health/bmore-healthy-babies>) is an initiative lead by the Baltimore City Health Department and the [Family League of Baltimore](http://www.flbcinc.org/) (URL: <http://www.flbcinc.org/>) that seeks to reduce infant mortality. This is accomplished by focusing on policy change, service improvements, community mobilization, and behavior change. As a result of BHB, the City of Baltimore's infant mortality rate has dropped to its lowest, and the disparity between black and white infant deaths has decreased by 37 percent. [City of Baltimore's Fetal and Infant Mortality Review team](http://healthybabybaltimore.com/our-initiatives/fetalinfant-mortality-review#:~:text=Fetal-Infant%20Mortality%20Review%20(FIMR)) (URL: [http://healthybabybaltimore.com/our-initiatives/fetalinfant-mortality-review#:~:text=Fetal-Infant%20Mortality%20Review%20\(FIMR\)](http://healthybabybaltimore.com/our-initiatives/fetalinfant-mortality-review#:~:text=Fetal-Infant%20Mortality%20Review%20(FIMR))) is an action-oriented community, for women, infants, and families in Baltimore City. It provides data and contextual information about families that experience a stillbirth or infant death.



## Summary

Understanding how brains develop, factors that can hinder ideal development, and factors that can increase resilience and respond to environmental stressors can equip fatality review teams to better understand the outcomes they see in child death cases. This understanding can also equip fatality review teams to better understand community strengths and challenges, identify system gaps, and make effective recommendations to address ACEs and toxic stress and build resilience capacity.

The National Center welcomes [questions or inquiries](#) (Email: [info@ncfrp.org](mailto:info@ncfrp.org)) about the connectivity between brain science and fatality review, or any issues related to the fatality review process.

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## Resources

- [CDC's Preventing Adverse Childhood Experiences \(ACEs\)](https://www.cdc.gov/violenceprevention/pdf/preventingACES-508.pdf) (URL: <https://www.cdc.gov/violenceprevention/pdf/preventingACES-508.pdf>): Leveraging the best available evidence to better understand adverse childhood experiences in their locales, prioritize ACEs prevention, and improve the mental, physical, and social well-being of their populations over the lifespan.
- [Resilience Research Centre](https://resilienceresearch.org/) (URL: <https://resilienceresearch.org/>): Partners with researchers, policy-makers, and clinicians to support individual and community well-being. This work is accomplished by educating children, youth, and adults in the family, school, workplace, and community settings under stress.
- [Change in Mind Institute](https://alliance1.org/web/Community/change-mind/web/resources/change-mind.aspx?hkey=e6857327-0c7c-484c-9b17-c05681b1c196) (URL: <https://alliance1.org/web/Community/change-mind/web/resources/change-mind.aspx?hkey=e6857327-0c7c-484c-9b17-c05681b1c196>) at the Alliance for Strong Families and Communities: Focuses on infusing brain science into all aspects of child welfare programs and practice.
- [FrameWorks Institute](https://www.frameworksinstitute.org/) (URL: <https://www.frameworksinstitute.org/>): Applies social science methods to study how people understand social issues-and how best to frame them.

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