Policy Options for Promoting Early Brain Development

A Strategic Guide for State and Territorial Public Health Leaders
Executive Summary

Early exposure to adverse experiences and stressors, such as poverty, unstable home environments, violence, and a lack of access to quality early education, can negatively affect a child’s development and long-term health and well-being. However, the impacts of these early experiences are not entirely deterministic. Consistent and responsive relationships and timely interventions during critical developmental stages can buffer the effects of adverse experiences and promote an optimal trajectory for vulnerable, at-risk children.

Decades of research point to effective population-level approaches that can promote what is most needed for children to thrive. This includes preventing and mitigating risk factors that impede healthy development, as well as promoting positive and protective factors such as strong child-caregiver relationships. ASTHO’s Early Brain Development (EBD) Strategic Guide is intended to help state and territorial health leaders consider and translate early brain development science into evidence-based policies and practices that promote and protect brain health and optimal development. It draws upon well-established research from the early brain development and child development fields, as well as ASTHO’s own research and expert interviews, to identify the following four evidence-informed pathways for promoting optimal development:

1. Promote positive and responsive caregiving relationships.
2. Reduce sources of stress and identify risks early.
3. Develop an early childhood infrastructure that supports healthy development.
4. Improve outcomes measurement and evaluation to support policy decisions.

This document can be used in combination with ASTHO’s Early Brain Development Technical Assistance Framework, a clearinghouse of early brain development research, promising policies and practices, and implementation recommendations and case studies. To maximize ease of use, this document presents the policy options as discrete approaches. However, two considerations are important when using and applying this resource. Firstly, many of the approaches below intersect and overlap with each other and with other existing and planned interventions (for example, effective outcomes measurement and evaluation strategies can and should be combined with programs to address sources of severe childhood stress). Secondly, and more importantly, these programs and policies can and should be aligned at the state and territorial level, as well as elsewhere, through direct and ongoing communication and collaboration. Although these approaches each have solid evidence bases on their own, states and territories can realize the largest possible benefits by reducing duplication of effort and sharing lessons learned by aligning all of their early brain development activities.
**Introduction: What Early Brain Development Science Says**

Early experiences, especially those within the first three years of life, transform the architecture of the developing brain and have lifelong impacts on a child’s cognitive and emotional development. During this period, a child’s brain is especially sensitive to the effects of early interactions. Positive and responsive child-caregiver interactions can set the course for positive development, while negative ones—such as inappropriate or absent caregiver responses, or child exposure to chronic stress and adverse experiences—can derail it.

As shown in Figure 1, adversity in the early years can disrupt a child’s brain development, impair his or her social, emotional, and cognitive development, and affect their long-term physical and mental health. The effects of adverse childhood experiences (ACEs)—which may include abuse, neglect, or household challenges (such as living with an adult with a mental illness)—have a compounding effect; adversity in childhood increases the likelihood of future health problems like heart disease, diabetes, substance abuse, and depression. According to a 2018 Child Trends study, 45 percent of all U.S. children have experienced at least one ACE, and one in ten children have experienced three or more, putting them at especially high risk for negative outcomes. The study found geographic as well as racial and ethnic variation in the prevalence of ACEs. For example, one in three non-Hispanic black children have experienced two to eight ACEs, compared with only one in five non-Hispanic white children.

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**Figure 1. The Adverse Childhood Experience Pyramid**

- **Conception**
- **Early Death**
- **Adverse Childhood Experiences**
- **Disrupted Neurodevelopment**
- **Social, Emotional, and Cognitive Impairment**
- **Adoption of Health-risk Behaviors**
- **Disease, Disability, and Social Problems**
- **Death**

*Mechanism by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan*
Translating Science into Evidence-Based Policy and Practice

Positive and responsive parenting and caregiving can mediate the effects of stress and adversity on child development. The importance of healthy relationships and safe environments, not only to brain health but also to long-term health and well-being, provides a strong justification for two-generation efforts that address the needs of both children and adults. Effective interventions can help identify and offset risks, support and strengthen families, and set up young children for later health and wellness. Moreover, early interventions are a proven investment. According to a study from the Center on the Developing Child at Harvard University that followed children into adulthood, early childhood program participants had greater average earnings than peers in the control group, and “the public saw returns in the form of reduced special education, welfare, and crime costs, and increased tax revenues from program participants later in life.” On average, every dollar invested in high-quality early childhood programs results in $4 to $9 in returns to the public.

Researchers at the Center on the Developing Child at Harvard University have identified a set of “design principles” that policymakers can use to develop policies and services that improve outcomes for children and families (see Figure 2).

ASTHO’s Essentials for Childhood Policy Guide notes that tested programs and policy approaches, such as evidence-based home visiting and maternal depression screening, can help support and shape the social environments in which children grow up and build a strong foundation for their health and wellness. By addressing the needs of children and caregivers together, two-generational and multigenerational approaches support responsive relationships, reduce sources of stress, and in the process help children and families thrive. As described below, state health leaders can play a critical role in communicating the science behind multigenerational approaches and engaging partners to develop a coordinated and evidence-based approach for promoting healthy child development and positive outcomes.

Figure 2. Three Principles to Improve Child and Family Outcomes

These principles, grounded in science, can guide policymakers and program developers as they design and adapt policies and programs to improve outcomes for children and families.
Four Pathways to Brain and Developmental Health and Well-Being

State and territorial health officials are adopting various strategies to promote safe, stable, and nurturing relationships and environments for children. The approaches highlighted below fall into four pathways or directions that promote brain health and set the course for long-term health and wellness.

States and territories can target resources and interventions early in life when they can have the greatest benefit for an individual’s long-term health and well-being, as well as to society through increased health and productivity and reduced social spending (see Figure 3). It is also critical for states and territories to coordinate and align activities in any of the four pathways with each other and with other existing and planned programs and policies to prevent duplication of effort and realize the greatest possible benefits.

Pathway #1 Promote Positive and Responsive Caregiving Relationships

Responsive caregiving relationships—characterized by an ongoing exchange between adult and child, or what researchers call “serve and return” interactions—are the most important factor in building sturdy brain architecture and creating the basis for positive long-term health and well-being. Preventing child abuse and neglect is foundational to positive child-caregiver interactions, and supporting stable and nurturing relationships can help prevent abuse in addition to fostering positive interactions.

Conveying the Science for Policy Decisions

Below are some ways that state and territorial health leaders can bring together diverse stakeholders to improve early brain development.

Engaging and Informing Partners About the Science of Brain Development

Early brain development science can serve as a common ground for cross-agency and cross-sector partnerships that improve outcomes for children. In addition, a clear “core story” can capture and present key scientific principles that help others successfully apply them in their own contexts. Health leaders can draw from a rich body of evidence-based communication tools and resources for communicating with key stakeholders. For example, the Center on the Developing Child at Harvard University has distilled decades of child development research into the following core concepts:

- **Responsive relationships and positive experiences build strong brain architecture.**
- **Adversity** disrupts the foundations of learning, behavior, and health.
- **Protective factors** in the early years strengthen resilience. Providing the right ingredients for healthy development from the start—including protective factors that can counterbalance the effects of adversity—produces better outcomes than trying to fix problems later.

Health leaders may also use or adapt publicly-available communication tools and resources to raise awareness among key groups or to
embed the four core concepts above into early childhood governance, policy development, and workforce training. The American Academy of Pediatrics’ early brain development resources and the Center on the Developing Child at Harvard University’s article “Five Key Numbers to Remember About Early Childhood Development” may translate theory into professional practice or public policy for key audiences.

**Developing Policies that Promote Brain Development**

State and territorial health officials can help set a vision and develop policies that promote early brain development. The Center on the Developing Child at Harvard University suggests that the three principles identified above can guide health leaders and policymakers to ask:

- What are the current policies, systems, or practices doing to address each principle?
- What could be done to address them better?
- What barriers prevent addressing them more effectively?

For more information, please see ASTHO’s Early Brain Development Technical Assistance Framework, which may help health leaders distill key scientific principles into a compelling core story to help partners set those principles into action.
The recommendations below build upon violence and injury prevention strategies to lay out ways that state and territorial health leaders and other individuals, stakeholders, and organizations can go beyond ensuring child safety to helping to build caregivers’ capacities to create interactive, nurturing homes for infants and children. Leaders are doing this work using evidence-based approaches in the pediatrics, early care and education, human services, and home settings.\textsuperscript{16} State and territorial health leaders are also developing and sharing public health messages to reinforce positive parenting and caregiving practices. In all cases, when replicating these approaches, states and territories should consider ways to coordinate this new work with other established or planned programs and policies.

### Promote Language Development by Reading Aloud

Early exposure to words has a strong effect on language development and future reading ability. A child’s vocabulary at age three is a key predictor of third grade reading achievement, and third grade reading level ability is itself a powerful predictor of academic and economic success.\textsuperscript{27} Researchers have found a “word gap” correlated with socioeconomic status: Differences in children’s vocabulary first appear at age 18 months, and by age three, toddlers with college-educated parents or caregivers have vocabularies two to three times the size of that of their peers with parents who did not graduate high school. Both the number and variety of words spoken to a child in the first three years of life determine healthy brain development.\textsuperscript{18} Children in more affluent homes may hear 30 million more words than children in families of lesser means by the time they reach three years of age. Unless they are engaged in a language-rich environment early in life, children will enter school behind their peers who are.\textsuperscript{15}

After having found that only 34 percent of the state’s fourth graders were reading at or above grade level, Georgia Department of Public Health (GDPH) and partners launched the Talk With Me Baby initiative in 2013. The program encourages parents and caregivers to talk to, read to, and sing to their infants and toddlers to increase the quality and quantity of language exposure, particularly among low-income infants and children accessing the Special Supplemental Nutrition Program for Women, Infants and Children (WIC). More than 50 percent of all new and expectant parents in Georgia utilize WIC benefits, providing a unique opportunity to engage with, and support children’s language development. In 2014, GDPH and Talk With Me Baby partners trained 1,000 WIC nutritionists and clinic staff to support families with language-building activities as part of their WIC visits. In 2016, Talk With Me Baby developed an online toolkit that other states and communities can use to train nurses, WIC nutritionists, social workers, foster parents, early learning educators, and pediatricians. Early evaluations show positive message penetration: more than one-third of WIC clients across Georgia reported that they had seen the Talk With Me Baby instructional video, approximately 80 percent of clients received counseling on the importance of language from WIC staff, and 88 percent of clients reported seeing the Talk With Me Baby informational posters.\textsuperscript{20} ASTHO’s 2018 Georgia Talk With Me Baby Case Study provides further information on how WIC nutritionists and other trusted early childhood providers can promote language nutrition—defined as conversations between caregivers and babies—by modeling
behaviors and using effective resources, such as a mobile app and online conversation starters to encourage parents to talk, interact, and engage with their children in everyday life conversations.

**Promote Positive Relationships through Evidence-Based Home Visiting**

Early childhood home visiting is a service delivery strategy that links expectant and new parents with a nurse, social worker, early childhood specialist, or paraprofessional who evaluates a family’s needs and provides tailored services that support positive parent-child interactions, promote early learning and language development (include developmental screenings), and connect families to appropriate services and resources. Evidence-based home visiting improves infant and child health, reduces the risk of unintended injuries, improves parenting skills and relationships, and promotes economic self-sufficiency for enrolled families. By helping parents understand the importance of reading to and talking with babies, home visiting has shown improvements in developmental outcomes, including measurable increases in early language acquisition, cognitive development, and academic achievement in first through third grade.
Established in 2010, the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program gives pregnant women and families, particularly those considered at-risk for poor outcomes, needed resources and skills to raise children who are physically, socially, and emotionally healthy and prepared to learn.\textsuperscript{23} MIECHV’s authorizing legislation requires state and territory grantees to invest at least 75 percent of federal grant funds in evidence-based models, with the opportunity to invest up to 25 percent of funds in promising or new approaches that do not yet qualify as evidence-based models but will undergo evaluation.\textsuperscript{24} For example, as of 2016, 39 states invested resources in Nurse-Family Partnership (NFP), which matches trained nurses with first-time expectant moms beginning in the second trimester of pregnancy through the child’s second birthday. Research shows that participation in NFP can help children experience better cognitive and language development than their non-participating peers. A Denver study found that an NFP cohort of 4-year old children born to mothers with low psychological resources—that is, those with higher levels of depression and anxiety and lower levels of intellectual functioning—had better language development and impulse control compared to a control group.\textsuperscript{25} Every dollar invested in NFP returns $6.40 to society, resulting from potential gains in wages, employment, and quality of life, of which, $2.90 are in savings to state and federal governments on medical care, child welfare, special education services, and criminal justice activities.\textsuperscript{26}

**Pathway #2 Reduce Sources of Stress and Identify Risks Early**

Exposure to chronic prenatal and childhood stress can have damaging effects on a child’s health, development, and relationships.\textsuperscript{27} Reducing sources of stress and identifying developmental risks early can support families and reduce the crippling effects of early stress and adversity. Interventions should be matched to sources of significant, or toxic stress that are severe in their impacts or lasting in
duration, and unmoderated by supportive relationships with caregivers. It is also important to note that not all stress harms child development; limited stressors such as exposures to new experiences and environments can be positive, or at least not harmful, when mediated by a responsive caregiver’s support. However, poverty, one of the most widespread sources of severe childhood trauma, makes it harder for parents to meet a child’s basic food, housing, and medical care needs. Economic hardship creates significant family stress and can lead to changes in caregiving, parent mental health, and family dynamics. Researchers studying the effects of poverty and toxic stress on brain development found that aspects of poverty, such as stressful psychosocial and physical home conditions can “have a corrosive effect on the quality of caregiving provided by adults in ways that can exacerbate rather than mitigate effects of stress on children’s brains.”

As described below, states are adopting several approaches to reduce these underlying sources of stress and their effects on healthy development. (For additional state examples of how to address poverty and economic hardship, see ASTHO’s Essentials for Childhood Policy Guide.)

**Promote Awareness about Healthy Development and Signs of Developmental Concerns**

A 2016 study found that public health messaging has the potential to raise awareness of the importance of positive parenting at the population level. Therefore, public health has a key role to play in supporting this important component of early brain health. States and territories have adopted population-level public awareness strategies to inform parents, caregivers, early childhood providers, and primary care providers about the building blocks of healthy development, including the importance of responsive communications with infants and toddlers and options for addressing developmental concerns. For example, the Virginia Department of Health developed the Healthy Futures web resource, the state’s web-based version of the American Academy of Pediatrics Bright Futures guidelines, to inform parents and caregivers about age-appropriate developmental milestones and help parents partner with their children’s healthcare providers.

Missouri Department of Public Health partners with WIC and the University of Missouri to implement the Developmental Milestones Program. Based on CDC’s Learn the Signs. Act Early., the program helps parents learn the signs of healthy development, act early if there is a concern, and talk to the child’s doctor to address developmental concerns. Following a four-county pilot, partners have expanded the optional program statewide. WIC nutritionists ask parents to complete an age-appropriate checklist as part of their visit. Then, after reviewing the checklist with parents, nutritionists may refer the parent to the child’s doctor for further screening and assessment if indicated. Other states have developed state-specific Act Early websites based on CDC’s Learn the Signs. Act Early. program. For example, the Utah Department of Health’s Act Early website offers tools, checklists, and videos to help parents learn about healthy infant and child development.
Identify Risks Early
Several state public health agencies are partnering with primary care providers and human service professionals and agencies to reach at-risk families early and identify developmental concerns.

Connecticut’s Office of Early Childhood adopted Help Me Grow (HMG) to connect children at risk for developmental delays and disabilities with needed services. The HMG model helps states and communities leverage resources and connect families to community-based services. Families can call an informational hotline to discuss concerns with a care coordinator or sign up to receive age-appropriate Ages and Stages Questionnaires. If developmental concerns arise, a child development community liaison can research programs and services to identify the best fit for a family’s needs. HMG does not deliver direct services, but instead builds collaboration across the healthcare, early care and education, and family support sectors.

Massachusetts reimburses developmental specialists and educators to provide early intervention services to children from birth to age three who have, or are at risk for developmental delays. Working under the supervision of a provider who can bill for services (e.g., a physical or occupational therapist), developmental specialists partner with families to follow the child’s individual family service plan and deliver services in home and community-based settings.

Reduce Access Barriers to Health and Human Services and Supports
Reducing access barriers to medical care and mental health services is an effective way to improve screening and treatment rates and reduce sources of financial stress for at-risk families. Recognizing the link between access to health and human services and healthy child development, states are adopting strategies to streamline benefits and eligibility, reimburse providers for maternal and child screening, and improve access to mental health services.

Since most children see a pediatrician for well-child visits in their first year, these visits offer a window of opportunity to identify and address developmental concerns before they affect a child’s development. In 2016, the Centers for Medicare & Medicaid Services issued an informational bulletin on maternal depression screening and treatment that clarified the critical role that Medicaid can play in identifying depression and connecting mothers with appropriate mental health services. Nearly half of children under 6 receive their healthcare coverage through Medicaid or the Children’s Health Insurance Program, and several state Medicaid agencies cover maternal depression screening as part of pediatric visits. In 2017, Texas lawmakers required that Medicaid and the state’s children’s health insurance program pay for maternal depression screening during a pediatrician visit, even if the mother is uninsured. In addition to reimbursing pediatricians for maternal depression screenings, Colorado Medicaid rewards providers in the state’s Accountable Care Collaborative for achieving evidence-based performance metrics in prenatal and postpartum care and infant and child primary care visits.
**Pathway #3 Develop an Early Childhood Infrastructure that Supports Healthy Development**

A coordinated early childhood approach that aligns health and early learning systems can help promote safe, stable, and responsive relationships and homes, experts say. While adding additional evidence-based programs and policies can be effective, enhancing coordination between existing efforts can also have a significant benefit for early brain development. CDC has found that integrating relationship-based prevention and intervention services early in a child’s life, when his or her brain is developing most rapidly, can “optimize developmental trajectories.”

States and territories are adopting a wide array of strategies to bridge the gaps between systems and programs that have historically operated separately from one another. States and territories that are implementing other approaches in this guide, or that already have a robust portfolio of early brain development programs and policies, should strongly consider the recommendations below as ways to increase the efficiency and effectiveness of their work.

**Recognize and Incorporate Science into Policy and Practice**

Some state policymakers have adopted legislation to raise awareness about the effects of adverse childhood experiences and encourage state agencies to develop a coordinated, evidence-based early childhood approach. For example, California Assembly Concurrent Resolution No. 155, chaptered in 2014, urges the governor...
to identify evidence-based solutions to reduce children’s exposure to ACEs, address impacts of those experiences, and invest in preventive healthcare and mental health and wellness interventions. It encourages the governor to consider the principles of brain development; the connection between mental and physical health; the concepts of toxic stress, adverse childhood experiences, and buffering relationships; and the roles of early intervention and investment in children as important strategies.

Many state agencies develop informational resources to raise public awareness about healthy development, assure access to healthcare and human services and benefits, prevent and identify risks, and connect families with appropriate services. State health leaders and policymakers can use tools, such as ASTHO's Early Brain Development Self-Assessment Tool or Zero to Three’s Infant and Toddlers in the Policy Picture: Self-Assessment Toolkit to assess the state’s current policies and investments, and identify opportunities to develop or refine early childhood policies to better support healthy development.

**Incorporate Behavioral Health into Pediatric Primary Care**

Integrating behavioral healthcare with pediatric primary care is a way to provide early detection and intervention of childhood mental health issues in a way that maximizes the impact of an existing, trained workforce that already sees children regularly. The early timing of pediatric screenings and interventions can help identify issues before they cause more significant challenges later in life as they are left undiagnosed. Integration also leverages scarce resources through timely and efficient consultations and referrals.
Iowa’s 1st Five Healthy Mental Development Initiative builds partnerships between physician practices and public service providers to enhance high quality well-child care. Providers can identify children at risk for developmental concerns by using developmental tools to assess social-emotional development and family risk factors. The program is available in most of the state’s counties.

With funding from the Substance Abuse and Mental Health Services Administration, in 2009 the Massachusetts Executive Office of Health and Human Services, the Massachusetts Department of Public Health, and the Boston Public Health Commission created an early childhood mental health program model for delivery in pediatric medical homes. This program, the Partnership for Early Childhood Mental Health, has noted that “the pediatric medical home can be the key to early identification, diagnosis[,] and either treatment or coordination of treatment for early childhood mental health conditions.” As part of this program, the Boston Public Health Commission developed a toolkit to help pediatric medical homes integrate mental health services into their practices.

**Leverage and Coordinate Health and Early Learning Resources**

Public health and Medicaid partnerships can ensure that children have access to a medical home and necessary services to support healthy development. A 2017 brief published by the National Association of Medicaid Directors identified four states’ innovative Medicaid strategies that focus on the complex healthcare needs of children. For example, New York State’s Health Home Serving Children initiative provides qualifying families easier access to social services and community resources. In 2018, California’s Department of Health Care Services will launch a Whole Child Model in 21 counties to help families enrolled in MediCal access all health services for their children through a single organization.

States have also adopted different approaches to coordinate early childhood resources, including through centralized agencies or through cross-agency partnerships that align early childhood resources and priorities. For example, in 2010, Washington state created a state Home Visiting Services Account, administered jointly by the Washington State Department of Early Learning and Thrive Washington, the state’s private-public partnership for early learning. Home visiting plays a key role in achieving Washington state’s 2020 goal of having 90 percent of children ready for kindergarten, with race and family income no longer predictors of readiness. A key lesson from these states is the importance of building the capacity of providers who serve children, from pediatricians to early child care providers, to implement evidence-based programs and assist parents in using those lessons at home.

In 2011, Connecticut enacted Public Act No. 11-181, which established the Early Childhood Cabinet and required a coordinated system of early care and education and child development. In 2013, Connecticut’s governor signed an executive order establishing the Office of Early Childhood, bringing together programs from the state departments of education, social services developmental services, and public health and the state board of regents.
States without a centralized early childhood office or agency can also coordinate and align resources through cross-agency collaborative efforts. The Texas Prevention and Early Intervention Program, which oversees the state's home visiting services, leads the multi-agency Early Childhood Systems Integration Group.

Created in 2013, the group engages leaders from Texas Department of State Health Services’ Maternal and Child Health Section, Medicaid, Early Childhood Intervention services, the state workforce commission's child care services program, and the attorney general's child support division. Using federal MIECHV funds, the Prevention and Early Intervention Program leads this cross-agency effort to identify opportunities to coordinate services and systems to achieve greater impact. A facilitator helps the group use the results-based accountability framework to collect and present data.

Pathway #4 Improve Outcomes Measurement and Evaluation

State health officials can play a critical role in identifying common indicators and measurement strategies for systems working toward a common goal. According to the 2016 report From Best Practices to Breakthrough Impacts, “The ultimate success of a child-centered or adult-focused program in achieving population-level impact depends upon the ability to learn what works (and doesn't) for whom, when, in what context(s)—and why.”

States are adopting varied approaches to define and measure outcomes for children and families served by early childhood programs and services, including through connections across agencies and programs to measure and strengthen service coordination, improve referral procedures, and avoid duplication. Approaches, like those summarized below, aim to help state and local officials measure and track delivery of healthcare and human services and broader early childhood system progress toward desired maternal and child health outcomes.

In 2018, Connecticut's Office of Early Childhood announced an initiative that rewards achievement of significant outcomes for vulnerable families and infants, such as reducing child abuse and increasing parental employment. The effort stems from a recent law that charges the Office of Early Childhood to advance two-generational solutions that recognize that child well-being depends on parental stability and success. The MIECHV Rate Card Pilot initiative, the first of its kind, rewards home visiting providers for achieving key results for at-risk families.

The Office of Early Childhood makes bonus payments to MIECHV providers that achieve desired outcomes, which may include full-term birth, caregiver employment, no new cases of child maltreatment, and no incidences of injury- or ingestion-related emergency department visits.

Texas Department of Family and Protective Services, which administers all of the state's home visiting programs, has adopted various steps to incorporate systems change into its contracts with local agencies that provide evidence-based home visiting services. The Early Development Instrument, a population measure of school readiness for kindergarten-aged children, measures five developmental domains that affect child well-being and school performance: physical health and well-being, social competence, emotional maturity, language and cognitive

No matter the goal, whether it is better health, success in school, or other metrics, all child development work shares the same foundation in the science of brain development.
skills, and communication skills and general knowledge. Results are reported as percentages of children living in the community who are vulnerable, at risk, or on track in these five categories. The data often helps communities identify areas that need the most systems changes, and it can help decisionmakers track progress to assess how investments and policies are impacting child health and well-being.\textsuperscript{40}

Community coalitions in Texas also have the option of utilizing the Results-Based Accountability (RBA) framework to identify indicators that the community deems most important to address. The \textit{Ready Kid San Antonio Coalition} identified three \textbf{RBA indicators} for happy, healthy, and school-ready children, each with measurable dimensions. As defined by RBA, happy children are those who grow up in safe, stable, and nurturing environments. An RBA scorecard provides population-level indicators—such as the percentage of preschool-aged children enrolled in school or the percentage of children in families experiencing employment instability—that quantify the community’s progress toward these indicators.

\textbf{Conclusion}

Adverse experiences in early childhood are associated with poor health and mental health outcomes in children and families, and these negative effects can last a lifetime. Research has shown what children and their families need to thrive now and into adulthood. The examples provided in this guide demonstrate how state health leaders and other partners can align programs and policies to promote healthy and responsive relationships, identify and address risks before they hinder healthy development, develop a coordinated early childhood infrastructure, and measure and reward outcomes that promote healthy development.

As this guide’s examples show, promoting healthy brain development requires a broad and multigenerational approach that focuses on promoting health and protective factors and preventing and reducing risk factors. Regardless of the goal, all child development work shares the same foundation in the science of brain development. This science can serve as the common ground for fruitful partnerships that improve outcomes for children, since healthy brain development is a core part of health, learning, and success later in life. Through evidence-based and innovative programs and policies, states and territories can realize benefits beyond brain health by building a strong foundation for health and well-being into the next generation.
Endnotes


2 Ibid.

3 CDC. “Adverse Childhood Experiences Presentation Graphics.” Available at https://www.cdc.gov/violenceprevention/acestudy/ACE_graphics.html


7 Ibid.


11 Ibid.


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