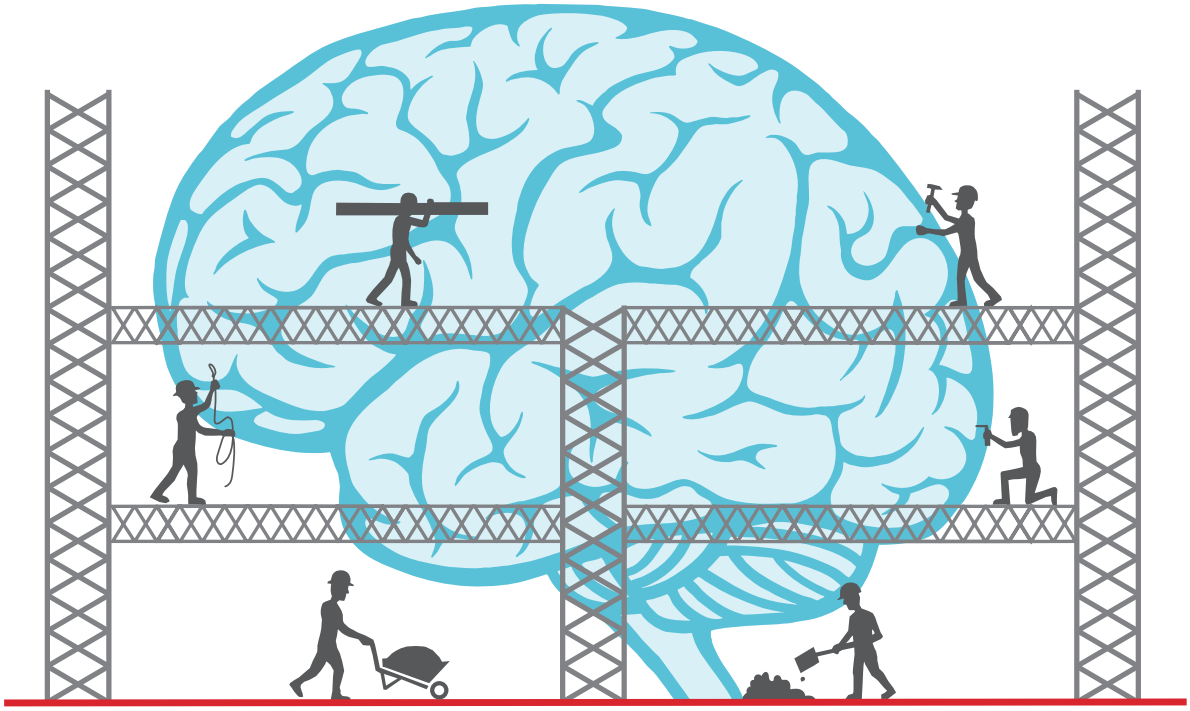
Facilitator's Guide

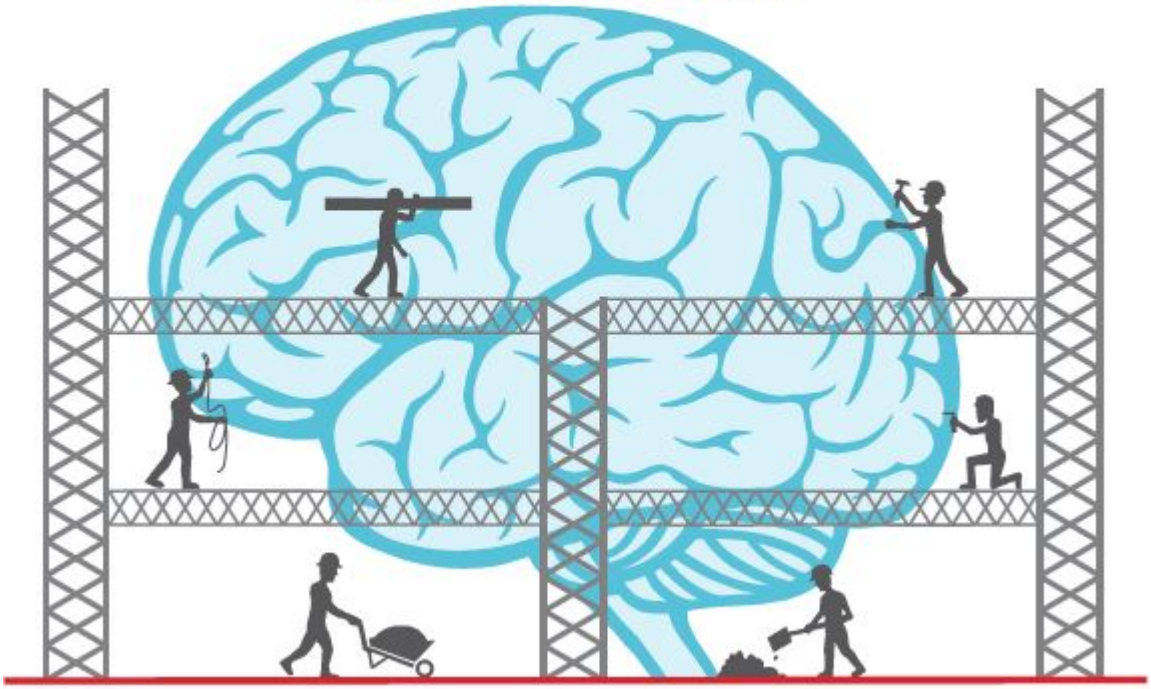
BUILDING STRONG BRAINS
TENNESSEE



Tennessee State Government

TENNESSEE COMMISSION ON CHILDREN AND YOUTH

BUILDING STRONG BRAINS
TENNESSEE



Facilitator Guide

Version 3.0

These materials have been designed to develop specific knowledge and skills for Building Strong Brains Tennessee trainers. They represent the proprietary and intellectual property of the State of Tennessee's Department of Children's Services and the Tennessee Commission on Children and Youth.

TN Tennessee State Government

TENNESSEE COMMISSION ON CHILDREN AND YOUTH

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Building Strong Brains Tennessee Facilitator Guide

Purpose

In order to secure our state's social and economic prosperity, now and in the future, *Building Strong Brains Tennessee* works to change the culture of Tennessee so that the state's overarching philosophy, policies, programs and practices for children, youth and young adults utilize the latest brain science to prevent and mitigate the impact of adverse childhood experiences. Through this training, we will create more partners who will work collaboratively to provide breakthrough approaches to help communities provide safe, stable, nurturing environments where children can develop the social, emotional and behavioral skills they need to secure long-term health, succeed in school and in life and contribute to our shared future.

This training aids in building a knowledge mobilization movement around early childhood brain development. This knowledge mobilization means developing a common understanding about early childhood through a shared, up-to-date, clear storyline based on science, including the following:

- The architecture of a young child's brain is shaped by the interaction between genes and experiences, and this can have either a positive or negative result.
- Science makes it clear that Adverse Childhood Experiences negatively impact the architecture of the developing brain.
- Children thrive in a safe, stable, nurturing environment of supportive families, caregivers, neighborhoods and communities.

Notes

Training Preparation & Checklist

Reserving and Preparing Venue Space

- ☐ Ensure space is available on training dates/times (at least 1 hour before and after training start/end time) and reserve the space.
- ☐ Confirm contact name and information for venue.
- ☐ Confirm adequate space and seating is available. Ensure space for food/drinks is available, if applicable. When possible, avoid seating participants where they need to turn around to view the presenter/screen.
- ☐ If applicable, confirm venue allows food, drink and if specific catering must be used.
- ☐ Consider parking capacity and accessibility for venue.
- ☐ Ensure the lighting is adequate.
- ☐ Inquire about technology available (LCD Projector, Speakers, Laptop/Computer).
- ☐ Communicate any ADA requirements to venue.
- ☐ Identify location of restrooms, vending machines, lunch venues (if necessary).
- ☐ Identify location of thermostat and how to operate.

Preparation/Before Training

- ☐ Prepare and copy training materials (prepare a few extra).
- ☐ Prepare list of participants for check-in.
- ☐ Prepare sign-in sheet.
- ☐ Purchase or print nametags (provide Sharpies if needed).
- ☐ Reconfirm any Americans with Disabilities Act (ADA) requirements with venue.
- ☐ Purchase/order food, drink, snacks, cups, plates, napkins, etc.
- ☐ Establish and communicate the cancellation plan (weather, illness, etc.)
- ☐ Send reminder to participants two days in advance (include date, time, location/directions, agenda, policy on late arrivals/no shows, etc.)

Day of Training

- ☐ Bring:
    - Food, drink, candy, supplies for activity, etc.
    - Sign-In sheet.
    - Nametags and Sharpies.
    - Extra pens.
    - Presentation on thumb drive or CD.
    - Flip chart, easel and markers.
    - Handouts and other materials.
    - Contact information for caterer, if applicable.
    - Sign(s) for door(s).
    - Business cards and/or include contact information in PowerPoint.
    - Supplies for activitities (brain architecture activity, serve and return activity, toxic stress activity).

- ☐ Arrive at least an hour early to set up and locate bathrooms, etc.
- ☐ Set comfortable room temperature, if possible.
- ☐ Bring necessary technology
    - Laptop;
    - LCD projector;
    - Extension cords;
    - Speakers;
    - HDMI cable.
- ☐ Have water/drink for yourself.
- ☐ Have a watch, clock, phone or some device to keep track of time.
- ☐ Wear comfortable shoes.
- ☐ Dress in layers, as you may not be able to control the temperature of the room.
- ☐ Start and end on time.

After Training

- ☐ Send "Thank you" to participants and include evaluation link.
- ☐ Submit evaluation results to TCCY.

Notes

Welcome and Introduction to Building Strong Brains Tennessee

- Introduce yourself and welcome the participants to the training. Express your enthusiasm about the training.
- Inform the participants about logistics, including location for bathrooms, breaks, length of training, etc.
- Provide an opportunity to ask questions.
- Transition into the Ice Breaker activity.

Activity 1.1 – Ice Breaker

Conducting the Activity

Goal:

Have fun while introducing the idea that many things influence our expression of ideas, thoughts and feelings.

Materials needed:

- One piece of paper for each participant
- One marker (preferable), pen or whatever is available for each participant

  (Alternately, you can have participants use back of agenda, schedule, handouts, etc. and their own marker or pen if resources are limited.)

Introduction:

- Ensure that each participant has one piece of paper and one marker/pen/pencil.
- Begin by saying,
  - "We are going to do an activity that only has two rules; they are:
    - You may not ask questions.
    - Provide only simple directions.
  - Oh… and one other thing…
    - This is independent study, do not look at your neighbor's paper. ☺"

Activity:

- Begin the activity by asking participants to do one simple drawing activity; ideally this will be completed within 10-20 seconds in order to move on to the next direction. A good starting direction is, "Okay, draw a line." Once everyone has drawn their line, provide another example, such as "Draw a circle." Other examples include:
    - Draw a square.
    - Draw a triangle.
    - Draw a rectangle.
- Participants may be tempted to ask you several questions, like "Which way do I turn my paper?" or "Which way do I draw my line?" or "How long is my line supposed to be?" or any variation on these ideas. DO NOT ANSWER ANY QUESTIONS. Gently remind them of Rule #1 and remind them of the final thought in the introduction – independent study.
- You will provide two or three simple directions, as noted above, and then ask the audience to begin to provide their own directions, popcorn style. Remind them to be simple. We do not want any "draw a cat" type of directions. Some of us are not terribly creative!
- If you would like to interject occasionally, or if people do not participate in providing directions, you may suggest others:
    - Write your name. (Some people may actually end up writing the words, "Your name.")
    - Write your favorite number. (Did they write it out numerically or with words?)
    - Draw a smiley face.
    - Draw a house.
- Allow activity to go on for four to five minutes, or until voluntary directions slow down.

Debriefing:

- Once everyone is finished, draw their attention back to you.
- Say, "Now I would like for everyone to hold up their paper and allow others in the room to see what you have drawn. I would like for you to find someone in the room whose paper looks exactly like yours."
- Provide time for participants to look around the room and realize that their paper is, indeed, unique. There is little chance that any two participants have the exact same paper. There may be similarities, but probably not duplicates.
- Say, "Isn't it interesting how we all heard the same directions, yet no two papers are identical? What does that tell us?"

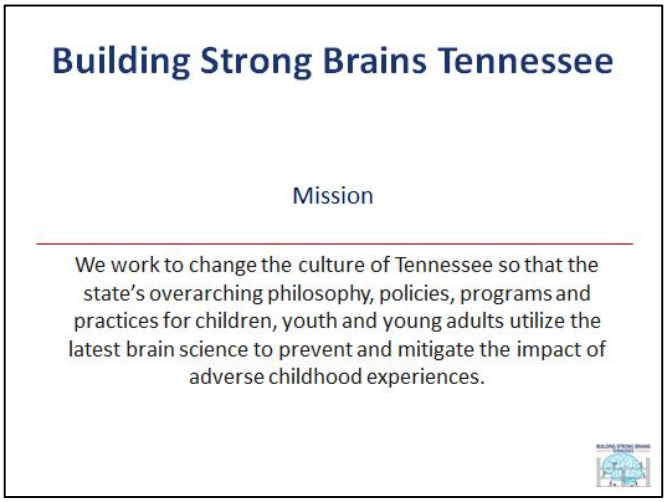
- Allow time for responses and when appropriate, say, “We all heard the same directions yet interpreted them differently. We may have similarities, but our backgrounds, talents, strengths, weaknesses and other things all influence how we expressed those directions. How many people here have been in conversation with peers, clients, families or other persons and realized that those people did not understand what you said when you felt that you had provided clear and direct communication?”

- Continue with, “There are many variables that influence how we process information including our past, our environment, our current stress level, our support system and countless others. Similarly, today we will learn more about the importance of early brain development and how events in early childhood may affect lifelong health and well-being.”

Notes

Corresponding Notes – *Slide 2*

- *Building Strong Brains Tennessee* is a statewide public-private partnership attempting to reduce ACEs.
- We work to change the culture of Tennessee so the state's overarching childhood philosophy, policies, programs and practices utilize the latest brain science to prevent and mitigate the impact of adverse childhood experiences.



Notes

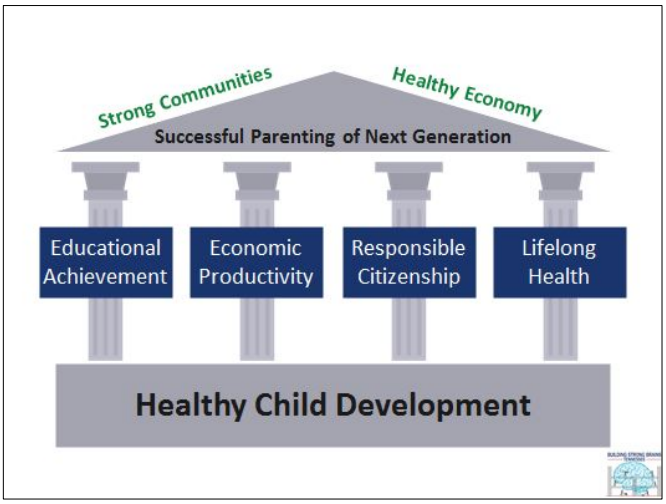
Corresponding Notes – *Slide 3*

- The public-private partnership includes a public sector steering group and a private sector steering group.
- It is supported by foundations, in-kind resources and Tennessee state government.
- Public private partnerships are critical for changing culture in our state. It demonstrates that *Building Strong Brains Tennessee* is a collective responsibility and the outcomes benefit our entire state.

Notes

Early Childhood is the Foundation for Prosperity

Corresponding Notes – *Slide 4*

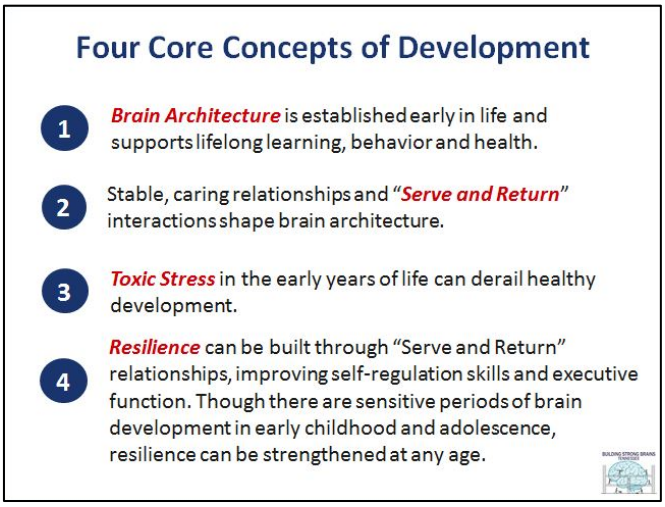


- The overarching message from science is clear: how children develop early in life matters later for them and for all of us.
- Healthy child development is the foundation for educational achievement, economic productivity, responsible citizenship and lifelong health. These are the pillars for successful parenting of the next generation, which ultimately result in strong communities and a healthy economy.
- This message is NOT just an opinion. It comes from neuroscience, molecular biology, genetics, behavioral and social science and even from economic analysis of human capital development. What all these sciences tell us is that healthy development in the early years means children will be more successful in school, and as adults they will be more productive contributors to the economy, more responsible participants in their communities and lead healthier, longer lives.

Notes

Introducing the Four Concepts of Development

Corresponding Notes – *Slide 5*



In our presentation, we will focus on four concepts of development created by the Harvard Center for the Developing Child:

- **Brain architecture**, which is established early in life and supports lifelong learning, behavior and health.
- Stable, caring relationships and **"serve and return"** interaction shape brain architecture.
- **Toxic stress** in the early years of life can derail healthy development
- **Resilience** can be built through "serve and return" relationships, improving self-regulation and building executive functions.

Facilitator Note – *This slide is to give an overview of the four main metaphors/content areas in the presentation.*

Notes

Brain Architecture

Key Terms and Themes

Brain architecture –constructed through an ongoing process that begins before birth and continues into adulthood and provides the foundation for all future learning, behavior and health.

Building Strong Brains Tennessee – a statewide partnership between both public and private entities to change the culture and reduce adverse childhood experiences in Tennessee.

Human capital - the stock of knowledge, habits, social and personality attributes, including creativity, embodied in the ability to perform labor so as to produce economic value.

Social competence - a complex, multidimensional concept consisting of social, emotional (e.g., affect regulation), cognitive (e.g., fund of information, skills for processing/acquisition, perspective taking), and behavioral (e.g., conversation skills, prosocial behavior) skills, as well as motivational and expectancy sets (e.g., moral development, self-efficacy) needed for successful social adaptation. Social competence also reflects having an ability to take another's perspective concerning a situation, learn from past experiences, and apply that learning to the changes in social interactions. Social competence is the foundation upon which expectations for future interaction with others is built, and upon which individuals develop perceptions of their own behavior.

Activity 2.1 – Introducing Brain Architecture

Conducting the Activity

Goal:

Help participants understand that building a sturdy home begins with a strong foundation and that building happens in a predictable sequence. Additionally, help participants understand different children are given varying levels of resources that ultimately impact the ability to develop strong brain architecture.

Materials needed:

- Pipe cleaners - Disseminate varying amounts to different tables with some tables only receiving enough supplies to build a small structure (approximately 12), some receiving enough to build a medium structure (approximately 20) and some receiving an abundance of pipe cleaners (approximately 30).
- Drinking straws (tend to disseminate more to tables who already have a large number of pipe cleaners. Do not disseminate more than five drinking straws to a table. Give no straws to at least one group with a smaller number of pipe cleaners).

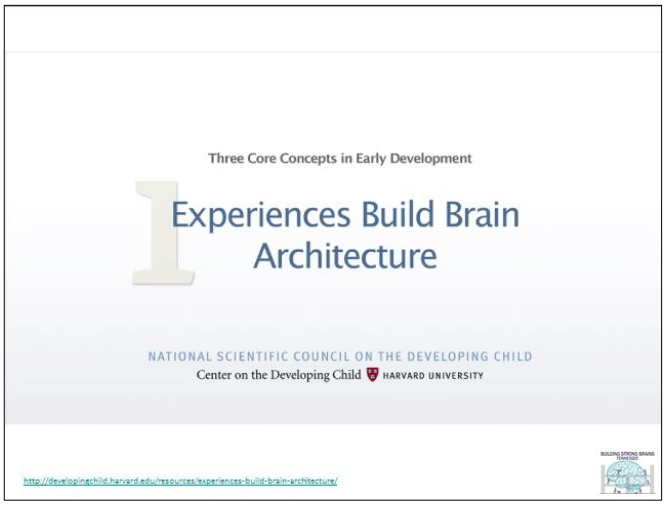
Activity:

- Organize participants into groups with no larger than six members. Instruct groups to construct a "brain" out of pipe cleaners and straws within 15 minutes with the goal of creating the strongest, tallest "brain" in the allotted time. At the end of the activity, compare the height of each group's structure. If completing the "toxic stress" activity (Activity 4.1), instruct groups to preserve their brains for a future activity.

Debriefing:

- Ask participants about their plan for architecture. Reflect back that a sturdy base is the first step in creating a strong structure.
- Upon comparing "brains," ask participants why some brains were smaller and less sturdy than others. Reflect that both the quantity and quality of supplies determine the sturdiness of their structure.

Corresponding Notes – *Slide 6*



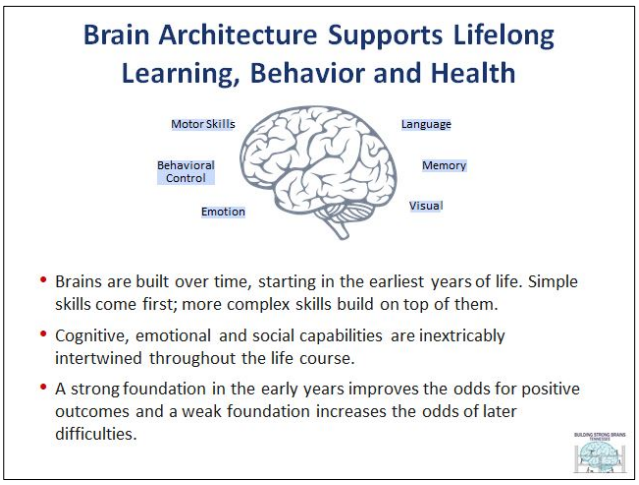
- The videos we will show come from the Harvard Center on the Developing Child Website and will set the stage for each of these concepts
- First we will dive into the video introducing the concept of Brain Architecture and then expand through further discussion and conversation.

Facilitator Note – *Video is 1 min 57 sec*

http://developingchild.harvard.edu/resources/experiences-build-brain-architecture/

Notes

Corresponding Notes – *Slide 7*

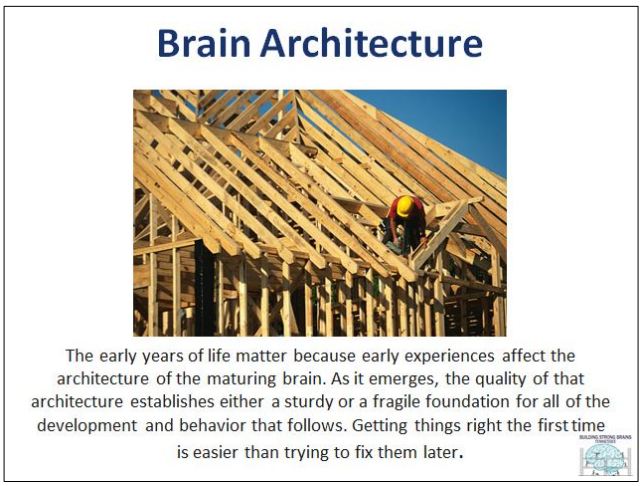


- Brains are built over time, starting in the earliest years of life. Simple skills come first; more complex skills build on top of them.
- Cognitive, emotional and social capabilities are inextricably intertwined throughout the life course. Just as strands are intertwined to make a rope, these capabilities are woven together to create strong academic and health outcomes. Emotional well-being and social competence provide a strong foundation for emerging cognitive abilities. Learning is a process by which the brain weaves skills together to form strong skill ropes.
- Emotional well-being and social competence provide a strong foundation for emerging cognitive abilities, and together they are the bricks and mortar that comprise the foundation of human development.
- Brain architecture establishes either a sturdy or a fragile foundation for all of the learning, health and behavior that follow.
- A strong foundation in the early years improves the odds for positive outcomes, and a weak foundation increases the odds of later difficulties.

Facilitator Note – *In this slide you will want to help the audience understand the process of brain building, emphasizing the importance of laying the foundation in the earliest years. Also, you will want to emphasize that cognitive, social and emotional development is deeply intertwined. This slide will set the stage for the next interactive slide with the audience.*

Notes

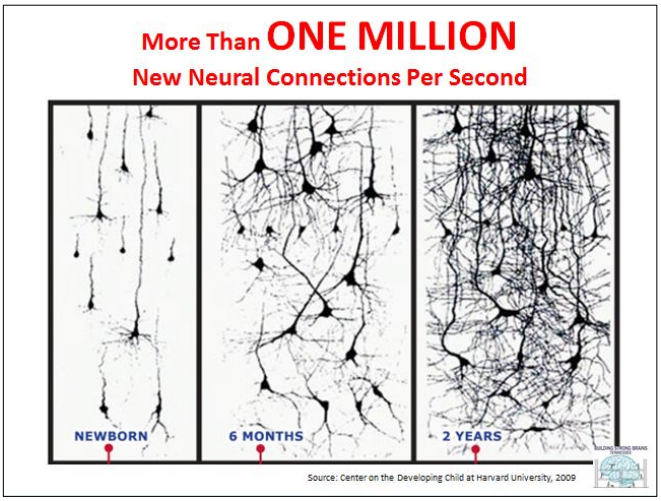
Corresponding Notes – *Slide 8*



- Ask the audience ***"If you build a home, what is the first thing you do?"***
    - Solicit the response, "Lay a foundation".
- Ask the audience ***"What are some symptoms that let you know immediately or even years later that you have a poorly laid foundation?"***
    - Solicit responses such as "Cracks in the drywall," "Roofing issues," "Floors that aren't level."
- Just like building a home, the earliest years of life lay the foundation for all future brain development. If a foundation is laid poorly, we may see symptoms such as addiction, disease, academic problems, etc. develop later in life.
- Also as in the construction of a home, the building process happens in a predictable sequence from bottom to top.
- Building a home often involves the contribution of many individuals with different skills; a framer, an electrician, a plumber, and a roofer. Similarly, solid construction of a child's brain often depends on relationships with high-quality early childcare providers and access to medical professionals and other adults in addition to parents.
- A strong foundation in the early years increases the probability of positive outcomes, and a weak foundation increases the odds of later difficulties. Getting things right the first time is easier than trying to fix them later.

Notes

Corresponding Notes – *Slide 9*



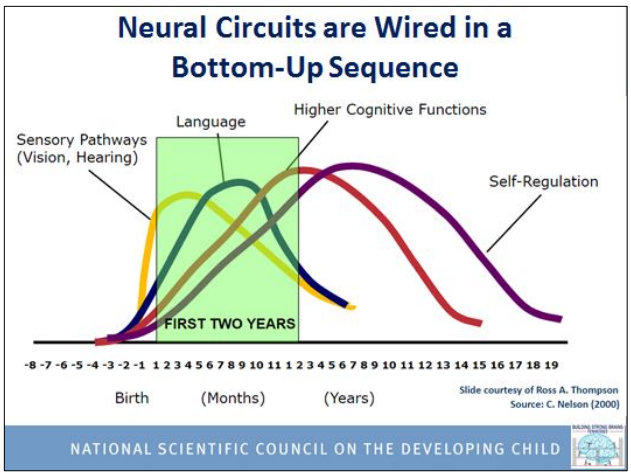
- Have you ever noticed how much rest children need? There is a lot going on during these key development years!
- In the first few years of life, **one million** new neural connections form every second, which means every second counts for brain development.
- A child is born primed for learning, and that child's experiences create and influence neural connections. As demonstrated by the picture, by the time we are two, neural connections abound.
- 85 percent of brain volume is fully developed by 3 years of age. The early years are the most active period for establishing neural connections, but new connections can form throughout the lifespan.
- While a child's brain continues developing, the important task of "pruning" occurs. The developing brain places emphasis on those experiences that are repetitive. In its effort to speed up transmission of signals, the brain begins to prune out those connections that are used less frequently in order to expedite those connections that happen more often. This helps to ensure that the neural connections that are most frequently used in the developing mind are retained. "Use it or lose it."
- But this is a double-edged sword. On the one hand, positive, healthy, growth-promoting experiences help to develop brains that are efficient and sophisticated (language, sight, movement in gravity). But for some young children, their developing brains are incorporating experiences that are abusive or profoundly neglectful, and these alter the brain's processing, sometimes for life.
- These influences begin early, even prenatally.

Sources: Center on the Developing Child at Harvard University. (2009). *Five numbers to remember about early childhood development* [Brief]. Retrieved from www.developingchild.harvard.edu

Nelson, C.A. (2000a). Change and continuity in neurobehavioral development. *Infant Behavior and Development, 22*(4), 415–429.

Notes

Corresponding Notes – *Slide 10*



- This conceptual graph shows how different sets of skills develop at different times in the brain, and how more complex skills build on the more basic skills that came before. Circuits build on circuits, and skills produce skills.
- Note that the prenatal period and first year of life are extended in this graph to more clearly show how much growth occurs in this time frame. Note that the rapid proliferation of neural connections is followed by a drop-off. That's the natural process of pruning, which helps the brain become more efficient by eliminating connections not being used.
- Self-regulation (a person's ability to control their emotions and behavior) is one of the last skills to finish developing. The brain building for this skill begins in infancy and continues to actively develop into a person's late teens and mid-twenties. This helps us understand why children, youth and young adults often need adult support to model and develop these skills.
- This is critical when we consider the timing of our public investments—the brain is doing its formative building and even pruning at a very young age, well before school begins. It is critical for those circuits to be built at each stage, to be used well and to be used frequently to provide a strong foundation for the more complex circuits that come later.

Source: Center on the Developing Child at Harvard University. (2009). *Five numbers to remember about early childhood development* [Brief]. Retrieved from www.developingchild.harvard.edu

Nelson, C.A. (2000b) [Graphic depicting development of sensory pathways, language, and cognitive function over time]. *Center on the Developing Child at Harvard University*. Retrieved from https://developingchild.harvard.edu/resources/inbrief-science-of-ecd/

Notes

Serve and Return Relationships Shape the Developing Brain

Key Terms and Themes

Serve and Return Interactions – when an infant or young child babbles, gestures, or cries, and an adult responds appropriately with eye contact, words, or a hug, neural connections are built and strengthened in the child's brain that support the development of communication and social skills. Much like a lively game of tennis, volleyball, or Ping-Pong, this back-and-forth is both fun and capacity-building. When caregivers are sensitive and responsive to a young child's signals and needs, they provide an environment rich in serve and return experiences.

Secure (Healthy) Attachment – classified by children who show some distress when their caregiver leaves but are able to compose themselves knowing that their caregiver will return. Children with secure attachment feel protected by their caregivers, and they know that they can depend on them to return.

Intergenerational Transmission of Trauma - refers to the transfer of individual abilities, traits, behaviors and outcomes from parents to their children. Also, intergenerational trauma refers to the transmission of historical oppression and its negative consequences across generations. There is evidence of the impact of intergenerational trauma on the health and well--being and on the health and social disparities facing Aboriginal peoples in Canada and other countries.

Brain Plasticity - neuroplasticity, or brain plasticity, refers to the brain's ability to CHANGE throughout life. The human brain has the amazing ability to reorganize itself by forming new connections between brain cells (neurons). Brain Plasticity is at its highest in the earliest years of life.

Activity 3.1 – Introducing Serve and Return Interactions

Goal:

Help participants understand that "serve and return" interactions build neural connections.

Materials needed:

- Disseminate pre-folded *Building Strong Brains Tennessee* Origami (a.k.a "fortune tellers") to groups of no more than six members.

Activity:

- Demonstrate how to conduct the activity with a volunteer from the audience. Have them select one of the four words (e.g. "brains"). Alternate opening the origami vertically and horizontally based on the number of letters in the selected word (e.g. alternate opening six times for the word "brains"). Have the volunteer select a number. Alternate opening the origami vertically and horizontally based on the number they selected. Have the volunteer select another number. Lift the flap of that number and follow the instructions under the flap (e.g. have a thumb wrestling match).
- Instruct group members to each take a turn with another group member doing the activity.

Debriefing:

- Ask participants to describe what they notice. Help participants understand that neural connections are formed through back and forth interaction with others. Increased interactions lead to stronger brain architecture.

Notes

Activity 3.2 – Introducing Serve and Return Interactions (alternate activity)

Conducting the Activity

Goal:

Help participants understand that "serve and return" interactions build neural connections.

Materials needed:

- Disseminate balls of yarn to groups of no more than six people.

Activity:

- Instruct a member from each group pick up the ball of yarn and throw the ball, retain hold on the string. Upon throwing the ball of yarn, tell them to compliment the person. The receiver of the ball should grasp the string, throw the ball to another member of the group and also compliment them. Instruct the group to continue this for 5 minutes. At the end of the activity, there should be a vast web of interconnectedness between group members. Instruct the person holding the ball to wrap the yarn back around the ball.

Debriefing:

- Ask participants to describe what they notice. Help participants understand that neural connections are formed through back and forth interaction with others. Increased interactions lead to stronger brain architecture.

Notes

Corresponding Notes – *Slide 11*

- Given that genes AND experience shape developing brain architecture, we know that "serve and return" interactions are critical for healthy brain development.
- What do I mean by "serve and return"?
    - Ask for examples of serve and return…like a game of tennis, volleyball or Ping-Pong.
- When an infant or young child babbles, gestures or cries, and an adult responds appropriately with eye contact, words or a hug, neural connections are built and strengthened in the child's brain. These support the development of communication and social skills. Much like a lively game of tennis, volleyball or Ping-Pong, this back-and-forth is both fun and capacity-building. When caregivers are sensitive and responsive to a young child's signals and needs, they provide an environment rich in serve and return experiences.
- Caring adults play a critical role teaching children new skills and making skill learning so fun and rewarding that children do the activities over and over again---building strong brain circuits for each skill.

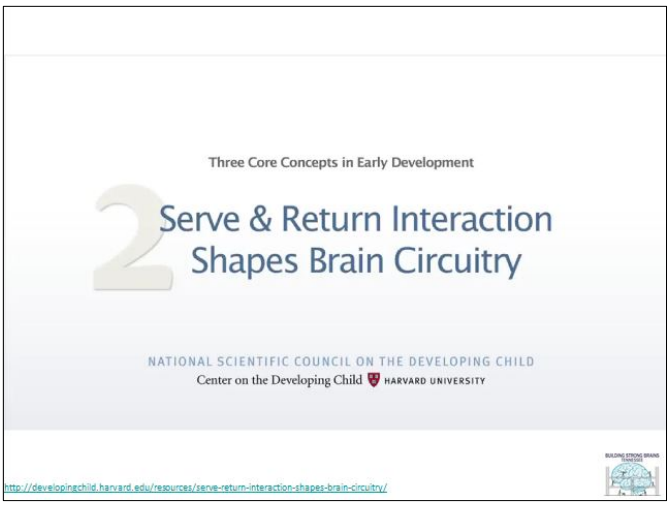
Notes

Corresponding Notes – *Slide 12*

- Now we will move on to the serve and return relationships and their importance in development of Brain Architecture.

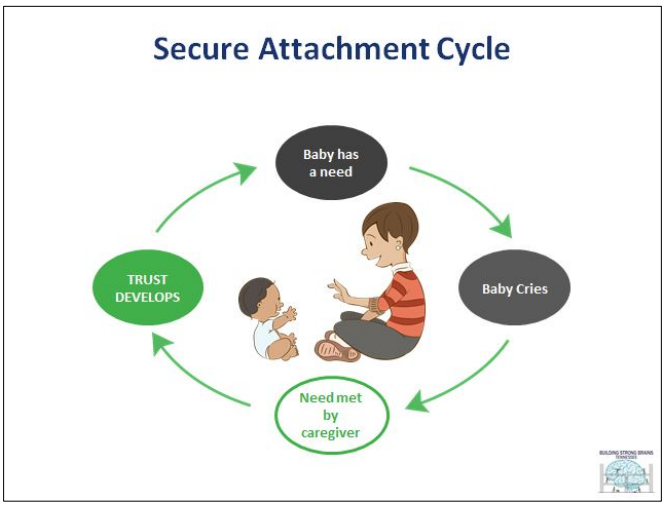
Facilitator Note *– Video is 1 min 42 sec*

http://developingchild.harvard.edu/resources/serve-return-interaction-shapes-brain-circuitry/



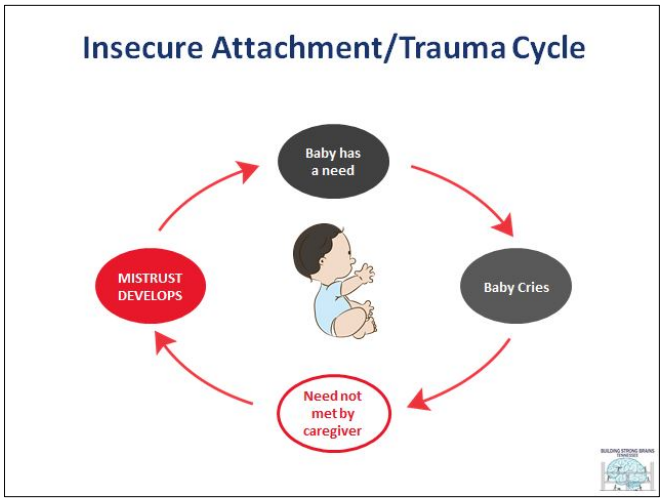
Notes

Corresponding Notes – *Slide 13*



- Ask the audience, ***"How do week old babies communicate that they have a need?"***
    - Solicit the response of "Crying."
- Ask the participant, **"What do caregivers do when a child begins to cry?"**
    - Solicit the response, "Try to figure out what was going on," or something similar.
- Healthy attachment starts in the womb when an expectant mother takes care of herself physically, avoids chronic stress situations and stays away from harmful toxins allowing for optimal brain development in utero (www.attachmenttraumanetwork.org). When we bring small children home, they are basically aliens to this world. They do not know what is safe and not safe; they have not acquired language, etc. They came from an environment where they were always warm, constantly fed and heard the rhythmic sounds of mom's heartbeat and breathing. They then enter into a world where they feel cold, hungry and experience other, sometimes overwhelming, sensations.
- When the baby cries, s/he is "serving" communication to the caregiver. When the caregiver goes through the laundry list of what could be wrong and tries to fulfill the need, s/he is "returning." These early serve and return interactions are teaching babies many things. Ask the audience, **"What do you think the baby is learning when they experience these early serve and return interactions?"**
    - Audience members will often say "trust," "safety," "love," etc. Reinforce these things.
- Think about the following example: When a caregiver says, "Oh, you were hungry!" the baby learns that the uncomfortable sensation in their stomach is hunger. When the caregiver says, "Here is some yummy milk" the baby learns that the word for the delicious white liquid they are drinking is "milk." Language acquisition is happening through these serve and return interactions.
- Additionally, the baby is learning they can trust their needs will be met, forms attachment with a caregiver, learns to feel safe, etc. As this cycle repeats in various settings, the infant is growing and forming important neural connections around these serve and return interactions. The repetitive behavior of needs-expression and needs-met develops a strong foundation for continued learning and brain development.
- This cycle happens repetitively throughout a day and, as needs are met, a child's ability to trust is increased and a positive world view is formed. As the child continues to grow, s/he is better able to articulate and express needs in effort to have those needs met appropriately.

Corresponding Notes – *Slide 14*



- Unfortunately, when this attachment cycle is unavailable to an infant, it may have lasting effects. If a child expresses a need through crying or another manner and that need does not receive a response, the child does not become calmed and is unable to regulate himself.
- Over time, a repeated lack of calming or attention will eventually lead to the child making their best attempts to self-regulate. In cases where there is inconsistent response by an adult caregiver, the child may become anxious, not knowing whether or not needs will be met.
- When a child is in a cycle where attachment is intermittent, or even lacking, s/he may have difficulty responding appropriately when an adult does attempt to intervene. This uncertainty may lead to disruptions in brain development and the ability to continue to develop higher level functioning skills.
- Despite the fact that children may not be able to recall these negative events, the brain and body do remember traumatic interactions.

Notes

Corresponding Notes – *Slide 15*

- Ask the audience ***"What did you notice in this video?"***
- This video demonstrates how much small children depend on serve and return interactions.
- Ask the audience what emotions came up when they watched this video.
- It is interesting to watch this baby become so distressed encountaring a still face. The mother was not yelling at the child, she did not leave, she was not physically threatening…she just did not respond. Children are hard-wired for serve and return interactions and feel distressed when they do not receive them.
- Explicitly make the point that the baby featured in this video has a healthy attachment. This is behavior of typically developing children who anticipate serve and return behavior because they are wired to receive it and are used to it.

Facilitator Note *– Video is 2 min 48 sec*
https://www.youtube.com/watch?v=apzXGEbZht0

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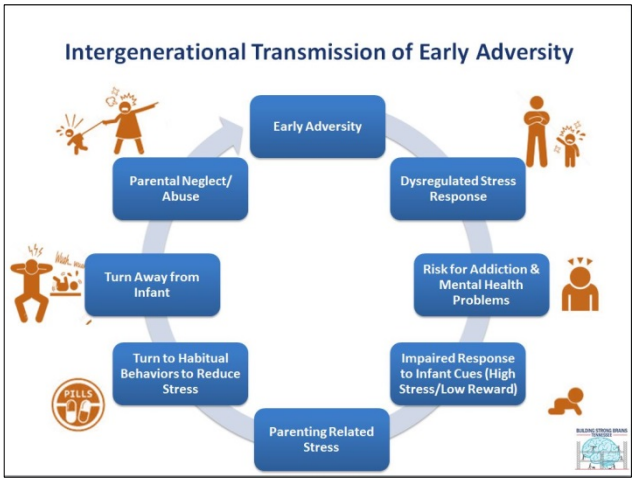
Corresponding Notes – *Slide 16*



- In this diagram, we see how trauma can be intergenerationally transmitted. When a person experiences early adversity, we know it leads to a dysregulated stress response.
- This impaired stress response significantly increases the risk for addiction and related problems later in life.
- Upon becoming a parent, the adults mental health, relationship and potential addiction issues impair responses to infant cues. For example, a crying infant can overwhelm a parent with anxiety or depression. Furthermore, these parents do not feel the rewards of parenting as acutely.
- In order to cope with the increased stress of raising an infant, the parent turns to habitual unhealthy stress relieving behaviors such as substance abuse. Ultimately, this leads to them "turning away" from the infant and the possibility of either abusing or neglecting the child.
- Thus begins the cycle of early adversity for the next generation.

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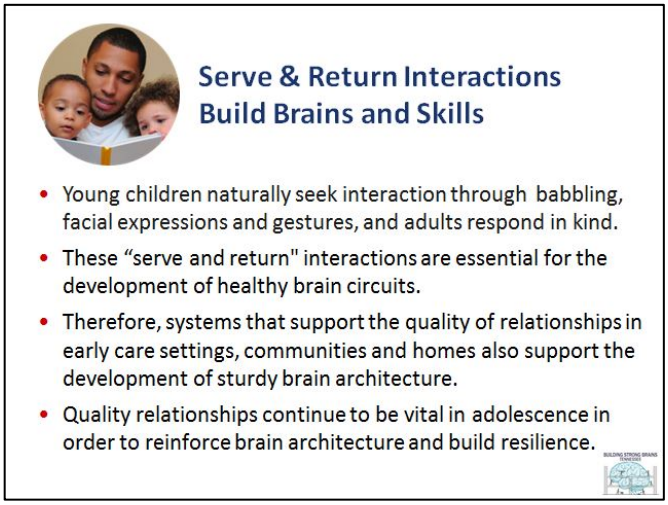
Corresponding Notes – *Slide 17*



- In early childhood, serve and return interaction happens when young children naturally reach out for interaction through babbling, facial expressions, words, gestures and cries, and adults respond by getting in sync and doing the same kind of vocalizing and gesturing back at them. The process continues back and forth.
- It is similar to a game of tennis, volleyball or catch—you need two people, playing at a similar level of skill, each responding in kind. Serve and return works best within a trusting relationship between a child and an adult who is responsive to the child's own unique individuality. These mutually rewarding interactions are essential for the development of healthy brain circuits and increasingly complex skills.
- The most important relationships begin in the family but often also involve other adults who play important roles in the lives of young children, such as grandparents and providers of early care and education. These adults continue to play an important role in building resilience through adolescence and adulthood.

Source: National Scientific Council on the Developing Child. (2007). *The science of early childhood development: Closing the gap between what we know and what we do.* Retrieved from www.developingchild.harvard.edu

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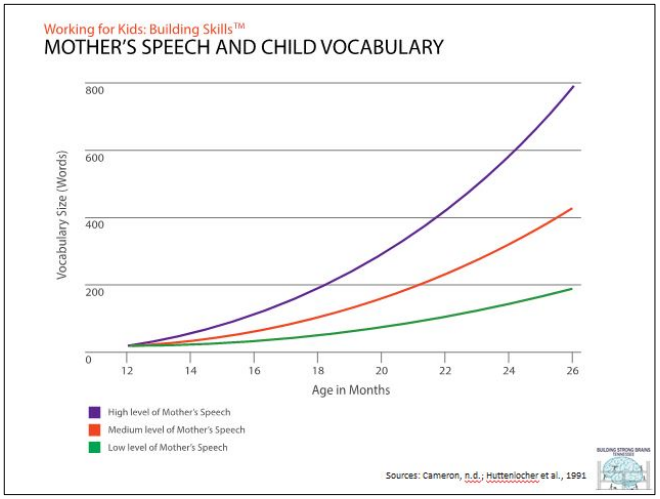
Corresponding Notes – *Slide 18*



- In this graph, you see three lines representing different trajectories of vocabulary gains.
- Let's pretend that the blue-violet line represents a child whose mother is a cosmotologist. In her profession, talking to clients and building relationships while styling or cutting hair is a key part of the job. This mother talks to her baby long before her baby says her first word. The mother is attentive to body language, babbles and gestures as "responses" in the conversation.
- Let's pretend the baby represented by the green line lives two doors down from the baby represented by the blue line. Her mother is a dental hygienist. As a dental hygeniest, she is sensitive to the fact that when a patient is unable to speak, she shouldn't carry on a back and forth conversation. This mother doesn't speak as frequently to her baby since her baby can't "talk." She expects to talk to her baby when the baby develops the capacity to respond with words.
- The red line represents a baby whose mother exposes the baby to a medium level of speech. This child still experiences a vocabulary difference of 400 words compared to the child with a mother who has a high level of speech.
- Right from the start of life, experiences matter, shaping the developing brain. As shown in this graph, the number of words a child learns and the rate at which they learn words is strongly influenced by how many words they hear on a regular basis. The baby represented by the blue-violet line has acquired about 600 more words by 26 months than the baby represented by the green line.
- As we will learn, children with large vocabularies are also developing strong brain pathways that they will have the rest of their lives for reading and speaking. This will put them on a road towards doing well in school and well in life.
- Ask the audience to consider environmental factors that would contribute to decreased speech by the mother. Explore the impact of stress or poverty on serve and return interactions.
- The bottom line is speaking to children early on is crucial for brain development. Narrating their life experiences long before they can speak helps build the foundation for language development.

***Facilitator Note** – Frequently audience members will reflect on the impact of technology such as a smart phone on brain development. Different types of engagement yield different results. See the following Time Magazine article for a deeper understanding of this subject.*

Sources: Cameron, J. (n.d.) [Graphic developed by Working For Kids depicting the increase in vocabulary size over time based on mother's level of speech]. Available from www.workingforkids.com

Heid, M. (2016, October 27). 5 ways to help your kids have a healthy relationship with technology. *Time Magazine.* Retrieved from http://time.com/4547316/inside-the-new-standards-for-kids-and-screen-time/

Huttenlocher, J., Haight, W., Bryk, A., Seltzer, M., & Lyons, T. (1991). Early vocabulary growth: Relation to language input and gender. *Developmental Psychology, 27*(2), 236-248.

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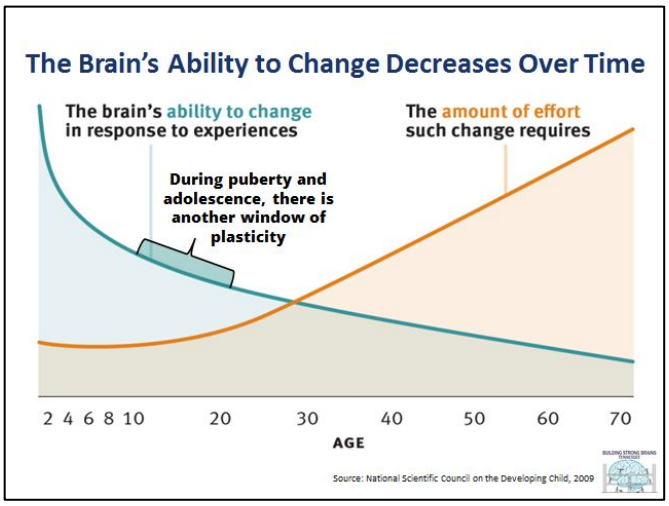
Corresponding Notes – *Slide 19*



- Plasticity, or the ability for the brain to reorganize and adapt, is greatest in the first years of life and decreases with age. This graph reinforces one important takeaway from the video: it is easier and more effective to get brain development right in the early years than to fix things later.

- The graph is a conceptual model that illustrates core developmental concepts – it does not reflect precise measurements. As the maturing brain becomes more specialized to assume more complex functions, it is less capable of reorganizing and adapting. For example, by the first year, the parts of the brain that differentiate vocal sounds are becoming specialized to the language the baby has been exposed to and are already starting to lose the ability to recognize sound distinctions found in other languages. As the brain prunes away circuits not used, those that are used become stronger and increasingly difficult to alter. Declining plasticity means it is easier and more effective to influence a baby's developing brain architecture than it is to rewire parts of its circuitry in the adult years. In other words, we can *invest now* by ensuring positive conditions for healthy development, or *pay more later* in the form of costly remediation, health care, mental health services and increased rates of incarceration.

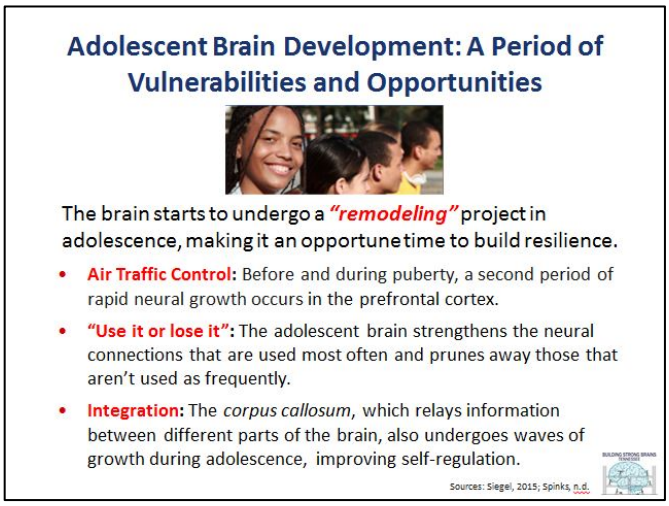
- A second sensitive period of brain plasticity is in adolescence. While the brain is not as plastic as it is in early childhood, it is still a sensitive period and highly influenced by experience.

Facilitator Note *– Audience members will often ask about brain plasticity later in life. Though the brain is markedly less plastic later in life, plasticity is always present. Interventions work later in life, they just take more effort. An example of brain plasticity later in life is highlighted through stroke victim rehabilitation. To learn more, see the article by Mang et al. below.*

Sources: Mang, C. S., Campbell, K. L., Ross, C. J. D., & Boyd, L. A. (2013). Promoting Neuroplasticity for Motor Rehabilitation After Stroke: Considering the Effects of Aerobic Exercise and Genetic Variation on Brain-Derived Neurotrophic Factor. *Physical Therapy*, *93*(12), 1707–1716.

National Scientific Council on the Developing Child. (2009). [Conceptual graph created by Pat Levitt in collaboration with the Center on the Developing Child at Harvard University depicting the brain's ability to change over time].

Corresponding Notes – *Slide 20*



- As we saw in the last slide, there is another marked window of opportunity to influence the brain and build resilience during puberty and adolescence. Three important things are happening during this time.
- Just as in a baby, the adolescent brain "over-produces" brain cells (neurons) and connections between brain cells (synapses) in certain areas. In particular, growth takes place in the prefrontal cortex, which sits just behind the forehead and controls planning, working memory and organization. It helps modulate mood. All of these contribute to executive function, the brain's "Air Traffic Control System" – We'll learn more about this in a little while.
- Two activities the brain undergoes during this time are "pruning" (the reduction of neurons and synapses) and an increase in myelin (a sheath that forms an insulating and protective coating around nerve fibers, making connections between neurons quicker, more coordinated, and more effective. Some pruning begins early, but it reaches its peak during the remodeling period of adolescence.
- Another region of the brain that grows during adolescence is the corpus callosum [pronounced *kôrpəs kəˈlōsəm*], a fiber system that relays information between the hemispheres of the brain. This linking together of different areas of the brain is called "integration" and results in decreased impulsivity, better judgment and increased self-regulation skills.

***Facilitator Note** – While pruning is a term actively used in academic literature, it is not a tested metaphor. Please don't elaborate on pruning by describing the process of gardening.*

Sources: Siegel, D.J. (2015). *Brainstorm: The power and purpose of the teenage brain*. New York, NY: Penguin Group.

Spinks, S. (n.d.). *Adolescent brains are works in progress.* Retrieved from http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/work/adolescent.html.

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Toxic Stress Derails Healthy Development

Key Terms and Themes

Amygdala – small, almond shaped structure acting like an alarm clock for your brain when confronted with a stressor. Signals the body's stress response system.

Corpus callosum – fiber system that relays information between the hemispheres of the brain.

Epigenetics – study of changes in gene expression without changes to the genes themselves.

Executive function – refers to a family of top-down mental processes needed when you have to concentrate and pay attention, when going on automatic or relying on instinct or intuition would be ill-advised, insufficient or impossible.

Fight or flight response – the fundamental physiologic response that is the body's primitive, automatic, inborn response that prepares the body to "fight" or "flee" from perceived attack, harm or threat to survival.

Genetic memory – memory that our genes have of the environments we live in.

Hypothalamus – a small region of the brain, located at the base of the brain near the pituitary gland. It is responsible for releasing hormones, regulating body temperature, maintaining daily physiological cycles, controlling appetite, managing sexual behavior, and regulation emotional responses.

Integration – linking of different areas of the brain that results in decreased impulsivity, better judgment, and increased self-regulation skills.

Limbic system – a complex system of nerves and networks in the brain, involving several areas near the edge of the cortex concerned with instinct and mood. It controls basic emotions (fear, pleasure, anger) and drives (hunger, sex, dominance, care of offspring).

Myelin – a sheath that forms an insulating and protective coating around nerve fibers, making connections between neurons quicker, more coordinated and more effective.

Neuron – a specialized brain cell transmitting nerve impulses; a nerve cell.

Positive stress – short, stressful events that are healthy for brain development and prepare the brain and body for stressful situations later in life.

Prefrontal cortex – controls planning, working memory, organization, and helps modulate mood.

Serum glucose – sugar in the form of glucose in the blood.

Stress hormones – in response to stress, the level of various hormones changes. Through a combination of nerve and hormonal signals, an alarm system is set off from the hypothalamus that prompts adrenal glands, which sit atop the kidneys, to release a surge of hormones, including adrenaline and cortisol.

Synapses – connections between brain cells (neurons).

Tolerable stress – tragic and often unavoidable stress events but there is a supportive caregiver for the child that buffers the stress response.

Toxic stress – ongoing, repeated exposure to abuse, neglect or household dysfunction and is bad for brain development. There is no supportive caregiver to buffer the stress response.

Activity 4.1 – Understanding Toxic Stress

Conducting the Activity

Goal:

Help participants understand the damaging impact of toxic stress on developing brain architecture.

Materials needed:

- Distribute varying amounts of jingle bells and/or small fishing weights and paper clips to each table. To tables with the greatest number of pipe cleaners and straws, distribute no more than five bells and/or two fishing weights. To tables with enough pipe cleaners to build a medium structure, distribute 10 bells and/or four fishing weights. To tables with only enough pipe cleaners to build a small structure, distribute 15 bells and/or five fishing weights. Be sure to provide a greater number of bells/weights to at least one table with weak brain architecture.

Activity:

- Instruct each member to add all the bells/weights given to them to their brain using the paperclips. Bells and weights must be hanging and cannot be supported by the table.

Debriefing:

- Have groups observe the impact of stress on various "brains" around the room. Note structures that withstood weight versus structures that collapsed. Reflect with the group how toxic stress derails brain architecture. Highlight that brains that likely received fewer serve and return interactions while developing and were already structurally weak were greatly compromised by toxic stress.

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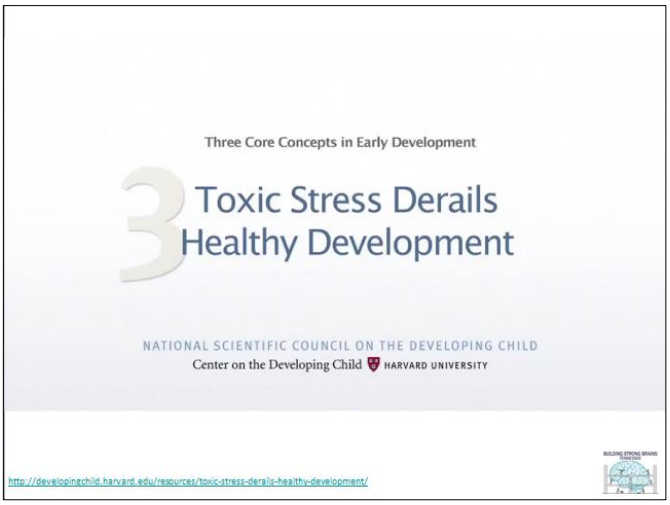
Corresponding Notes – *Slide 21*



- So how is healthy brain architecture derailed? Toxic levels of stress ultimately disrupt the pathways for healthy development.
- Following the video: What do we mean by "toxic stress?" We mean stress that is so high that it actually becomes toxic to the body. Ask the audience "***Do we all know that stress is toxic to us as adults?***" Solicit response. Ask the audience "***What are some outcomes of high levels of stress in adulthood?"***
    - *Solicit answers such as heart disease, relationship issues, depression, etc.*
- When we are stressed, we experience increases in heart rate, blood pressure, serum glucose and a release of stress hormones for the "fight or flight response." Excessive or prolonged activation of stress response systems can lead to long-term disruptions in the brain architecture, immune and metabolic systems and cardiovascular function.

Facilitator Note *– Video is 1 min 52 sec*
http://developingchild.harvard.edu/resources/toxic-stress-derails-healthy-development/

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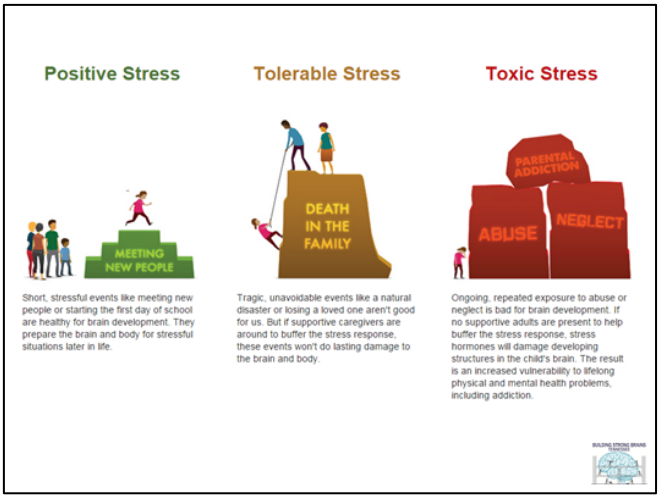
Corresponding Notes – *Slide 22*



- Not all stress is toxic. Some stress is positive for children and helps them prepare for life's future challenges.
- Positive stress is short and includes stressful events like starting the first day of school or getting an immunization. These experiences are healthy for brain development and prepare the brain and body for stressful situations later in life.
- Tolerable stress is tragic and often unavoidable. It includes events like losing a loved one or experiencing a frightening injury. The key here is that the child has supportive caregivers to buffer the stress response. This keeps these events from doing lasting damage to the brain and body.
- Toxic stress is ongoing, repeated exposure to abuse, neglect or household dysfunction. It is bad for brain development. If no supportive adults are present to help buffer the stress response, stress chemicals will damage developing structures in the child's brain and harm the body. The result is an increased vulnerability to lifelong physical and mental health problems, including addiction.

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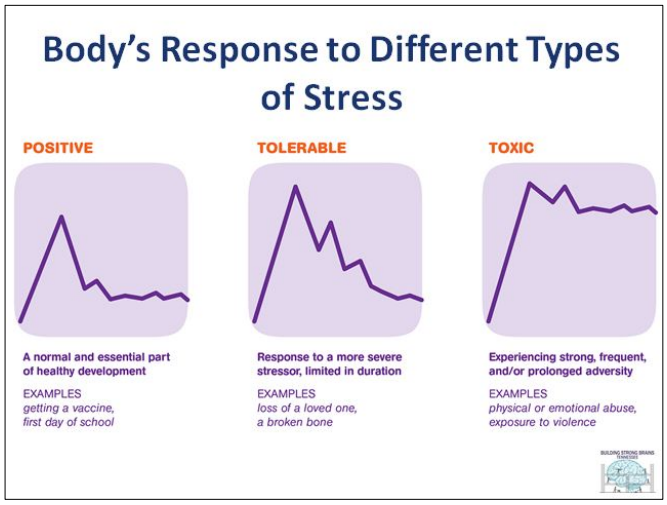
Corresponding Notes – *Slide 23*



- Because responsive relationships are both expected and essential, their absence is a serious threat to a child's development and well-being. If an adult's responses to a child are unreliable, inappropriate or simply absent, the developing architecture of the brain may be disrupted, and subsequent physical, mental and emotional health may be impaired. The persistent absence of serve and return interaction acts as a "double whammy" for healthy development. Not only does the brain not receive the positive stimulation it needs, but the body's stress response is activated, flooding the developing brain with potentially harmful stress hormones.

- Learning how to cope with adversity is an important part of healthy child development. When we are threatened, our bodies prepare us to respond by increasing our heart rate, blood pressure and stress hormones, such as cortisol.

- ***(Ask audience what they notice about the first graph)***. When a young child's stress response systems are activated within an environment of supportive relationships with adults, these physiological effects are buffered and brought back down to baseline. Children experience brief increases in heart rate and mild elevations in hormone levels.

- ***(Ask audience what they notice about the second graph)***. Tolerable stress is a more serious event that happens in a child's life. It activates the body's alert systems to a greater degree as a result of more severe, longer-lasting difficulties. Again, what helps the stress become tolerable is the presence of a safe, stable and nurturing caregiver who can buffer the stressful experience. If the activation is time-limited and buffered by relationships with adults who help the child adapt, the brain and other organs recover from what might otherwise be damaging effect. Children can be amazingly resilient when they know an adult will protect them.

- However, if the stress response is extreme and long-lasting, and buffering relationships are unavailable to the child, the result can be damaged, weakened systems and brain architecture, with lifelong repercussions. ***(Ask audience what they notice about the third graph)*** This is toxic stress. It puts cracks in the foundation for lifelong health and releases harmful chemicals in the brain and body.

- Toxic stress is defined as strong, frequent and/or prolonged adversity—such as physical or emotional abuse, chronic neglect, caregiver substance abuse or mental illness, exposure to violence and/or the accumulated burdens of family economic hardship—without adequate adult support. It leads to increases in heart rate, blood pressure, serum glucose, stress hormones and inflammatory cytokines [pronounced ˈ*sīdəˌkīn*] fuel the "fight or flight response" to deal with acute threat.

- Excessive or prolonged activation of stress response systems can lead to long-term disruptions in brain architecture, immune status, metabolic systems and cardiovascular function. This kind of prolonged activation of the stress response systems can disrupt the development of brain architecture and other organ systems and increase the risk for stress-related disease and cognitive impairment, well into the adult years.
- Safe, stable and nurturing relationships can help serious stressors become more tolerable.

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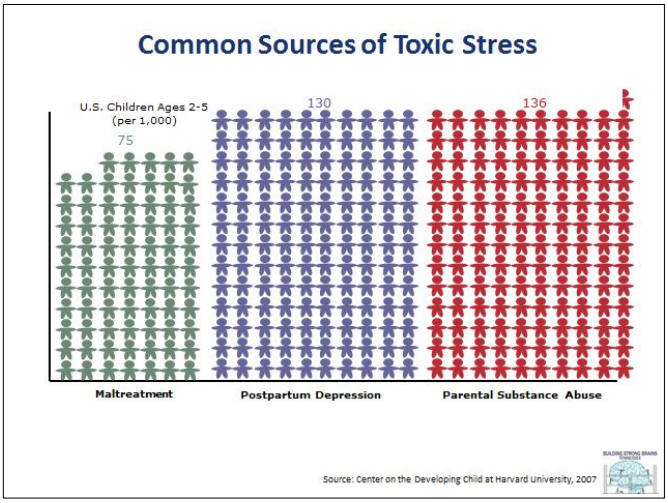
Corresponding Notes – *Slide 24*



- This graph emphasizes that children are more frequently exposed to conditions that set the stage for neglect. This is true worldwide—neglect is the greatest stress faced by children.
- Conditions like postpartum depression and parental substance abuse often significantly impair serve and return interactions that can increase toxic stress in children.
- The maltreatment rates in this graph include neglect, physical abuse, sexual assault, psychological abuse and parental custodial interference. It excludes spanking/conventional corporal punishment. The maltreatment numbers do not include many of the conditions that lead to neglect. As you can see, even though the prevelance of maltreatment is high, it is not nearly as high as the number of children with a parent experiencing postpartum depression or abusing substances. There is a great deal of opportunity to improve safe, stable, nurturing relationships and environments for children.
- Building the capabilities of adult caregivers can help strengthen the environment of relationships essential to children's lifelong learning, health and behavior. A breakdown in reciprocal serve and return interactions between adult caregivers and young children can be the result of many factors. Adults might not engage in serve and return interactions with young children due to significant stresses brought on by financial problems, a lack of social connections or chronic health issues. Caregivers who are at highest risk of providing inadequate care often experience several of these problems simultaneously. Policies and programs that address the needs of adult caregivers and help them to engage in serve and return interactions will in turn help support the healthy development of children.

Sources: Center on the Developing Child at Harvard University. (2007). *Early childhood program effectiveness* (InBrief). Retrieved from www.developingchild.harvard.edu

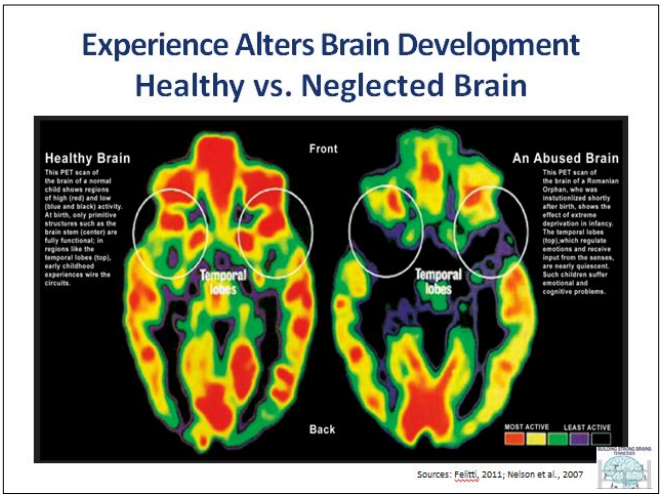
Finkelhor, D., Ormrod, R., Turner, H., & Hamby, S.L. (2005). The victimization of children and youth: A comprehensive, national survey. *Child Maltreatment, 10*(1), 5-25.

O'Hara, M. W., & Swain, A. M. (1996). Rates and risk of postpartum depression - A meta-analysis. *International Review of Psychiatry, 8*(1), 37-54.

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration [SAMHSA], Office of Applied Studies. (2009). *The NSDUH report: Children living with substance-depending or substance-abusing parents: 2002-2007.* Rockville, MD. Available from https://datafiles.samhsa.gov/study-publication/children-living-substance-dependent-or-substance-abusing-parents-2002-2007

Corresponding Notes – *Slide 25*

- As you are learning, toxic stress in children has devastating effects. The effects of increased levels of stress chemicals have physical consequences for the developing brain.



- Until the 1990s, orphanages in Romania were known for harsh and overcrowded conditions. Institutions were understaffed, and abuse and neglect were a reality for everyday life. This picture is of a PET scan of two young developing brains. PET scans measure activity in the brain, which is reflected through increasingly vibrant colors.
- This slide shows the physical effects of a typically developing three-year-old child compared to a three-year-old child who entered one of these Romanian orphanage shortly after birth. The scan provides a picture of activity in the temporal lobes reflecting ways in which early childhood experiences effect the wiring of circuits in the brain.
- The picture on your left, of the typically developing brain, shows high density with lots of red, yellow and green, indicating high brain circuitry and activity. The picture on the right, of the Romanian orphan, shows significantly more regions of black and blue colors, reflecting low neural activity in the temporal lobes, which regulate emotions and receive input from the senses.
- Children in these institutions had minimal serve and return interaction with a caregiver, and caregivers had very little training on child development. As a result, the lack of a secure attachment for these children resulted in lower levels of neural activity and brain development.
- The good news is that early intervention may address and reverse these effects. The effects of identifying a stable home with attentive and nurturing adult caregivers, with supportive services as indicated, can provide long-lasting effects.

Source: Felitti, V.J. (2011, July 20). The impacts of Adverse Childhood Experiences on adults [Webinar]. In *The Impact of Trauma on Women and Girls Across the Lifespan Webinar Series*. Retrieved from https://services.choruscall.com/links/womenshealth.html#

Nelson, C. A., Zeanah, C. H., Fox, N. A., Marshall, P. J., Smyke, A. T., & Guthrie, D. (2007). Cognitive recovery in socially deprived young children: The Bucharest early intervention project. *Science*, *318*(5858), 1937-1940.

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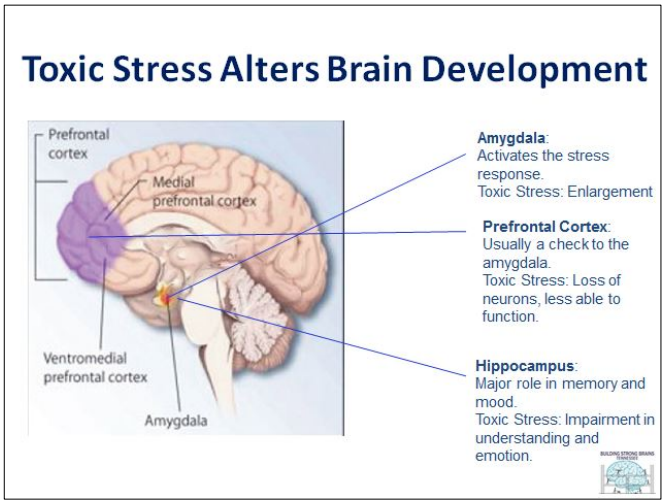
Corresponding Notes – *Slide 26*

- Studies like the one just referenced demonstrate the lasting effects of toxic stress on the brain. Let's talk about why that is so.



- The brain is a complex organ, and many factors influence development. The limbic [pronounced *limbik*] system, located in the inner brain beneath the cortex, is a collection of small structures involved in emotional and stress responses and reward-seeking behaviors. The limbic system is primarily associated with instinctive behaviors.
- The amygdala [pronounced *uh*-**mig**-d*uh*-l*uh*] is a small, almond-shaped structure acting like an alarm clock for your brain. When you confront a stressor, the amygdala interprets and evaluates the images and, sounds and when it perceives danger, it signals the stress response system in the body.
- When the amygdala identifies a danger and triggers the stress response system, the hippocampus engages and assigns memory formation and spatial learning to the event.
- Also involved, the hypothalamus acts as the control center for the body's stress response systems, regulating the release of cortisol and other stress hormones.
- The limbic system functions to provide a foundation for continued learning and brain development, allowing a child to further engage in higher level cognitive functioning skills in other areas. When this system is disrupted by toxic stress, the brain is unable to form important neural connections, resulting in an inability to move into higher level cognitive skills. The child remains in a flight, fight or freeze response with the amygdala consistently sending the alarm and the stress response system, remains elevated.
- This kind of prolonged activation of the stress response systems can disrupt the development of brain architecture and other organ systems and increase the risk for stress-related disease and cognitive impairment well into the adult years.
- Toxic stress, when triggered by multiple sources or not mitigated, can have a cumulative toll on physical and mental health across the lifespan.

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Corresponding Notes – *Slide 27*

- Epigenetics is the study of changes in gene expression without changes to the genes themselves.
- The epigenome is like a memory that our genes have of the environments we live in – what we can think of as *genetic memory*.
- Genes can remember things from outside our bodies that affect how things on the inside of our bodies work. Examples might be how our bodies heal, how children's bodies develop and how our bodies deal with stress. The idea is that, if something can affect the inside of our bodies, the genes can remember it. Such genetic memories alter how genes run our bodies' internal workings, just like a persons's memories can affect the decisions they make and how they live their daily life.
- Just as a person builds new memories, genetic memories are constantly forming and affecting how other parts inside our bodies work.
- Gene expression impacts organ function and development. Experiences that change gene expression when vital organs (e.g., brain, heart, kidneys) are first developing, impact lifetime physical and mental health.
- The most crucial time for building good genetic memories is early in childhood, because a child's growing body and mind will live with these memories for the rest of their lives.
- Researchers at Emory University in Atlanta have conducted studies with mice to help identify the role of toxic stress in gene expression. Their experiments show that a newborn mouse pup may actually harbor generations worth of information passed down by ancestors.
    - Researchers taught male mice to fear the smell of cherry blossoms by associating the scent with mild foot shocks. Two weeks later, they bred these males with female mice. The offspring were raised to adulthood with no exposure to the cherry blossom smell.
    - Even with no exposure to the smell, when the offspring were exposed to the scent for the first time, they suddenly exhibited similar characteristics to those of their fathers, becoming anxious and fearful. Further investigation showed that they were even born with more cherry-blossom-detecting neurons in their noses and more brain space devoted to cherry blossom smelling. Researchers extended this study out to the second generation. When these offspring bred, they showed similar results.
    - Researchers also sought to control for social influences and artificially inseminated female mice that had no exposure to the original mouse subjects or their offspring. When the offspring from these pairings were exposed to the same smell, they were more jumpy than when smelling a

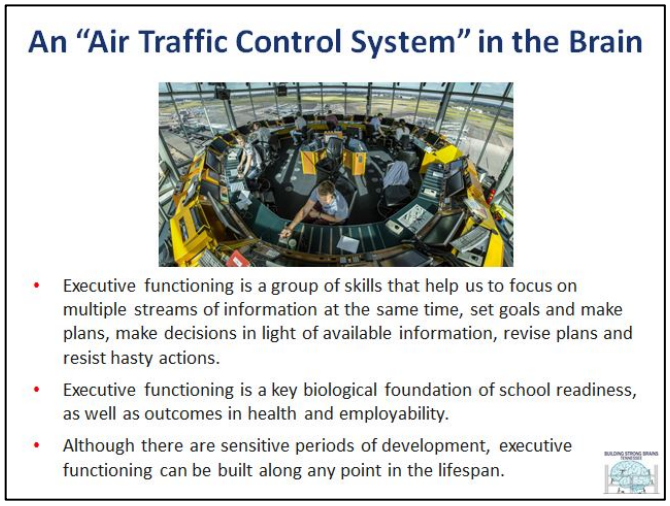
neutral odor even though they had never been exposed to the cherry-blossom smell before. The same response was noted in their grandpups as well.

- The fact that genes are vulnerable to modification in response to toxic stress, nutritional problems and other negative influences underscores the importance of providing supportive and nurturing experiences for young children in the earliest years, when brain development is most rapid.
- A complete understanding of these mechanisms remains evasive, resulting in the research community being split on the results. Research continues to further understand these processes.

Notes

Air Traffic Control

Corresponding Notes – *Slide 28*

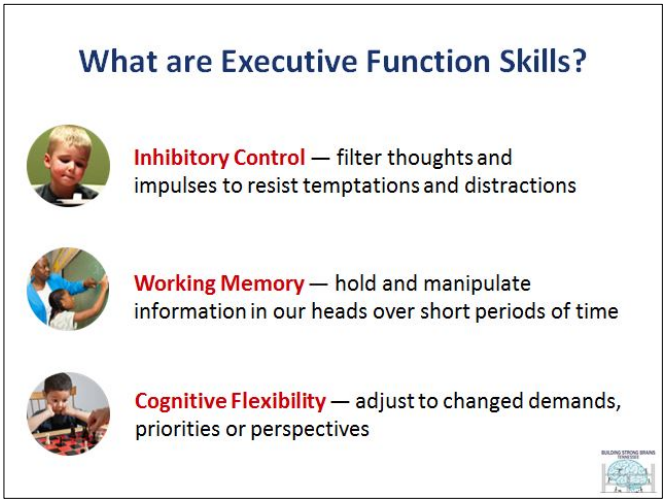


- It is not just literacy and math capabilities that begin to develop early in life.
- Science is now pointing to a set of skills that are foundational to the ability to learn, and, therefore, to achievement, success in life and the ability to make healthy decisions instead of risky ones. This is executive functioning.
- Executive functioning is a group of skills that help us to focus on multiple streams of information at the same time, set goals and make plans, make decisions in light of available information, revise plans and resist hasty actions.
- This is a key biological foundation of school readiness as well as outcomes in health and employability. Toxic stress derails the development of these functions.

Source: Center on the Developing Child at Harvard University. (2011). *Building the brain's "Air Traffic Control" system: How early experiences shape the development of executive function: Working paper No. 11.* Retrieved from http://www.developingchild.harvard.edu

Notes

Corresponding Notes – *Slide 29*



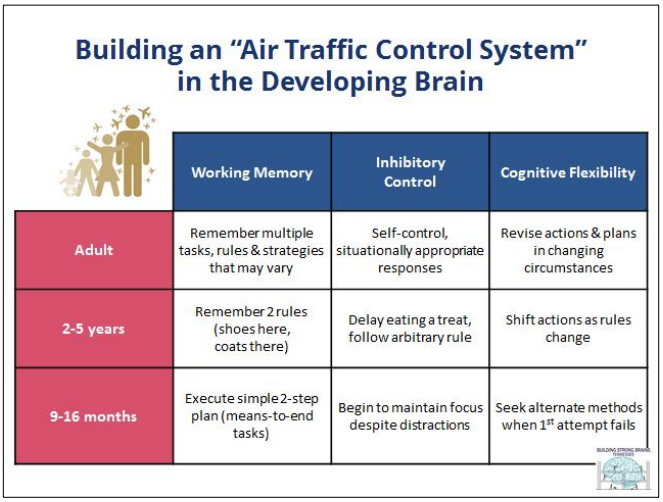
- Inhibitory control (represented by an image of the marshmallow test, a classic inhibitory control measure) is the skill we use to master and filter our thoughts and impulses so we can resist temptations, distractions and habits and to pause and think before we act.
- Working Memory (represented by a photo of learning long division, an example of following a multi-step process) is the capacity to hold and manipulate information in our heads over short periods of time.
- Cognitive or Mental Flexibility (represented by a photo of a child struggling to come up with a new strategy after the "game has changed") is the capacity to nimbly switch gears and adjust to changed demands, priorities or perspectives, to apply different rules in different settings, to catch mistakes and fix them.

Source: Center on the Developing Child at Harvard University. (2011). *Building the brain's "Air Traffic Control" system: How early experiences shape the development of executive function: Working paper No. 11.* Retrieved from http://www.developingchild.harvard.edu

Notes

Corresponding Notes – *Slide 30*

- This slide shows us that "air traffic control" functions are built over time. Children are not miniature adults with fully developed executive functioning.
- These are the ages at which children typically develop these foundational skills – but remember that we are born with the capacity to learn these skills, not the inevitability of learning them. And remember that they can be learned at any age – it's just easier to learn them on the right schedule.



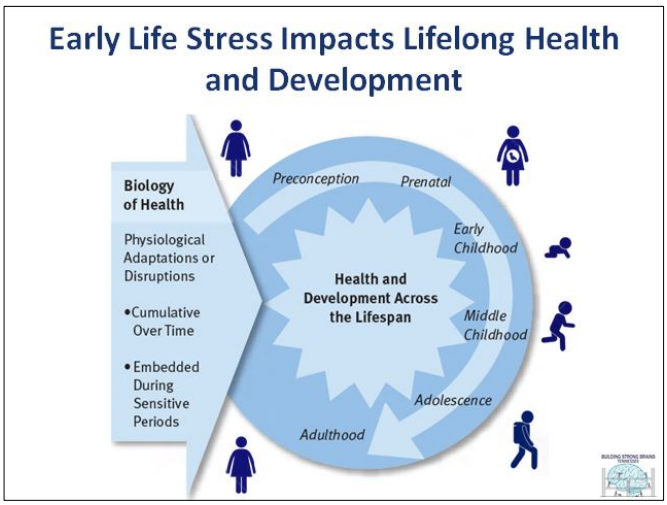
- Other examples from later development include:
    - Working Memory, five to 16 years: Develop ability to search varying locations, remember where something was found, then explore other locations (e.g., a game of Concentration).
    - Inhibitory Control, 10-18 years: Flexibly switching between a central focus (such as riding a bike or driving) and peripheral stimuli that may or may not need attention (road signs and pedestrians vs. billboards and passing houses).
    - Cognitive Flexibility, 10-12 years: adapts to changing rules, even along multiple dimensions (O.K. to shout on playground, not in school, but O.K. sometimes in theater rehearsal).
- Healthy development of "air traffic control systems" help children manage stress. When children experience toxic stress, this development is compromised and children have fewer healthy coping skills.

Source: Center on the Developing Child at Harvard University. (2011). *Building the brain's "Air Traffic Control" system: How early experiences shape the development of executive function: Working paper No. 11.* Retrieved from http://www.developingchild.harvard.edu

Notes

Corresponding Notes – *Slide 31*

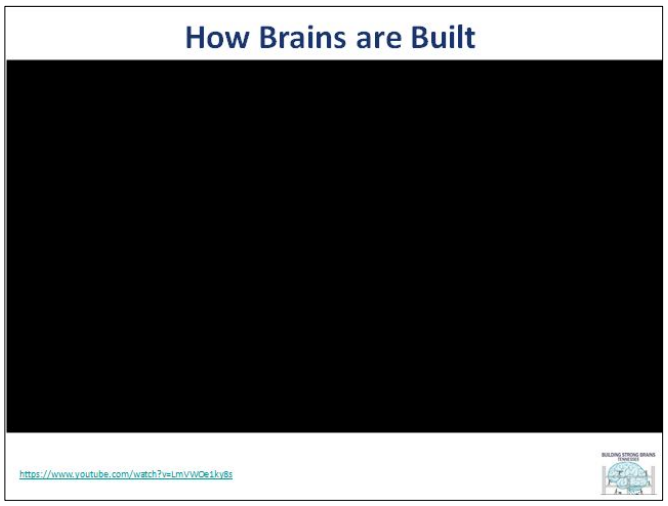
- Stress can happen at any time over childhood from the prenatal period to adulthood.
- However, two key things to remember are that stresses are cumulative over time and stresses have the greatest impact when they occur during sensitive periods –periods when different systems in the brain are developing.
- Toxic stress will have a greater impact during sensitive periods of system development. This is why two children experiencing the same stress at slightly different ages will have different outcomes.



Notes

Corresponding Notes – *Slide 32*

- This video, developed by Alberta Family Wellness Initiative, is a great summary of the concepts we have explored in the first part of this presentation.



Notes

Adverse Childhood Experiences

Key Terms and Themes

Adverse Childhood Experiences – Adverse childhood experiences (ACEs) are stressful or traumatic events, including abuse and neglect. They may also include household dysfunction such as witnessing domestic violence or growing up with family members who have substance use disorders. ACEs are strongly related to the development and prevalence of a wide range of health problems throughout a person's lifespan, including those associated with substance misuse.

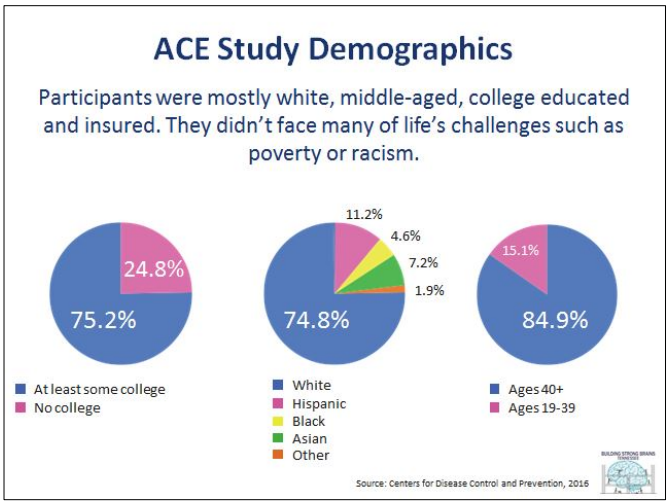
Graded Dose Response – describes the change in effect on an organism caused by differing levels of exposure (or doses) to a stressor (usually a chemical) after a certain exposure time.

Implicit Bias – refers to the attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner.

Disproprtionality or ***Disproportionate Representation*** –refers to the ratio between the percentage of persons in a particular racial or ethnic group at a particular decision point or experiencing an event (maltreatment, incarceration, school dropouts) compared to the percentage of the same racial or ethnic group in the overall population.

Racial Equity – as an outcome, we achieve racial equity when race no longer determines one's socioeconomic outcomes; when everyone has what they need to thrive, no matter where they live. As a process, we apply racial equity when those most impacted by structural racial inequity are meaningfully involved in the creation and implementation of the institutional policies and practices that impact their lives.
https://www.centerforsocialinclusion.org/our-work/what-is-racial-equity/

Corresponding Notes – *Slide 33*



- The Adverse Childhood Experiences study was conducted in the mid-90s by Kaiser Permanente and the Centers for Disease Control. The researchers wanted to understand the common denominator for many of the health risk behaviors and preventable diseases observed in their practices. They hypothesized that childhood adversity might be the root cause of these diseases.
- They gave out a survey to over 17,000 Kaiser Permanente members asking about 10 types of childhood adversity. The members were a privately insured, middle class, mostly Caucasian and mostly college-educated population.
- The people studied were not the individuals you expect to have traumatic life experiences. The majority of this population most likely did not experience many of life's challenges such as racism, unemployment or poverty.

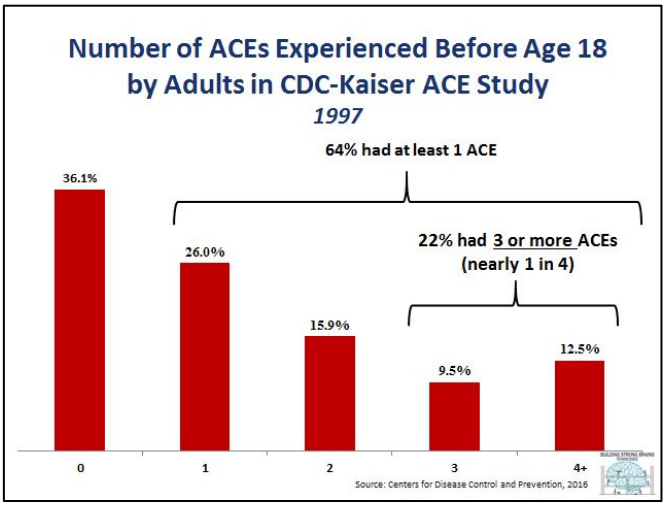
Source: Centers for Disease Control and Prevention, Kaiser Permanente. (2016). *The ACE study survey data*. Retrieved from https://www.cdc.gov/violenceprevention/acestudy/about.html

Notes

Corresponding Notes – *Slide 34*

- The original ACE study found that most people (64%) had at least one ACE; about 12 percent of the population has an ACE score of 4 or more.
- Four or more ACEs is the tipping point for a significantly increased risk of poor social, emotional and physical health outcomes.

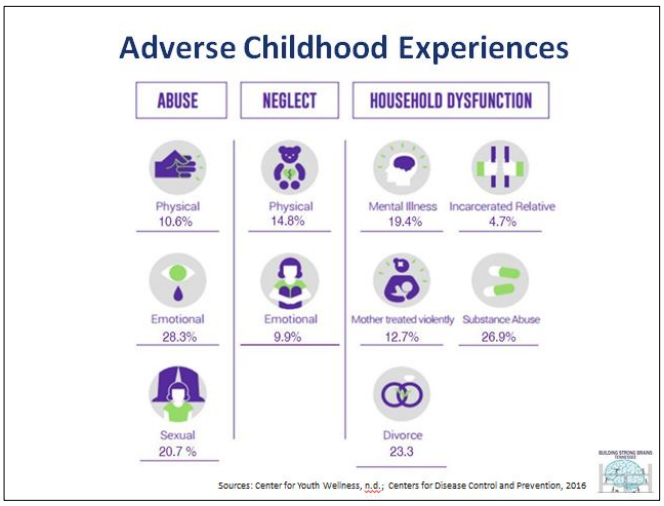
Source: Source: Centers for Disease Control and Prevention, Kaiser Permanente. (2016). *The ACE study survey data*. Retrieved from https://www.cdc.gov/violenceprevention/acestudy/about.html



Notes

Corresponding Notes – *Slide 35*

- The 10 questions included five types of child abuse or neglect (physical abuse, physical neglect, emotional abuse, emotional neglect and sexual abuse) and five types of household dysfunction (parent with mental illness, divorce, incarceration, substance abuse or mother treated violently) that occurred before age 18. At the end, participants got a score between zero and 10. They then compared the scores to the members' medical records.
- In every category except incarceration, at least 10 percent of the population experienced the adversity. Prevelance was high.



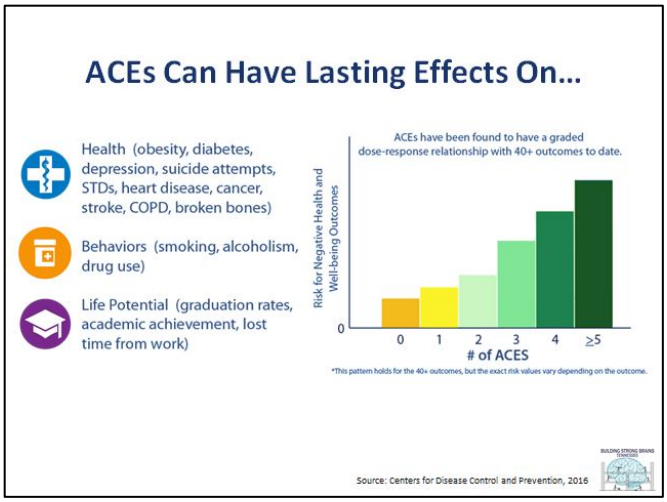
Source: Center for Youth Wellness. (n.d.) [Infographic listing types of ACEs under three categories]. *Children Can Thrive.* Retrieved from http://centerforyouthwellness.org/what-we-are-doing/childrencanthrive/

Centers for Disease Control and Prevention, Kaiser Permanente. (2016). *The ACE study survey data*. Retrieved from https://www.cdc.gov/violenceprevention/acestudy/about.html

Notes

Corresponding Notes – *Slide 36*

- As your ACE Score increases, so does your risk for health risk behaviors, disease, social problems and mental health issues.
- ACEs have been found to have a graded dose-response relationship with 40+ negative outcomes to date. A "graded dose-response" means that as the number of ACEs increases the intensity of the response, or likelihood that you experience poor outcomes, increases.
- Listed on the screen are some of the negative outcomes associated with an increased ACE score.



- You can think of an ACE score as a cholesterol score for childhood trauma. The ACE Study found that the higher someone's ACE score – the more types of childhood adversity a person experienced – the higher his/her risk of chronic disease, mental illness, violence, being a victim of violence and a bunch of other consequences.
    - People with an ACE score of four are twice as likely to be smokers and seven times more likely to be alcoholic(s).
    - Having an ACE score of four increases the risk of emphysema or chronic bronchitis by nearly 400 percent and suicide by 1,200%. An ACE score above 6 was associated with a 3,000 percent increase in attempted suicide.
    - Compared to an ACE score of zero, having four adverse childhood experiences was associated with a doubling of risk of being diagnosed with cancer.
    - People with an ACE score of five or higher are seven to 10 times more likely to use illegal drugs, to report addiction and to inject illegal drugs.
    - People with high ACE scores are more likely to be violent and to have more marriages, more broken bones, more drug prescriptions, more depression and more autoimmune diseases.
    - ACEs are responsible for a big chunk of workplace absenteeism and for costs in health care, emergency response, mental health and criminal justice. A major finding from the ACE Study is that childhood adversity contributes to most of our major chronic health, mental health, economic health and social health issues.
    - Regardless of socio-economic class or other demographics, people who have adverse childhood experiences use more health and medical services through their lifetime.

- The ACE Study also found that it didn't matter what the types of ACEs were. An ACE score of 4 that includes divorce, physical abuse, an incarcerated family member and a depressed family member has the same statistical health consequences as an ACE score of 4 that includes living with an alcoholic, verbal abuse, emotional neglect and physical neglect.

Sources: ACEs Too High. (n.d.) *ACEs science 101*. Retrieved from https://acestoohigh.com/aces-101/

Bellis, M., Hughes, K., Hardcastle, K., Ashton, K., Ford, K., Quigg, Z., & Davies, A. (2017). The impact of adverse childhood experiences on health service use across the life course using a retrospective cohort study. *Journal of Health Services Research & Policy*, *22*(3), 168-177.

Centers for Disease Control and Prevention. (2016, April 1). *About adverse childhood experiences*. Retrieved from https://www.cdc.gov/violenceprevention/acestudy/about_ace.html

Felitti, V.J. (2002). The relation between adverse childhood experiences and adult health: Turning gold into lead. *The Permanente Journal*, *6*(1), 44-47.

Medical Xpress. (2017, July 12). Higher use of general health care services throughout adult life linked with traumatic childhoods. Retrieved from https://medicalxpress.com/news/2017-07-higher-health-adult-life-linked.html

Stevens, J.E. (2012, December 8). The adverse childhood experiences study - The largest public health study you never heard of, part two [Blog post]. Retrieved from http://www.huffingtonpost.com/jane-ellen-stevens/the-adverse-childhood-exp_4_b_1943772.html

Notes

Corresponding Notes – *Slide 37*

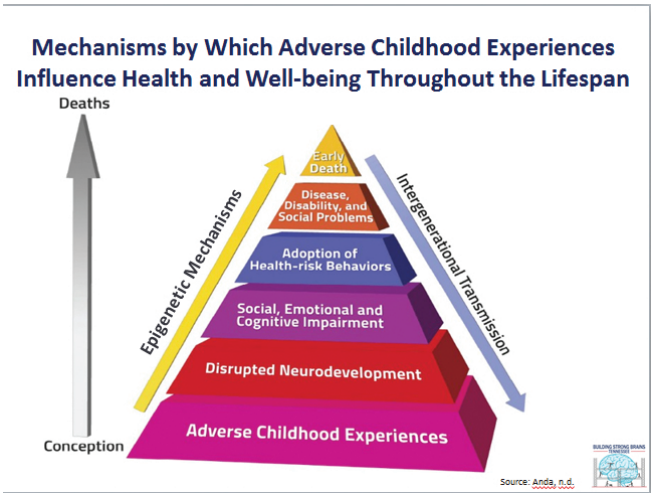
- This 5 minute video provides a great overview of the origins of the ACE study. "Paper Tigers" and "Resilience" are two films developed by James Redford that compliment the information you are learning here.

Facilitator Note *– Video is 4 min 59 sec*
https://vimeo.com/139998006

Notes

Corresponding Notes – *Slide 38*

- The original co-investigators developed this pyramid to explain the relationship between ACEs and the rates of disease and disability associated with a higher score.
- When children and families do not have public policies and community supports to prevent high ACE scores, higher ACEs leads to disrupted brain development through a lack of serve and return interactions.
- Science has shown higher ACE scores compromise social, emotional and cognitive development.



- Additionally, toxic stress compromises the immune system and can lead to inflammation in the body.
- When communities do not provide safe, stable and nurturing relationships to support strong brain architecture and buffer constant stress, children and adolescents with high ACE scores adopt health risk behaviors to cope with stress. Examples include substance use, smoking, early promiscuity, overeating, etc.
- It makes sense that disease, disability and social problems logically follow the adoption of these unhealthy coping skills. Even when unhealthy coping skills are not adopted, exposure to toxic levels of stress disrupt multiple physiological systems, including the immune system, and lead to the development of disease.
- Toxic stress impacts genetic expression across the lifespan, represented by the arrow on the left side of the pyramid.
- The most astounding thing about this study is that it showed when you have four or more ACEs, you tend to die five to 10 years earlier than those who have low or no ACEs. A subsequent study done by the National Institute of Health found that when you have six or more ACEs, your life is cut short by 20 years, on average.
- On the right side going down, you see intergenerational transmission. We know that, if parents with high ACE scores have children, they have a much higher likelihood of passing ACEs on to their own children. Communities and supports that provide safe, stable and nurturing relationships and environments can disrupt this this cycle and positively impact epigenetics. Two generational strategies such as home visiting and parent education can especially break the intergenerational cycle of trauma.

Source: Anda, R. (n.d.) [Graphic depicting mechanisms by which Adverse Childhood Experiences influence health and well-being throughout the lifespan]. *Community Resilience Cookbook*. Retrieved from http://communityresiliencecookbook.org/your-body-brain/

Corresponding Notes – *Slide 39*

- Our knowledge of ACEs has expanded since the original study was published. It continues to evolve.

- Since the original ACE study was published, additional ACEs have been added to newer, validated versions of the questionnaire. We know that multiple types of childhood adversity can produce toxic stress in a child.

- The accumulated burdens of family economic hardship, racism* (and its effects on everyday experiences), and bullying are some of the types of childhood adversity that have been studied and shown to increase poor social, emotional and physical health outcomes. These are referred to as conditions of Trauma and Social Location. We define racism as systems that treat people differently based on the color of their skin.

New Additions to the ACEs Questionnaire

The Philadelphia ACE Study Questions

Conventional ACEs	Expanded ACEs
Physical Abuse	Witnessing Violence
Emotional Abuse	Living in Unsafe Neighborhoods
Sexual Abuse	Experiencing Racism
Emotional Neglect	Living in Foster Care
Physical Neglect	Experiencing Bullying
Domestic Violence	
Household Substance Abuse	
Incarcerated Care Provider	
Mental Illness in the Home	

- Given that the original Adverse Childhood Experiences (ACEs) Study relied on data predominantly collected from white, middle- / -upper-middle-class participants and focused on experiences within the home, members from the Philadelphia ACEs Task Force decided to conduct a study to see if there were community factors that would impact health and well-being.. In 2012 and 2013, the Philadelphia Expanded ACE Study was implemented to understand the impact of community-level adversity.

- Their survey included a more racially and socioeconomically diverse population and included both the original ACE questions and expanded, community-level-ACE questions. The goal was to see if the original ACE study could adequately measure adversity faced by an ethnically and socioeconomically diverse population. Their findings concluded that almost seven in 10 adults had experienced at least one ACE and that two out of five had an ACE score of 4 or more. Additionally, 40 percent of Philadelphians had experienced four or more of the expanded, community-level ACEs.

- Although new ACE questionnaires are including these questions, the original study and many of the replication studies (including those in Tennessee) only include the original 10 questions, suggesting that prevalence of childhood adversity could be even higher.

***Facilitator Note** – The Annie E. Casey Foundation has this helpful definition of structural racism. The concept of racism is widely thought of as simply personal prejudice, but in fact, it is a complex system of racial hierarchies or inequities. At the micro level of racism, or individual level, are internalized and interpersonal racism. At the macro level of racism, we look beyond the individuals to the broader dynamics, including institutional and structural racism. Structural racism is the racial bias across institutions and society. It describes the cumulative and compounding effects of an array of factors that systematically privilege white people and disadvantage people of color. Since the word "racism" often is understood as a conscious belief, "racialization" may be a better way to describe a process that does not require intentionality. Race equity expert John A. Powell writes: " 'Racialization' connotes a process rather than a static event. It underscores the fluid and dynamic nature of race… 'Structural racialization' is a set of processes that may generate disparities or depress life outcomes without any racist actors."*

Source: Pachter, L. M., Lieberman, L., Bloom, S., & Fein, J. (2017). Developing a community-wide initiative to address childhood adversity and toxic stress: A case study of the Philadelphia ACEs task force. *Academic Pediatrics*, S130-S135

Annie E. Casey Foundation. (2014). *Racial Equity and Inclusion Action Guide*. Retrieved November 9, 2018, from Annie E. Casey Foundation: https://www.aecf.org/m/resourcedoc/AECF_EmbracingEquity7Steps-2014.pdf#page=4

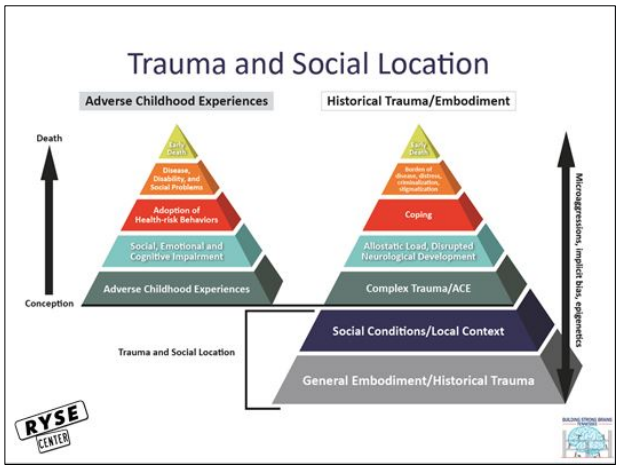
Notes

Corresponding Notes – *Slide 40*

- We are going to dig a little deeper into the impact of these "expanded ACEs" and the impact on children of color who are more likely to experience them.
- Unaddressed, continual stress related to these additional ACEs is more prevalent with communities that experience this adversity. This leads to increased toxic stress in communities of color.
- Implicit bias is one source of discrimination and subsequent stress. The Ohio State University Kirwan Institute for the Study of Race and Ethnicity defines implicit bias as "The attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner." These biases, which encompass both favorable and unfavorable assessments, are activated involuntarily and without an individual's awareness or intentional control. The following video describes how implicit bias impacts a child's experience as early as pre-K.
- You will notice that although the video explains that both white people and people of color have implicit biases, people of color are disproportionately negatively affected by implicit biases of the majority population. We see that as early as pre-K, black children are being disciplined more frequently than white children, despite no difference in actual behavior.
- While implicit bias certainly contributes to increased stress in children of color, it is not the only cause of identity-based discrimination.

Notes

Corresponding Notes – *Slide 41*



- Because our collective well-being depends on creating a foundation of health for all children, it is important to recognize other elements that compromise healthy child development by producing toxic stress. We know where a person lives has a crucial impact on their foundation for lifelong health. Seventy to 90 percent of disease risks are attributed to environment.

- Many children are born into systems and structures that limit their opportunities to access safe, stable and nurturing relationships and environments. These environments already have social and economic inequities. We can think about these inequities as being a series of locked doors for children of color. Some children and families have all the keys they need to access healthcare, safe parks, high-quality early childcare and stable housing. Many children, including children of color, do not have the keys to these locked doors.

- Census data show that the poorest census tracts also 1) are the "richest" in the proportion of young children; 2) have the least realized social, physical, and educational, as well as economic capital; and 3) are highly racially segregated and separated from many sources of economic opportunity. The implications are that the country's poorest neighborhoods require substantially more supports, or keys, to unlock doors for young children but currently have fewer. This includes individual services to young children and their families but also publicly available services and voluntary supports, such as parks, playgrounds and libraries.

- Increased family stress associated with a lack of resources, safety, and stability increases risk for exposure to toxic levels of stress in children. Elevated caregiver stress and instability makes it more challenging to have the psychological and financial capacity to engage in nurturing serve and return interactions with children.

- As we compare the pyramid on the right to that on the left, we see there are two additional layers underneath the lived experience of trauma. The foundation of the pyramid is historical trauma. This foundation impacts a child's health in several ways. Many of the inequities we continue to see today are a result of structures that continue to exist generations later, including segregation we see for communities of color and barriers and locked doors to resources. Additionally, the science of epigenetics is beginning to demonstrate that exposure to trauma by previous generations can be passed down to future generations, compromising health.

- Next, we see these geographic or "place" inequities through social conditions and local context. As we see in the Census data, the tracts with higher poverty have a much higher representation of children of color. These areas not only increase exposure to toxic stress because of compromised safety and lack of stability, but also locked doors that prevent access to those services, supports, and community environments that

would offload stressors and promote health and resilience. As an example, the majority of young children of color who live in these low-income areas have working parents. Unfortunately, people of color are more likely to be employed in low-wage jobs that lack predictable schedules and benefits, such as paid time off. Lack of affordability and accessibility locks the door to high-quality, early childhood education and care for these families. The result is a stressful, unpredictable and unstable situation for many families.

- As a result of chronic exposure to stress and lack of access to supports, children of color are more likely to experience ACEs such as having a parent with mental health issues or experiencing neglect. This stress certainly impacts the quality and availability of serve and return interactions. These conditions paint a picture of complex trauma that negatively impact brain and body development. Increasingly, we see children cope with this stress by adopting unhealthy behaviors that increase the prevalence of disease, disability, criminalization, social problems and eventual early death. Across the lifespan, the impact of overt racism and implicit bias continue to contribute to chronic, high elevations of stress.

- These data suggest that improving child health trajectories and reducing health disparities according to race and socioeconomic status will require concerted individual effort as well as community-building efforts directed to poor and usually racially segregated neighborhoods and communities. As a community, we can build a strong foundation for children of color who are overrepresented in poor outcomes by identifying keys to unlock those doors to health and well-being.

Sources: Bruner, C. (2017). ACE, place, race, and poverty: Building hope for children. *Academic Pediatrics*, S123-S129.

Gee, G. C., & Ford, C. L. (2011). STRUCTURAL RACISM AND HEALTH INEQUITIES: Old Issues, New Directions. Du Bois review : social science research on race, 8(1), 115-132.

Johnson-Staub, C. (2017). Equity starts early: Addressing racial inequities in child care and early education policy. Center for Law and Social Policy (CLASP).

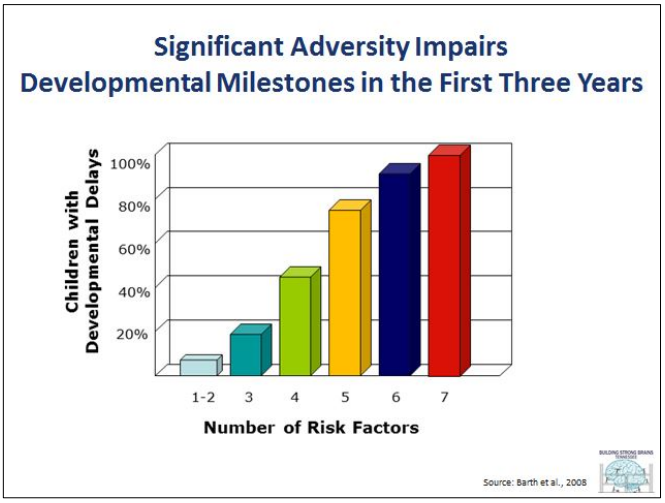
Mohatt, N., Thompson, A., Thai, N., & Tebes, J. (2014). Historical trauma as public narrative: A conceptual review of how history impacts present-day health. Social Science & Medicine, 128-136.

Rappaport, S. M., & Smith, M. T. (2010). Environment and Disease Risks. *Science*, 460-461.

Stevens, J. (2015, April 7). Adding layers to the ACEs pyramid - What do you think? Retrieved October 23, 2018, from ACEsConnection.com: https://www.acesconnection.com/blog/adding-layers-to-the-aces-pyramid-what-do-you-think

Corresponding Notes – *Slide 42*

- Studies of adverse childhood experiences (commonly referred to as ACEs) have shown that the more categories of stressors a child experiences, also referred to as risks, the greater the likelihood of experiencing developmental delays.
- These include delays in cognitive, social, emotional and physical health aspects of development.
- This study used to generate this graph looked at more risk factors than the original 10 ACEs including, caregiver mental health problems, non-white racial status, low caregiver education, single caregiver, biomedical risk condition, poverty, teen-age caregiver, domestic violence, four or more children in the home and caregiver substance abuse.



Sources: Barth, R. P., Scarborough, A., Lloyd, E. C., Losby, J., Casanueva, C., & Mann, T. (2008). *Developmental status and early intervention service needs of maltreated children*. Washington, DC: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation.

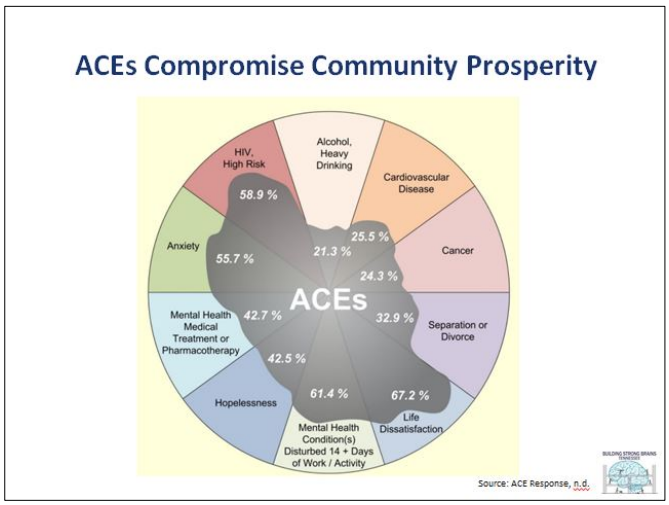
Center on the Developing Child at Harvard University. (2009). *Five numbers to remember about early childhood development* [Brief]. Retrieved from www.developingchild.harvard.edu

Notes

Corresponding Notes – *Slide 43*

- Although we have talked a great deal about the impact of ACEs on individuals, we know their collective effect constitutes a massive public health issue.

- Whatever issue you care about, whether you are running a 5k for heart disease prevention, want to see a propsperous local economy or care about the safety of yourself or your family, ACEs compromise these outcomes. This image demonstrates how much ACEs contribute to diseases and disruptions in emotional and mental health.



- The "oil spill" in each part of the pie piece is the amount of that issue attributable to ACEs. The portion not covered by the "oil" can arise due to other reasons. For example, the development of some poor mental health outcomes is due to organic origins and not a result of toxic stress.

- You can imagine that strategies to reduce ACEs are like placing a paper towel in the middle of the spill and soaking it up. As the oil absorbs, you see simultaneous and relative reduction in every single one of these problem areas.

- Even if you did not experience any ACEs, ACEs impact you by compromising your community well-being, personal safety, tax dollars and quality of life. High ACE scores threaten prosperity for us all.

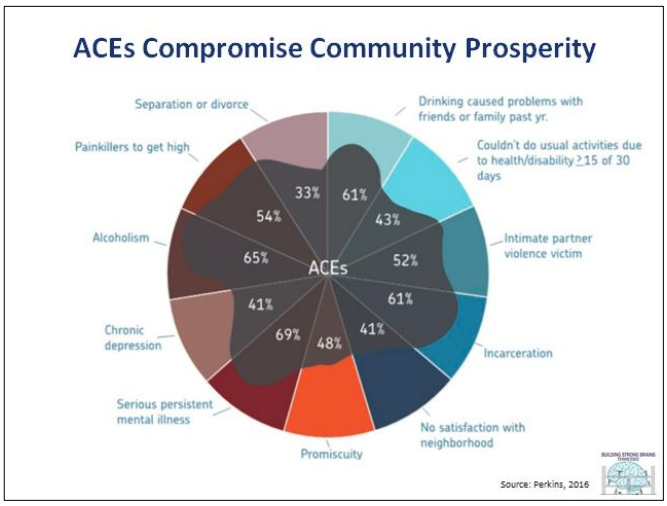
Sources: ACE Response. (n.d.). [Pie chart depicting mental, physical, and behavioral health costs and portion of risk attributable to ACEs]. *The Washington State Family Policy Council Legacy.* Retrieved from http://www.aceresponse.org/give_your_support/Washington_State_Family_Policy_Council_19_52_sb.htm

Centers for Disease Control and Prevention, Kaiser Permanente. (2016). *The ACE study survey data*. Retrieved from https://www.cdc.gov/violenceprevention/acestudy/about.html

Washington State Department of Health. (2009). *Behavioral Risk Factor Surveillance System (BRFSS)* [Data analyzed by Dr. Robert Anda and Dr. David Brown]. Available from https://www.doh.wa.gov/DataandStatisticalReports/DataSystems/BehavioralRiskFactorSurveillanceSystemBRFSS

Washington State Department of Health. (2009 - 2011). *Behavioral Risk Factor Surveillance System (BRFSS)* [Data analyzed by Dr. Dario Longhi and Ann Reeves working with the Foundation for Healthy Generations in Seattle, WA]. Available from https://www.doh.wa.gov/DataandStatisticalReports/DataSystems/BehavioralRiskFactorSurveillanceSystemBRFSS

Corresponding Notes – *Slide 44*



- Here you see that 54 percent of substance abuse with painkillers, 65 percent of alcoholism, 52 percent of intimate partner violence, and 61 percent of incarceration is attributable to an ACE score of four or more.

Facilitator Note *– For both of these "oil spill" graphs, The Population Attributable Risk (PAR) data that Dr. Robert Anda and Dr. Laura Porter use are from three sources: the original ACE Study; 2009 Washington State Behavioral Health Risk Factor Surveillance System data, analyzed by Dr. Anda and Dr. David Brown; and the 2009-2011 Washington State Behavioral Risk Factor Surveillance System data, analyzed by Dr. Dario Longhi and Ann Reeves working with the Foundation for Healthy Generations in Seattle, WA. Some of the findings are published in articles, and some were released in speaker materials. The PAR calculation is based on risks for people who have 1, 2, 3, 4, etc. ACES as compared to those with zero ACEs.*

Sources: Centers for Disease Control and Prevention, Kaiser Permanente. (2016). *The ACE study survey data*. Retrieved from https://www.cdc.gov/violenceprevention/acestudy/about.html

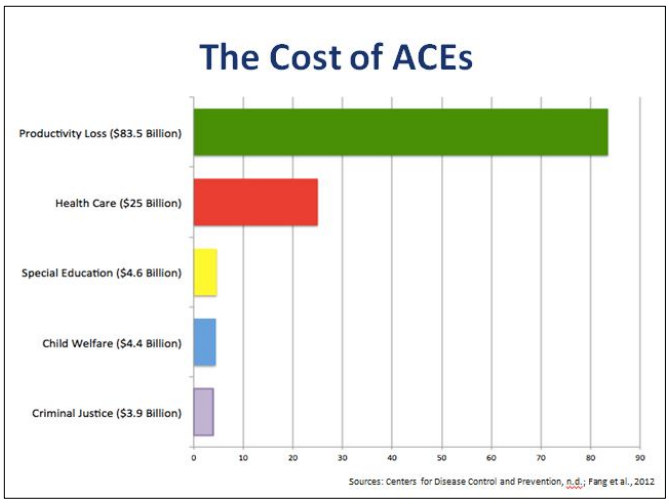
Perkins, C. (2016, May 29). Building Brainerd's resilience: Could research on childhood trauma change society? *Brainerd Dispatch*. Retrieved from http://www.brainerddispatch.com/news/4042791-building-brainerds-resilience-could-research-childhood-trauma-change-society

Washington State Department of Health. (2009). *Behavioral Risk Factor Surveillance System (BRFSS)* [Data analyzed by Dr. Robert Anda and Dr. David Brown]. Available from https://www.doh.wa.gov/DataandStatisticalReports/DataSystems/BehavioralRiskFactorSurveillanceSystemBRFSS

Washington State Department of Health. (2009 - 2011). *Behavioral Risk Factor Surveillance System (BRFSS)* [Data analyzed by Dr. Dario Longhi and Ann Reeves working with the Foundation for Healthy Generations in Seattle, WA]. Available from https://www.doh.wa.gov/DataandStatisticalReports/DataSystems/BehavioralRiskFactorSurveillanceSystemBRFSS

Notes

Corresponding Notes – *Slide 45*



- Though the costs of disease, disability and social problems related to ACEs are immense, the greatest economic toll actually results in productivity loss: absence from the work force through missed days from work due to sickness or mental health issues. Think about the impact that has on businesses in Tennessee.
- The estimate of the aggregate lifetime cost of child maltreatment in 2008 was obtained by multiplying per-victim lifetime cost estimates by the estimated cases of new child maltreatment in 2008.
- The total lifetime economic burden resulting from new cases of fatal and nonfatal child maltreatment in the United States in 2008 was approximately $124 billion. In sensitivity analysis, the total burden is estimated to be as large as $585 billion.

***Facilitator Note** – This information is from the original study for your information.*

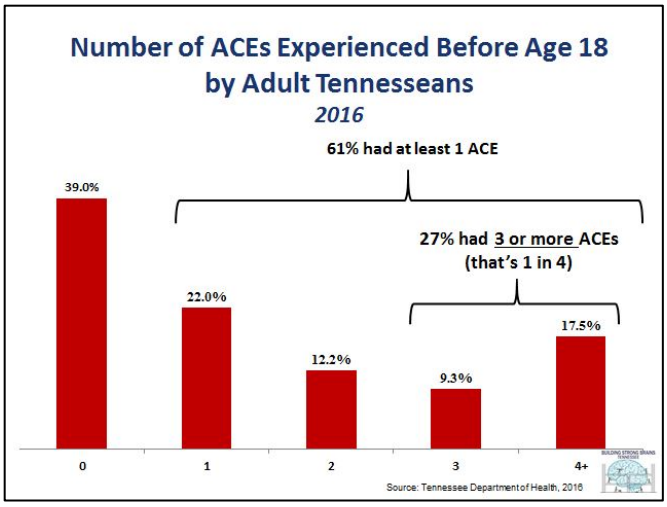
- *Lifetime productivity losses associated with child maltreatment (CM) were estimated using the human capital approach, which measures the potential loss of earnings due to being maltreated during childhood. Currie and Widom (2010) assessed the economic consequences in individuals with documented histories of childhood neglect and physical and sexual abuse and a matched comparison group who were followed into adulthood (mean age = 41). They found that individuals with documented histories of neglect and/or abuse earned about $5,000 less per year on average than the comparison group, controlling for background characteristics. Based on their findings, we assume experience of CM reduces victim earnings by $5,000 (in the year 2003 dollars) per year from ages 18 to 64, assuming that productivity losses are negligible beyond age 65 when most retire. Adjusted to 2010 dollars, the earning gap is $5,890, and assuming a long-term growth in labor productivity of 1 percent per year (Grosse, 2003), the present discounted value of these earnings losses from age 6 would be $144,360. We do not include the value of lost tax receipts from reduced earnings. Although these are a cost to the government, from a social perspective, this is a transfer from individuals to the public sector, and there is no net loss.*
- *Average lifetime cost per victim of fatal child maltreatment: According to Corso, Mercy, Simon, Finkelstein, and Miller's (2007) work, for children age 0–4, the average cost per case for a fatal assault was $11,300 (in year 2000 dollars) in medical costs and $1,005,650 (in 2000 dollars) for lost productivity. Adjusted to 2010 dollars, the medical costs and productivity losses are $14,100 and $1,258,812, respectively.*

Sources: Centers for Disease Control and Prevention. (n.d.). Adverse childhood experiences: Looking at how ACEs affect our lives & society [Infographic]. *Veto Violence.* Retrieved from https://vetoviolence.cdc.gov/apps/phl/resource_center_infographic.html

Fang, X., Brown, D. S., Florence, C. S., & Mercy, J. A. (2012). The economic burden of child maltreatment in the United States and implications for prevention. *Child abuse & neglect*, *36*(2), 156-165.

Corresponding Notes – *Slide 46*

- Tennessee is one of 30 states that has examined the rates of ACEs at the state population. The prevelance of ACEs among Tennesseans are similar to those in previous studies on ACEs.
- Using the Behavioral Risk Factors Surveillance System (BRFSS), citizens are randomly called via landline and cell phone.
- In 2014, 61 percent of Tennessee's population had an ACE score of at least 1, and 27 percent reported having 3 or more. That is 1 in 4 Tennesseans.

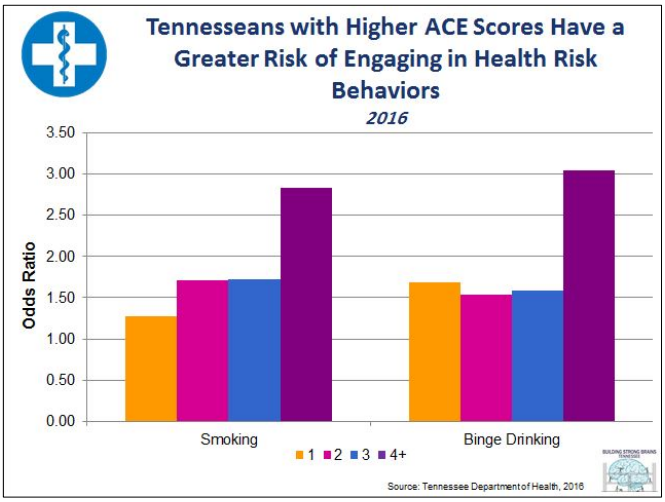


Source: Tennessee Department of Health, Division of Policy, Planning, and Assessment, Office of Surveillance, Epidemiology, and Evaluation. (2016). *Behavioral Risk Factor Surveillance System (BRFSS) ACEs* [Data analyzed by the Division of Family, Health, and Wellness]. Available from https://www.tn.gov/health/topic/statistics-brfss

Notes

Corresponding Notes – *Slide 47*

- In Tennessee, we see the same poor health, wellness and economic outcomes observed in other ACE studies.
- The odds of smoking and binge drinking are considerably higher for those who report having four or more ACEs.

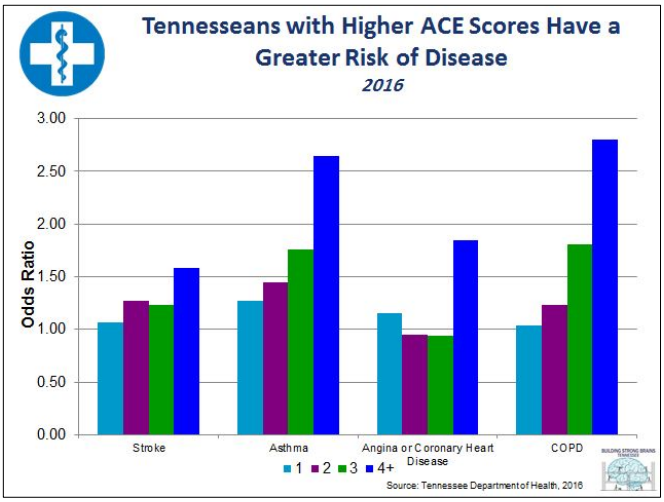


Source: Tennessee Department of Health, Division of Policy, Planning, and Assessment, Office of Surveillance, Epidemiology, and Evaluation. (2016). *Behavioral Risk Factor Surveillance System (BRFSS) ACEs* [Data analyzed by the Division of Family, Health, and Wellness]. Available from https://www.tn.gov/health/topic/statistics-brfss

Notes

Corresponding Notes – *Slide 48*

- In Tennessee, the more ACEs you have, the more likely you are to have had a stroke, or be diagnosed with asthma, coronary heart disease or COPD.

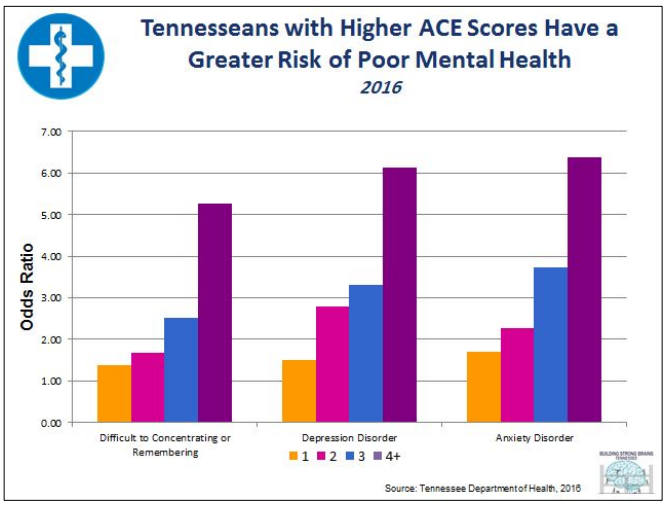


Source: Tennessee Department of Health, Division of Policy, Planning, and Assessment, Office of Surveillance, Epidemiology, and Evaluation. (2016). *Behavioral Risk Factor Surveillance System (BRFSS) ACEs* [Data analyzed by the Division of Family, Health, and Wellness]. Available from https://www.tn.gov/health/topic/statistics-brfss

Notes

Corresponding Notes – *Slide 49*

- Difficulty concentrating or remembering, a depression diagnosis and anxiety disorders are also considerably higher in individuals who report having four or more ACEs.

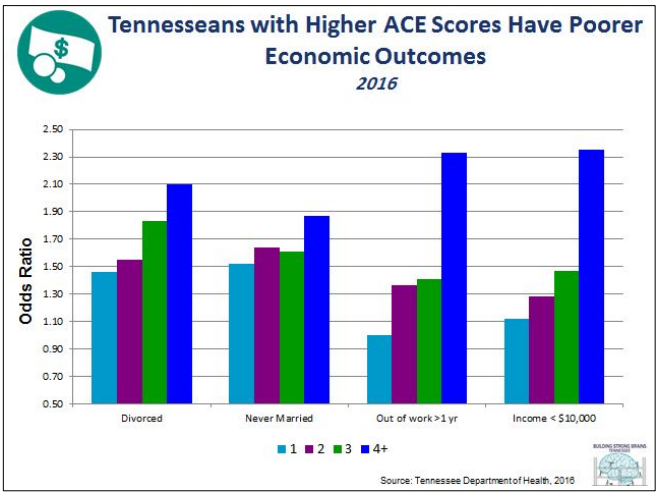


Source: Tennessee Department of Health, Division of Policy, Planning, and Assessment, Office of Surveillance, Epidemiology, and Evaluation. (2016). *Behavioral Risk Factor Surveillance System (BRFSS) ACEs* [Data analyzed by the Division of Family, Health, and Wellness]. Available from https://www.tn.gov/health/topic/statistics-brfss

Notes

Corresponding Notes – *Slide 50*

- Economic outcomes are significantly impacted by higher ACE scores. In Tennessee, those with four or more ACEs are more likely to be divorced or never married.
- Individuals are also more likely to report being unable to work and far more likely to report being out of work for more than one year and making less than $10,000 annually.



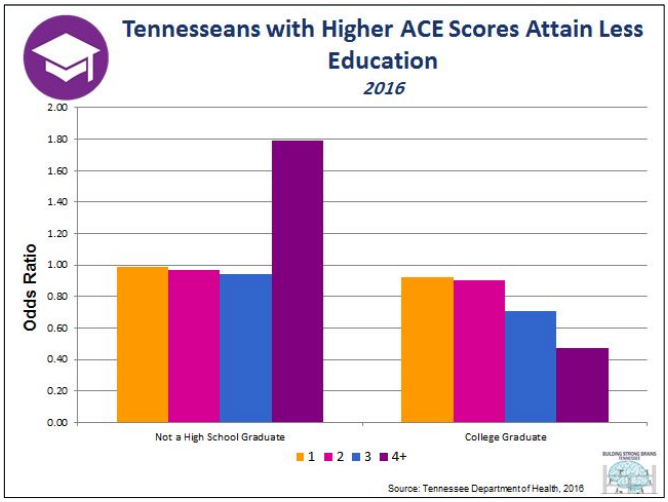
Source: Tennessee Department of Health, Division of Policy, Planning, and Assessment, Office of Surveillance, Epidemiology, and Evaluation. (2016). *Behavioral Risk Factor Surveillance System (BRFSS) ACEs* [Data analyzed by the Division of Family, Health, and Wellness]. Available from https://www.tn.gov/health/topic/statistics-brfss

Notes

Corresponding Notes – *Slide 51*

- Educational outcomes influence economic outcomes. Those with four or more ACEs are far less likely to be a college or high school graduate.

Source: Tennessee Department of Health, Division of Policy, Planning, and Assessment, Office of Surveillance, Epidemiology, and Evaluation. (2016). *Behavioral Risk Factor Surveillance System (BRFSS) ACEs* [Data analyzed by the Division of Family, Health, and Wellness]. Available from https://www.tn.gov/health/topic/statistics-brfss



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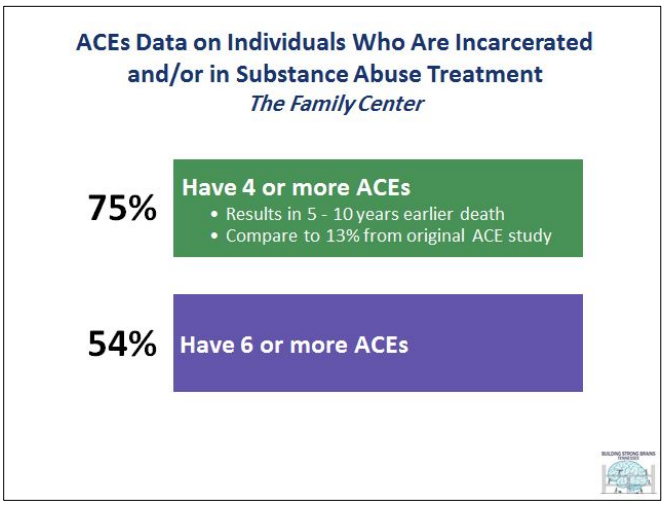
Corresponding Notes – *Slide 52*



- Given that the Behavioral Risk Factors Surveillance System uses telephone calls to gather data, there are barriers to reaching more vulnerable populations such as individuals who are incarcerated, in substance abuse treatment or more transient populations.
- The Family Center, a child abuse prevention agency serving Middle Tennessee, has collected over 1,400 ACE scores of parents who are incarcerated and/or in substance abuse treatment.
- As you see, these individuals have much higher ACE scores than the original Kaiser Permanente population. Over 75 percent report having an ACE score of four or more (compared to 13 percent of the original Kaiser population), and 54 percent report having an ACE score of six or more, a score associated with a 20-year decrease in lifespan.
- These parents are often experiencing the outcomes of a higher ACE score: addiction, incarceration, etc.
- We don't have data on the percentage of the original ACE study population who experienced 6 or more ACEs because it was so negligible. They didn't list beyond four (the tipping point for increased risk of poor health outcomes).

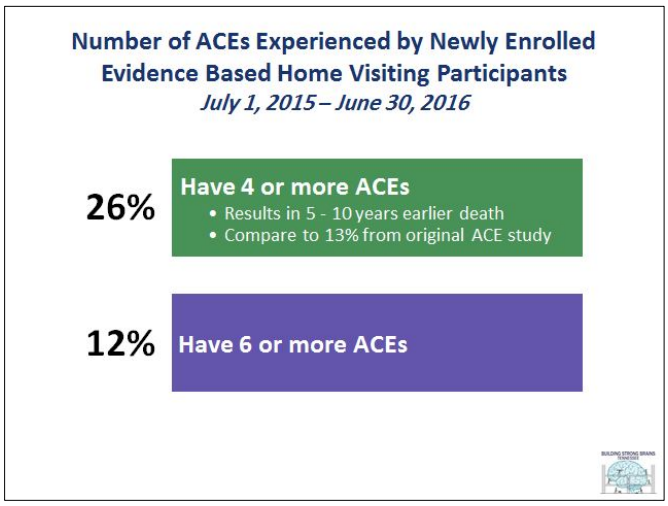
Facilitator Note – *This data was gathered by The Family Center from individuals at Mending Hearts, Renewal House, The Next Door, CDC Men & Women, and DC4 Men & Women (in Davidson County) and Adult Detention Center and Rutherford County Correctional Work Center Men & Women (in Rutherford County) between April 2014 and July 2017.*

Notes

Corresponding Notes – *Slide 53*

- Even those who qualify to receive primary prevention services, such as evidence-based home visiting services in Tennessee, report having higher ACEs than those included in the original ACE study. In order to qualify for home visiting services in Tennessee, you must have at least one risk factor such as poverty, being a teen parent, having post-partum depression, etc.

Facilitator Note – *This data was gathered by the Tennessee Department of Health's Evidence Based Home Visiting Programs.*



Notes

Resilience Scale

Key Terms and Themes

Resilience – a combination of protective factors that enable people to adapt in the face of serious hardship, and is essential to ensuring that children who experience adversity can still become healthy, productive citizens.

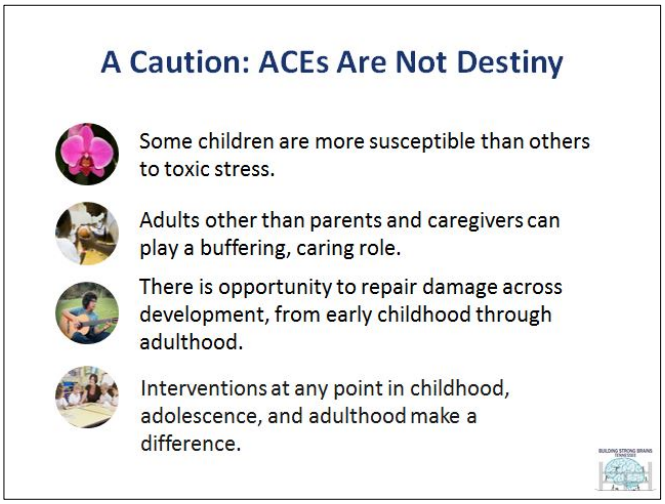
Resilience Scale – an effective simplifying model for channeling thinking about developmental outcomes and resilience. The tool can be used to translate a wide range of messages from the science of early child development — from individual differences to gene-environment interaction to critical and sensitive periods and resilience. In addition, the metaphor has a wide range of ways in which it can be deployed.

Fulcrum – the point on which a lever rests or is supported and on which it pivots.

Safe, stable, nurturing relationships and envrionments – Safety, stability, and nurturing are three critical qualities of relationships and environments that make a difference for children as they grow and develop. They can be defined as follows:

■ Safety: The extent to which a child is free from fear and secure from physical or psychological harm within their social and physical environment.
■ Stability: The degree of predictability and consistency in a child's social, emotional, and physical environment.
■ Nurturing: The extent to which a parent or caregiver is available and able to sensitively and consistently respond to and meet the needs of their child.

Corresponding Notes – *Slide 54*



- We can think about ACEs as being "fact not fate." While higher ACE scores increase the risk of experiencing disease, disability and social problems, it is not fate for everyone.
- You can think about the risks of a higher ACE score being similar to the risks related to smoking cigarettes. It is a fact that smoking increases your chance of heart disease and lung cancer, but it is not necessarily fate. Many people smoke well into their 80s and die from other causes.
- Safe, stable and nurturing relationships mitigate the risks of ACEs and promote resilience and healing.
- Some children are biologically more susceptible to toxic stress.
    - Children who are biologically sensitive to stress are often referred to as "orchid" children. Like an orchid, they need a more optimal set of conditions not just to survive but to thrive.
    - Children who are biologically less sensitive are known as "dandelion" children. Like a dandelion, they are able to thrive in a wider range of conditions.
- Other adults, not just parents, serve a buffering, caring role for children.
    - These include adults such as grandparents, other family, coaches, teachers, childcare workers, pastors, mentors, etc.
- There is capacity to repair across development. Adolescence represents another period of increased brain plasticity when interventions and nurturing relationships have a strong impact.
- Interventions can make a difference for children and adults. Two-generation approaches often create the most measurable improvements for families.

***Facilitator Note** – While "orchid" and "dandelion" children are terms frequently used to describe different biological predispositions/temperments, it is not a tested metaphor. Please don't elaborate on these concepts.*

Source: Center on the Developing Child at Harvard University. (2014). *Enhancing and practicing executive function skills with children from infancy to adolescence.* Retrieved from www.developingchild.harvard.edu

Tennessee Department of Health, Maternal and Child Health Section. (2015). *Adverse childhood experiences in Tennessee: Fact not fate*. Retrieved from https://tn.gov/health/topic/MCH-reports

Corresponding Notes – *Slide 55*

- We know that, as they experience more early life toxic stresses, children suffer more severe and lasting effects on health and adult functioning.
- We also know that some toxic stress exposure increases the probability of further toxic stress exposure. We refer to this as having a high "adverse childhood stress (or ACE) score."
- And we now realize that many downstream health and behavior problems are caused by early life stresses. We call this realization becoming "trauma informed."
- It is important to understand how we can build resilience in children and both prevent and mitigate ACEs.
- The keys to healthy child development are:
    - A balanced approach to emotional, social, cognitive and language development starting in the earliest years of life.
    - Supportive relationships and positive learning experiences that begin with parents but are strengthened by others outside the home.
    - Highly specialized interventions as early as possible for children and families experiencing significant adversity.

Notes

Corresponding Notes – *Slide 56*

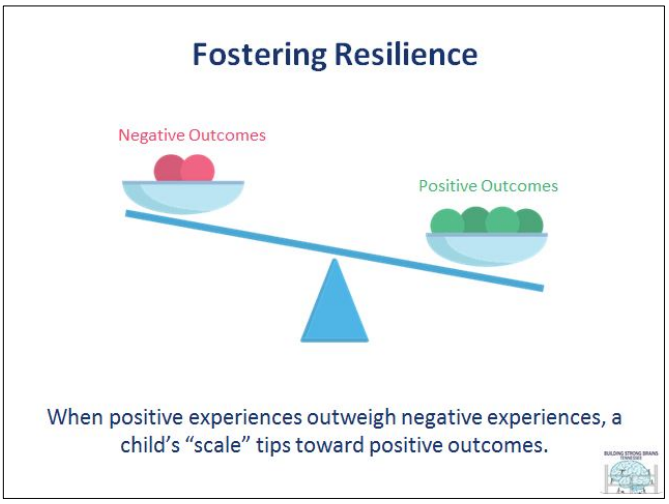
- Though many perceive resilience as solely an internal trait, science tells us environmental factors profoundly influence a child's capacity to be resilient. Resilience is built throughout development when a child consistently has safe, stable nurturing relationships and environments. The following video explains how resilience can be built across childhood and adolescence.

Facilitator Note *– Video is 3 min 11 sec*
https://vimeo.com/106322359

Notes

Corresponding Notes – *Slide 57*

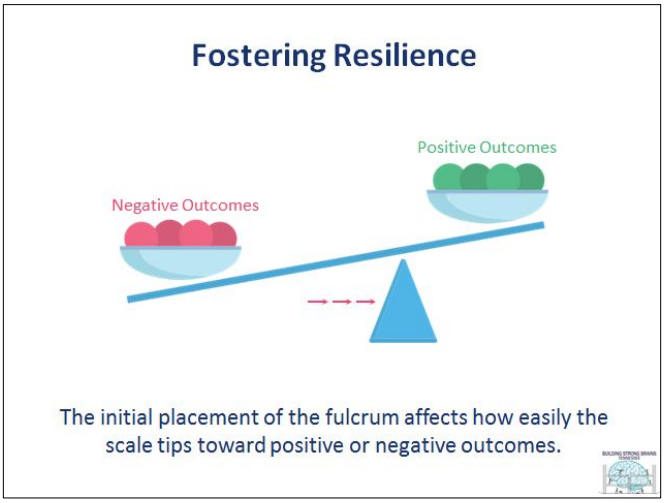
- Just as brain architecture, gene expression and other biological development is heavily influenced by environment, so is resilience.
- Let's think of the child as being a scale. When positive experiences outweigh negative experiences, a child's "scale" tips toward positive outcomes. You might think that to counteract the negative outcomes of stress we need to just provide more positive experiences.



Notes

Corresponding Notes – *Slide 58*

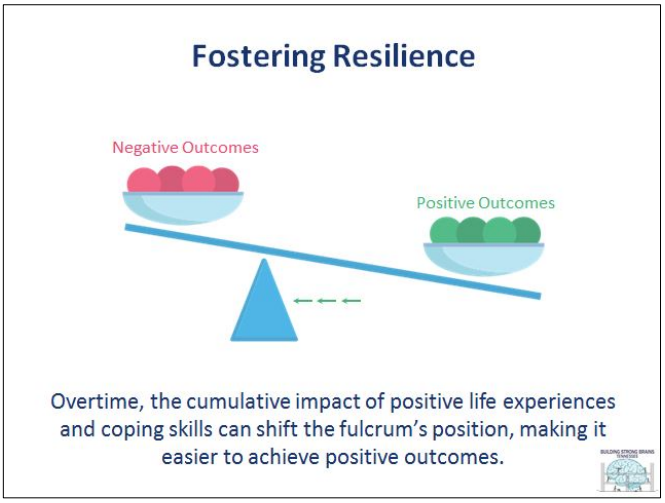
- However, it is more complicated than that. We all know that some children are more sensitive to life stresses and relatively few stresses can have significant impacts on them, while other children are more resilient and can tolerate a significant amount of stress before showing the same repercussions. We think of these differences as representing where the child's fulcrum of the scale is placed. So some children more easily tip negative, while others more easily tip positive.



Notes

Corresponding Notes – *Slide 59*

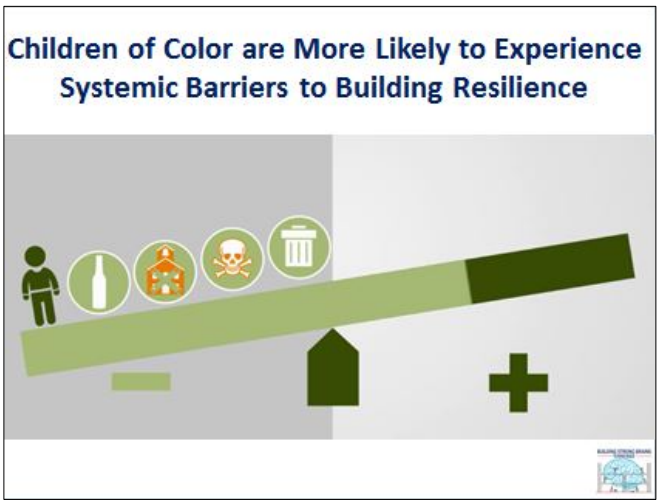
- To make children more resilient, what we really want to do is to shift the fulcrum so that stresses have less of a negative outcome. Well, it turns out we can do that!
- Teaching children certain coping skills can improve their resilience. A good thing about this is the parts of the brain that underlie coping skills develop late--- they are developing throughout adolescence.
- Two critical times of development when we can shift the fulcrum are during early childhood and adolescence.



- Children can be taught coping skills to improve resilience and build stronger pathways in the brain for these skills throughout the teenage years and well into their 20s.

Notes

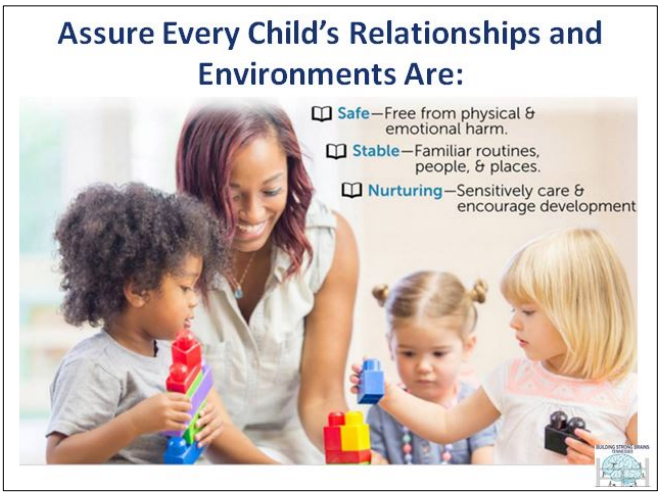
Corresponding Notes – *Slide 60*



- As we discussed earlier in our presentation, environmental, systemic and structural issues children of color and children in poverty experience weaken our community's health, well-being and prosperity.
- The series of locked doors children face as a result of under-resourced communities and harmful policies negatively impact health, development and life potential by loading the negative side of the scale with stress.
- These barriers also decrease access to those safe, stable, nurturing relationships and environments that would offload negative weight and load the positive side of the scale.
- Our strategies for tipping childrens' scales toward resilience must include identifying innovative solutions that act as keys to locked doors.

Notes

Corresponding Script – *Slide 61*



- Research indicates that supportive, responsive relationships with caring adults as early in life as possible can prevent or reverse the damaging effects of toxic stress response.
- The CDC recommends safe, stable and nurturing relationships and environments to protect children from accumulating ACEs and to mitigate them.
    - **Safe** means free from physical and emotional harm.
    - **Stable** means familiar routines, people and places.
    - **Nurturing** means sensitive care and encouraging development.
- Children need all three of these factors in order to not just survive, but thrive.
- **The single most common factor for children who develop resilience is at least one stable and committed relationship with a supportive parent, caregiver or other adult.** These relationships provide the personalized responsiveness, scaffolding and protection that buffer children from developmental disruption. We know from research that support from a trusted adult can counterbalance the effects of prolonged stress. Trusted adults also build key capacities—such as the ability to plan, monitor and regulate behavior—that enable children to respond adaptively to adversity and thrive. This combination of supportive relationships, adaptive skill-building and positive experiences is the foundation of resilience.
- **Children who do well in the face of serious hardship typically have a biological resistance to adversity and strong relationships with the important adults in their family and community.** Resilience is the result of a combination of protective factors. Neither individual characteristics nor social environments alone are likely to ensure positive outcomes for children who experience prolonged periods of toxic stress. The interaction between biology and environment builds a child's ability to cope with adversity and overcome threats to healthy development.
- **Research has identified a common set of factors that predispose children to positive outcomes in the face of significant adversity.** Individuals who demonstrate resilience in response to one form of adversity may not necessarily do so in response to another. Yet when these positive influences are operating effectively, they "stack the scale" with positive weight and optimize resilience across multiple contexts. These counterbalancing factors include:
    - facilitating supportive adult-child relationships;
    - building a sense of self-efficacy and perceived control;

  - providing opportunities to strengthen adaptive skills and self-regulatory capacities; and
  - mobilizing sources of faith, hope and cultural traditions.

- **Learning to cope with manageable threats is critical for the development of resilience.** Not all stress is harmful. Every child has numerous opportunities to experience manageable stress. With the help of supportive adults, this "positive stress" can be growth-promoting. Over time, we become better able to cope with life's obstacles and hardships, both physically and mentally.

- **The capabilities that underlie resilience can be strengthened at any age.** The brain and other biological systems are most adaptable early in life. Yet while their development lays the foundation for a wide range of resilient behaviors, it is never too late to build resilience. Age-appropriate, health-promoting activities can significantly improve the odds that an individual will recover from stress-inducing experiences. For example, regular physical exercise, stress-reduction practices and programs that actively build executive function and self-regulation skills can improve the abilities of children and adults to cope with, adapt to and even prevent adversity in their lives. Adults who strengthen these skills in themselves can better model healthy behaviors for their children, thereby improving the resilience of the next generation.

Sources: Center on the Developing Child at Harvard University. (n.d.). *Key concepts: Resilience.* Retrieved from https://developingchild.harvard.edu/science/key-concepts/resilience/

Centers for Disease Control and Prevention. (2014). *Essentials for childhood: Steps to create safe, stable, and nurturing relationships and environments.* Retrieved from https://www.cdc.gov/violenceprevention/childmaltreatment/essentials.html

Notes

Corresponding Notes – *Slide 62*

- The skills that can help build resilience are controlled by a part of the brain that is one of the last to develop, the prefrontal cortex.
- This part of the brain governs the ability to focus attention, problem solve, plan ahead, regulate behavior, control impulses and adjust to new circumstances.
- Collectively, we call these skills "Executive Function and Self Regulation" skills.
- **Children aren't born with these skills—they are born with the potential to develop them.** If children do not get what they need from their relationships with adults and the conditions in their environments—or (worse) if those influences are sources of toxic stress—their skill development can be seriously delayed or impaired. Adverse environments resulting from neglect, abuse and/or violence may expose children to toxic stress, which disrupts brain architecture and impairs the development of executive function.
- **The support that children need to build these skills at home, in early care and education programs and in other settings they experience regularly, is one of society's most important responsibilities.** Growth-promoting environments provide children with "scaffolding" that helps them practice necessary skills before they must perform them alone. Adults can facilitate the development of a child's executive function skills by establishing routines, modeling social behavior and creating and maintaining supportive, reliable relationships. It is also important for children to exercise their developing skills through activities that foster creative play and social connection, teach them how to cope with stress, involve vigorous exercise and, over time, provide opportunities for directing their own actions with decreasing adult supervision.
- Remember strategies that work to effectively strengthen these skills in older children and adolescents are similar to what worked in younger children. Specifically, you want to have adolescents use these skills again and again. And to get them to do this, you need to interest them in learning the skills, have them repeatedly engage in activities that use the skill, and have them develop self-confidence with the skill so it is fun and engaging so they want to do it again and again.
- This can be difficult! No doubt! Figuring out a clever way to get middle and high school students interested in planning ahead, focusing their attention and controlling their impulses can be challenging for adults. But it is worth trying because the impact can be significant. With young children, we learned, if a skill was fun and rewarding, they would be more likely to engage in continued skill learning. The same is true in the adolescent years. So as adults and as communities, we need to rethink how we teach these skills to youth. Simply telling them to "learn to control their impulses" will not work. We want to motivate them to control their impulses because it will be rewarding to them.

- In addition to developing executive functioning skills, teaching children and youth techniques to regulate and calm down their bodies can promote stress management. Practices such as yoga, progressive muscle relaxation, meditation and mindful breathing are healthy coping skills that manage stress and support resilience.

Source: Cameron, J. (n.d.) *Improving air traffic control helps with stress management* [PowerPoint slide].

Notes

Solving Childhood Adversity through Collective Ingenuity

Key Terms and Themes

Collective Ingenuity – a community or group of people identifying inventive or resourceful solutions.

Prosperity – a successful, flourishing, or thriving condition, especially in financial respects; good fortune.

Trauma-Informed Care – an organizational structure and treatment framework that involves understanding, recognizing, and responding to the effects of all types of trauma.

Return on Investment – (ROI) a performance measure used to evaluate the efficiency of an investment or compare the efficiency of a number of different investments. ROI tries to directly measure the amount of return on an particular investment, relative to the investment's cost. To calculate ROI, the benefit (or return) of an investment is divided by the cost of the investment. The result is expressed as a percentage or a ratio.

Two-Generation Approach – focus on creating opportunities for and addressing needs of both children and the adults in their lives together. The approach recognizes that families come in all different shapes and sizes and that families define themselves.

Corresponding Notes – *Slide 63*

- Understanding ACEs gives many people a common language and a common understanding of how we can work together to move from marginal results to massive results.
- We can drive down the rates of social problems, mental health issues and physical diseases just by providing children with what they deserve anyway: safe, stable and nurturing relationships and environments.
- When we support adults to have healthy relationships with children, we have the opportunity to change children's trajectories by stacking the scale and creating resilience.
- As Tennesseans understand the impact of Adverse Childhood Experiences, they will realize the future economic development and prosperity of the state depends on what we do now to prevent these experiences, whenever possible, and to wrap services around children and families when they cannot be prevented. There will be better collaboration across disciplines, departments, agencies and communities and a focus on the infrastructure of services and supports that make a difference.
- Addressing ACEs is a simpler solution than finding a cure for cancer, navigating rising incarceration rates, driving down the obesity epidemic or addressing academic failure. Relationships help you heal from ACEs and prevent the accumulation of more.

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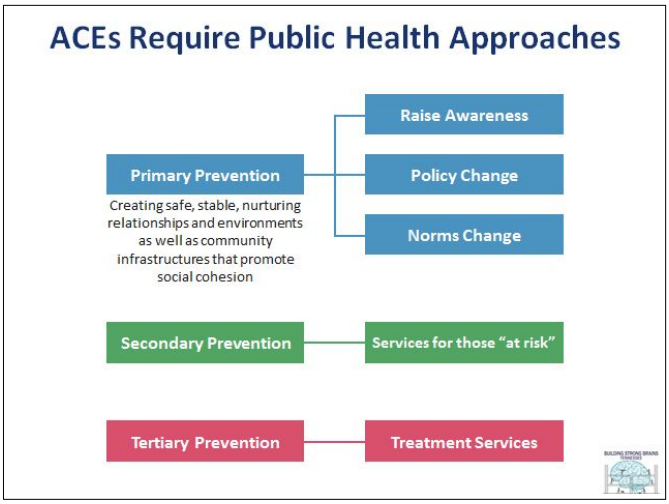
Corresponding Notes – Slide 64



- The damaging effects of toxic stress resulting from adverse childhood experiences are arguably the largest public health crisis we have faced.
- In order to address a public health crisis, we must use a public health approach. This means investing not just in treatment or services for those at risk, but also in primary prevention strategies, such as increasing awareness and supporting policy change.
- When we think back to other public health initiatives, such as smoking cessation, the biggest difference came from raising awareness and shifting policies.
    - Everyone is aware of the harmful effects of smoking because of advertisements seen on television, information provided by their doctor or health insurance questions about smoking habits.
    - In addition, policies shifted, including organizational policies. Our country went from having a culture of smoking, where you could smoke anywhere, to implementing bans on smoking in most public places.
- Because of these efforts, we have we experienced a norms change. People now expect the healthiest option.
- We need to address ACEs and toxic stress in a similar manner. Everyone needs to understand diseases, disabilities and social problems are frequently an outcome of toxic stress. We need policies that help adults understand their collective responsibility for children's well-being and to develop policies that support those safe, stable and nurturing relationships and environments that all children need.

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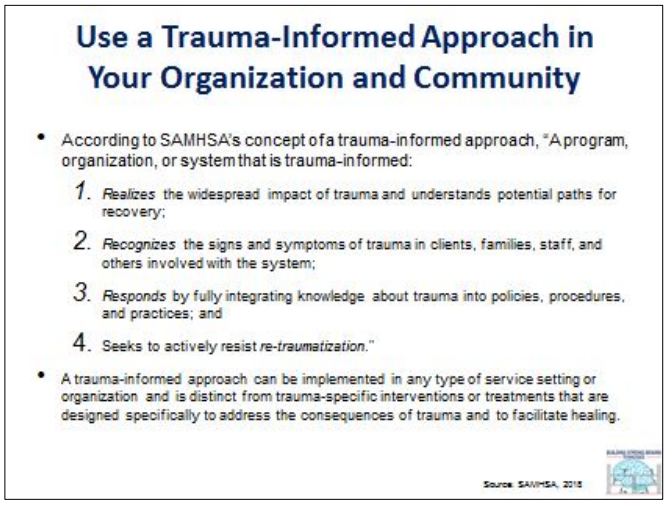
Corresponding Notes – Slide 65



- According to SAMHSA's concept of a trauma-informed approach, "A program, organization, or system that is trauma-informed:
  1. ***Realizes*** the widespread impact of trauma and understands potential paths for recovery;
  2. ***Recognizes*** the signs and symptoms of trauma in clients, families, staff, and others involved with the system;
  3. ***Responds*** by fully integrating knowledge about trauma into policies, procedures, and practices; and
  4. Seeks to actively resist ***re-traumatization***."
- A trauma-informed approach can be implemented in any type of service setting or organization and is distinct from trauma-specific interventions or treatments that are designed to address the consequences of trauma and to facilitate healing.

Source: Substance Abuse and Mental Health Services Administration. (2018, April 27). *Trauma-Informed Approach and Trauma-Specific Interventions*. Retrieved October 23, 2018, from U.S. Department of Health & Human Services: Substance Abuse and Mental Health Services Administration: https://www.samhsa.gov/nctic/trauma-interventions

Notes

Corresponding Notes – *Slide 66*

- SAMHSA's Six Key Principles of a Trauma-Informed Approach: reflects adherence to six key principles rather than a prescribed set of practices or procedures. These principles may be generalizable across multiple types of settings, although terminology and application may be setting- or sector-specific:

1. **Safety** – Prevents violence across the lifespan and creates safe, physical environments.
2. **Trustworthiness** and **Transparency** – Fosters positive relationships among residents, city hall, police, schools and others.
3. **Empowerment** – Ensures opportunities for growth are available for all.
4. **Collaboration** – Promotes involvement of residents and partnership among agencies.
5. **Peer Support** – Engages residents to work together on issues of common concern.
6. **History**, **Gender**, **Culture** – Values and supports history, culture and diversity.

- From SAMHSA's perspective, it is critical to promote the linkage to recovery and resilience for those individuals and families impacted by trauma. Consistent with SAMHSA's definition of recovery, services and supports that are trauma-informed build on the best evidence available and consumer and family engagement, empowerment and collaboration.

Source: Substance Abuse and Mental Health Services Administration (SAMHSA). (2017). *SAMHSA Spotlight: A Series on Building Resilient and Trauma-Informed Communities*. Retrieved October 23, 2018, from U.S. Department of Health & Human Services: Substance Abuse and Mental Health Services Administration: https://store.samhsa.gov/shin/content//SMA17-5014/SMA17-5014.pdf

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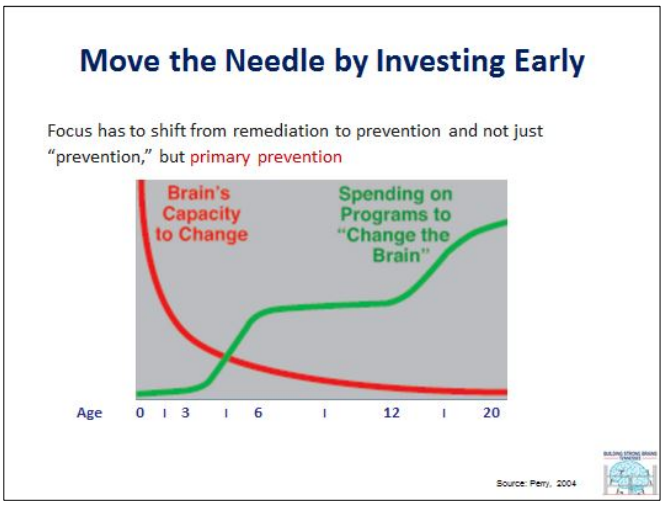
Corresponding Notes – *Slide 67*



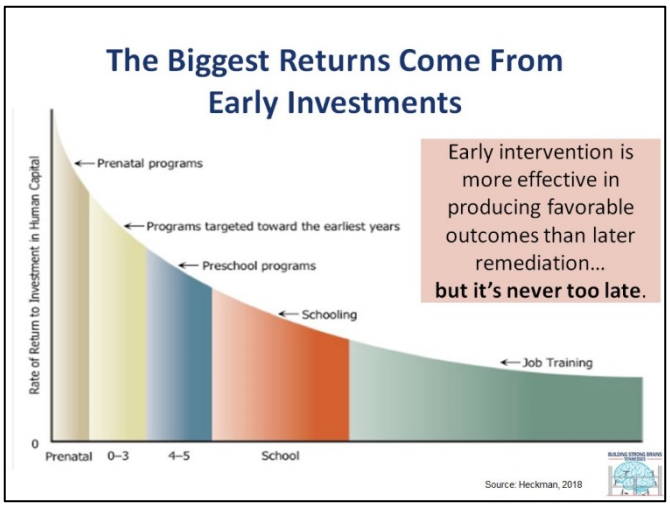
- In order to protect children from the harmful effects of adverse childhood experiences and toxic stress, we have to invest more resources into primary prevention, a prevention effort that prevents a disease from ever occurring.
- As you see in this graph, the red line represents the brain's capacity to change. You will notice the earliest years of life represent the time when you can have the most significant impact on changing the brain.
- The green line represents the spending on programs to "change the brain."
- Ask the audience, "What do you notice here?"
    - Solicit the response similar to "Very little spending spent when it matters the most."
- We have to invest more time, energy and fiscal resources into developing prevention infrastructure when we can have the greatest impact on health and well-being.

Source: Perry, B.D. (2004, September 23). Maltreatment and the developing child: How early childhood experience shapes child and culture. In *The Margaret McCain Lecture Series*. Retrieved from https://childtrauma.org/wp-content/uploads/2013/11/McCainLecture_Perry.pdf

Notes

Corresponding Notes – *Slide 68*

- Providing young children with a healthy environment in which to learn and grow is not only good for their development - economists have also shown that high-quality early childhood programs bring impressive returns on investment to the public.
- Nobel Laureate Prize winning economist James Heckman has demonstrated that we see 13%, or $6.30 for every $1 spent in return on investment on ahigh-quality, comprehensive program from birth to age five. This program led to better education, health, social and economic outcomes.



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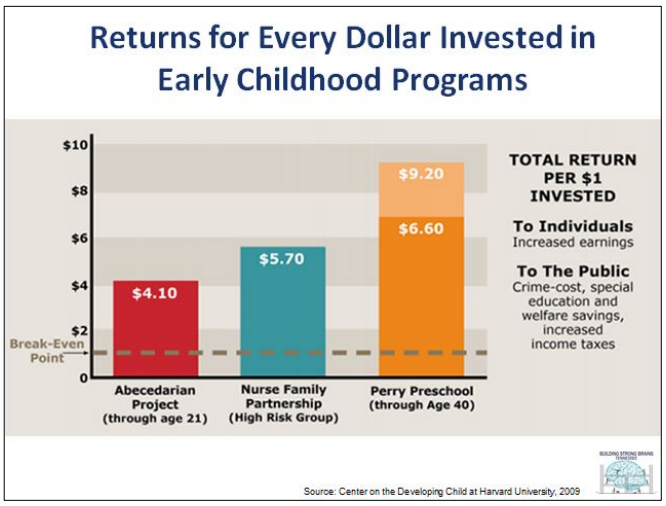

- Three of the most rigorous long-term studies found a range of returns between $4 and $9 for every dollar invested in early learning programs for low-income children. Program participants followed into adulthood benefited from increased earnings while the public saw returns in the form of reduced special education, welfare and crime costs and increased tax revenues from program participants later in life.
- Despite the irrefutable evidence, we spend very little money on the earliest programs that make the biggest impact on building strong brain architecture and creating health across the lifespan, such as quality home visiting programs, quality early childcare and high-quality pre-K.
- Investing in human capital, especially early on, results in great returns.

Sources: Center on the Developing Child at Harvard University. (2009). *Five numbers to remember about early childhood development* [Brief]. Retrieved from www.developingchild.harvard.edu

Heckman, J. J., Malofeeva, L., Pinto, R., & Savelyev, P. A. (2009). *The effect of the Perry Preschool Program on the cognitive and non-cognitive skills of its participants*. Unpublished manuscript.

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Notes

Corresponding Notes – Slide 70

- Children's developing brains are like batteries that need to be able to "plug in." One of the best ways to improve brain architecture and academic success is by supplying, from a very young age through adolescence, access to the many charging stations that can power up children's learning – places like early learning centers, libraries, parks and museums.
- We are a people who believe in fairness across places. However, we know that access to resources is spotty in some of our communities. Communities living in poverty and, more frequently, communities of color have less charging stations. We need to ensure that all children, no matter where they live, are able to connect to a variety of learning opportunities when they are young.

Notes

Corresponding Notes – *Slide 71*

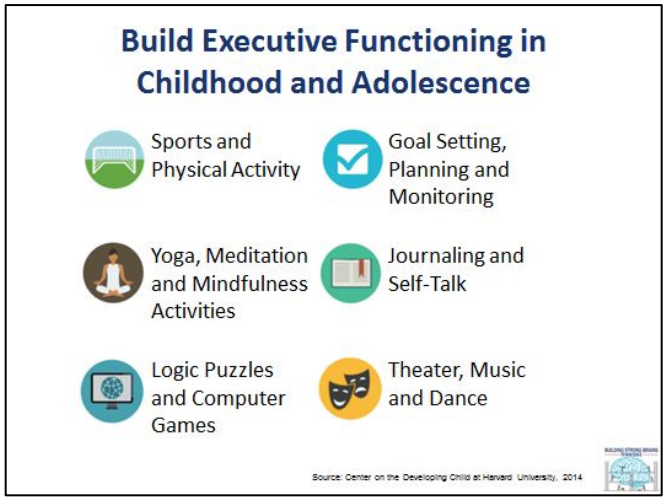
- What are some sound strategies we can employ to effectively prevent and mitigate ACEs? As you will see in this video, one way is to identify mental health challenges early and provide adequate support.
- Play the "Mental Levelness" video. Following the video state the following:
    - You will notice in the video that they say "children can't level themselves."
    - The help of many different kinds of adults with specialized skills can help children become level and fix "little wobbles" early so they do not become "big wobbles" later in life.
    - One strategy to address ACEs is to invest in evidence-based programs that detect and address the "little wobbles" early.

Facilitator Note – *Video is 1 min 54 sec*
https://vimeo.com/120444414

Notes

Corresponding Notes – *Slide 72*

- Building executive functioning skills in adolescence is a way to help youth manage stress and mitigate the impact of toxic stress.
- Some examples of activities you can engage adolescents in to build executive functioning skills include goal setting, planning and monitoring, journaling, playing strategy games and puzzles, playing sports, and practicing yoga and meditation.



Source: Center on the Developing Child at Harvard University. (2014). *Enhancing and practicing executive function skills with children from infancy to adolescence.* Retrieved from www.developingchild.harvard.edu

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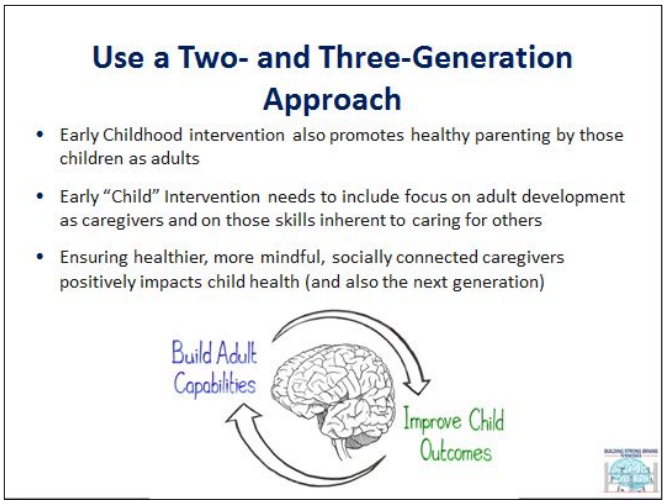
Corresponding Notes – *Slide 73*



- Science tells us another important way to prevent ACEs is to stop the intergenerational cycle of trauma by using two- and three-generation approaches. In order to do this we need to support:
    - Early childhood intervention also promotes healthy parenting by those children as adults.
    - Early "child" intervention needs to include focus on adult development as parents and on those skills inherent to caring for others.
    - Ensuring healthier, more mindful, socially connected parents positively impacts child health (and also the next generation).
- Examples of programs that use a two-generation approach include the FIND program currently being studied by Harvard University. In this program, parent interactions with their children are video taped. When the tapes are reviewed, program administrators "find" positive interactions a parent had with a child and reinforce those interactions. Other examples include "one stop shops" for parents and children that are child-friendly and decrease stress for the parent and child by housing many needed services and resources in one location.

Notes

Corresponding Notes – *Slide 74*

- When we think about programs and services that reduce and mitigate ACEs, we can think about those services, policies and environmental factors that support parents and other adults to provide safe, stable and nurturing relationships and environments.

- Listed on these slides, you will see *some* ways that we can effectively prevent and mitigate ACEs. The list of services, policies, practices and environmental factors extend much farther than what is listed here. To learn more, visit www.acesconnection.com.
    - Adopt **Trauma-Informed School Policies and Practices**: Increasingly, schools are adopting trauma-informed policies and classroom practices that significantly decrease discipline referrals and increase attendance.
    - High quality **child care and pre-K** to build strong serve and return interactions with adults, catch signs of toxic stress early, and support families toward economic stability
    - High quality, evidence-based **home visiting services** to pregnant women and families with newborns
    - **Business and Organization Policies** that support working parents such as paid parental leave, flexible work schedules, or consistant work shifts
    - Increased access to **integrated healthcare** that focuses on a high degree of collaboration and communication among health professionals and creates a comprehensive plan to address the biological, psychological and social needs of the patient. Often these teams include physicians, nurses, psychologists, social workers and other health professionals, depending on the need of the patient
    - **Parenting support** programs for teens and **teen pregnancy prevention** programs

Sources: Centers for Disease Control and Prevention. (2016, April 1). *About adverse childhood experiences*. Retrieved from https://www.cdc.gov/violenceprevention/acestudy/about_ace.html

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Schwarz, D. (2018). The power of cross-sector collaboration to build a culture of health. 2018 Building Strong Brains Summit. Nashville.

Corresponding Notes – *Slide 75*

- The list continued:
    - Access to **Mental Health** and **Substance Abuse Treatment Services**
    - **Sufficient Income Support** for Low Income Families
    - **Intimate Partner Violence Prevention** Programs
    - **Considering the impact of environmental conditions on social determinants of health, community well-being and early childhood development in community development** plans (e.g., ensuring that communities have enough high-quality, mixed income housing, ensuring that there is safe local green space and recreational ammenities available, ensuring that there are accessable local grocery stores, etc.). This is particularly important for communities living in poverty and communities of color who have disproportionately less access
    - **Healthcare systems investing in their local communities** by supporting access to affordable housing, community centers, grocery stores, childcare facilities and other infrastructure improvements that make the community a healthier place to live. This ultimately reduces healthcare costs and improves health outcomes
    - Opportunities for parents to develop a healthy, strong **social support network**.
- Communities using ingenuity and collaboration to support safe, stable and nurturing relationships for all children and families will see improved social and economic prosperity.

Source: Centers for Disease Control and Prevention. (2016, April 1). *About adverse childhood experiences*. Retrieved from https://www.cdc.gov/violenceprevention/acestudy/about_ace.html

Hacke, R., & Deane, K. (2017, March 15). *Improving Community Health by Strengthening Community Investment*. Retrieved September 28, 2018, from Robert Wood Johnson Foundation: https://www.rwjf.org/en/library/research/2017/03/improving-community-health-by-strengthening-community-investment.html

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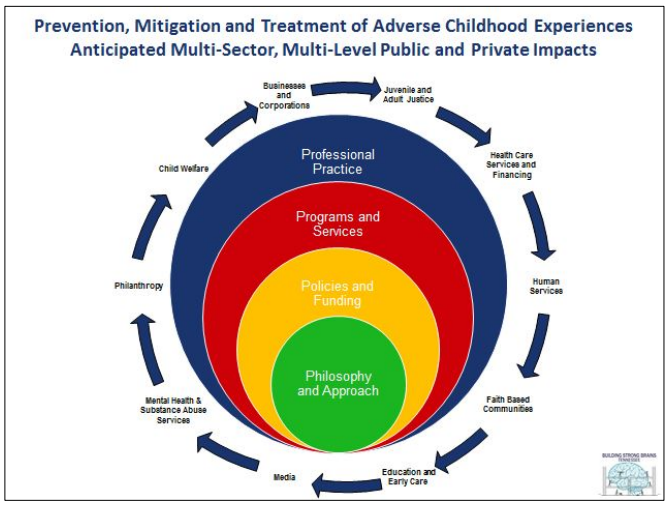
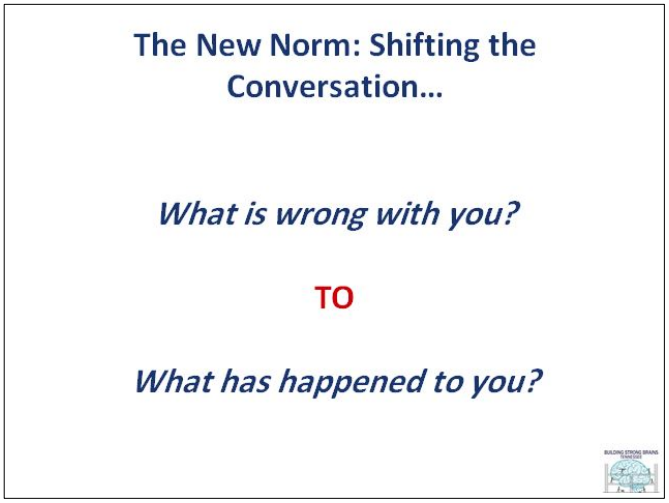
Corresponding Notes – *Slide 76*



- *Building Strong Brains Tennessee* is not only trying to develop more ACE prevention infrastructure in the areas of philosophy, policies, programs and practices but is also working to align many public and private sectors around the issue.
- These partners work collaboratively to identify breakthrough approaches to help communities provide safe, stable, nurturing environments.
- The goal is to ensure all Tennessee children have what they need to thrive by creating a culture where we invest more resources early on to prevent the development of diseases, health risk behaviors, mental health issues and social issues.
- The change in public investments will produce long term improvements by building healthy, strong future generations of citizens. The future prosperity of Tennessee depends on building strong brain architecture in the early years and makes it imperative for us to act.

Notes

Corresponding Notes – *Slide 77*



- Ultimately, we are shifting to a new norm in conversation…from "What is wrong with you?" to "What happened to you?"
- This science helps us shift thinking on an individual level when we see the symptoms of toxic stress. When we ask "What has happened?" it shifts our entire demeanor to be helpful to someone who is hurting.
- The question not only helps us shift on an individual basis, but also with societal issues. We can better understand some of our most difficult issues and actually work together to solve them rather than placing blame. Societal shame and guilt have done nothing to move the needle on these complex issues impacting all of us. Evidence shows approaching the conversation in a trauma-informed manner does have impact.
- All children need someone in their corner. The shift from "What is wrong with you?", or "Why are you a problem?" to "What has happened to you, and how we can we support you and help you overcome these experiences?" will result in a more effective, more empathetic service delivery system and a stronger Tennessee.

Notes

Corresponding Notes – *Slide 78*

- If you want to learn more about Adverse Childhood Experiences, brain development and resilience feel free to check out The Tennessee Commission on Children and Youth's website.

Notes

Corresponding Notes – *Slide 79*

- Please have participants fill out the survey. They can either enter in the website or use a QR code scanner on their phone to access the short assessment.

Notes

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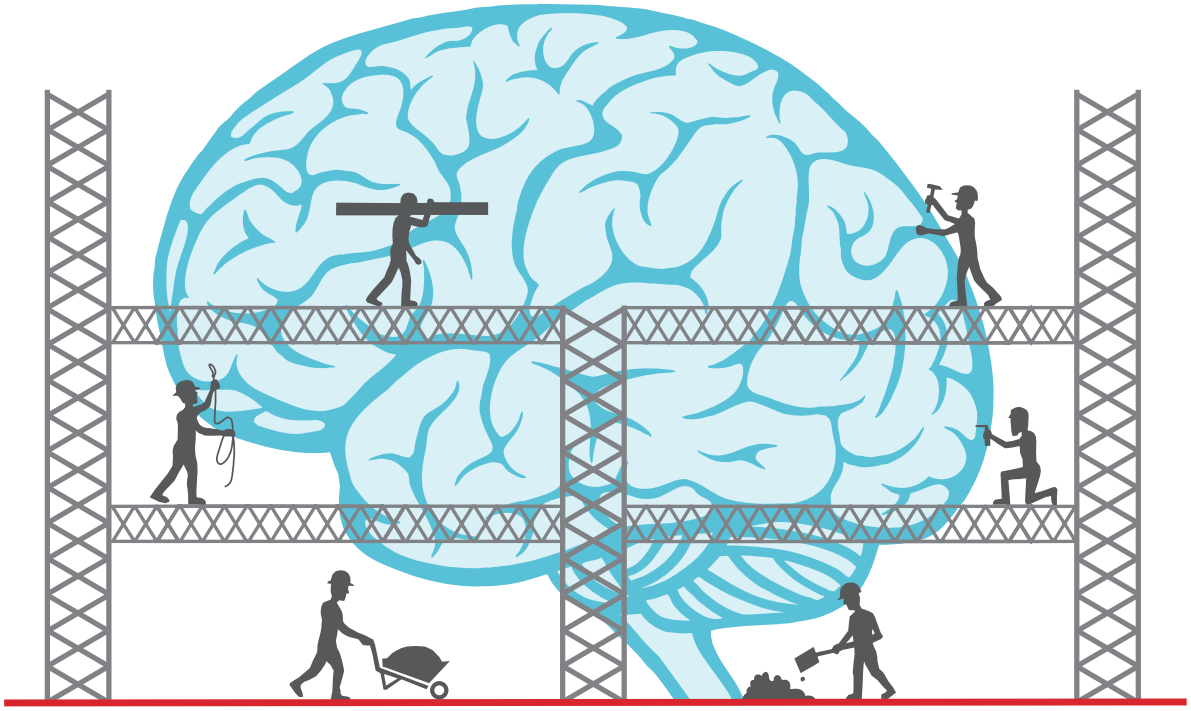
Slide Decks

BUILDING STRONG BRAINS TENNESSEE



Tennessee State Government

TENNESSEE COMMISSION ON CHILDREN AND YOUTH

Facilitator's Guide Cross-Walk

3 Hour Slide Deck

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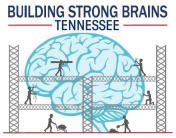
1

The Role of Life Experiences in Shaping Brain Development



Name
Title
Organization

Tennessee State Government

2

Building Strong Brains Tennessee

Mission

We work to change the culture of Tennessee so that the state's overarching philosophy, policies, programs and practices for children, youth and young adults utilize the latest brain science to prevent and mitigate the impact of adverse childhood experiences.

3

Public Private Partnership

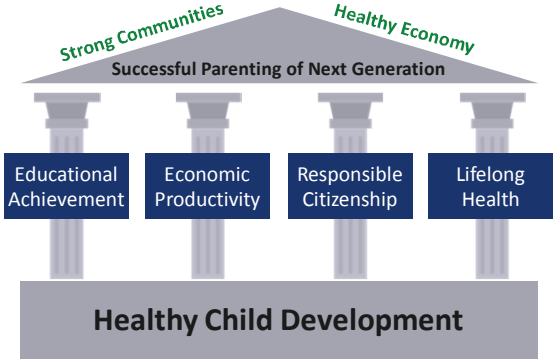
Public and Private Sector Steering Groups

Supported by:

Foundations and In-kind Resources
Tennessee State Government

ACE · THE UNIVERSITY OF MEMPHIS · THE HEALING TRUST · Tennessee State Government

4



5

Four Core Concepts of Development

1. ***Brain Architecture*** is established early in life and supports lifelong learning, behavior and health.
2. Stable, caring relationships and "***Serve and Return***" interactions shape brain architecture.
3. ***Toxic Stress*** in the early years of life can derail healthy development.
4. ***Resilience*** can be built through "Serve and Return" relationships, improving self-regulation skills and executive function. Though there are sensitive periods of brain development in early childhood and adolescence, resilience can be strengthened at any age.

6

Three Core Concepts in Early Development

1 Experiences Build Brain Architecture

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD
Center on the Developing Child HARVARD UNIVERSITY

http://developingchild.harvard.edu/resources/experiences-build-brain-architecture/

Brain Architecture Supports Lifelong Learning, Behavior and Health

7

- Brains are built over time, starting in the earliest years of life. Simple skills come first; more complex skills build on top of them.
- Cognitive, emotional and social capabilities are inextricably intertwined throughout the life course.
- A strong foundation in the early years improves the odds for positive outcomes and a weak foundation increases the odds of later difficulties.

Brain Architecture

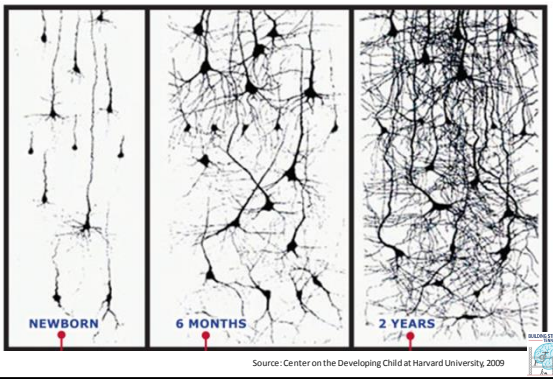
8

The early years of life matter because early experiences affect the architecture of the maturing brain. As it emerges, the quality of that architecture establishes either a sturdy or a fragile foundation for all of the development and behavior that follows. Getting things right the first time is easier than trying to fix them later.

8

More Than ONE MILLION New Neural Connections Per Second

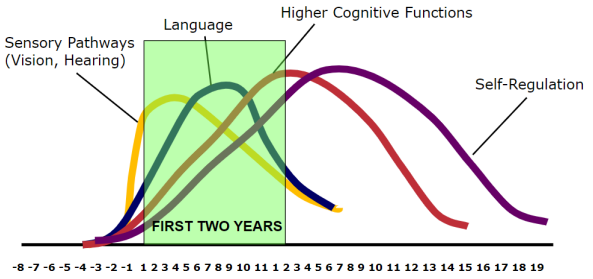
9



Source: Center on the Developing Child at Harvard University, 2009

Neural Circuits are Wired in a Bottom-Up Sequence

10



Slide courtesy of Ross A. Thompson
Source: C. Nelson (2000)

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD

11

Serve & Return Relationships Support Skill Learning

12

Three Core Concepts in Early Development

2 Serve & Return Interaction Shapes Brain Circuitry

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD
Center on the Developing Child HARVARD UNIVERSITY

http://developingchild.harvard.edu/resources/serve-return-interaction-shapes-brain-circuitry/

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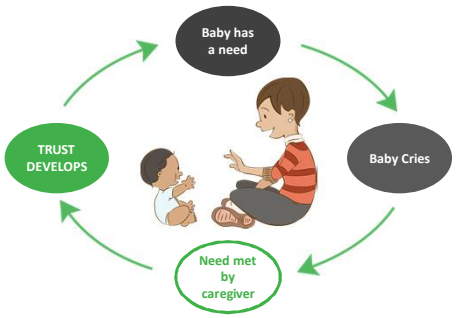
Secure Attachment Cycle



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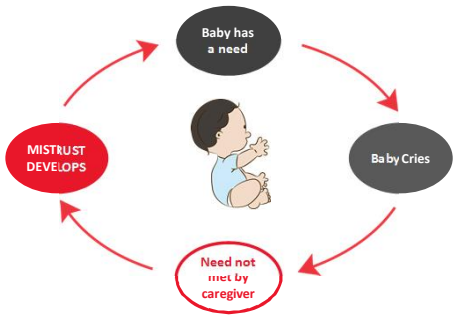
Insecure Attachment/Trauma Cycle



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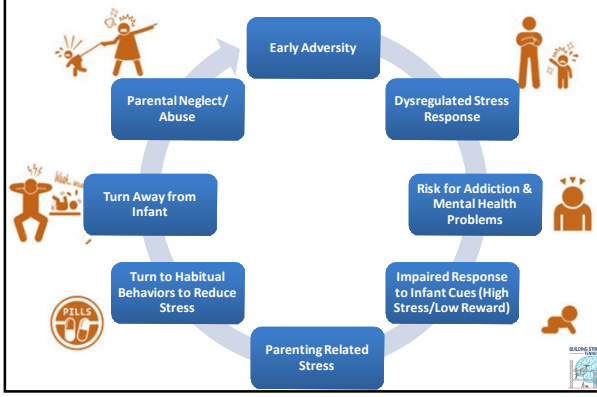
Still Face Experiment

https://www.youtube.com/watch?v=apzXGEbZht0

16

Intergenerational Transmission of Early Adversity



17

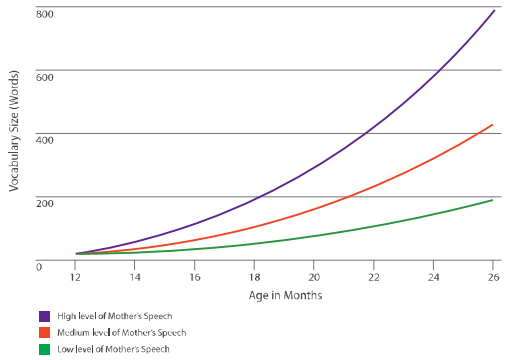
Serve & Return Interactions Build Brains and Skills

- Young children naturally seek interaction through babbling, facial expressions and gestures, and adults respond in kind.
- These “serve and return" interactions are essential for the development of healthy brain circuits.
- Therefore, systems that support the quality of relationships in early care settings, communities and homes also support the development of sturdy brain architecture.
- Quality relationships continue to be vital in adolescence in order to reinforce brain architecture and build resilience.

18

Working for Kids: Building Skills™

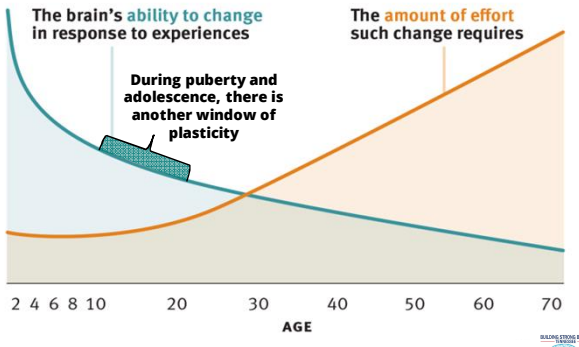
MOTHER’S SPEECH AND CHILD VOCABULARY



Sources: Cameron, n.d.; Huttenlocher et al., 1991

19

The Brain's Ability to Change Decreases Over Time



Source: National Scientific Council on the Developing Child, 2009

20

Adolescent Brain Development: A Period of Vulnerabilities and Opportunities

The brain starts to undergo a ***"remodeling"*** project in adolescence, making it an opportune time to build resilience.

- **Air Traffic Control:** Before and during puberty, a second period of rapid neural growth occurs in the prefrontal cortex.
- **"Use it or lose it":** The adolescent brain strengthens the neural connections that are used most often and prunes away those that aren't used as frequently.
- **Integration:** The *corpus callosum*, which relays information between different parts of the brain, also undergoes waves of growth during adolescence, improving self-regulation.

Sources: Siegel, 2015; Spinks, n.d.

21

Three Core Concepts in Early Development

3 Toxic Stress Derails Healthy Development

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD
Center on the Developing Child HARVARD UNIVERSITY

http://developingchild.harvard.edu/resources/toxic-stress-derails-healthy-development/

22

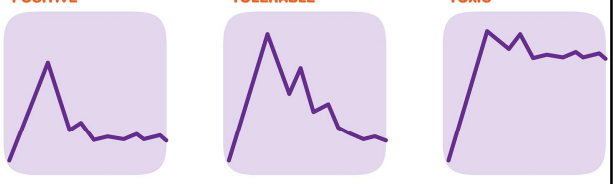
Short, stressful events like meeting new people or starting the first day of school are healthy for brain development. They prepare the brain and body for stressful situations later in life.

Tragic, unavoidable events like a natural disaster or losing a loved one aren't good for us. But if supportive caregivers are around to buffer the stress response, these events won't do lasting damage to the brain and body.

Ongoing, repeated exposure to abuse or neglect is bad for brain development. If no supportive adults are present to help buffer the stress response, stress hormones will damage developing structures in the child's brain. The result is an increased vulnerability to lifelong physical and mental health problems, including addiction.

23

Body's Response to Different Types of Stress



A normal and essential part of healthy development

EXAMPLES
getting a vaccine, first day of school

Response to a more severe stressor, limited in duration

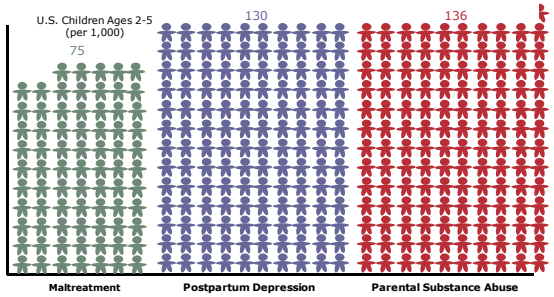
EXAMPLES
loss of a loved one, a broken bone

Experiencing strong, frequent, and/or prolonged adversity

EXAMPLES
physical or emotional abuse, exposure to violence

24

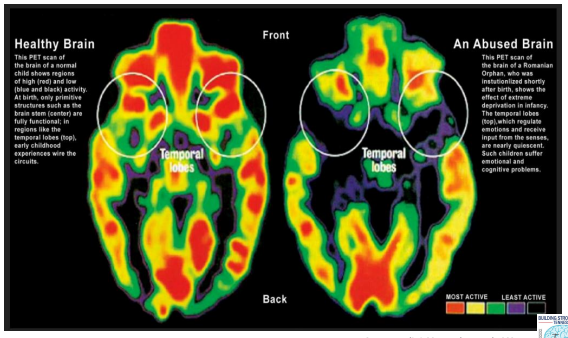
Common Sources of Toxic Stress



Source: Center on the Developing Child at Harvard University, 2007

25

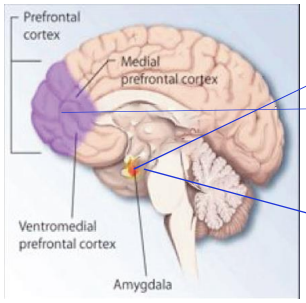
Experience Alters Brain Development
Healthy vs. Neglected Brain



Sources: Felitti, 2011; Nelson et al., 2007

26

Toxic Stress Alters Brain Development



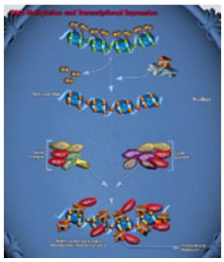
Amygdala:
Activates the stress response.
Toxic Stress: Enlargement

Prefrontal Cortex:
Usually a check to the amygdala.
Toxic Stress: Loss of neurons, less able to function.

Hippocampus:
Major role in memory and mood.
Toxic Stress: Impairment in understanding and emotion.

27

Toxic Stress Changes Gene Expression
Epigenetics



Intergenerational Transmission of Stress Response in Male Mice

28

An "Air Traffic Control System" in the Brain

- Executive functioning is a group of skills that help us to focus on multiple streams of information at the same time, set goals and make plans, make decisions in light of available information, revise plans and resist hasty actions.
- Executive functioning is a key biological foundation of school readiness, as well as outcomes in health and employability.
- Although there are sensitive periods of development, executive functioning can be built along any point in the lifespan.

29

What are Executive Function Skills?

Inhibitory Control — filter thoughts and impulses to resist temptations and distractions

Working Memory — hold and manipulate information in our heads over short periods of time

Cognitive Flexibility — adjust to changed demands, priorities or perspectives

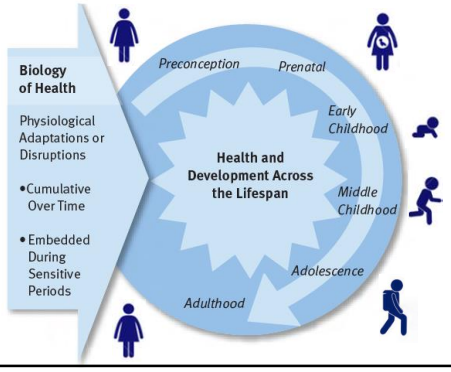
30

Building an "Air Traffic Control System" in the Developing Brain

	Working Memory	Inhibitory Control	Cognitive Flexibility
Adult	Remember multiple tasks, rules & strategies that may vary	Self-control, situationally appropriate responses	Revise actions & plans in changing circumstances
2-5 years	Remember 2 rules (shoes here, coats there)	Delay eating a treat, follow arbitrary rule	Shift actions as rules change
9-16 months	Execute simple 2-step plan (means-to-end tasks)	Begin to maintain focus despite distractions	Seek alternate methods when 1st attempt fails

Early Life Stress Impacts Lifelong Health and Development

31



How Brains are Built

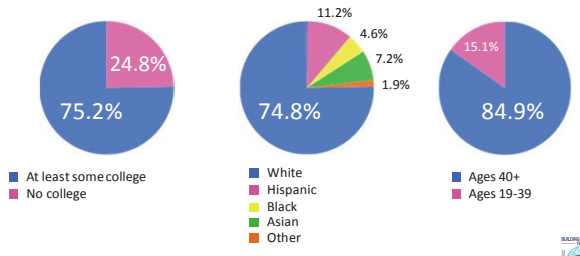
32

https://www.youtube.com/watch?v=LmVWOe1ky8s

ACE Study Demographics

33

Participants were mostly white, middle-aged, college educated and insured. They didn't face many of life's challenges such as poverty or racism.

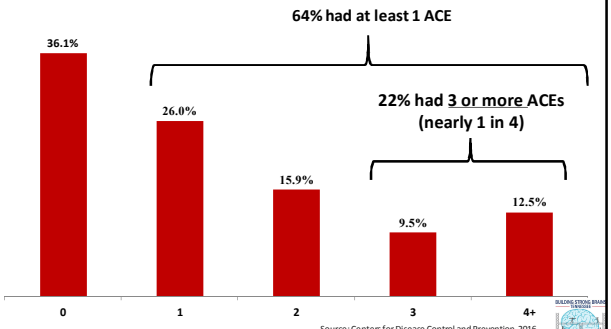


Source: Centers for Disease Control and Prevention, 2016

Number of ACEs Experienced Before Age 18 by Adults in CDC-Kaiser ACE Study

34

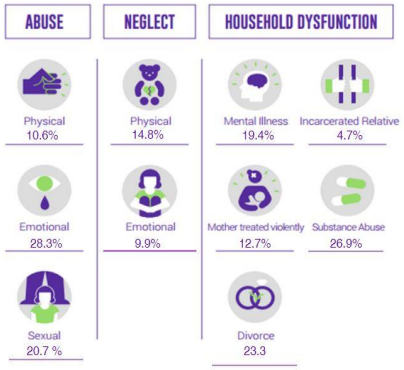
1997



Source: Centers for Disease Control and Prevention, 2016

Adverse Childhood Experiences

35

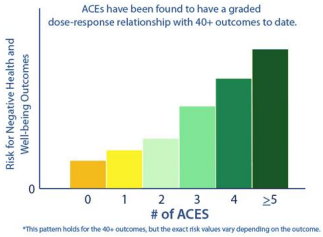


Sources: Center for Youth Wellness, n.d.; Centers for Disease Control and Prevention, 2016

ACEs Can Have Lasting Effects On…

36

- Health (obesity, diabetes, depression, suicide attempts, STDs, heart disease, cancer, stroke, COPD, broken bones)
- Behaviors (smoking, alcoholism, drug use)
- Life Potential (graduation rates, academic achievement, lost time from work)



Source: Centers for Disease Control and Prevention, 2016

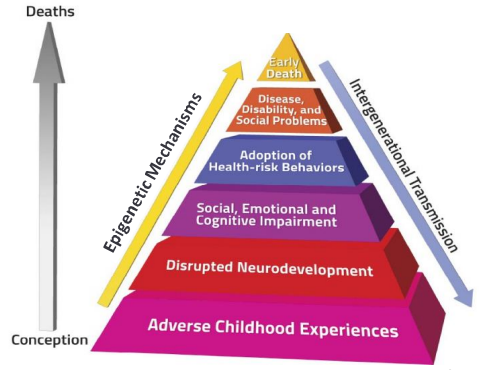
Adverse Childhood Experiences

37

https://www.youtube.com/watch?v=ccKFkcfXx-c

Mechanisms by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

38



Source: Anda, n.d.

New Additions to the ACEs Questionnaire

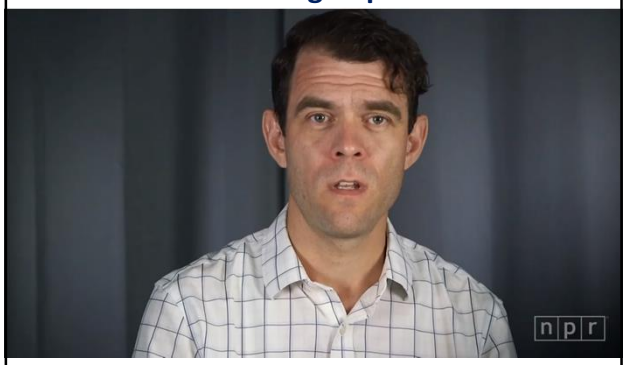
39

The Philadelphia ACE Study Questions

Conventional ACEs	Expanded ACEs
Physical Abuse	Witnessing Violence
Emotional Abuse	Living in Unsafe Neighborhoods
Sexual Abuse	Experiencing Racism
Emotional Neglect	Living in Foster Care
Physical Neglect	Experiencing Bullying
Domestic Violence	
Household Substance Abuse	
Incarcerated Care Provider	
Mental Illness in the Home	

Understanding Implicit Bias

40



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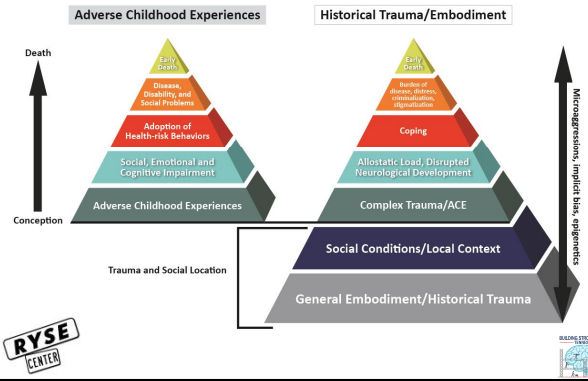
Trauma and Social Location

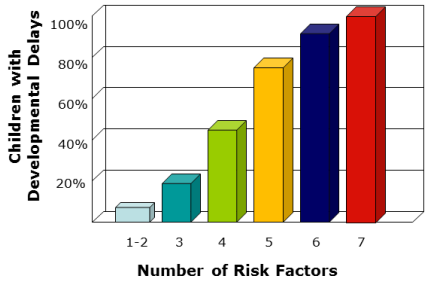
41



RYSE CENTER

Significant Adversity Impairs Developmental Milestones in the First Three Years

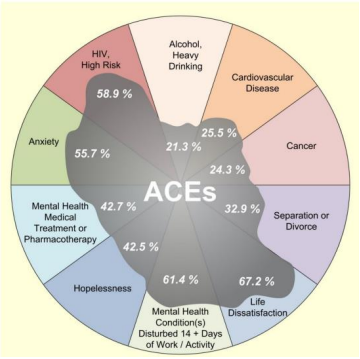
42



Source: Barth et al., 2008

43

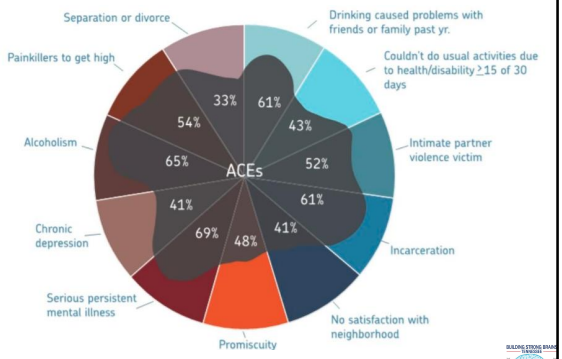
ACEs Compromise Community Prosperity



Source: ACE Response, n.d.

44

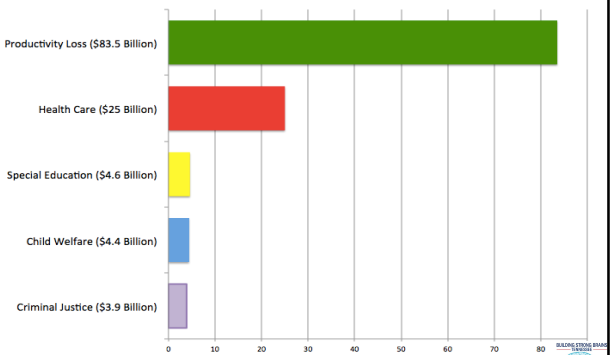
ACEs Compromise Community Prosperity



Source: Perkins, 2016

45

The Cost of ACEs

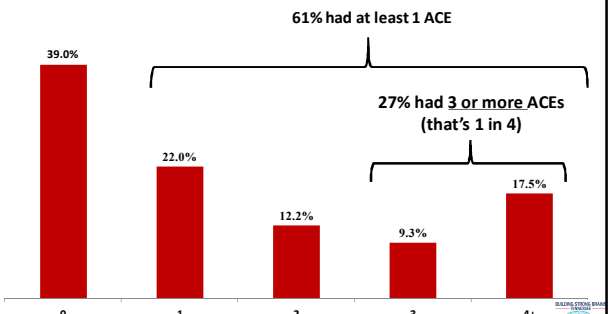


Sources: Centers for Disease Control and Prevention, n.d.; Fang et al., 2012

46

Number of ACEs Experienced Before Age 18 by Adult Tennesseans

2016

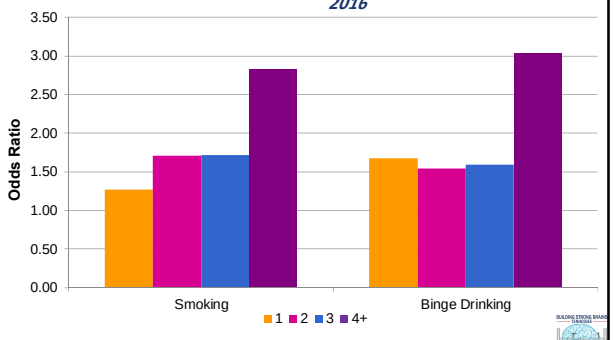


Source: Tennessee Department of Health, 2016

47

Tennesseans with Higher ACE Scores Have a Greater Risk of Engaging in Health Risk Behaviors

2016

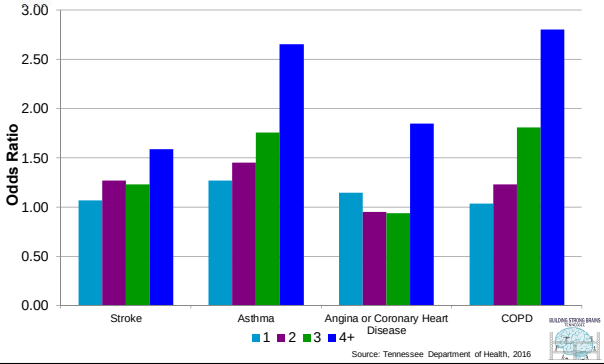


Source: Tennessee Department of Health, 2016

48

Tennesseans with Higher ACE Scores Have a Greater Risk of Disease

2016

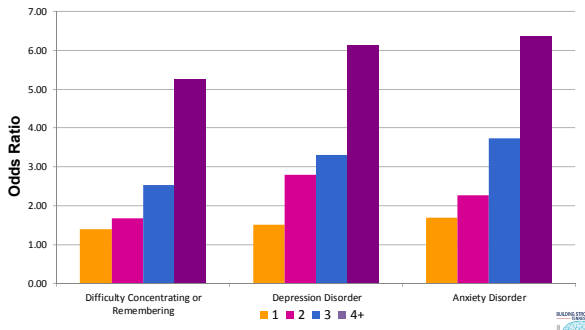


Source: Tennessee Department of Health, 2016

Tennesseans with Higher ACE Scores Have a Greater Risk of Poor Mental Health

49

2016

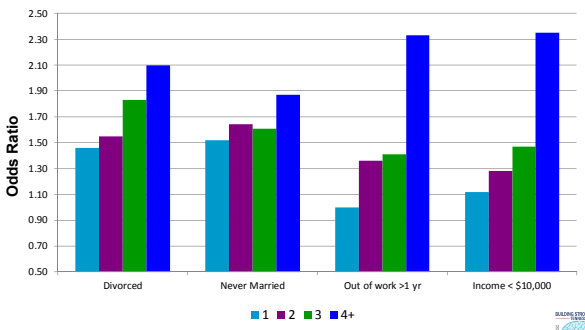


Source: Tennessee Department of Health, 2016

Tennesseans with Higher ACE Scores Have Poorer Economic Outcomes

50

2016

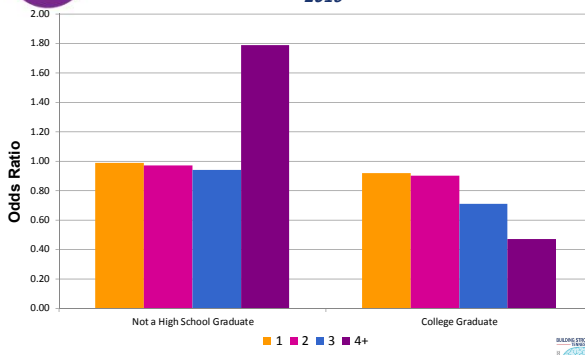


Source: Tennessee Department of Health, 2016

Tennesseans with Higher ACE Scores Attain Less Education

51

2016



Source: Tennessee Department of Health, 2016

ACEs Data on Individuals Who Are Incarcerated and/or in Substance Abuse Treatment

52

The Family Center

75% **Have 4 or more ACEs**
- Results in 5 - 10 years earlier death
- Compare to 13% from original ACE study

54% **Have 6 or more ACEs**

Number of ACEs Experienced by Newly Enrolled Evidence Based Home Visiting Participants

53

July 1, 2015 – June 30, 2016

26% **Have 4 or more ACEs**
- Results in 5 - 10 years earlier death
- Compare to 13% from original ACE study

12% **Have 6 or more ACEs**

A Caution: ACEs Are Not Destiny

54

Some children are more susceptible than others to toxic stress.

Adults other than parents and caregivers can play a buffering, caring role.

There is opportunity to repair damage across development, from early childhood through adulthood.

Interventions at any point in childhood, adolescence, and adulthood make a difference.

55

Keys to Healthy Development

- Early support for emotional, social, cognitive and language development
- Supportive relationships with adults and caregivers and opportunities to learn from infancy to young adulthood
- Highly specialized early interventions for children and families experiencing significant adversity
- Opportunities to build executive functioning skills across childhood and adolescence

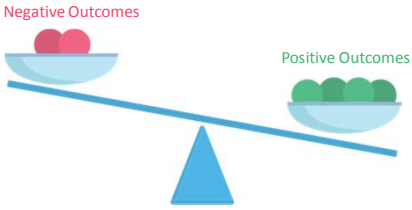
56

Fostering Resilience

https://vimeo.com/106322359

57

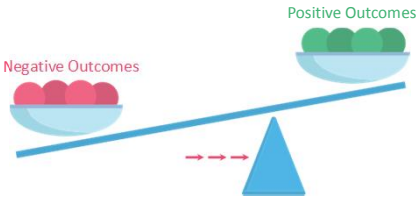
Fostering Resilience



When positive experiences outweigh negative experiences, a child's "scale" tips toward positive outcomes.

58

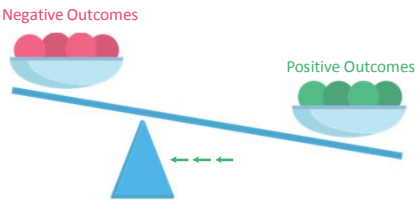
Fostering Resilience



The initial placement of the fulcrum affects how easily the scale tips toward positive or negative outcomes.

59

Fostering Resilience



Overtime, the cumulative impact of positive life experiences and coping skills can shift the fulcrum's position, making it easier to achieve positive outcomes.

60

Children of Color are More Likely to Experience Systemic Barriers to Building Resilience

Assure Every Child's Relationships and Environments Are:

61

Improving Air Traffic Control Helps with Stress Management Across the Lifespan

62

- Focusing Attention
- Problem Solving
- Planning Ahead
- Behavior Regulation
- Controlling Impulses
- Adjusting to New Circumstances

Executive Function and Self Regulation Skills can be built at any point across the lifespan.

Source: Cameron, n.d.

Collective Ingenuity

63

ACEs Require Public Health Approaches

64

Primary Prevention
Creating safe, stable, nurturing relationships and environments as well as community infrastructures that promote social cohesion

- Raise Awareness
- Policy Change
- Norms Change

Secondary Prevention — Services for those "at risk"

Tertiary Prevention — Treatment Services

Use a Trauma-Informed Approach in Your Organization and Community

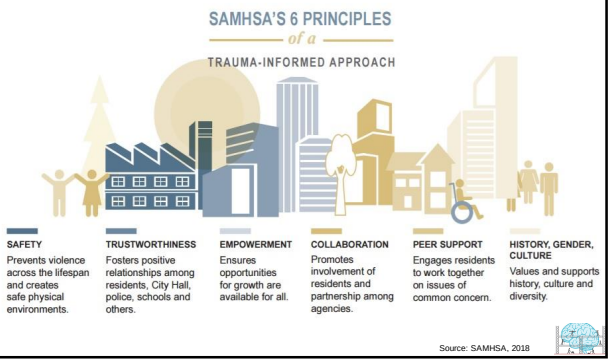
65

- According to SAMHSA's concept of a trauma-informed approach, "A program, organization, or system that is trauma-informed:
  1. *Realizes* the widespread impact of trauma and understands potential paths for recovery;
  2. *Recognizes* the signs and symptoms of trauma in clients, families, staff, and others involved with the system;
  3. *Responds* by fully integrating knowledge about trauma into policies, procedures, and practices; and
  4. Seeks to actively resist *re-traumatization*."
- A trauma-informed approach can be implemented in any type of service setting or organization and is distinct from trauma-specific interventions or treatments that are designed specifically to address the consequences of trauma and to facilitate healing.

Source: SAMHSA, 2018

Use a Trauma-Informed Approach in Your Organization and Community

66

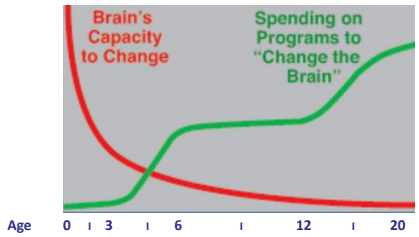


Source: SAMHSA, 2018

67

Move the Needle by Investing Early

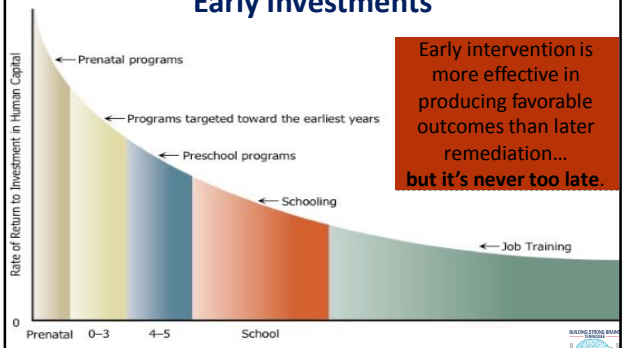
Focus has to shift from remediation to prevention and not just "prevention," but primary prevention



Source: Perry, 2004

68

The Biggest Returns Come From Early Investments

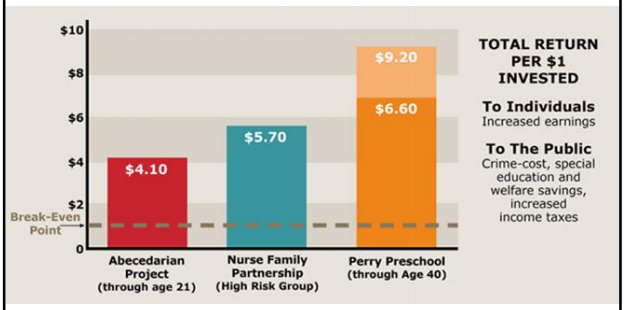


Early intervention is more effective in producing favorable outcomes than later remediation… **but it's never too late.**

Source: Heckman, 2018

69

Returns for Every Dollar Invested in Early Childhood Programs



Source: Center on the Developing Child at Harvard University, 2009

70

Create Charging Stations

71

Support Mental Levelness in Young Children

https://vimeo.com/120444414

72

Build Executive Functioning in Childhood and Adolescence

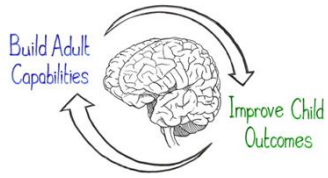
- Sports and Physical Activity
- Goal Setting, Planning and Monitoring
- Yoga, Meditation and Mindfulness Activities
- Journaling and Self-Talk
- Logic Puzzles and Computer Games
- Theater, Music and Dance

Source: Center on the Developing Child at Harvard University, 2014

73

Use a Two- and Three-Generation Approach

- Early Childhood intervention also promotes healthy parenting by those children as adults
- Early "Child" Intervention needs to include focus on adult development as caregivers and on those skills inherent to caring for others
- Ensuring healthier, more mindful, socially connected caregivers positively impacts child health (and also the next generation)



74

What CAN Be Done About ACEs Across the Lifespan?

- Adopt Trauma-Informed School Policies and Practices
- Access to High-Quality, Affordable Childcare and Pre-K
- Home Visiting to Pregnant Women and Families with Newborns
- Business and Organization Policies that support working parents
- Access to Integrated Healthcare
- Parent Support Programs for Teens and Teen Pregnancy Prevention Programs

75

What CAN Be Done About ACEs Across the Lifespan?

- Access to Mental Health and Substance Abuse Treatment
- Sufficient Income Support for Low-Income Families
- Intimate Partner Violence Prevention
- Bringing Community Development and Childhood Development together
- Health System Investment in Communities
- Social Supports for Parents

…and so much more

76

Prevention, Mitigation and Treatment of Adverse Childhood Experiences: Anticipated Multi-Sector, Multi-Level Public and Private Impacts

77

The New Norm: Shifting the Conversation…

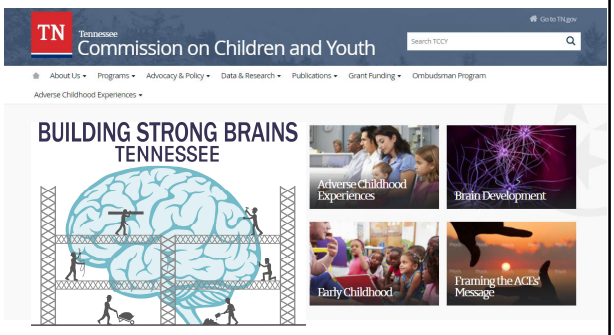
What is wrong with you?

TO

What has happened to you?

78

Further Information



Tennessee Commission on Children and Youth Website
https://www.tn.gov/tccy/topic/tccy-aces

79

Adverse Childhood Experiences Community Survey

http://bit.ly/2dZOeWg

Facilitator's Guide Cross-Walk

1.5 Hour Slide Deck

Slide 1, facilitator's guide pg. N/A

Slide 2, facilitator's guide pg. 9

Slide 3, facilitator's guide pg. 11

Slide 4, facilitator's guide pg. 12

Slide 5, facilitator's guide pg. 14

Slide 6, facilitator's guide pg. 15

Slide 7, facilitator's guide pg. 16

Slide 8, facilitator's guide pg. 17

Slide 9, facilitator's guide pg. 21

Slide 10, facilitator's guide pg. 22

Slide 11, facilitator's guide pg. 27

Slide 12, facilitator's guide pg. 28-29

Slide 13, facilitator's guide pg. 31

Slide 14, facilitator's guide pg. 33

Slide 15, facilitator's guide pg. 34

Slide 16, facilitator's guide pg. 35-36

Slide 17, facilitator's guide pg. 37

Slide 18, facilitator's guide pg. 38

Slide 19, facilitator's guide pg. 39

Slide 20, facilitator's guide pg. 40-41

Slide 21, facilitator's guide pg. 42

Slide 22, facilitator's guide pg. 46

Slide 23, facilitator's guide pg. 47

Slide 24, facilitator's guide pg. 48

Slide 25, facilitator's guide pg. 49

Slide 26, facilitator's guide pg. 50-51

Slide 27, facilitator's guide pg. 52

Slide 28, facilitator's guide pg. 53

Slide 29, facilitator's guide pg. 54

Slide 30, facilitator's guide pg. 56-57

Slide 31, facilitator's guide pg. 59-60
(slide 33 may be swapped out for the other "oil slick" slide depending on your audience.)

Slide 32, facilitator's guide pg. 61

Slide 33, facilitator's guide pg. 62

Slide 34, facilitator's guide pg. 72

Slide 35, facilitator's guide pg. 73-75

Slide 36, facilitator's guide pg. 77-78

Slide 37, facilitator's guide pg. 79-80

Slide 38, facilitator's guide pg. 81

Slide 39, facilitator's guide pg. 85

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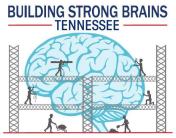
Slide 47, facilitator's guide pg. 96

Slide 48, facilitator's guide pg. 97

1

The Role of Life Experiences in Shaping Brain Development



Name
Title
Organization

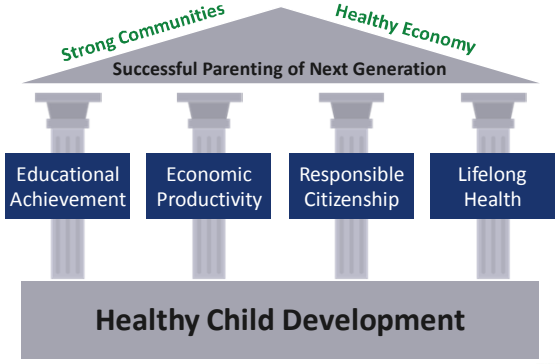
2

Building Strong Brains Tennessee

Mission

We work to change the culture of Tennessee so that the state's overarching philosophy, policies, programs and practices for children, youth and young adults utilize the latest brain science to prevent and mitigate the impact of adverse childhood experiences.

3



4

Four Core Concepts of Development

1. ***Brain Architecture*** is established early in life and supports lifelong learning, behavior and health.
2. Stable, caring relationships and "***Serve and Return***" interactions shape brain architecture.
3. ***Toxic Stress*** in the early years of life can derail healthy development.
4. ***Resilience*** can be built through "Serve and Return" relationships, improving self-regulation skills and executive function. Though there are sensitive periods of brain development in early childhood and adolescence, resilience can be strengthened at any age.

5

http://developingchild.harvard.edu/resources/experiences-build-brain-architecture/

6

Brain Architecture Supports Lifelong Learning, Behavior and Health

- Brains are built over time, starting in the earliest years of life. Simple skills come first; more complex skills build on top of them.
- Cognitive, emotional and social capabilities are inextricably intertwined throughout the life course.
- A strong foundation in the early years improves the odds for positive outcomes and a weak foundation increases the odds of later difficulties.

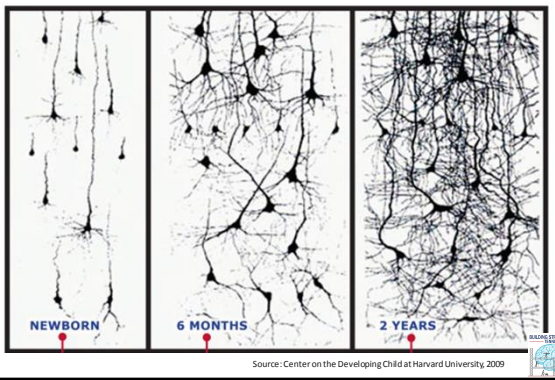
7

Brain Architecture

The early years of life matter because early experiences affect the architecture of the maturing brain. As it emerges, the quality of that architecture establishes either a sturdy or a fragile foundation for all of the development and behavior that follows. Getting things right the first time is easier than trying to fix them later.

8

More Than ONE MILLION
New Neural Connections Per Second



Source: Center on the Developing Child at Harvard University, 2009

9

10

Three Core Concepts in Early Development

2 Serve & Return Interaction Shapes Brain Circuitry

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD
Center on the Developing Child HARVARD UNIVERSITY

http://developingchild.harvard.edu/resources/serve-return-interaction-shapes-brain-circuitry/

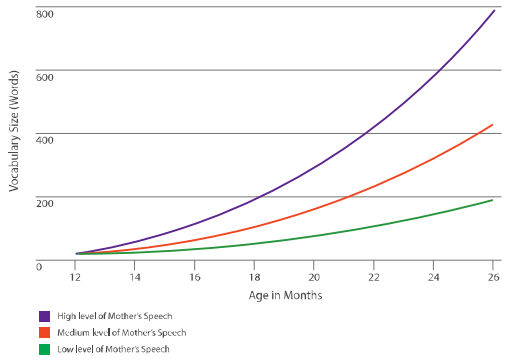
11

Serve & Return Interactions Build Brains and Skills

- Young children naturally seek interaction through babbling, facial expressions and gestures, and adults respond in kind.
- These “serve and return" interactions are essential for the development of healthy brain circuits.
- Therefore, systems that support the quality of relationships in early care settings, communities and homes also support the development of sturdy brain architecture.
- Quality relationships continue to be vital in adolescence in order to reinforce brain architecture and build resilience.

12

Working for Kids: Building Skills™
MOTHER'S SPEECH AND CHILD VOCABULARY



Sources: Cameron, n.d.; Huttenlocher et al., 1991

13

Adolescent Brain Development: A Period of Vulnerabilities and Opportunities

The brain starts to undergo a ***"remodeling"*** project in adolescence, making it an opportune time to build resilience.

- **Air Traffic Control:** Before and during puberty, a second period of rapid neural growth occurs in the prefrontal cortex.
- **"Use it or lose it":** The adolescent brain strengthens the neural connections that are used most often and prunes away those that aren't used as frequently.
- **Integration:** The *corpus callosum*, which relays information between different parts of the brain, also undergoes waves of growth during adolescence, improving self-regulation.

Sources: Siegel, 2015; Spinks, n.d.

14

Three Core Concepts in Early Development

3 Toxic Stress Derails Healthy Development

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD
Center on the Developing Child HARVARD UNIVERSITY

http://developingchild.harvard.edu/resources/toxic-stress-derails-healthy-development/

15

Positive Stress

Short, stressful events like meeting new people or starting the first day of school are healthy for brain development. They prepare the brain and body for stressful situations later in life.

Tolerable Stress

Tragic, unavoidable events like a natural disaster or losing a loved one aren't good for us. But if supportive caregivers are around to buffer the stress response, these events won't do lasting damage to the brain and body.

Toxic Stress

Ongoing, repeated exposure to abuse or neglect is bad for brain development. If no supportive adults are present to help buffer the stress response, stress hormones will damage developing structures in the child's brain. The result is an increased vulnerability to lifelong physical and mental health problems, including addiction.

16

Body's Response to Different Types of Stress

POSITIVE

A normal and essential part of healthy development

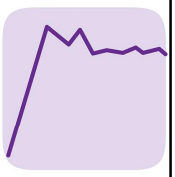
EXAMPLES
getting a vaccine, first day of school

TOLERABLE

Response to a more severe stressor, limited in duration

EXAMPLES
loss of a loved one, a broken bone

TOXIC

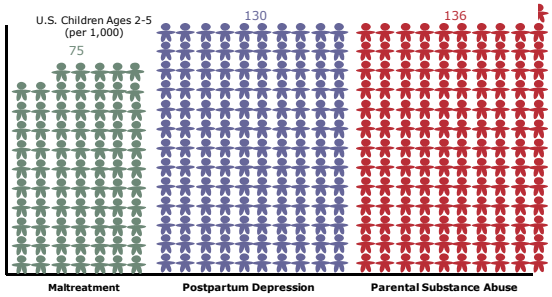


Experiencing strong, frequent, and/or prolonged adversity

EXAMPLES
physical or emotional abuse, exposure to violence

17

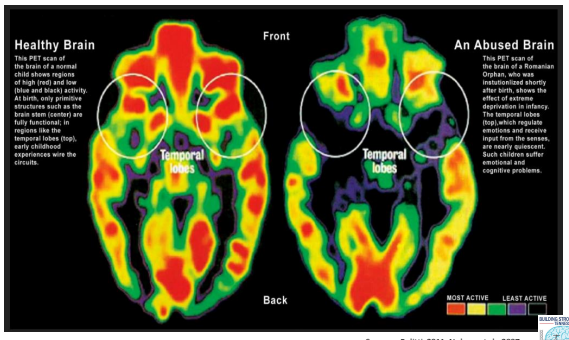
Common Sources of Toxic Stress



Source: Center on the Developing Child at Harvard University, 2007

18

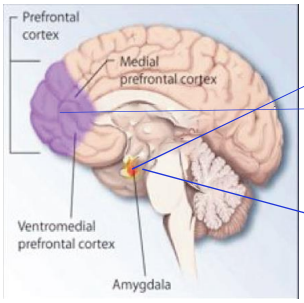
Experience Alters Brain Development Healthy vs. Neglected Brain



Sources: Felitti, 2011; Nelson et al., 2007

19

Toxic Stress Alters Brain Development



Amygdala: Activates the stress response.
Toxic Stress: Enlargement

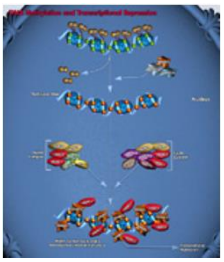
Prefrontal Cortex: Usually a check to the amygdala.
Toxic Stress: Loss of neurons, less able to function.

Hippocampus: Major role in memory and mood.
Toxic Stress: Impairment in understanding and emotion.

20

Toxic Stress Changes Gene Expression

Epigenetics



Intergenerational Transmission of Stress Response in Male Mice

21

An "Air Traffic Control System" in the Brain

- Executive functioning is a group of skills that help us to focus on multiple streams of information at the same time, set goals and make plans, make decisions in light of available information, revise plans and resist hasty actions.
- Executive functioning is a key biological foundation of school readiness, as well as outcomes in health and employability.
- Although there are sensitive periods of development, executive functioning can be built along any point in the lifespan.

22

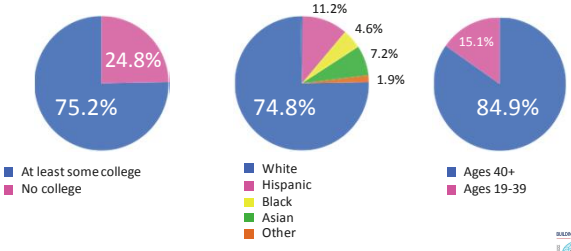
How Brains are Built

https://www.youtube.com/watch?v=LmVWOe1ky8s

23

ACE Study Demographics

Participants were mostly white, middle-aged, college educated and insured. They didn't face many of life's challenges such as poverty or racism.

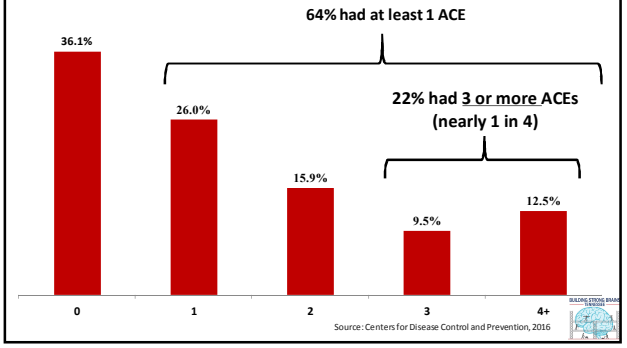


Source: Centers for Disease Control and Prevention, 2016

24

Number of ACEs Experienced Before Age 18 by Adults in CDC-Kaiser ACE Study

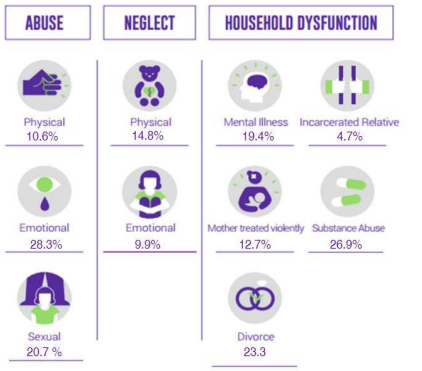
1997



Source: Centers for Disease Control and Prevention, 2016

25

Adverse Childhood Experiences

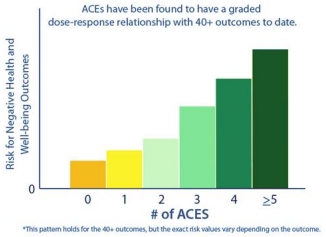


Sources: Center for Youth Wellness, n.d.; Centers for Disease Control and Prevention, 2016

26

ACEs Can Have Lasting Effects On…

- Health (obesity, diabetes, depression, suicide attempts, STDs, heart disease, cancer, stroke, COPD, broken bones)
- Behaviors (smoking, alcoholism, drug use)
- Life Potential (graduation rates, academic achievement, lost time from work)



Source: Centers for Disease Control and Prevention, 2016

27

Adverse Childhood Experiences

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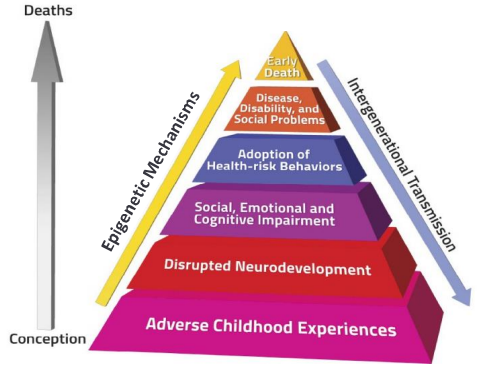
Mechanisms by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan



Source: Anda, n.d.

29

New Additions to the ACEs Questionnaire

The Philadelphia ACE Study Questions

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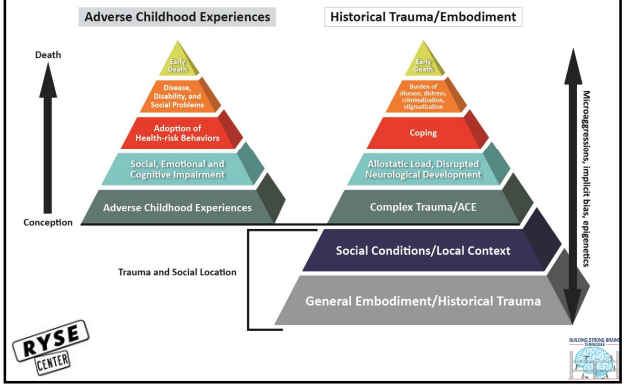
Mental Illness in the Home	

30

Trauma and Social Location



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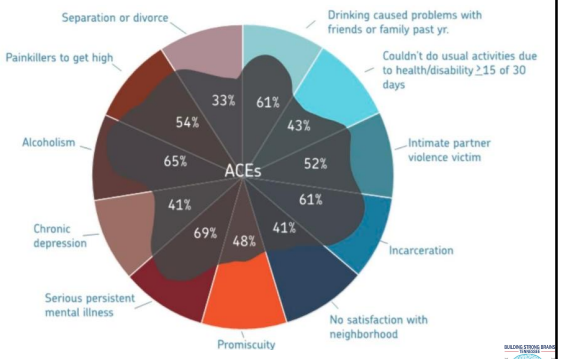
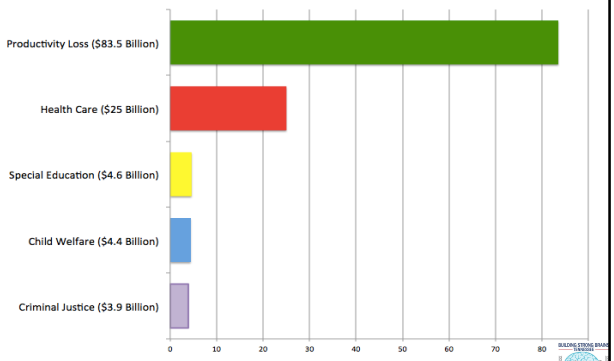
ACEs Compromise Community Prosperity



Source: Perkins, 2016

32

The Cost of ACEs



Sources: Centers for Disease Control and Prevention, n.d.; Fang et al., 2012

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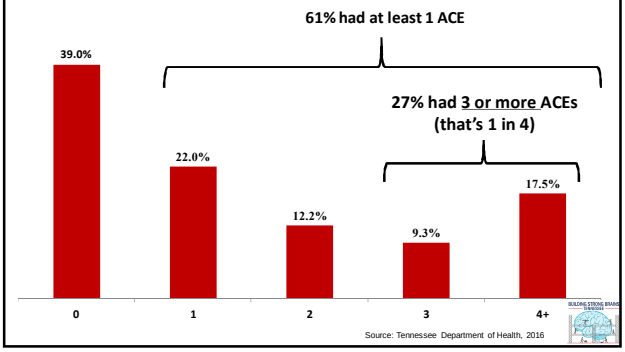

Source: Tennessee Department of Health, 2016

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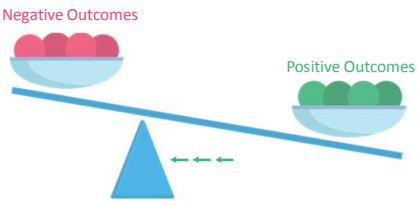
Fostering Resilience



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- Focusing Attention
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Executive Function and Self Regulation Skills can be built at any point across the lifespan.

Source: Cameron, n.d.

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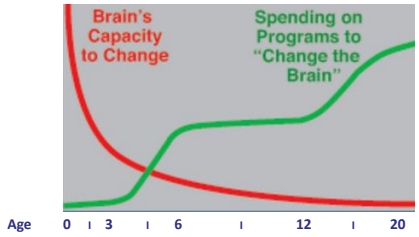

Source: Perry, 2004

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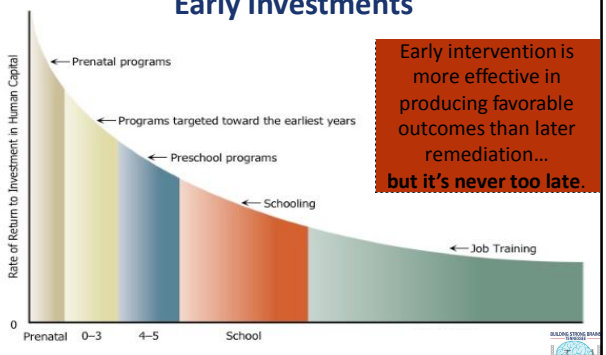
The Biggest Returns Come From Early Investments



Early intervention is more effective in producing favorable outcomes than later remediation…
but it's never too late.

Source: Heckman, 2018

41

Build Executive Functioning in Childhood and Adolescence

- Sports and Physical Activity
- Goal Setting, Planning and Monitoring
- Yoga, Meditation and Mindfulness Activities
- Journaling and Self-Talk
- Logic Puzzles and Computer Games
- Theater, Music and Dance

Source: Center on the Developing Child at Harvard University, 2014

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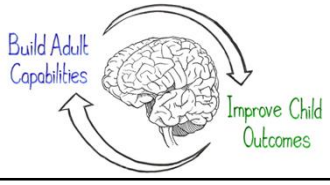

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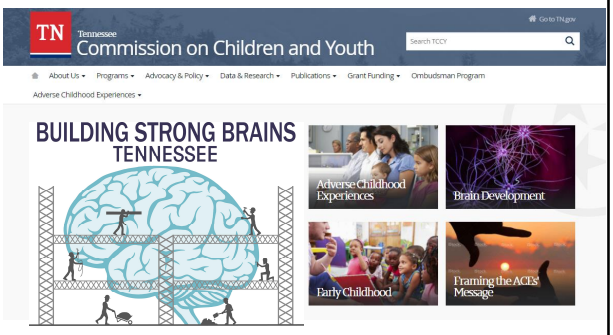

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Facilitator's Guide Cross-Walk

1 Hour Slide Deck

Slide 1, facilitator's guide pg. N/A

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Slide 23, facilitator's guide pg. 50-51

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Slide 27, facilitator's guide pg. 56-57

Slide 28, facilitator's guide pg. 59-60
(slide 28 may be swapped out for the other "oil slick" slide depending on your audience.)

Slide 29, facilitator's guide pg. 62

Slide 30, facilitator's guide pg. 72

Slide 31, facilitator's guide pg. 73-75

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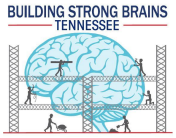
Slide 41, facilitator's guide pg. 96

Slide 42, facilitator's guide pg. 97

1

The Role of Life Experiences in Shaping Brain Development



Name
Title
Organization

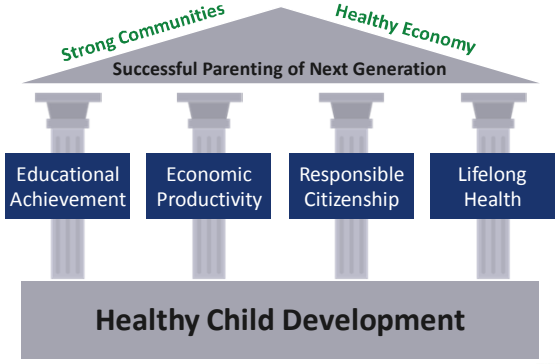
2

Building Strong Brains Tennessee

Mission

We work to change the culture of Tennessee so that the state's overarching philosophy, policies, programs and practices for children, youth and young adults utilize the latest brain science to prevent and mitigate the impact of adverse childhood experiences.

3



4

Four Core Concepts of Development

1. ***Brain Architecture*** is established early in life and supports lifelong learning, behavior and health.
2. Stable, caring relationships and "***Serve and Return***" interactions shape brain architecture.
3. ***Toxic Stress*** in the early years of life can derail healthy development.
4. ***Resilience*** can be built through "Serve and Return" relationships, improving self-regulation skills and executive function. Though there are sensitive periods of brain development in early childhood and adolescence, resilience can be strengthened at any age.

5

http://developingchild.harvard.edu/resources/experiences-build-brain-architecture/

6

Brain Architecture Supports Lifelong Learning, Behavior and Health

- Brains are built over time, starting in the earliest years of life. Simple skills come first; more complex skills build on top of them.
- Cognitive, emotional and social capabilities are inextricably intertwined throughout the life course.
- A strong foundation in the early years improves the odds for positive outcomes and a weak foundation increases the odds of later difficulties.

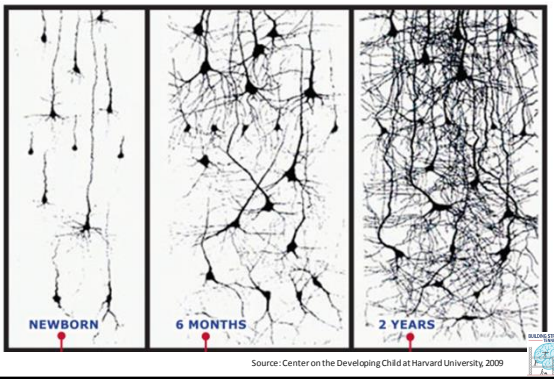
7

Brain Architecture

The early years of life matter because early experiences affect the architecture of the maturing brain. As it emerges, the quality of that architecture establishes either a sturdy or a fragile foundation for all of the development and behavior that follows. Getting things right the first time is easier than trying to fix them later.

8

More Than ONE MILLION
New Neural Connections Per Second



Source: Center on the Developing Child at Harvard University, 2009

9

10

Three Core Concepts in Early Development

2 Serve & Return Interaction Shapes Brain Circuitry

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD
Center on the Developing Child HARVARD UNIVERSITY

http://developingchild.harvard.edu/resources/serve-return-interaction-shapes-brain-circuitry/

11

Serve & Return Interactions Build Brains and Skills

- Young children naturally seek interaction through babbling, facial expressions and gestures, and adults respond in kind.
- These "serve and return" interactions are essential for the development of healthy brain circuits.
- Therefore, systems that support the quality of relationships in early care settings, communities and homes also support the development of sturdy brain architecture.
- Quality relationships continue to be vital in adolescence in order to reinforce brain architecture and build resilience.

12

Adolescent Brain Development: A Period of Vulnerabilities and Opportunities

The brain starts to undergo a ***"remodeling"*** project in adolescence, making it an opportune time to build resilience.

- **Air Traffic Control:** Before and during puberty, a second period of rapid neural growth occurs in the prefrontal cortex.
- **"Use it or lose it":** The adolescent brain strengthens the neural connections that are used most often and prunes away those that aren't used as frequently.
- **Integration:** The *corpus callosum*, which relays information between different parts of the brain, also undergoes waves of growth during adolescence, improving self-regulation.

Sources: Siegel, 2015; Spinks, n.d.

13

Three Core Concepts in Early Development

3 Toxic Stress Derails Healthy Development

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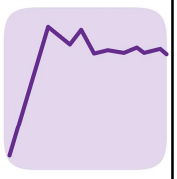
14

Positive Stress	Tolerable Stress	Toxic Stress
		
Short, stressful events like meeting new people or starting the first day of school are healthy for brain development. They prepare the brain and body for stressful situations later in life.	Tragic, unavoidable events like a natural disaster or losing a loved one aren't good for us. But if supportive caregivers are around to buffer the stress response, these events won't do lasting damage to the brain and body.	Ongoing, repeated exposure to abuse or neglect is bad for brain development. If no supportive adults are present to help buffer the stress response, stress hormones will damage developing structures in the child's brain. The result is an increased vulnerability to lifelong physical and mental health problems, including addiction.

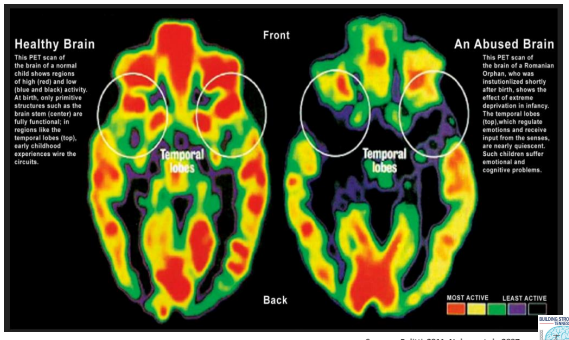
15

Body's Response to Different Types of Stress

POSITIVE	TOLERABLE	TOXIC
		
A normal and essential part of healthy development	**Response to a more severe stressor, limited in duration**	**Experiencing strong, frequent, and/or prolonged adversity**
EXAMPLES *getting a vaccine, first day of school*	EXAMPLES *loss of a loved one, a broken bone*	EXAMPLES *physical or emotional abuse, exposure to violence*

16

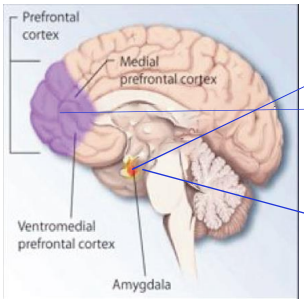
Experience Alters Brain Development Healthy vs. Neglected Brain



Sources: Felitti, 2011; Nelson et al., 2007

17

Toxic Stress Alters Brain Development



Amygdala:
Activates the stress response.
Toxic Stress: Enlargement

Prefrontal Cortex:
Usually a check to the amygdala.
Toxic Stress: Loss of neurons, less able to function.

Hippocampus:
Major role in memory and mood.
Toxic Stress: Impairment in understanding and emotion.

18

An "Air Traffic Control System" in the Brain

- Executive functioning is a group of skills that help us to focus on multiple streams of information at the same time, set goals and make plans, make decisions in light of available information, revise plans and resist hasty actions.
- Executive functioning is a key biological foundation of school readiness, as well as outcomes in health and employability.
- Although there are sensitive periods of development, executive functioning can be built along any point in the lifespan.

How Brains are Built

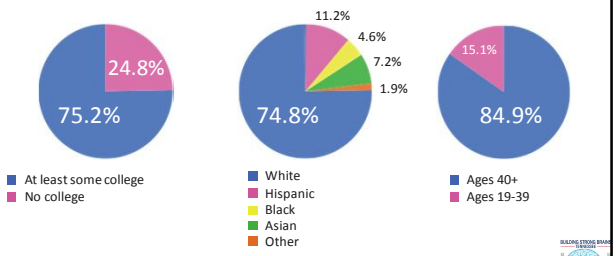
19

https://www.youtube.com/watch?v=LmVWOe1ky8s

ACE Study Demographics

20

Participants were mostly white, middle-aged, college educated and insured. They didn't face many of life's challenges such as poverty or racism.

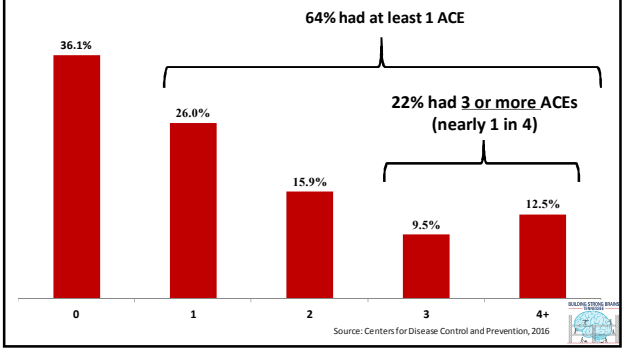


Source: Centers for Disease Control and Prevention, 2016

Number of ACEs Experienced Before Age 18 by Adults in CDC-Kaiser ACE Study

21

1997



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Adverse Childhood Experiences

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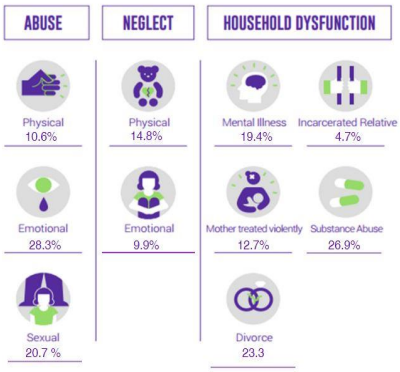

Sources: Center for Youth Wellness, n.d.; Centers for Disease Control and Prevention, 2016

ACEs Can Have Lasting Effects On…

23

- Health (obesity, diabetes, depression, suicide attempts, STDs, heart disease, cancer, stroke, COPD, broken bones)
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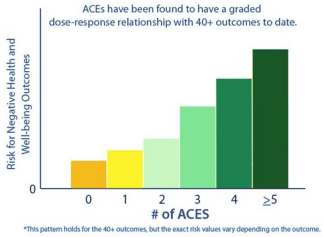
- Life Potential (graduation rates, academic achievement, lost time from work)



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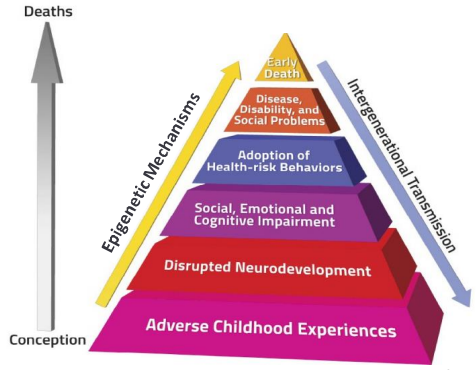

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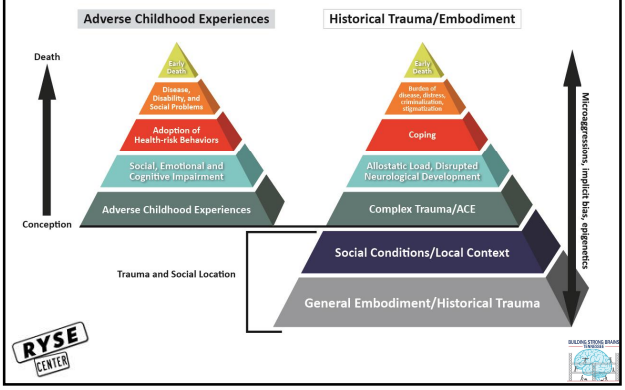

RYSE CENTER

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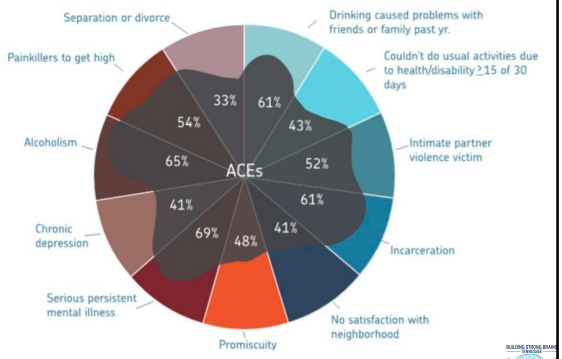

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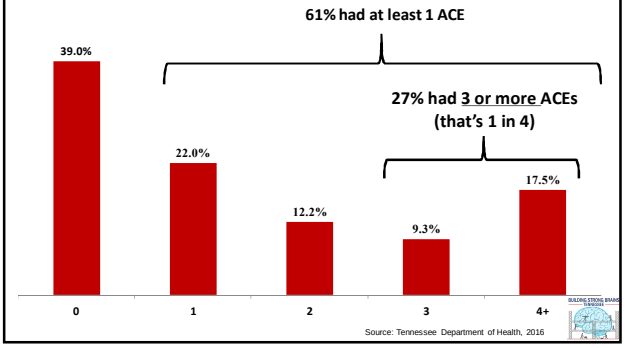

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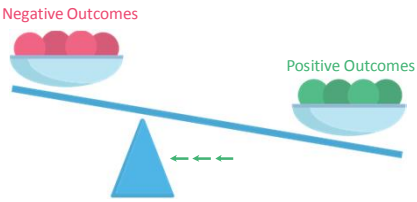

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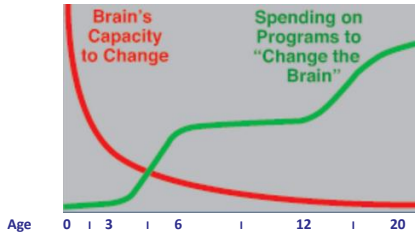

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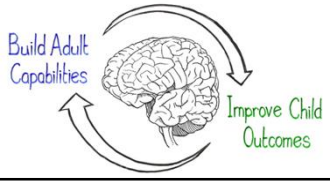

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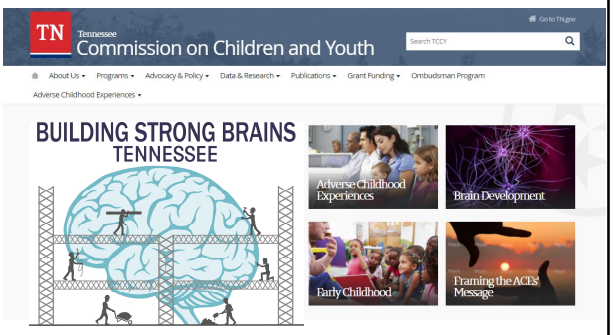

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Slide 14, facilitator's guide pg. 59-60

Slide 15, facilitator's guide pg. 62

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Slide 18, facilitator's guide pg. 79

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Slide 21, facilitator's guide pg. 93

Slide 22, facilitator's guide pg. 94

Slide 23 facilitator's guide pg. 95

Slide 24, facilitator's guide pg. 96

Slide 25, facilitator's guide pg. 97

*Note the change in slide order from the original deck

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The Role of Life Experiences in Shaping Brain Development

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We work to change the culture of Tennessee so that the state's overarching philosophy, policies, programs and practices for children, youth and young adults utilize the latest brain science to prevent and mitigate the impact of adverse childhood experiences.

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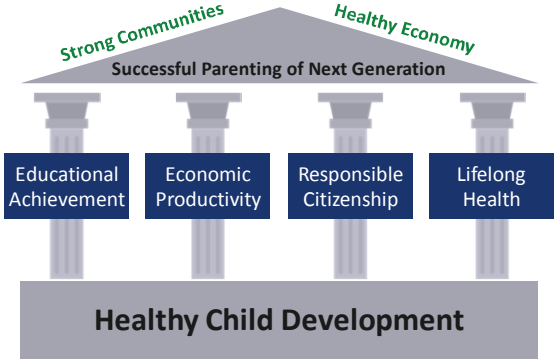

4

Brain Architecture

The early years of life matter because early experiences affect the architecture of the maturing brain. As it emerges, the quality of that architecture establishes either a sturdy or a fragile foundation for all of the development and behavior that follows. Getting things right the first time is easier than trying to fix them later.

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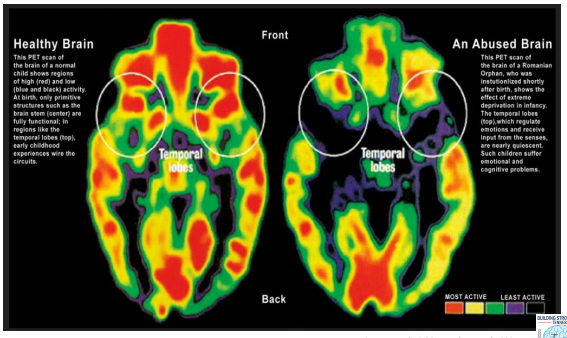
Experience Alters Brain Development
Healthy vs. Neglected Brain

7



Sources: Felitti, 2011; Nelson et al., 2007

An "Air Traffic Control System" in the Brain

8

- Executive functioning is a group of skills that help us to focus on multiple streams of information at the same time, set goals and make plans, make decisions in light of available information, revise plans and resist hasty actions.
- Executive functioning is a key biological foundation of school readiness, as well as outcomes in health and employability.
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How Brains are Built

9

https://www.youtube.com/watch?v=LmVWOe1ky8s

Adverse Childhood Experiences

10

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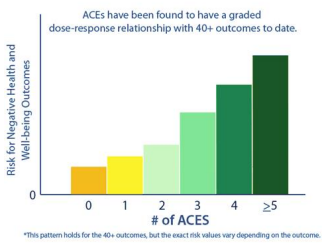
ACEs Can Have Lasting Effects On…

11

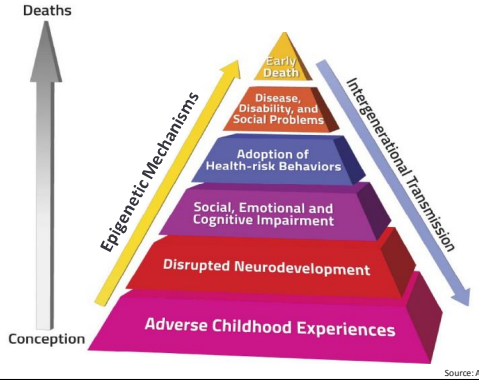
- Health (obesity, diabetes, depression, suicide attempts, STDs, heart disease, cancer, stroke, COPD, broken bones)
- Behaviors (smoking, alcoholism, drug use)
- Life Potential (graduation rates, academic achievement, lost time from work)



Source: Centers for Disease Control and Prevention, 2016

Mechanisms by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

12



Source: Anda, n.d.

New Additions to the ACEs Questionnaire

13

The Philadelphia ACE Study Questions

Conventional ACEs	Expanded ACEs
Physical Abuse	Witnessing Violence
Emotional Abuse	Living in Unsafe Neighborhoods
Sexual Abuse	Experiencing Racism
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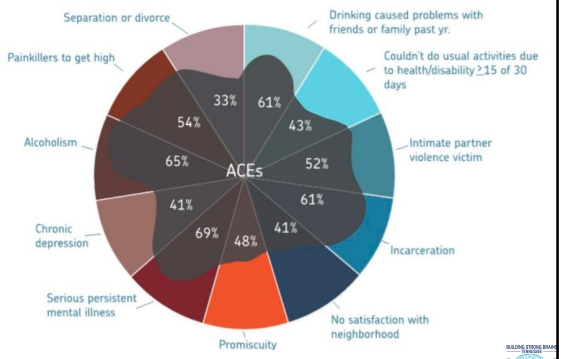
Domestic Violence	
Household Substance Abuse	
Incarcerated Care Provider	
Mental Illness in the Home	

ACEs Compromise Community Prosperity

14



Source: Perkins, 2016

Number of ACEs Experienced Before Age 18 by Adult Tennesseans

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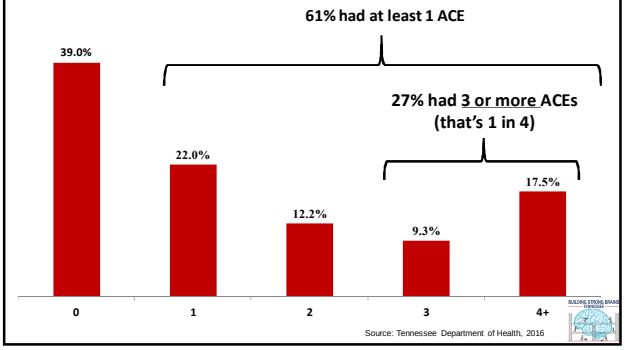

Source: Tennessee Department of Health, 2016

Fostering Resilience

16

https://vimeo.com/106322359

Assure Every Child's Relationships and Environments Are:

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Improving Air Traffic Control Helps with Stress Management Across the Lifespan

18

Focusing Attention
Problem Solving
Planning Ahead
Behavior Regulation
Controlling Impulses
Adjusting to New Circumstances

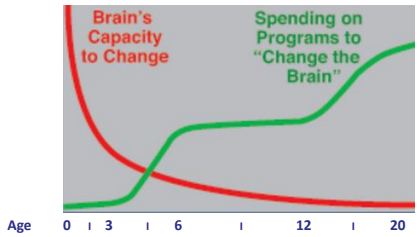
Executive Function and Self Regulation Skills can be built at any point across the lifespan.

Source: Cameron, n.d.

19

Move the Needle by Investing Early

Focus has to shift from remediation to prevention and not just "prevention," but primary prevention



Source: Perry, 2004

20

What CAN Be Done About ACEs Across the Lifespan?

- Adopt Trauma-Informed School Policies and Practices
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…and so much more

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Prevention, Mitigation and Treatment of Adverse Childhood Experiences Anticipated Multi-Sector, Multi-Level Public and Private Impacts

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The New Norm: Shifting the Conversation…

What is wrong with you?

TO

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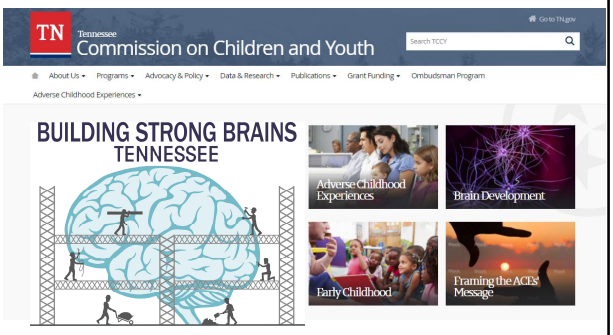
Further Information



Tennessee Commission on Children and Youth Website
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25

Adverse Childhood Experiences Community Survey

http://bit.ly/2dZOeWg

Facilitator's Guide Cross-Walk

15 Minute Slide Deck

Slide 1, facilitator's guide pg. N/A

Slide 2, facilitator's guide pg. 9

Slide 3, facilitator's guide pg. 11

Slide 4, facilitator's guide pg. 16

Slide 5, facilitator's guide pg. 27

Slide 6, facilitator's guide pg. 34

Slide 7, facilitator's guide pg. 42

Slide 8, facilitator's guide pg. 46

Slide 9, facilitator's guide pg. 5-51

*Slide 10, facilitator's guide pg. 62

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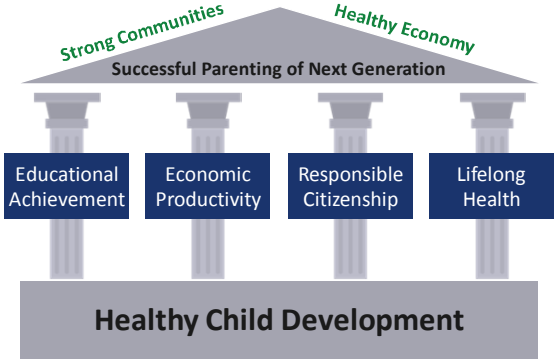

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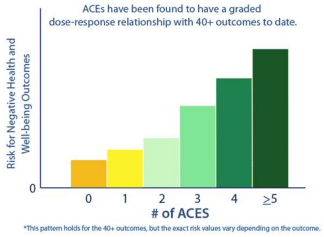

Source: Centers for Disease Control and Prevention, 2016

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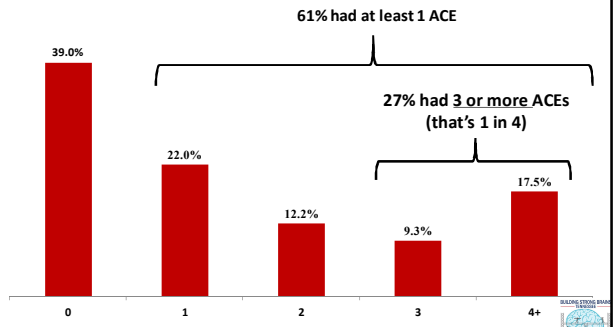

Source: Tennessee Department of Health, 2016

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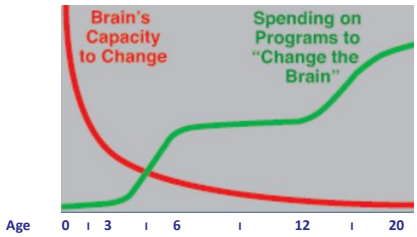

Source: Perry, 2004

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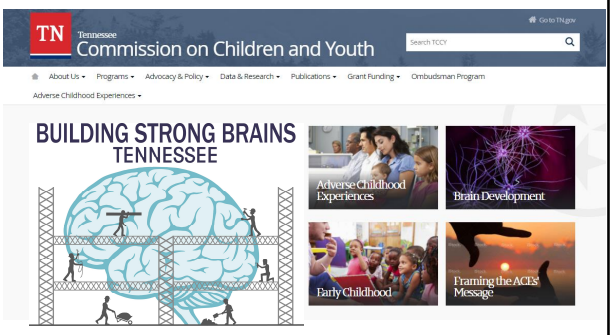

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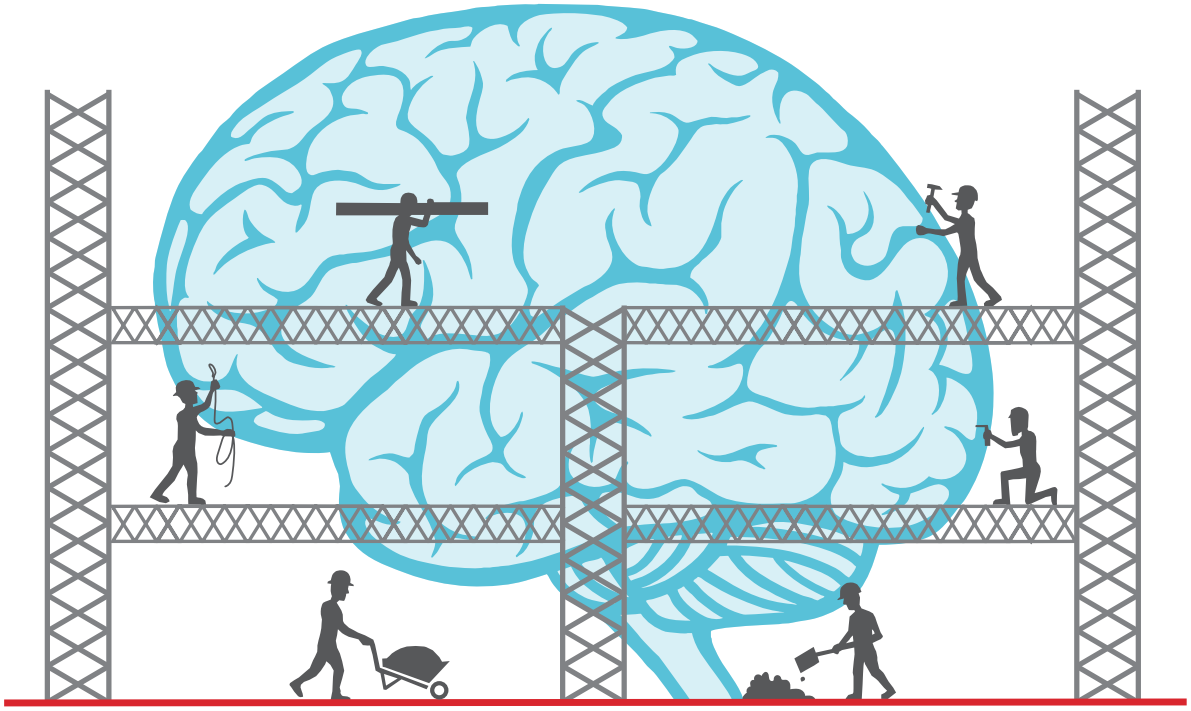
FrameWorks

BUILDING STRONG BRAINS
TENNESSEE



Tennessee State Government

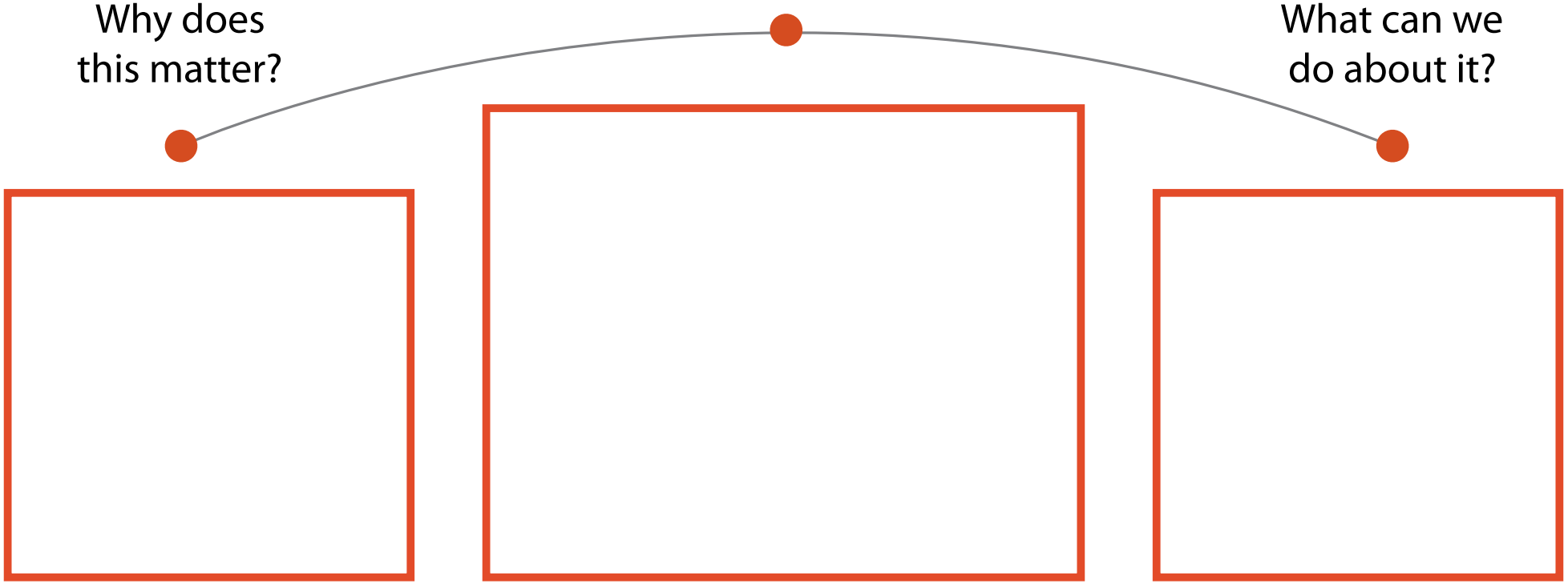
TENNESSEE COMMISSION ON CHILDREN AND YOUTH

A Reframed Story about ECD and ACEs

How does this work? If it's not working, why not?

Why does this matter?

What can we do about it?



Ready, Set, FrameCheck!

Ask yourself the following questions to make sure a communication is framed well.*

Does it…

Lead with a VALUE?

Does the piece begin with the tested values for your issue, rather than an opposing view, data point, or reference to other literature? *Remember this sets the stage for why the issue matters, what is at stake, and why the public should care!*

Avoid SWAMPINESS?

Does it avoid cuing up unproductive patterns of public thinking, like crisis-based or hyper-emotional language? It is careful not to assume too much about what the reader knows? *Refer to the Swamp to be sure you've navigated around the most likely culprits!*

Provide sufficient EXPLANATION?

Does it unpack how things work and what affects what, rather than offering descriptions or assertions? *Revisit the tested explanatory metaphors or explanatory chains to consider where there might be room to pack in more explanation!*

Steer clear of NAKED NUMBERS?

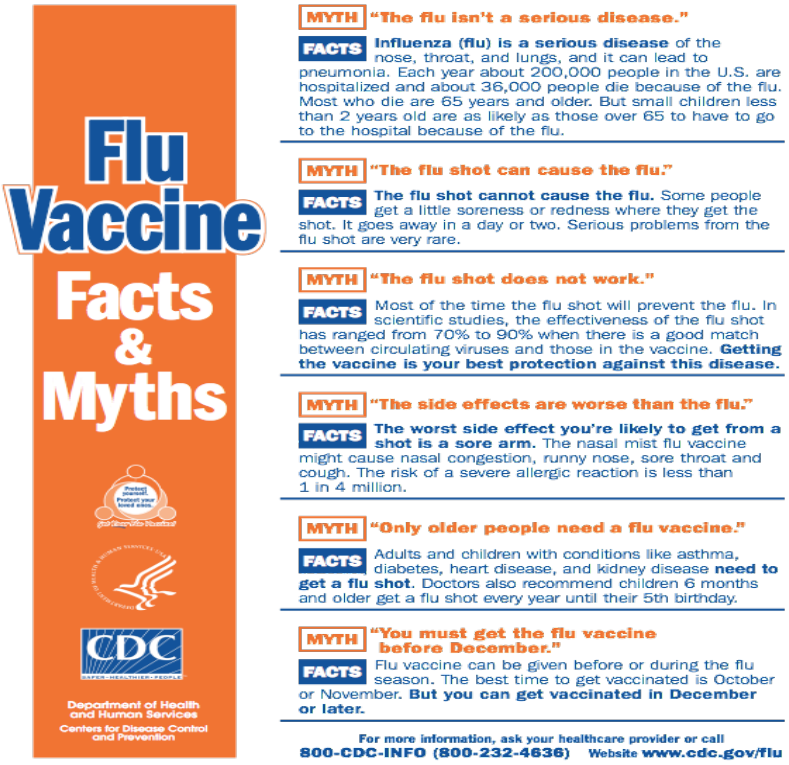
Are quantitative data used to enhance and support an overall explanatory approach, rather than standing alone as if numbers have magical "prove my point" powers? *Remember that the public will come up with their own interpretations of the data if you don't provide one!*

Offer specific SOLUTIONS?

Are practical, feasible solutions asserted and explained – preferably sooner rather than later? Do they help frame the social problem as a "public issue" with broad implications for society, rather than as a "private trouble," which only affects certain people? *Don't forget that solutions are most effective when presented as the logical "fix" for the problem at hand, rather than merely listed or named. Be sure to demonstrate how the solution is well-matched to the problem!*

*Keep in mind that images and other VISUALS should support the overarching framing strategy. (They have important communications jobs too!)

NO Myth/Fact!



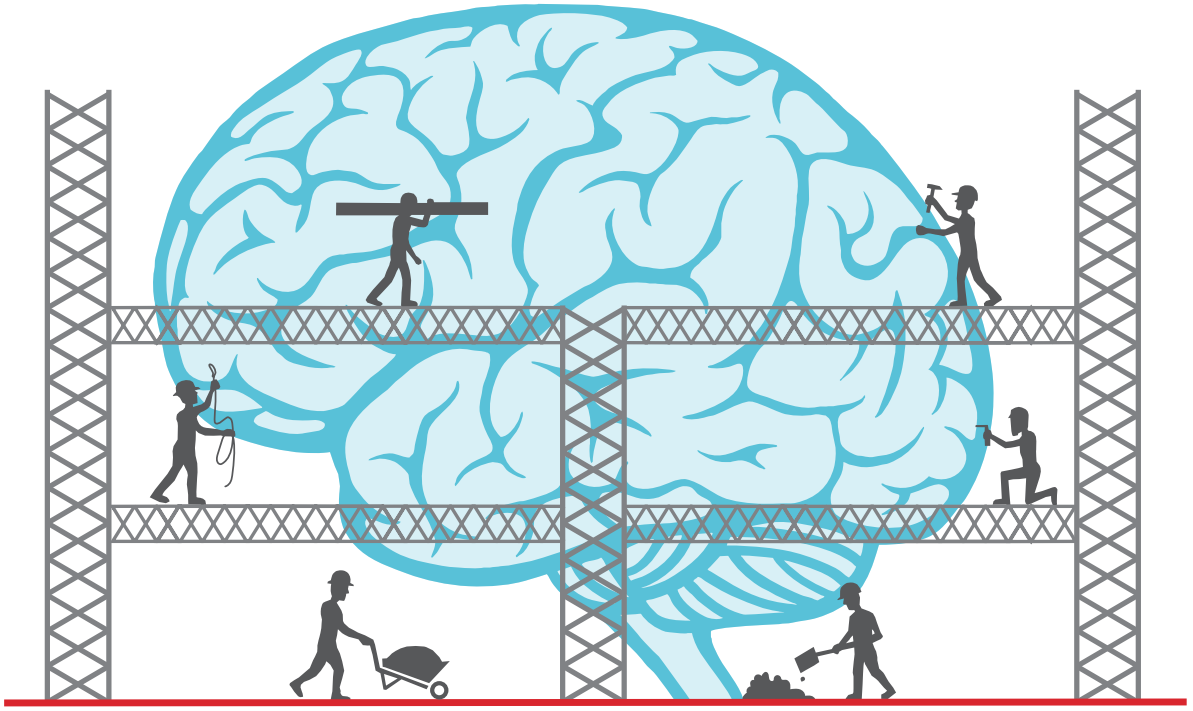
When a researcher at the University of Michigan asked people to read the information, many people misremembered false statements about the flu in the CDC brochure as true.

- Some of the group remembered 28% of the false statements as true; 3 days later, they misremembered 40% of the false statements as true.
- The remainder of the group did better at first, but three days later made as many errors as the rest of the group.
- They attributed the source of their false beliefs to the CDC.

(from Persistence of Myths Could Alter Public Policy Approach, Shankar Vedantam, Washington Post, September 4, 2007)

Training Resources

BUILDING STRONG BRAINS TENNESSEE



TN Tennessee State Government

TENNESSEE COMMISSION ON CHILDREN AND YOUTH

Adult Learning Theory

Being an effective trainer involves understanding how adults learn best. Adults bring their experience to training and want to test course content with that they already know. Adults have a stake in the contributions they make to the class. Ego and self-esteem are on the line when they are asked to try new tasks in front of peers and coworkers.

Adults want training that focuses on the here and now rather than on hypothetical situations. They must see a definite reason for learning a new concept, and the learning had to be applicable to their work. Adults want to focus on current issues, or they tend to become restless. Adults need direct, concrete experiences that they apply their learning to real work.

Adults are accustomed to being active and self-directed: the best learning is based upon experience. They come to training with an accumulation of life experiences and knowledge, which are tremendous assets to be tapped and utilized. Adults can learn a great deal from dialogue with peers and coworkers in the training classroom.

Adults need to receive feedback on how they are progressing in training and feedback on the results of their efforts. Opportunities must be incorporated into professional development activities which allow the adult to practice the learning and to receive applicable feedback.

Transfer of learning is not automatic for adults, so the trainer must facilitate it by coaching, modeling, and practicing course content. Follow-up support and feedback are necessary to help adult learners transfer course material into daily practice.

Some basic principles of adult learning are:

- adults will commit to learning when the goals and objectives are realistic and important to them;
- the adult is partner with the instructor in the learning process;
- adults are capable of taking responsibility for their own learning;
- adults have something to lose and have a strong need to maintain their self-esteem;
- adult learning gain through two-way communication;
- adults learn through reflection on their own and others' experience;
- adults learn what they perceive to be useful in their life situations;
- adults' attention spans are a function of their interest in the experience;
- adults are most receptive to instruction that is clearly related to problems they face daily;

- adults learn better in an environment that is informal and personal;
- adult learners apply learning that they have been influential in planning;
- adults learn when they feel supported in experimenting with new ideas and skills;
- adults are likely to have somewhat fixed points of view that make them closed to new ways of thinking and behaving;
- adults learn to react to the differential status of members of the group;
- adults are internally motivated to develop increased effectiveness;
- adults filter their learning through their value systems.

Types of Learners/Learning Styles

Be mindful of your participant's learning styles. Each person has his/her own way of learning. We are all auditory (hearing), visual (seeing) and/or kinesthetic (touching) learners. Learning results from stimulation of the senses. In some adults, one sense is used more than others to learn or recall information. Trainers should present material in a way that stimulates as many senses as possible to enhance chances of success. (For example, a kinesthetic learner will be comfortable and open to learning if Play-Doh or small objects are available on the table in the classroom.)

Visual Learners (Who Learn Through Seeing)

- need to see the trainer's body language and facial expression to fully understand the content of a lesson;
- may think in pictures and learn best from visual displays including diagrams, illustrated books, overhead transparencies, videos, flip charts, and handouts;
- often prefer to take detailed notes to absorb the information;
- are not particularly talkative in class;
- are sometimes detail people;
- often have some degree of artistic ability; and
- often learn better by demonstration.

Auditory Learners (Who Learn Through Listening)

- learn best through verbal lectures, discussions, talking things through, and listening to what others have to say;
- often tend to be talkative;
- typically like music;
- can tell and remember stories;

- interpret the underlying meanings of speech through listening to tone of voice, pitch, speed, and other nuances;
- often benefit from reading text aloud and using a tape recorder.

Tactile/Kinesthetic Learners (Who Learn Through Moving, Doing and Touching)

- learn best through a hands-on approach, actively exploring the physical world around them;
- may find it hard to sit still for long periods and may become distracted by their need for activity and exploration;
- like to disassemble things and put them back together;
- like to touch people and things;
- may enjoy the act of writing things down.

As a trainer, remember that people learn at different speeds, and it is natural for adults to be uncomfortable when faced with a particular learning situation. Positive reinforcement by the trainer can facilitate and enhance learning for the adult learner. Integration of new knowledge and skill takes time and effort on application.

The classroom environment for training should be physically and psychologically comfortable. Long lectures, long periods of sitting, and little or no activities will not be motivating for adult learners and will not promote retention.

Planning for Different Levels of Learners

Adapt to your learners. What does the class know about your topic? If they don't know much, you need to educate them. If they have existing knowledge, you need to provide new information, a different perspective, or show them how to use their knowledge.

Why is the topic relevant or significant to these specific learners? In other words, why should they care? What needs do your learners have regarding the topic? What information, explanations, evidence or arguments do they need topic. How can you make them interested? What is your goal with this audience? Are you reinforcing existing knowledge, adding new knowledge, or showing them how to make their knowledge relevant? Are they indifferent? If so, show them why your topic matters.

Are they hostile? Then identify their common concerns and show them how those concerns are relevant to them and to you. Your goal is to reduce hostility, not eliminate it. What attitudes are they likely to have toward you or toward the idea of attending a particular training? Ask yourself, will you have to overcome negative expectations about yourself, your listeners, or your topic?

What is the outcome they want from the training experience? What is the general purpose? Do you want to persuade them to see things in a particular way? Do you want them to understand a new concept? Perhaps you intend to encourage them to take action or support the ideas they already have.

What specifically do you want your listeners to think or do as a result of your training? For example, you may want them to understand how to utilize the Functional Assessment. You may want them to have knowledge about the Core Conditions. Clarify for yourself what you want to accomplish with your audience. Be clear with yourself about what it is you intend to convey to your listeners.

Remember you are training people with a variety of learning styles. Stay attuned to the attitudes and temperament. If you only gear your training toward one type of learning style, then you are neglecting other listeners in the room. Being prepared to present your topic to all types of learners will increase your success in the classroom and as a trainer.

The American with Disabilities Act

We train a variety of learners. Remember it is our responsibility to make training accessible to all our learners. We have included relevant sections of the **American's with Disabilities Act**[1] here to illustrate some of the considerations we may face when training different types of learners.

Appendix B to Part 36 -- Preamble to Regulation on Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities (Published July 26, 1991)

Authority: 5 U.S.C. 301; 28 U.S.C. 509, 510; 42 U.S.C. 12186(b).

Source: Order No. 1513 - 91, 56 FR 35592, July 26, 1991, unless otherwise noted.

Subpart A -- General

Sec.36.101 Purpose.

The purpose of this part is to implement title III of the Americans with Disabilities Act of 1990 (42 U.S.C. 12181), which prohibits discrimination on the basis of disability by public accommodations and requires places of public accommodation and commercial facilities to be designed, constructed, and altered in compliance with the accessibility standards established by this part.

Sec.36.102 Application.

(a) General. This part applies to any --

(1) Public accommodation;

(2) Commercial facility; or

(3) Private entity that offers examinations or courses related to applications, licensing, certification, or credentialing for secondary or postsecondary education, professional, or trade purposes.

(b) Public accommodations. (1) The requirements of this part applicable to public accommodations are set forth insubparts B, C, and D of this part.

[1] https://www.ada.gov/reg3a.html#anchor-36101

(2) The requirements of subparts B and C of this part obligate a public accommodation only with respect to the operations of a place of public accommodation.

(3) The requirements of subpart D of this part obligate a public accommodation only with respect to --

(i) A facility used as, or designed or constructed for use as, a place of public accommodation; or

(ii) A facility used as, or designed and constructed for use as, a commercial facility.

(c) Commercial facilities. The requirements of this part applicable to commercial facilities are set forth in subpart D of this part.

(d) Examinations and courses. The requirements of this part applicable to private entities that offer examinations or courses as specified in paragraph (a) of this section are set forth in Sec.36.309.

(e) Exemptions and exclusions. This part does not apply to any private club (except to the extent that the facilities of the private club are made available to customers or patrons of a place of public accommodation), or to any religious entity or public entity.

Sec.36.309 Examinations and courses.

(a) General. Any private entity that offers examinations or courses related to applications, licensing, certification, or credentialing for secondary or postsecondary education, professional, or trade purposes shall offer such examinations or courses in a place and manner accessible to persons with disabilities or offer alternative accessible arrangements for such individuals.

(b) Examinations. (1) Any private entity offering an examination covered by this section must assure that --

(i) The examination is selected and administered so as to best ensure that, when the examination is administered to an individual with a disability that impairs sensory, manual, or speaking skills, the examination results accurately reflect the individual's aptitude or achievement level or whatever other factor the examination purports to measure, rather than reflecting the individual's impaired sensory, manual, or speaking skills (except where those skills are the factors that the examination purports to measure);

(ii) An examination that is designed for individuals with impaired sensory, manual, or speaking skills is offered at equally convenient locations, as often, and in as timely a manner as are other examinations; and

(iii) The examination is administered in facilities that are accessible to individuals with disabilities or alternative accessible arrangements are made.

(2) Required modifications to an examination may include changes in the length of time permitted for completion of the examination and adaptation of the manner in which the examination is given.

(3) A private entity offering an examination covered by this section shall provide appropriate auxiliary aids for persons with impaired sensory, manual, or speaking skills, unless that private entity can demonstrate that offering a particular auxiliary aid would fundamentally alter the measurement of the skills or knowledge the examination is intended to test or would result in an undue burden. Auxiliary aids and services required by this section may include taped examinations, interpreters or other effective methods of making orally delivered materials available to individuals with hearing impairments, Brailled or large print examinations and answer sheets or qualified readers for individuals with visual impairments or learning disabilities, transcribers for individuals with manual impairments, and other similar services and actions.

(4) Alternative accessible arrangements may include, for example, provision of an examination at an individual's home with a proctor if accessible facilities or equipment are unavailable. Alternative arrangements must provide comparable conditions to those provided for nondisabled individuals.

(c) Courses. (1) Any private entity that offers a course covered by this section must make such modifications to that course as are necessary to ensure that the place and manner in which the course is given are accessible to individuals with disabilities.

(2) Required modifications may include changes in the length of time permitted for the completion of the course, substitution of specific requirements, or adaptation of the manner in which the course is conducted or course materials are distributed.

(3) A private entity that offers a course covered by this section shall provide appropriate auxiliary aids and services for persons with impaired sensory, manual, or speaking skills, unless the private entity can demonstrate that offering a particular auxiliary aid or service would fundamentally alter the course or would result in an undue burden. Auxiliary aids and services required by this section may include taped texts, interpreters or other effective methods of making orally delivered materials available to individuals with hearing impairments, Brailled or large print texts or qualified readers for individuals with visual impairments and learning disabilities, classroom equipment adapted for use by individuals with manual impairments, and other similar services and actions.

(4) Courses must be administered in facilities that are accessible to individuals with disabilities or alternative accessible arrangements must be made.

(5) Alternative accessible arrangements may include, for example, provision of the course through videotape, cassettes, or prepared notes. Alternative arrangements must provide comparable conditions to those provided for nondisabled individuals.

Your Leadership and Facilitation Experience

1. What's the most successful group facilitation or workshop leadership you ever led?

2. What specifically did you do to help the group get results?

3. What are your three strongest attributes as workshop or training-program leader?

4. What's the *least* successful group facilitation or workshop you ever led?

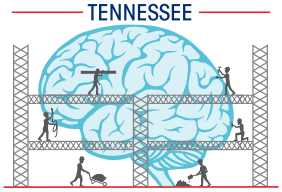
5. In hindsight, what could you have done differently to improve this result?

6. What one or two areas would you like to improve as a workshop and training-program leader?

Notes

Klatt, Bruce (1999). The Ultimate Training Workshop Handbook. McGraw-Hill, pp. 492-493

BUILDING STRONG BRAINS
TENNESSEE



Assessing Your Skills As a Presenter

List two or three key points for each of the following three questions:

1. What are your strengths as a presenter?

2. What are your biggest concerns as a presenter?

3. What things can you do to overcome, or least prepare for and lessen, these concerns?

Ice Breaker - Building Strong Brains

Goal:

Have fun while introducing the idea that many things influence our expression of ideas, thoughts and feelings.

Materials needed:

One piece of paper for each participant
One marker, pen or whatever is available for each participant

(Alternately, you can have participants use back of agenda, schedule, handouts, etc. and their own marker or pen if resources are limited.)

Introduction:

- Welcome everyone and ensure that each has one piece of paper and one marker/pen/pencil.
- Begin by saying,
    - "We are going to do an activity that only has two instructions, they are:
        - You may not ask questions.
        - Provide only simple directions.
    - Oh…and one other thought…
        - This is independent study, do not look at your neighbor's paper ☺."

Activity:

- Begin the activity by asking participants to do one simple drawing activity, ideally this will be completed within 10-20 seconds in order to move on to the next direction. I usually start with, "Ok, draw a line." Once everyone has drawn their line, provide another example, "draw a circle." Other examples include:
    - Draw a square.
    - Draw a triangle.
    - Draw a rectangle.
- Participants may be tempted to ask you several questions, like "which way do I turn my paper?" or "which way do I draw my line?" or "how long is my line supposed to be?" or any variation on these ideas. DO NOT ANSWER ANY QUESTIONS. Gently remind them

of instruction #1 and remind them of the final thought in the introduction- independent study.

- You will provide two or three simple directions, as noted above, and then ask the audience to begin to provide their own directions, popcorn style. Remind them to be simple, we do not want any "draw a cat" type things here. Some of us are not terribly creative.
- If you would like to interject occasionally or if people do not participate in providing directions, you may suggest:
    - Write your name. (Some people may actually end up writing the words, "your name.")
    - Write your favorite number. (Did they write it out numerically or with words?)
    - Draw a smiley face.
    - Draw a house.
- Allow activity to go on for 4-5 minutes or until voluntary directions slow down.

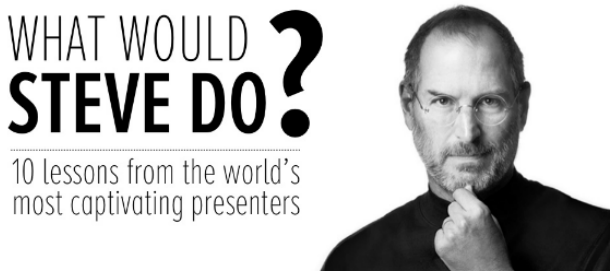
Debriefing:

- Once everyone is done with drawing the directions provided, draw their attention back to you.
- Say, "Now I would like for everyone to hold up their paper and allow others in the room to see what you have drawn. I would like for you to find someone in the room whose paper looks exactly like yours."
- Provide time for participants to look around the room and realize that their paper is indeed, unique. There is little chance any two participants have the exact same paper. There may be similarities but probably not duplicates.
- Say, "Isn't it interesting how we all heard the same directions yet no two papers are identical? What does that tell us?"
- Allow time for responses and when appropriate say, "We all heard the same directions yet interpreted them differently. We may have similarities but our backgrounds, talents, strengths, weaknesses, influences and other things all influence how we expressed those directions. How many persons here have been in conversation with peers, clients, families, or other persons and realized that those persons did not understand what you said when you felt that you had provided clear and direct communication?"
- Continue with, "There are many variables that influence how we process information, including our past, our environment, our current stress level, our support system, and countless others. Similarly, today we will learn more about the importance of early brain development and how events in early childhood may affect lifelong health and wellbeing."

Speaking 101 Resources

If you've got a presentation to give at work or school — or are perhaps getting ready to speak at a TEDx event? — we recommend these talks to help get you pumped up.

https://www.ted.com/playlists/226/before_public_speaking



https://www.themuse.com/advice/10-lessons-anyone-can-learn-from-the-worlds-best-presenters

This infographic, which boils down all the essentials—from ways to make an impact on your audience to tips to prepare 24 hours before—into one quick, fun read.

https://www.themuse.com/advice/this-is-it-your-ultimate-public-speaking-cheat-sheet

Training Do's and Don'ts

Do:

- Show respect to participants.
- Foster participation and engagement.
- Watch, listen and respond appropriately to participants.
- Adapt, improvise and be flexible.
- Be open to learning from participants.
- Abandon preconceptions.
- Show your own enthusiasm.
- Have fun and enjoy the presentation.
- Reflect on the presentation.
- Know your boundaries.

Don't

- Lecture excessively.
- Dominate.
- Interrupt.
- Criticize.
- Take yourself too seriously.
- Take things personally or get defensive.
- "Over share" personal story.

Training Do's and Don'ts

Preparation/Before Training

- ☐ Prepare and Copy training materials (prepare a few extra)
- ☐ List of Participants for Check-In
- ☐ Prepare Sign-In Sheet
- ☐ Purchase or print nametags (Sharpies)
- ☐ Communicate any ADA requirements to venue
- ☐ Purchase/order food, drink, snacks, cups, plates, napkins, etc.
- ☐ Establish and communicate the cancellation plan (weather, illness, etc.)
- ☐ Send reminder to participants two days in advance (include date, time, location/directions, agenda, policy on late arrivals/no shows, etc.)

Reserving and preparing venue space

- ☐ Confirm adequate space and seating is available. Ensure space includes space for food/drinks, if applicable. When possible, avoid seating participants when they need to turn around to view the presenter/screen.
- ☐ If applicable, confirm venue allows food, drink and if specific catering must be used
- ☐ Consider parking capacity and accessibility for venue
- ☐ Ensure the lighting is adequate
- ☐ Inquire about available technology available (LCD Projector, Speakers, Laptop/Computer)
- ☐ Ensure space is available on training dates/times (at least one hour before and after training start/end time) and reserve the space
- ☐ Confirm contact name and information for venue
- ☐ Communicate any ADA requirements to venue
- ☐ Location of restrooms, vending machines, lunch venues (if necessary)
- ☐ Location of thermostat and how to operate

Day of Training

- ☐ Bring food, drink, candy, supplies, etc.
- ☐ Bring sign in sheet
- ☐ Bring nametags and Sharpies
- ☐ Bring extra pens
- ☐ Arrive at least an hour early to set-up and locate bathrooms, etc.

- ☐ Set comfortable room temperature

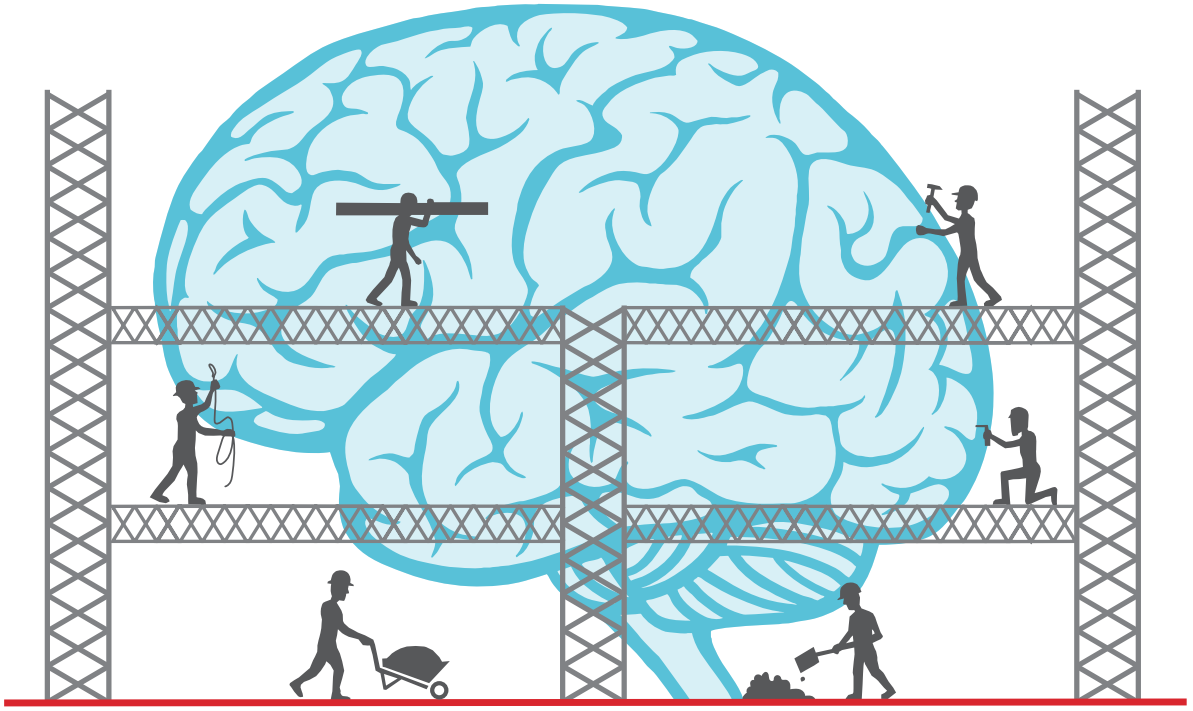
- ☐ Bring necessary technology
    - Laptop
    - LCD projector
    - Extension cords
    - Speakers
    - HDMI cable
- ☐ Bring presentation on thumb drive or CD
- ☐ Bring flip chart, easel and markers
- ☐ Bring handouts and other materials
- ☐ Bring ACEs presentation flipchart, if applicable
- ☐ Bring contact information for caterer, if applicable
- ☐ Bring Sign(s) for door(s)
- ☐ Have water/drink for yourself
- ☐ Have a watch, clock, phone or some device to keep track of time
- ☐ Wear comfortable shoes
- ☐ Dress in layers, as you may not be able to control the temperature of the room
- ☐ Bring business cards and/or include contact information in PowerPoint
- ☐ Start and end on time

After Training

- ☐ Send “Thank you” to participants and include evaluation link
- ☐ Submit evaluation results to TCCY

ACEs Resources

BUILDING STRONG BRAINS
TENNESSEE



Tennessee State Government

TENNESSEE COMMISSION ON CHILDREN AND YOUTH

ACE Questionnaire

There are 10 types of childhood trauma measured in the ACE Study. Five are personal — physical abuse, verbal abuse, sexual abuse, physical neglect, and emotional neglect. Five are related to other family members: a parent who's an alcoholic, a mother who's a victim of domestic violence, a family member in jail, a family member diagnosed with a mental illness, and the disappearance of a parent through divorce, death or abandonment. Each type of trauma counts as one. So a person who's been physically abused, with one alcoholic parent, and a mother who was beaten up has an ACE score of three.

There are, of course, many other types of childhood trauma — watching a sibling being abused, losing a caregiver (grandmother, mother, grandfather, etc.), homelessness, surviving and recovering from a severe accident, witnessing a father being abused by a mother, witnessing a grandmother abusing a father, etc. The ACE Study included only those 10 childhood traumas because those were mentioned as most common by a group of about 300 Kaiser members; those traumas were also well studied individually in the research literature.

The most important thing to remember is that the ACE score is meant as a guideline: If you experienced other types of toxic stress over months or years, then those would likely increase your risk of health consequences.

Prior to your 18th birthday:

1. Did a parent or other adult in the household often or very often… Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt?
   No___If Yes, enter 1__
2. Did a parent or other adult in the household often or very often… Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured?
   No___If Yes, enter 1__
3. Did an adult or person at least 5 years older than you ever… Touch or fondle you or have you touch their body in a sexual way? or Attempt or actually have oral, anal, or vaginal intercourse with you?
   No___If Yes, enter 1__
4. Did you often or very often feel that … No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other?
   No___If Yes, enter 1__
5. Did you often or very often feel that … You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
   No___If Yes, enter 1__
6. Were your parents ever separated or divorced?
   No___If Yes, enter 1__
7. Was your mother or stepmother:
   Often or very often pushed, grabbed, slapped, or had something thrown at her? or Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?
   No___If Yes, enter 1__
8. Did you live with anyone who was a problem drinker or alcoholic, or who used street drugs?
   No___If Yes, enter 1__
9. Was a household member depressed or mentally ill, or did a household member attempt suicide? No___If Yes, enter 1__
10. Did a household member go to prison?
    No___If Yes, enter 1__

Now add up your "Yes" answers: _ This is your ACE Score

_____

THE TRUTH ABOUT ACEs

WHAT ARE THEY?

ACEs are ADVERSE CHILDHOOD EXPERIENCES

The three types of ACEs include

ABUSE
- Physical
- Emotional
- Sexual

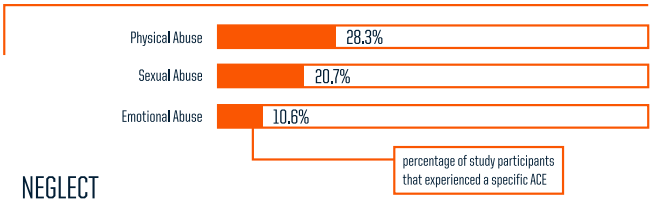
NEGLECT
- Physical
- Emotional

HOUSEHOLD DYSFUNCTION
- Mental Illness
- Incarcerated Relative
- Mother treated violently
- Substance Abuse
- Divorce

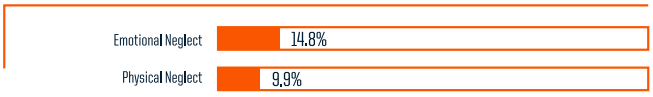
HOW PREVALENT ARE ACEs?

The ACE study revealed the following estimates:*

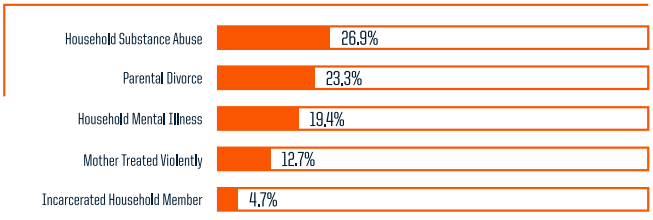
ABUSE



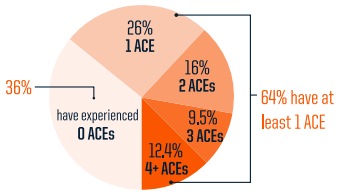
NEGLECT



HOUSEHOLD DYSFUNCTION

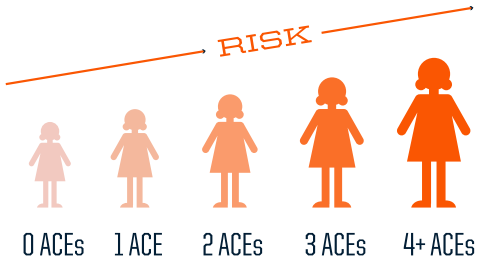


Of 17,000 ACE study participants:



WHAT IMPACT DO ACEs HAVE?

As the number of ACEs increases, so does the risk for negative health outcomes



Possible Risk Outcomes:

BEHAVIOR
- Lack of physical activity
- Smoking
- Alcoholism
- Drug use
- Missed work

PHYSICAL & MENTAL HEALTH
- Severe obesity
- Diabetes
- Depression
- Suicide attempts
- STDs
- Heart disease
- Cancer
- Stroke
- COPD
- Broken bones

rwjf.org/aces

Robert Wood Johnson Foundation

*Source: http://www.cdc.gov/ace/prevalence.htm

Adverse Childhood Experiences Resources

Center on the Developing Child
HARVARD UNIVERSITY

The Harvard Center on the Developing Child was founded in 2006 to drive science-based innovation that achieves breakthrough outcomes for children facing adversity. The Center catalyzes local, national, and international innovation in policy and practice for children and families. These ideas are tested and implemented in collaboration with a broad network of research, practice, policy, and philanthropic leaders to seek transformational improvements in lifelong educational achievement, economic security, and physical and mental health.

http://developingchild.harvard.edu/

Science to Policy and Practice: Three Principles to Improve Outcomes for Children and Families

In a new report, the Center on the Developing Child has identified three principles that can guide public policy choices and front-line practice across a wide range of areas affecting children and families. The paper discusses the science behind each of these principles and presents examples of how they might be applied. Finally, the paper explores the crucial ways in which the three principles are related to and support one another. To learn about these ideas, visit the link below:

https://developingchild.harvard.edu/resources/three-early-childhood-development-principles-improve-child-family-outcomes/

ACEs Connection Network
Join the movement to prevent ACEs, heal trauma, build resilience.

ACEs Connection Network is a social network that accelerates the global movement toward recognizing the impact of adverse childhood experiences in shaping adult behavior and health and reforming all communities and institutions -- from schools to prisons to hospitals and churches -- to help heal and develop resilience rather than to continue to traumatize already traumatized people. The network achieves this by creating a safe place and a trusted source where members share information, explore resources and access tools that help them work together to create resilient families, systems and communities.

http://www.acesconnection.com/

Robert Wood Johnson Foundation

Traumatic childhood events such as abuse, neglect, witnessing experiences such as crime, parental conflict, mental illness, and substance abuse can create dangerous levels of stress and derail healthy brain development—resulting in long-term effects on learning, behavior and health.

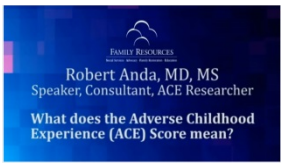
A growing network of leaders in research, policy and practice are developing approaches to prevent adverse childhood experiences (ACEs) and mitigate their impact through building resilience. This collection contains commentary from experts and resources detailing innovative approaches for improving mental and physical health using an ACEs framework.

http://www.rwjf.org/en/library/collections/aces.html

TED Ideas worth spreading

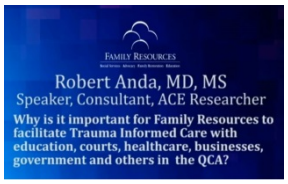
TED Talk on Adverse Childhood Experiences by Dr. Nadine Burke Harris. Childhood trauma isn't something you just get over as you grow up. Pediatrician Nadine Burke Harris explains that the repeated stress of abuse, neglect and parents struggling with mental health or substance abuse issues has real, tangible effects on the development of the brain. This unfolds across a lifetime, to the point where those who've experienced high levels of trauma are at triple the risk for heart disease and lung cancer. An impassioned plea for pediatric medicine to confront the prevention and treatment of trauma, head-on.

http://www.ted.com/talks/nadine_burke_harris_how_childhood_trauma_affects_health_across_a_lifetime



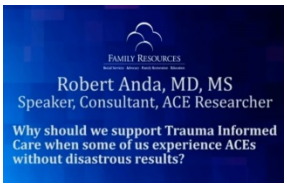
What Does the ACEs Score Mean? Dr. Robert Anda is one of the nation's leading experts in Adverse Childhood Experiences and helped develop the ACE assessment, which indicates the risk an individual has of physical and emotional damage resulting from childhood trauma, including violence, divorce, domestic abuse, sexual abuse, neglect, and more. In this part of his interview, Dr. Anda explains what an ACE Score means:

https://www.youtube.com/watch?v=qp_9nLjRdDo



Family Resources and Trauma Informed Care is working to bring different professions together -- education, government, business, healthcare, the courts, attorneys, social agencies and others to create a Trauma Informed Care community in the Quad Cities. Dr. Robert Anda, a leading authority on Trauma Informed Care, talks in this video clip about the importance of Family Resources community effort:

https://www.youtube.com/watch?v=xB0EL2E5X-M



Importance of ACEs is a Recent Discovery. Adversity is Not Destiny, But It is Risk. There have always been violent and dysfunctional families. Some children have been abused throughout history. But only in the past 10 or 20 years has the discovery been made showing the damage that is done by Adverse Childhood Experiences. A lack of awareness makes some people ask resistance questions such as, "Why should my tax dollars or my support go to help kids who go through these things when bad things happened to me, and I turned out okay?" Dr. Robert Anda, in an interview with Family Resources, answers this question. Family Resources is facilitating training in the Quad Cities with the aim of developing a Trauma Informed Care community

https://www.youtube.com/watch?v=j9pXdkCbQmg

Building Resilience: Traumatic childhood events like abuse and neglect can create dangerous levels of stress and derail healthy brain development, resulting in long-term effects on learning, behavior and health. A growing network of leaders in research, policy and practice are leading the way in preventing adverse childhood experiences (ACEs) and mitigating their impact by building resilience. In this video, Robert Anda, co-principal investigator of the ACE study and senior scientific consultant for the U.S. Centers for Disease Control and Prevention, discusses how he became involved in the ACE study and how he sees the importance of prevention.

https://www.youtube.com/watch?v=2B5ux-elQWM

Building Resilience: In this video, Nadine Burke Harris, CEO and Founder for the Center for Youth Wellness in San Francisco, says that ACEs and toxic stress is the next massive public threat. Traumatic childhood events like abuse and neglect can create dangerous levels of stress and derail healthy brain development, resulting in long-term effects on learning, behavior and health. A growing network of leaders in research, policy and practice are leading the way in preventing adverse childhood experiences (ACEs) and mitigating their impact by building resilience.

https://www.youtube.com/watch?v=tMaBi-SVPjo

The Alberta Family Wellness Initiative (AFWI) is a multi-disciplinary initiative that connects early brain and biological development and children's mental health with addiction research, prevention, and treatment. The AFWI seeks to translate current research into sound policy and practice on behalf of Alberta families.

http://www.albertafamilywellness.org/initiative/integrating-science-policy-practice

The Philadelphia ACE Task Force (PATF) is a network of more than 100 individuals from pediatrics, behavioral health, education, law, philanthropy, and others who are committed to building a resilient Philadelphia. The PATF has identified four key priorities to bringing about systemic change throughout the city and region:

- Educate the community about ACEs, trauma, and resilience
- Understand the practical interventions presently utilized in Philadelphia to address childhood adversity and trauma
- Prepare the workforce with the information and skills needed to incorporate trauma-informed practices into their work
- Utilize the Philadelphia Expanded ACE Data to support policies and practices

By convening engaged stakeholders across sectors, the Philadelphia ACE Task Force seeks provide professionals and community members with what the tools necessary to envision and create a trauma-informed city.

http://www.philadelphiaaces.org/

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

Adverse Childhood Experiences and the Lifelong Consequences of Trauma: The American Academy of Pediatrics brief on ACEs and trauma.

https://www.aap.org/en-us/Documents/ttb_aces_consequences.pdf

Self-Healing Communities

A Transformational Process Model for Improving Intergenerational Health

A comprehensive model of building community capacity in Washington helped make dramatic reductions in rates of health issues and social problems.

http://www.rwjf.org/content/dam/farm/reports/reports/2016/rwjf430225

APPI The Washington State ACEs Public-Private Initiative

A new study shows that local community networks in Washington State have succeeded in reducing the effects of adverse childhood experiences (ACEs) such as child abuse and neglect, domestic violence, household substance use, and parent mental illness. The three-year study released by the ACEs Public-Private Initiative (APPI), along with its evaluation partners Mathematica Policy Research and Community Science, revealed that community efforts led to increased graduation rates, decreased smoking and alcohol use among pregnant women, and a drop in teen drinking, among other results.

http://www.appi-wa.org/wp-content/uploads/2016/08/APPI-evaluation-release_policymakers_8-09-16_FINAL.pdf

Leaders from six communities worked together in 2015 with the Center for the Study of Social Policy (CSSP) through the Early Childhood-LINC Learning Lab on Community Approaches to Toxic Stress (see sidebar) to learn from each other's experiences, discuss the challenges and opportunities they face and generate ideas to improve the response to toxic stress in their own communities and in others.

The framework presented here can be useful to other local leaders, including those involved in community coalitions and collective impact efforts to promote the healthy development and well-being of young children; parents and all adults who play a significant role in the lives of children; public officials and policymakers; and the many practitioners who are weaving together health, early care and education, family support and other strategies to form aligned early childhood systems. Our aim is to articulate how multiple efforts can fit together to create conditions in which children (and adults) are less likely to experience toxic stress and more likely to receive appropriate support when they do. The recommendations here can also be a tool for local

leaders to reach out to potential new partners as they craft solutions that reach more people more effectively. Finally, the framework can be useful to parents, other family members and community residents to increase their understanding of toxic stress and suggest what they can do to prevent and mitigate the effects of toxic stress on their children and all children in their community.

http://www.cssp.org/reform/early-childhood/early-childhood-linc/working-toward-well-being-community-approaches-to-toxic-stress-web.pdf

ACEs are not destiny, and early trauma does not have to dictate a life story. Research shows that protective factors—chiefly, the presence of a nurturing adult—can cushion the impact of adversity in a child's life.

That's why this cookbook focuses on resilience. Resilience has been shown to buffer the impact of suffering or stress. Resilience isn't just a gift of nature or an exercise of will; resilience grows through positive experiences, supportive environments and the caring intervention of others.

http://communityresiliencecookbook.org/

Vroom is a set of tools and resources from the Bezos Family Foundation designed to inspire families to turn everyday moments into "brain building moments" by layering activities that are essential to healthy brain development onto existing routines. Vroom's website offers a variety of tools available to download free, as well as a mobile app that provides easy access to daily "brain building" activities.Vroom was developed with input from early childhood experts, neuroscientists, parents, and community leaders, as well as the Center on the Developing Child.

http://www.joinvroom.org/

The Urban Child Institute is a non-profit organization dedicated to the health and well-being of children from conception to age three in Memphis and Shelby County, Tennessee.

http://www.urbanchildinstitute.org/

The Frameworks Children's Mental Health Tennessee Toolkit: This toolkit was developed for the Tennessee Commission on Children and Youth (TCCY) with the generous support of the Annie E. Casey Foundation and KIDS COUNT. It builds on research sponsored by the Center on the Developing Child at Harvard University, the Jacksonville System of Care Initiative, and the Alberta Family Wellness Initiative to be a compendium of communications research and resources for helping the public better understand issues such as child development, child mental health, and programs informed by a "System of Care" operational philosophy

http://www.frameworksinstitute.org/toolkits/cmhtennessee/

Change the First Five Years and You Change Everything: a compelling 4 minute video highlighting the importance of the first 5 years of life.

https://www.youtube.com/watch?v=GbSp88PBe9E

Resources on Implicit Bias, Race & Racism

Project Implicit®

Project Implicit is a non-profit organization and international collaboration between researchers who are interested in implicit social cognition - thoughts and feelings outside of conscious awareness and control. The goal of the organization is to educate the public about hidden biases and to provide a “virtual laboratory” for collecting data on the Internet.

https://implicit.harvard.edu/implicit/

THE OHIO STATE UNIVERSITY
KIRWAN INSTITUTE FOR THE STUDY OF RACE AND ETHNICITY

The Kirwan Institute for the Study of Race and Ethnicity is an interdisciplinary engaged research institute at The Ohio State University established in May 2003.

http://kirwaninstitute.osu.edu/research/understanding-implicit-bias/

THE ASPEN INSTITUTE

Report: Structural Racism and Community Building - This publication represents an effort to summarize and share the Roundtable’s perspective on racial equity with a broader audience.

https://assets.aspeninstitute.org/content/uploads/files/content/docs/rcc/aspen_structural_racism2.pdf

THE ANNIE E. CASEY FOUNDATION

Structural Racism and Youth Development: Roundtable on Community Change Working Paper Series

https://www.aecf.org/resources/structural-racism-and-youth-development/

Frequently Asked Questions

How can I use the ACE Questionnaire?

- Purpose:
  - To support screening, assessment and treatment of a child or family.
  - To further refine interventions for participants.
  - To educate the broader community.
  - To inform public policy.

- Key thoughts:
  - The ACE score is a guideline for the level of trauma one has experienced that can be a *starting point* for assessment, education, treatment and advocacy.
  - The ACE survey *is not a clinical assessment, diagnostic or prognostic tool* and as a result cannot be used to evaluate how well an intervention works.
  - An ACE score cannot be undone and cannot be reduced.
  - Individuals with the same ACE score could be functioning at very different levels, depending upon how resilient they are or what services/supports they have received.
  - Intervention and treatment can increase an individual's resiliency; resiliency is key in order to reduce the impact that ACEs have on an individual's well-being.
  - Your responses to the ACE questionnaire.
  - There are numerous versions of the "ACE Questionnaire" you may see out in circulation.
  - In Tennessee, we emphasize that an ACE score is fact, it is not fate.

If I have a high ACE score, does that mean I will die earlier?

- ACEs are "fact not fate" and a high ACE score doesn't necessarily mean one will develop life-shortening diseases. There are many factors that can promote resilience and mitigate the impact of ACEs including safe, stable and nurturing relationships. Therapeutic interventions can also mitigate the impact of ACEs. It is never too late to address past trauma!

I have adopted a child with a high ACE score. How can I support my child?

- Safe, stable and nurturing relationships help children heal from previous trauma. Reading books about the impacts of trauma can help you better understand concerning behaviors (if there are any). Also, therapy with a therapist experienced in child trauma can help mitigate the impact.

- Recommended reading:
    - The Connected Child: Bring Hope and Healing to Your Adopted Child – Karyn Purvis
    - Parenting from the Inside Out - Dr. Daniel Siegel
    - The Whole Brain Child – Dr. Daniel Siegel

Now that I know about ACEs, what can I do?

- Share the information with others.
- Ask legislators to support funding for ACEs Innovation Grants.
- Help change the culture in your organization/community to be more ACEs/trauma-informed.
- Help change the culture in Tennessee.
- Get involved with ACEs efforts in your community.
- Embed ACEs public awareness materials on your agency website.
- Find ways to connect with children to provide safe, stable, nurturing relationships and environments (e.g. Scout troops, faith-based classes, mentoring programs).
- Refer families of young children to Books from Birth.
- Be a social support for parents.
- Refer children and families to needed services.
- Align your volunteer time and charitable giving with organizations that prevent and mitigate ACEs.

How has access inequality in areas such as education, housing and healthcare contributed to an increase of ACEs for marginalized populations?

- While research shows that ACEs commonly affect people across demographic groups, individuals who are members of marginalized groups and who live in marginalized communities are subject to significant additional stressors.
- These race- and place-based stressors are particularly damaging because they tend to be chronic, and chronic experiences of adversity disrupt development more than isolated traumatic events because they impair function across multiple domains, including attachment, self-concept, cognition, and regulation of affect and behavior.
- Racism is a major source of toxic stress. Examples of how racism can manifest include interpersonal racial discrimination (avoiding or ostracizing a person because of race), systemic racial discrimination (exclusionary or aversive practices by organizations or systems), racial harassment (hostile race-based physical or verbal assaults), and racial microaggressions (brief, everyday exchanges that send denigrating messages). All of these experiences may contribute to immediate or delayed post-traumatic stress disorder (PTSD) and related symptoms.
- Discrimination (whether based on race, ethnicity, or socioeconomic status) also shapes the unequal distribution of money, power, and resources and impacts the

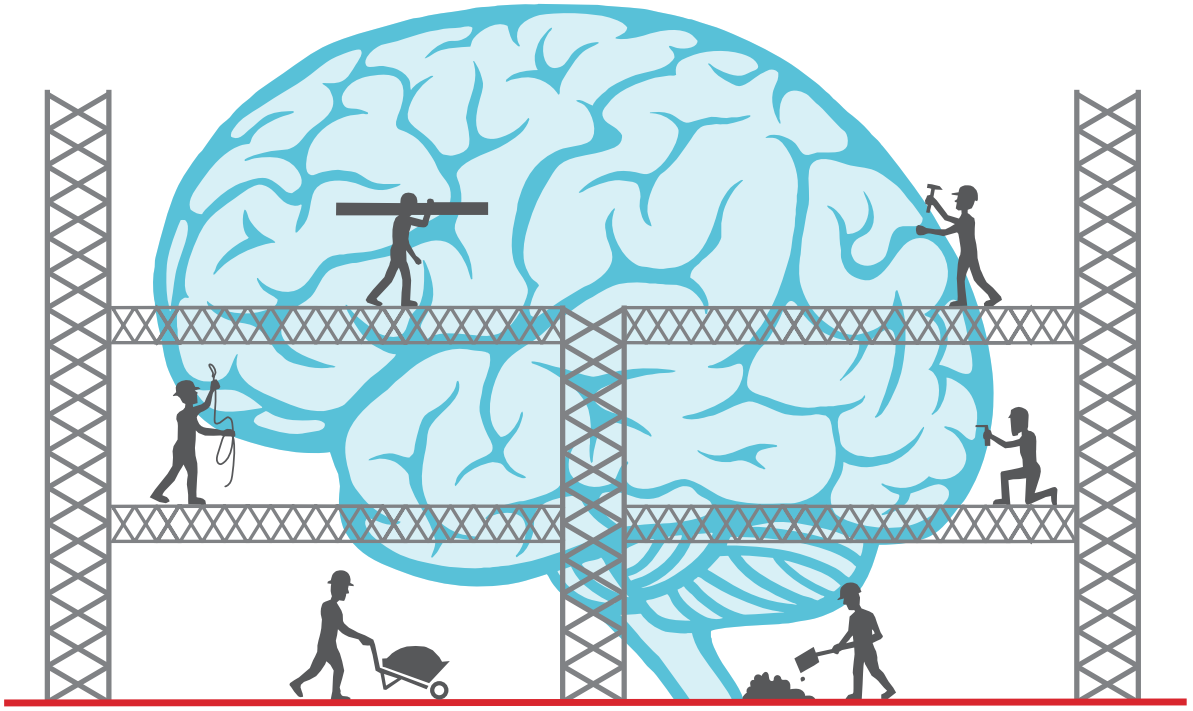
conditions in which people are born, grow, live, work and age. These conditions, commonly referred to as social determinants of health (SDH), directly affect the likelihood that individuals within a given population will experience trauma.

- For example, many children in the United States are currently living in neighborhoods characterized by adverse physical and economic conditions, including community violence, environmental hazards, and lack of resources. Families in these neighborhoods are under the greatest stress and, therefore, ACEs are more likely to occur.

- Our country's history of injustice and oppression due to racism has manifested itself into the structures and communities we have today. In order to improve these communities, we must shift policies and practices based on the history that led to their development.
- For more information, see Bruner, C. (2017). ACE, place, race, and poverty: building hope for children. Academic Pediatrics, 17(7), S123-S129.

Building Strong Brains

BUILDING STRONG BRAINS TENNESSEE



Tennessee State Government

TENNESSEE COMMISSION ON CHILDREN AND YOUTH

BUILDING STRONG BRAINS TENNESSEE

Addressing Adverse Childhood Experiences: A Case for Attention and Action in Tennessee

The future prosperity of any society depends on its ability to foster the health and well-being of the next generation. When Tennessee invests wisely in children and families, the next generation will pay that back through a lifetime of productivity and responsible citizenship.

The early years of life matter because the basic architecture of the human brain is constructed through an ongoing process that begins before birth and continues into adulthood. Like the construction of a home, the building process begins with laying the foundation, framing the rooms and wiring the electrical system in a predictable sequence. Early experiences literally shape how the brain gets built, establishing either a sturdy or a fragile foundation for all of the development and behavior that follows. A strong foundation in the early years increases the probability of positive outcomes. A weak foundation increases the odds of later difficulties, and getting things right the first time is easier than trying to fix them later.

The interactive influences of genes and experience shape the developing brain. The active ingredient is the "serve and return" relationships children have with their parents and other caregivers in their family or community. Like the process of serve and return in games such as tennis and volleyball, young children naturally reach out for interaction. This process starts in infancy – with facial expressions and babbling – and continues throughout the early years. If adults do not respond by getting in sync, the child's learning process is incomplete. This has negative implications for later learning. But when children develop in an environment of relationships that are rich in responsive, back-and-forth interactions, these brain-building experiences establish a sturdy architecture on which future learning is built.

Just as a rope needs every strand to be strong and flexible, child development requires support and experiences that weave many different capacities together. Cognitive, emotional and social capacities are tightly connected in the brain. Language acquisition, for example, relies on hearing, the ability to differentiate sounds, and the ability to pay attention and engage in social interaction. Science therefore directs us away from debating which kinds of skills children need most, and toward the realization that they are all intertwined.

Science also points us to pay attention to factors that can disrupt the developmental periods that are times of intense brain construction, because when this activity is derailed, it can lead to lifelong difficulties in learning, memory and cognitive function. Stress is an important factor to consider. Everyday challenges, like learning to get along with new people or in new environments, set off a temporary stress response that helps children be more alert while learning new skills. But truly adverse childhood experiences – severely negative experiences such as the loss of a parent through illness, death or incarceration; abuse or neglect; or witnessing violence or substance abuse – can lead to a toxic stress response in which the body's stress systems go on "high alert" and stay there. This haywire stress response releases harmful chemicals into the brain that impair cell growth and make it harder for neurons to form healthy connections, damage the brain's developing architecture and

increase the probability of poor outcomes. This exaggerated stress response also affects health, and is linked to chronic physical diseases such as heart disease and diabetes.

Science tells us that many children's futures are undermined when stress damages the early brain architecture. But the good news is that potentially toxic stressors can be made tolerable if children have access to stable, responsive adults – home visitors, child care providers, teachers, coaches, mentors. The presence of good serve-and-return acts as a physical buffer that lessens the biological impact of severe stress.

The factors children are exposed to affect how well they progress, and communities play a big role. A child's wellbeing is like a scale with two sides; one end can get loaded with positive things, while the other end can get loaded with negative things. Supportive relationships with adults, sound nutrition and quality early learning are all stacked on the positive side. Stressors such as witnessing violence, neglect or other forms of toxic stress are stacked on the other. This dynamic system shows us two ways we can achieve positive child outcomes: to tip to the positive side, we can pile on the positive experiences, or we can offload weights from the negative side. Children who have experienced several ACEs are carrying a heavy negative load, and to tip these children toward the positive, innovative states and communities have been able to design high-quality programs for children to prevent Adverse Childhood Experiences whenever possible, and respond to them with strong, nurturing supports to ameliorate their impact when they can't be prevented. These programs have solved problems in early childhood development and shown significant long-term improvement for children.

As Tennesseans understand the impact of Adverse Childhood Experiences, they will realize the future economic development and prosperity of the state depends on what we do now to prevent these experiences whenever possible and to wrap services around children and families when they can't be prevented. There will be better collaboration across disciplines, departments, agencies and communities, and focus on the infrastructure of services and supports that make a difference. When child abuse and domestic violence prevention, home visiting, mental health and substance abuse services for parents, and a variety of other services and supports are available for early intervention, they put in place a preventive system that improves serve-and-return before it breaks down. This kind of sound investment in our society's future is confirmed by brain science. It improves outcomes for children now, and is a significant foundation for solutions to many of the long-standing and nagging challenges we face as a state in our health, mental health, social services, child protection, and juvenile and criminal justice systems.

All children need someone in their corner. The shift from "What is wrong with you, or why are you a problem?" to "What has happened to you, and how we can we support you and help you overcome these experiences?" will result in a more effective, more empathetic service delivery system and a stronger Tennessee.

10/11/2017

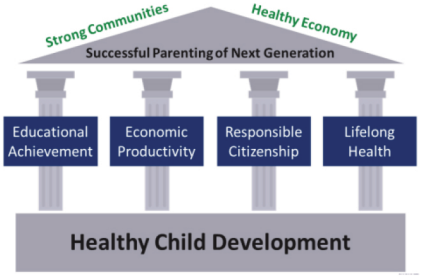
**** Document Use: This document was developed in collaboration with FrameWorks Institute, an organization that "designs, conducts and publishes communications research to prepare nonprofit organizations to expand their constituency base, to build public will, and to further public understanding of specific social issues." The language is meant to be used freely by anyone and doesn't require referencing.***

BUILDING STRONG BRAINS TENNESSEE

Building Strong Brains works to change the culture of Tennessee so that the state's overarching philosophy, policies, programs and practices for children, youth and young adults utilize the latest brain science to prevent and mitigate the impact of adverse childhood experiences.

TN

Healthy child development is the foundation for educational achievement, economic productivity, responsible citizenship and lifelong health. These are the pillars for successful parenting of the next generation and ultimately result in strong communities and a healthy economy.



What are ACEs?

Adverse childhood experiences, or ACEs, are stressful or traumatic experiences, such as abuse, neglect and family dysfunction that disrupt the safe, stable, nurturing environments that children need to thrive.

Brain Architecture and Serve & Return

- Brain architecture is established early in life and supports lifelong learning, behavior and health.
- Brains are built over time, starting in the earliest years of life. A child's brain develops 1,000,000 neural connections per second during the first 3 years.
- A strong foundation in the early years improves the odds for positive outcomes, and a weak foundation increases the odds of later difficulties.
- Positive experiences with caregivers help to build fundamental brain architecture in young children.
- Young children naturally reach out for interaction through babbling, facial expressions and gestures, and adults should respond in kind.
- These "serve and return" interactions are essential for the development of healthy brain circuits.

Air Traffic Control and Toxic Stress

- Stress can be positive, tolerable or toxic. Positive stress is a normal and essential part of healthy development and occurs during events like meeting new people. Tolerable stress results from unavoidable, more severe events, such as the death of a loved one or a natural disaster. Toxic stress results from prolonged exposure to adversity without adequate caregiver support.
- Toxic stress impacts brain architecture, biology and gene expression.
- Executive functioning, or the air traffic control system of the brain, is a group of skills that help us focus on multiple streams of information simultaneously, such as inhibitory control, working memory and cognitive flexibility.
- Exposure to toxic stress may disrupt brain architecture and impair the development of executive function.

Resilience

- Resilience can be built through serve and return relationships, improving self-regulation and executive functioning.
- When positive experiences outweigh negative experiences, a child's "scale" tips towards positive outcomes.
- Over time, the cumulative impact of positive experiences and coping skills make it easier to achieve positive outcomes.

ADVERSE CHILDHOOD EXPERIENCES

- The original ACEs study identified 10 types of childhood adversity:
  - Physical, emotional and sexual abuse;
  - Physical and emotional neglect;
  - Household dysfunction - mental illness, incarcerated relatives, mother treated violently, substance abuse and divorce;
  - "New" ACEs include poverty, racism and bullying.

ECONOMIC AND HEALTH COSTS

- The Center for Disease Control and Prevention (CDC) conservatively estimated the lifetime costs for all new cases of child maltreatment in 2008 at $124 billion in 2010 dollars for child and adult medical, child welfare, special education and criminal justice costs and productivity losses (Fang et al., 2012).
- Productivity loss, such as absence from the work force or missed days due to sickness or mental health or substance abuse issues, is the greatest economic toll.
- ACEs can have lasting effects on adulthood disease, disability and social functioning.
- The more ACEs individuals have, the more likely they are to experience over 40 negative health outcomes identified to date, including cancer, heart disease and early death.

WHAT CAN BE DONE?

- Build strong foundations through investment in high-quality, evidence-based early intervention programs.
- Studies show a $7 return for each $1 spent on programs targeting the earliest years of development.
- Provide safe, stable, nurturing relationships and environments for every child.
- Create community infrastructure that promotes social cohesion and supports two-generation programs to build executive functioning across the lifespan and help break the intergenerational cycle of ACEs.

ACES IN TENNESSEE

- A 2016 study on adverse childhood experiences in Tennessee found 61% of participants had at least one ACE and 27% had three or more – more than one in four Tennesseans.
- Emotional abuse, separation/divorce and substance abuse were most commonly reported.
- Beginning in 2019, Governor Haslam recommended, and the General Assembly appropriated, $2.45 million in recurring funding to address ACEs.
- Funds support ACEs Innovation Grants across Tennessee in a wide range of sectors, including academia, medical, education, mental health, justice/courts, public awareness, community and early childhood programs.
- This is a good start for the future prosperity of Tennessee.

For more information visit www.tn.gov/tccy.

Tennessee Commission on Children and Youth. Authorization No. 316683. No. of copies, 20,000. This public document was promulgated at a cost of $0.05 per copy. June 2018.

BUILDING STRONG BRAINS TENNESSEE

ACEs PROJECTS FUNDED FOR FY17

September 2016

I
THE INFANT COURT PROJECT
Davidson County

The Infant Court Project will bring an evidenced based infant court team model to Tennessee to address the unique needs of infants, toddlers, and their families with court involvement. The Association of Infant Mental Health in Tennessee (AIMHiTN) will develop and implement the first specialized infant and toddler court docket in the state.

The program will be initiated in Davidson County Juvenile Court in collaboration with Judge Sheila Calloway and Magistrate Melinda Rigsby. Modeled after Zero To Three Safe Babies Court Team demonstration projects, the team will focus on the unique needs of children in state custody between birth and age 3. The team will give specialized attention to these children and their families, providing more frequent professional and judicial oversight and monitoring of the family's progress. Training and consultation about the negative impact of ACEs and toxic stress on brain development and the importance of safe, stable, and nurturing relationships for very young children will be provided to professionals working in or with the Davidson County Juvenile Court involved in cases of maltreated infants and toddlers in the child welfare system.

AIMHiTN is a multidisciplinary, interagency association of mental health advocates and professionals whose mission is raising awareness about infant mental health, supporting infant mental health system development, and developing infant and early childhood workforce capacity. AIMHiTN will partner with Tennessee's Centers of Excellence for Children in State Custody (COEs) and its COE Infant Mental Health Collaborative, spearheaded by Dr. Giovanni Billings of the Vanderbilt COE, to provide expert clinical consultation and training support to the project.

II
ACE HEALTH CARE PROVIDER EDUCATIONAL PROGRAM
Baptist Memorial Hospital for Women
Memphis

Baptist Memorial Hospital for Women has developed the ACE Health Care Provider Educational Program to educate physicians and other health care providers on adverse childhood experiences

(ACEs) and social determinants of health, and arm them with the information and tools they need to address ACEs in their practices. Educating physicians, and engaging them to ask the ACE questions of their patient families and referring patient families to Universal Parenting Places (UPPs) will impact parenting behavior in such a way as to prevent childhood adversities. The program will secure inclusion of ACE risk questionnaires in initial medical assessments at physician offices, including local primary care physicians, pediatricians and obstetricians. Inclusion of the ACE questionnaire will give physicians the information they need to recommend that parents seek additional support and counseling at the UPP sites. It also provides an opportunity for doctors to educate their patients on toxic stress and its effects, while following current American Academy of Pediatrics guidelines to look for toxic stress in their patients.

The ultimate goal of this program is to lessen and prevent the effects of ACEs by expanding ACE awareness within the Memphis community health care organizations and providers. By educating health care professionals, the intent is to prevent ACES from occurring in homes. For those cases where a child has already been exposed to ACEs, the program will seek to mitigate the effects of ACEs on the brains of the young children by educating their parents/caregivers on how behavior and environment impacts their child's brain architecture and brain development.

III

BELMONT UNIVERSITY'S EDUCATING TRAUMA INFORMED PROFESSIONALS

Nashville

Belmont University's Educating Trauma Informed Professionals (BETIP) project will directly address the need to improve professional practices and promote cross-fertilization among professions that touch children and families during sensitive periods of development and beyond. Adverse childhood experiences (ACEs) are linked to negative mental and physical health outcomes in adulthood. Community-based providers can be effective in addressing ACEs, yet there are currently no standard trauma-informed care education models for undergraduates. BETIP has two initial aims: 1) to develop an evidence-based, cross-disciplinary, trauma-informed care curriculum for undergraduate nursing, public health and social work students and 2) to identify and address knowledge and training needs among recent graduates and practicing professionals in these disciplines. Community stakeholders will be engaged to identify knowledge gaps about ACEs; work with ACEs content, messaging and curriculum design experts and support faculty champions to lead development of the new curriculum. With a focus on improving long term outcomes for Tennessee's children and their families, these efforts also support Belmont's greater mission to help students from diverse backgrounds to engage and transform the world with disciplined intelligence, compassion, courage and faith. Investigators are Dr. Cathy R. Taylor, dean and professor and Dr. Sabrina Sullenberger, associate professor and Department of Social Work chair, Gordon E. Inman College of Health Sciences and Nursing at Belmont University.

IV

BUILDING STRONG BRAINS AND STRONG FAMILIES: IMPLEMENTATION OF TRAUMA-INFORMED CARE (TIC) AT THE BOYS & GIRLS CLUB OF JOHNSON CITY/WASHINGTON COUNTY

This project, Implementation of Trauma-Informed Care (TIC) at the Boys & Girls Club of Johnson City/Washington County, is designed to determine whether implementing trauma-informed care (TIC) at the Boys & Girls Club will reduce the effects of toxic stress in at-risk children and their caregivers. There is a large body of evidence supporting the negative effects of toxic stress on learning and health. TIC emphasizes compassion, the belief that every person has value and should be treated with dignity, and that often symptoms that are observed (misbehavior, substance use, criminal behavior, mental illness) may be normal responses to past traumatic experiences.

Three facets of the project include

- Agency-wide TIC training in which all paid and volunteer staff will be educated by a full-time, on-site, TIC expert about the effects of ACEs and the potentially therapeutic impact of implementing TIC principles. Everyone who interacts with children and their families will be trained to interact with a TIC mindset.
- Creation of a quiet room at the B&GC which will be a safe space to de-escalate situations in which someone (e.g., child, parent, staff member) is angry or upset. This is a practice that has been found to be effective when implementing TIC.
- Parent/guardian training. The team will teach *Positive Parenting,* a manualized parenting program that infuses TIC principles and information about the outcomes associated with ACEs taught to a randomly selected group of 30 parents/guardians of children at the B&GC in one 2-hour session. A randomly selected comparison group of 30 parents/guardians will be taught a similar-length non-TIC-focused class to enable comparisons among interventions.

Short-term goals of these interventions are to reduce the amount of toxic stress children experience both at the B&GC and in their homes. Through increasing parents/guardians' skills, ACEs should be reduced not only for children who attend the B&GC, but for other children in the family as well. This should result in improved behavior and better learning in the children and improved parenting and coping in the parents/guardians. Long-term goals that will only become evident beyond this project are that health problems, substance abuse, and incarceration rates will be reduced and educational attainment and health will be improved, thereby reducing the need for resources and increasing the contributions of those affected.

Andrea Clements, PhD, Professor and Assistant Chair, Department of Psychology is Principal Investigator. Collaborators are Robin Crumley, President & CEO, Boys & Girls Club of Johnson

City/Washington County and Becky Haas, Community Crime Prevention Coordinator, Johnson City Police Department.

V

MEDICAL COLLABORATIONS AND NURTURING PARENTS PROGRAM

Frontier Health

Northeast Tennessee

Frontier Health will develop a program, the Medical Collaborations and Nurturing Parents Program, to support high risk mothers and infants born with Neonatal Abstinence Syndrome (NAS) in collaboration with the medical community. The program will expose parents to positive parenting guidelines, and information and access to services which address substance use and mental health needs, creating a positive impact and increasing protective factors for their children prior to giving birth and continuing thereafter.

Frontier Health will incorporate the use of the *Nurturing Parenting Parent Educational Program,* an evidence based model of positive parent training, to give at risk parents additional skills and knowledge to help them be better prepared for the challenges of parenthood, especially the unique challenges of babies born with NAS. A behavioral health professional with trauma training will meet the new parents at their OB/GYN and PCP offices and follow them through their hospital stay and the extended stay of their infants to provide advocacy and support. Training on Adverse Childhood Experiences (ACES) will be provided to nurses and medical staff to promote understanding and care for high risk parents. Parent classes and support groups will be offered in other neutral locations such as area churches, community centers and housing complexes. With early intervention and prevention strategies that offer parents of NAS babies advocacy, education, and linkage to needed resources, it is thought there can be an immediate impact for these infants and mothers and a long lasting impact on their future health and wellbeing, the medical community and the population health of Northeast Tennessee.

VI

DISCOVER TOGETHER

Tracy City, Grundy County

Discover Together is a collection of programs in Tracy City, TN, a rural community in Grundy County, designed to provide families with positive adaptive skills that help them thrive in the face of isolation and poverty. Focusing on social connectedness and narrative skills, programming includes: a summer camp for children ages 6-12; a family Co-op for children 0-5 and their caregivers; and an after-school learning lab that offers a visual narrative module. Discover Together also includes a Community Ambassador program, which trains community members in

early child development, family engagement, and ACEs awareness. Ambassadors' responsibilities are to find families in need, connect them to services around their community, and ensure families remain connected to programs and assistance.

Severe poverty is one of the key factors increasing the risk for adverse childhood experiences. Coupled with social isolation, severe poverty increases the stress on families especially in rural communities where there are few economic opportunities and necessary social services are often scarce and/or difficult to access. Further, as stated in the reports *The Importance of Being in School: A Report on Absenteeism in Public Schools* and *Chronic Absenteeism in Tennessee's Early Grades*, economically disadvantaged children experience chronic absenteeism more frequently and its effects more acutely than others. When children in rural areas growing up in severe poverty miss school, they miss opportunities to connect with others and gain important academic and social skills that prepare them to access additional educational and later work opportunities. Discover Together's *Building Strong Brains* project will leverage its Community Ambassador program to identify families suffering from or at risk for ACEs by using the school district's early warning system for chronic absenteeism. Brain science tells us that reducing chronic, often toxic, stress and building supportive, caring relationships in children's lives is the most effective combination to facilitate building healthy brains and life-long sturdy brain architecture. Through Community Ambassadors' efforts, Discover Together focuses on addressing immediately visible issues of absenteeism and some root causes of that absenteeism including family stress and isolation.

After identifying children at risk of being chronically absent, an Ambassador will meet with families, identify their needs, and connect them with social supports. By facilitating these supports and ensuring that children are in school, Discover Together hopes to mitigate chronic family stress that in turn may reduce children's exposure to those adverse conditions described in ACEs. This whole-family strategy will not only allow students to spend more time in school receiving the education and social support needed to buffer the effects of adversity and stress, but will increase caregivers' social support and resources and assist them with underlying problems that led to their child's absenteeism.

Discover Together is a collaboration among Sewanee: The University of the South; the Yale Child Study Center, Scholastic, and community partners in Tracy City, TN.

VII
TRAUMA INFORMED PRACTICES
Metropolitan Nashville Public Schools

Metro Nashville Public School's project, Trauma Informed Practices, puts an emphasis on social-emotional support through its schools, beginning work on developing social emotional learning

competencies in all district initiatives. The new program called Trauma Informed Practices (TIPS) will work to incorporate extensive professional development (PD) to promote awareness of the impacts of adverse childhood experiences on neurobiological development and school success, and integrate evidence-informed, trauma-sensitive practices with existing school practices.

The main components of the program include:

- Promote awareness and drive practices through widespread PD:
  - Provide ongoing PD for direct service providers within district schools
  - Provide ongoing consultation to district educational professionals, with an emphasis on pilot schools
  - Develop and implement a Train the Trainer model for pilot schools and target groups (e.g., trauma-informed schools committee, Behavior Support Team, STARS counselors (Project PREVENT), Community Achieves site managers, trauma-informed schools specialists)
  - Develop and offer monthly full-day PD to all district staff
  - Monitor and streamline integrity of ACEs-related activities in the district
  - Participation in trauma-informed care work group
- Establish MNPS Trauma-informed schools committee to further promote awareness and organizational change.

The efforts of this project will also prevent ACEs for children attending MNPS and younger or yet to be born siblings of school-aged children through provision of parent training on the impacts of ACEs (e.g., Parent University, Family Engagement University, and interactions between trauma-informed school staff and parents/guardians). Grant funds will support a trauma support coordinator to facilitate district-wide professional development and allow the district to implement a pilot project of more targeted prevention and intervention strategies in 16 high schools.

VIII
ADVERSE CHILDHOOD EXPERIENCE (ACES) INITIATIVE PROGRAM
Murfreesboro City Schools

The Adverse Childhood Experience (ACE) Initiative Program, funded through *Building Strong Brains: Tennessee's ACEs Initiative* grant, allows Murfreesboro City Schools (MCS) to further its vision to focus on the whole child assuring their success in a global community. Those few words encompass a great undertaking to assist our students and their families to meet academic, nutritional, medical, social and behavioral needs.

The ACEs Initiative Program will promote prevention of ACEs by educating school staff, parents, and community partners regarding childhood trauma and the impact of ACEs on children's physical and social development. As a protective factor against ACEs, this program will enhance social connections within the family and greater community. These programs and services help mitigate the effects of ACEs by providing small group intervention for students who are identified

at-risk and then linking the students to available school-based and community services. Likewise, parents will receive parent training and support and be linked with community partners to build positive social connections.

By promoting the prevention of ACEs and the mitigation of the impact of adverse childhood experiences, the ACEs Initiative Program will improve academic success, improve physical and emotional health, increase parent-child interactions, and strengthen social connections for students within Murfreesboro City Schools and their families.

Through a long-term partnership between the school, family and our community partners, the ACE Initiative positively impacts the physical and social/emotional health of our students and families.

IX
HEAD START TRAUMA SMART
South Central Human Resource Agency

South Central Human Resource Agency Head Start/Early Head Start will implement an inclusive intervention model, Head Start Trauma Smart, that mirrors a currently successful program in Kansas City, Missouri. To combat the long-lasting adverse effects of trauma, the Head Start-Trauma Smart program serves as a "reset" mechanism that helps adjust the way children and adults alike react to complex, traumatic experiences. Trauma Smart is grounded a research-based model by Kristine M. Kinniburg, LCSW: Margaret Blaustein and adapted by Avis Smith, ACSW, LSCSW, LCSW, referred to as ARC—Attachment, (Self) Regulation and Competency (ARC).

Head Start/Early Head Start is the ideal venue for this model because of the children's consistent exposure in the classroom every day. Additionally, the program currently has a very active parent engagement component that will facilitate the inclusion of families in the system of trauma education and intervention. Families currently participate in training and center meetings on a monthly basis. By utilizing the Smart Connections parent education curriculum, they will support the home to classroom link.

The goal of the project is to implement a trauma-informed system of interaction in the classroom that transcends into the home. The expected outcome is that children will develop coping skills that allow them to achieve greater mental wellness, a necessity to being successful in the school setting. This early intervention will aid in the prevention of ACES and toxic stress affecting the brain architecture of young children and help reduce the likely re-occurrence of events in the child's life. The immediate goal is to provide training and support for Head Start/Early Head Start staff and families to arm them with coping tools in the classroom and at home.

The model gives staff and parents training to create calm, connected classrooms and home environments that recognize and address behavioral and other problems triggered by trauma, and provide the supports for children to learn and thrive. The goal is to provide practical, hands-on tools with effective coping strategies and bring them into the classrooms where children learn and play every day.

X

ACES ON-LINE LEARNING FOR EARLY CHILDHOOD WORKFORCE PROJECT

Tennessee State University

Tennessee State University's Center of Excellence for Learning Sciences (COELS) housed in the Division of Research and Sponsored Programs will create an online training module to support *Building Strong Brains: Tennessee's ACEs Initiative*. This module will be a comprehensive, sustainable, accessible, dynamic professional development tool for the state's early childhood workforce.

To develop the module, COELS's team of early childhood experts will garner the latest research information, and collaborate with ACEs leaders within the state to create and implement this innovative training option. Using a modified framework of Gallagher's Model *"Factors that contribute to quality professional practices and ultimately improving child outcomes",* COELS believes the content and activities within the Tennessee Child Care Online Training System (TCCOTS) can elevate learning within a supportive work environment. The training module will provide participants with the knowledge-base to understand key ACEs concepts and strategies to assist children and families.

Early childhood professionals must have access to numerous quality training opportunities, and though traditional training venues are needed, this online option allows the broadest access for early childhood professionals across the state. The ACEs module will reside on TCCOTS, which is also managed by COELS at Tennessee State University. The module is targeted to go live in the summer of 2017.

XI

PROTECTING CHILDREN FROM ACES AND TRAUMA (PCAT)

University of Tennessee Health Science Center

The University of Tennessee Health Science Center (UTHSC) will develop the Protecting Children from ACEs and Trauma (PCAT) program with the funding received for the Building Strong Brains: Tennessee's ACEs Initiative that will incorporate a wraparound approach with trauma-focused interventions to address the needs of children and families that have been impacted by trauma and other adverse experiences in childhood. The PCAT provider network includes Compass Intervention Services, the Family Institute of Tennessee, Shelby County Schools and FACES of Memphis, to offer wraparound and trauma-focused therapies in school and in the community to

mitigate the effects of the adverse events experienced and assist with the child and family's recovery.

PCAT will utilize existing community organizations to provide the services and build community awareness and understanding of the impact of adverse childhood experiences (ACEs) on child development, promote recovery from the damaging effects of childhood adversity, and recommend policy and funding changes that promote the kind of safe and nurturing environments that contribute to healthy brain development and reduce ACEs.

PCAT will also work with local groups to address childhood adversity and build on the foundation of existing ACEs and childhood exposure to violence initiatives currently being implemented. PCAT will use community education and outreach principles based on evidence-informed and culturally defined messaging to improve the community's understanding of these issues and how they can play a role in assuring that children and families get the services and supports needed.

UTHSC has an established reputation for creating programs designed to address challenging community issues and create the infrastructure to support the study of health policy and economics needed to advocate for policy changes to address the needs of the area's underserved populations. Through PCAT, UTHSC will assist families, community members, policy makers, funders, community organizations and other key stakeholders in understanding the importance of all the work underway to create trauma-informed and engaged communities throughout Memphis and Shelby County. Finally, UTHSC will join the other initiatives in support of local efforts working to take steps at the community level as "change makers" in addressing ACEs and toxic stress early.

Dr. Altha J. Stewart, associate professor, Department of Psychiatry and director, Center for Health in Justice Involved Youth will direct the program.

XII

COMMUNITY RESILIENCE: EDUCATE, ACT, TRAIN, INSPIRE, VALUE, EMPOWER (CREATIVE) PROGRAM
United Way of Greater Chattanooga

The Community Resilience: Educate, Act, Train, Inspire, Value, Empower (CREATIVE) Program is based in evidence, experience, and a theory of change specific to thoroughly understanding early childhood education, ACES, and reform. Created using strong Harvard Family Research specific to early childhood education, learning, community/business, and family involvement, United Way of Greater Chattanooga will implement a program that drives change, building a case for empowering child-invested stakeholders and advancing sustainable community change. The CREATIVE effort will be informed and executed by a cross sector of leaders in business, family, early childhood, pediatrics, politics, neighborhoods and faith based organizations.

The CREATIVE Program will impact (1) philosophy, (2) policy, (3) programs, and (4) practice by addressing mindsets and scripts, politicians and agendas, current childcare programs, and existing

best practices. Designed at the preventive intervention level, the CREATIVE Program is an extension of Chattanooga 2.0, intended to "change the conversation on social issues" and build "public will and understanding." Specifically, the program will address abuse and neglect beyond physical abuse to emotional abuse as part of engaging people in conversations, motivating them to act, and helping them overcome roadblocks.

Key actions include a community summit, professional education and training, awareness through social media and neighborhood based engagement, and measuring our work. Dedicated resources and a timeline ensure: realistic and measurable goals; participant-centered activities; spheres of influence engagement; threaded best practices and evidence; challenge/barrier discussions; and improved outcomes.

CREATIVE's six goals target: Championing the business community; Recognizing and responding to our community's signs and needs; Equipping people with knowledge and tools; Incorporating the Five Protective Factors in program activities; Building brains, bodies of knowledge, and bridges between stakeholders; and Measuring our impact.

From philosophy to practice, a successful project can help reduce long-term trauma and related damage to children, reduction in scarcity of resources impacting our most vulnerable, and greater involvement from policy makers and local government and business investing at the ground level through influence and action.

XIII

MITIGATING ACES IN PEDIATRIC PRIMARY CARE

Vanderbilt University Medical Center

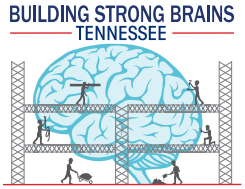
The goal of Mitigating ACEs in Pediatric Primary Care is to affect policy and practice related to Adverse Childhood Experiences (ACEs) screening and intervention in pediatric primary care. This research project will include, first, developing and testing a new ACEs screening tool that is brief, has a pediatric perspective, builds on parents' strengths, and measures parenting-related ACEs that can be treated. The new ACEs screening tool, the Parenting and Family Stressors Assessment (PAFSA), will measure parenting-related ACEs (e.g. corporal punishment, threatening, humiliation) and family stressors (e.g. divorce, incarceration, mental illness). A research assistant will invite approximately 1000 parents to complete the PAFSA in the Vanderbilt Pediatric Primary Care Clinic. Measures will include child behavior problems hypothesized to be associated with elevated PAFSA scores.

The second part of the project will be to recruit English and Spanish-speaking parents for a randomized controlled trial (RCT) to determine if educational interventions can help educate parents about ACEs and decrease ACE scores two months post-intervention. In preparation for the RCT, an evidence-based parent training intervention, Vanderbilt's Play Nicely online multimedia

program, will be further developed so that it can be viewed for free on smart phones and tablets. In the RCT, 300 to 400 parents will be recruited to participate in the study. Parents in the intervention group will receive 1) a copy of the Play Nicely Healthy Discipline Handbook, 2) information about how to view the Play Nicely multimedia program online and 3) the Tennessee ACEs Handout developed as a joint effort of the Tennessee Chapter of the American Academy of Pediatrics and the Tennessee Department of Health. Parents in the Control Group will receive routine primary care. The correlation between the PAFSA score and child behavior problems will be analyzed. For parents in the RCT, the PAFSA score of children in the intervention group will be compared with PAFSA score of children in the control group at two months. Attitudes toward spanking, parenting behaviors, and knowledge about ACEs between parents in the intervention group and parents in the control group will be compared.

Deliverables from the project will include: 1) a new pediatric ACEs screening tool (PAFSA) that has been tested in a pediatric primary care clinic; 2) knowledge about whether the PAFSA is associated with child behavior problems; 3) knowledge of the effect of office-based interventions for children with high ACE scores, and 4) further development of a free, evidence-based parent training program.

SECTORS REPRESENTED BY SELECTED PROPOSALS
Medical
…. Baptist Memorial Health Care Foundation …. Vanderbilt University …. Frontier Behavioral Health
Education
…. Metro Nashville Public Schools …. Murfreesboro City Schools
Mental Health
…. Frontier Behavioral Health …. Association of Infant Mental Health in Tennessee [AIMHiTN]
Justice/Courts
…. Association of Infant Mental Health in Tennessee [AIMHiTN]
Academia
…. Belmont University
Community
…. Discover Together [Grundy County] …. United Way Chattanooga …. UT Health Sciences Center …. ETSU/Boys & Girls Club
Early Childhood/Childcare/Head Start
…. South Central HRA …. Tennessee State University



ACEs PROJECTS FUNDED FOR FY18

July 2017

I

ACE HEALTH CARE PROVIDER EDUCATIONAL PROGRAM
Baptist Memorial Hospital for Women
Memphis

Baptist Memorial Hospital for Women has developed the ACE Health Care Provider Educational Program to educate physicians and other health care providers on adverse childhood experiences (ACEs) and social determinants of health, arming them with information and tools they need to address ACEs in their practices. The program is securing inclusion of ACE risk questionnaires in initial medical assessments at physician offices, including local primary care physicians, pediatricians and obstetricians. Inclusion of the ACE questionnaire gives physicians the information they need to recommend that parents seek additional support and counseling at the Universal Parenting Place (UPP) sites, which equip families to prevent and mitigate ACEs, among other things. It also provides an opportunity for doctors to educate their patients on toxic stress and its effects, following current American Academy of Pediatrics guidelines to look for toxic stress in their patients.

The ultimate goal of this program is to lessen and prevent the effects of ACEs by expanding ACE awareness within the Memphis community health care organizations and providers. For cases where a child has already been exposed to ACEs, the program seeks to mitigate the effects of ACEs on the brains of the young children by educating parents/caregivers on how behavior and environment impact brain architecture and brain development.

II

ADVERSE CHILDHOOD EXPERIENCE (ACES) INITIATIVE PROGRAM
Murfreesboro City Schools

The Adverse Childhood Experience (ACE) Initiative Program, funded for a second year through *Building Strong Brains: Tennessee's ACEs Initiative* grant, allows Murfreesboro City Schools (MCS) to further its vision to focus on the whole child, assuring their success in a global community. This effort encompasses a major undertaking to assist students and their families to meet academic, nutritional, medical, social and behavioral needs.

The Program promotes prevention of ACEs by educating school staff, parents, and community partners about childhood trauma and the impact of ACEs on children's physical and social development. As a protective factor against ACEs, this program enhances social connections within the family and greater community. These programs and services help mitigate the effects of ACEs by providing small group intervention for students who are identified at-risk and then linking the students to available school-based and community services. Likewise, parents receive parent training and support and are linked with community partners to build positive social connections.

By promoting prevention of ACEs and mitigation of the impact of adverse childhood experiences, the ACEs Initiative Program has begun to improve academic success, improve physical and emotional health, increase parent-child interactions, and strengthen social connections for students within Murfreesboro City Schools and their families.

III
ALL CHILDREN EXCEL NASHVILLE
Monroe Harding, Fiscal Agent
Nashville

ACE Nashville will implement a Trauma Informed Care cohort's 12 month action plan intended to directly impact organizational and institutional policies, programs and practices in Davidson County and to enhance wider scale adoption of trauma informed care. As a collective impact initiative, ACE Nashville has growing potential to leverage the communications science and momentum behind the Initiative. Specifically, funds will be used to: 1) Develop and disseminate a template for use in Davidson County that translates the science and knowledge of ACE research and Tennessee's BSB training to day-to-day, trauma informed organizational or institutional policies, operations, services and practices; 2) Provide in-person and web based training on use of the template at no charge; and 3) Provide ongoing consultation and peer support at no charge from ACE Nashville members.

The template for implementing trauma informed organization, service and practice change will highlight the following:

- Training and education on Tennessee's BSB 'core story', ACE research and impact of trauma on early childhood brain development, Protective Factors and Safe, Stable, Nurturing Relationships and Environments to prevent and mitigate trauma
- Use of reflective staff supervision, support and self-care
- 'Best practice' for environments, operations and programs to be physically and emotionally safe for both staff and consumers and include facility security, crisis prevention planning, transparency and information sharing among staff and 'consumers', cultural competency, privacy and confidentiality, consistency and predictability, strength based engagement and goal setting strategies.

IV

BABY STEPS FOR SUCCESS

East Tennessee State University Department of Pediatrics

In Baby Steps for Success, East Tennessee State University Department of Pediatrics will adapt and integrate evidence-based assessment and intervention for parenting, family functioning, mental health, social determinants of health, substance abuse, and family planning into a series of Enhanced Well Child Visits at the ETSU Pediatrics Clinic, which routinely conducts 10 visits during the first two years of life. Integration of enhanced services into the pediatric medical home will build trust among families and providers and significantly expand reach of evidence-based interventions to prevent and mitigate effects of ACEs. This will be done in partnership with Families Free and other service providers in Northeast Tennessee.

The target population is families with infants affected by prenatal drug exposure and/or neonatal abstinence syndrome residing in Washington, Carter, Johnson, Unicoi, Sullivan and Greene Counties.

The project will provide training for seven (7) pediatric residents and 66 medical students each year, many of whom go on to practice in the region and state, creating new generations of trauma-informed health care providers, and training and tools for child health, education and social service providers in the region and beyond through live-broadcasting and video recording of an annual continuing education conference.

The project will assess implementation, reach, adoption and maintenance of the program and effectiveness in preventing and mitigating effects of ACEs among infants, mothers, and families using the RE-AIM model, an implementation science approach to evaluation.

V

BELMONT UNIVERSITY'S EDUCATING TRAUMA INFORMED PROFESSIONALS

Nashville

Belmont University's Educating Trauma Informed Professionals (BETIP) project addresses the need to improve professional practices and promote cross-fertilization among professions that touch children and families during sensitive periods of development and beyond through development of a standard trauma-informed care education models for undergraduates. BETIP has two initial aims: 1) to develop an evidence-based, cross-disciplinary, trauma-informed care curriculum for undergraduate nursing, public health and social work students and 2) to identify and address knowledge and training needs among recent graduates and practicing professionals in these disciplines. Community stakeholders have been engaged to identify knowledge gaps about ACEs; work with ACEs content, messaging and curriculum design experts, and support faculty champions to lead development of the new curriculum. With a focus on improving long term outcomes for Tennessee's children and their families, these efforts also support Belmont's greater mission to help students from diverse backgrounds to engage and transform the world with disciplined intelligence, compassion, courage and faith.

VI

BUILDING STRONG BRAINS: THE TENNESSEE STORY

WCTE Upper Cumberland

Cookeville Tennessee

WCTE will produce a series of stand-alone episodes called *Building Strong Brains: ACEs, The Tennessee Story,* in collaboration with agencies, organizations, communities and other stakeholders involved in the state's ACEs Initiative. The purpose is to increase information about and brand awareness for ACEs messaging that can potentially reach every citizen in the state. Producers will work closely with the FrameWorks Institute to assure continuity with the science-based values and metaphors used to communicate most effectively about brain development and ACEs. Information will focus on prevention, mitigation and recovery for families and children affected by ACEs. Episodes—planned to encompass the Initiative mission, pillars for health development, values and metaphors; community innovations addressing ACEs in a variety of sectors; and tools and resources to prevent and mitigate ACEs—will permit brief messages to be drawn from within the episodes to be used on other social media platforms, between longer programs and for public service messages. Content will be made available to other public television stations statewide.

VII

DISCOVER TOGETHER

Tracy City, Grundy County

Discover Together is a collection of programs in Tracy City, TN, a rural community in Grundy County, designed to provide families with positive adaptive skills that help them thrive in the face of isolation and poverty. Discover Together includes a Community Ambassador program, which trains community members in early child development, family engagement, and ACEs awareness. Ambassadors' responsibilities are to find families in need, connect them to services in their community, and ensure families remain connected to programs and assistance.

Discover Together's *Building Strong Brains* project is leveraging its Community Ambassador program to identify families experiencing or at risk for ACEs by using the school district's early warning system for chronic absenteeism. Through Community Ambassadors' efforts, Discover Together focuses on addressing immediately visible issues of absenteeism and some root causes of that absenteeism including family stress and isolation.

After identifying children at risk of being chronically absent, an Ambassador meets with families to identify their needs, and connect them with social supports. By facilitating these supports and ensuring that children are in school, Discover Together hopes to mitigate chronic family stress that in turn may reduce children's exposure to ACEs. This whole-family strategy allows students to spend more time in school receiving the education and social support needed to buffer the effects of adversity and stress. It increases caregivers' social support and resources and assists them with underlying problems that led to their child's absenteeism.

Discover Together is a collaboration among Sewanee: The University of the South; the Yale Child Study Center; Scholastic, and community partners in Tracy City, TN.

VIII
EARLY LEARNING CURRICULA FOR BOARD OF REGENTS
Tennessee State University

Tennessee State University's Center Of Excellence in Learning Sciences (COELS) will create the Early Learning Curricula, tool kits with infusion guides for community college and four year early childhood-related courses. The goal of the project is to immerse the Early Childhood Education (ECED) student population in concepts, language, and strategies to help prevent ACEs and toxic stress from affecting brain architecture of young children. Nine (9) specific ECED community college courses and two (2) general education courses will be developed. Infusion guides will help inform what information to include based on course focus area. Detailed informational resources will be adaptable for each course.

The intent is to train and equip 30 plus ECED faculty across the state with the tool kits and infusion guides, which ought to impact over 2,000 students (estimated by enrollment data) each semester. With inclusion of summer semesters the potential impact in one fiscal year could be over 4,000 students. The first year of this project is focused on resource creation, dissemination, and training. The following years will be focused on data analysis, resource revisions/additions based on latest research, and additional training.

Courses and toolkits will be available to the twelve community colleges and ten state universities under the Tennessee Board of Regents and University of Tennessee system that will be the main core of this project, plus other institutions of higher education recognized by the Tennessee Independent Colleges and Universities Association (TICUA), which identified Teacher Education and Professional Development as one of the top 20 majors of degrees awarded throughout the state of Tennessee.

IX
FOUNDATIONS OF CHANGE FOR SOCIAL/EMOTIONAL LEARNING
University of Tennessee Extension Services

The goal for Foundations of Change for Social/Emotional Learning is to ascertain information about factors contributing to effective efforts aimed at mitigating and preventing ACEs and their potential ramifications on individuals and communities. The goal of the "Readiness to Change" needs assessment is to learn what factors are needed for a community to have the capacity to implement effective ACE prevention and mitigation policies and practices. The needs assessment is intended to engage communities in conversations related to ACEs that will raise awareness about the issue and instigate conversations related to mitigating and preventing their occurrence, and for communities to take actionable measures to mitigate and prevent ACEs at the individual-, family-, community-, and State-levels via a shift in philosophy, policy,

and practice.

The goal of providing a Social Emotional Learning (SEL) intervention program aimed at building youth's resilience is to mitigate the effects of ACEs within three (3) afterschool care settings using RULER, an SEL program that provides educators with professional development and a universal-classroom curriculum to develop and foster the emotional skills of students in kindergarten through eighth grade. RULER's theory of change suggests that as educators and students practice five emotional skills represented by the RULER acronym on a regular basis, all stakeholders develop their emotional intelligence and improve the emotional climates in schools and homes.

Expected outcomes include increased community awareness about ACEs through engagement in the needs assessment process; that youth participating in the RULER program will increase their social-emotional intelligence and self-care abilities; that educating communities and afterschool care programs about ACEs and SEL will instigate the beginning of a paradigm shift from "what's wrong with you" to "what happened to you" while simultaneously shifting culture closer to embracing the "whole-person".

X

MEDICAL COLLABORATIONS AND NURTURING PARENTS PROGRAM

Frontier Health

Northeast Tennessee

Frontier Health continues to develop a program, the Medical Collaborations and Nurturing Parents Program, to support high risk mothers and infants born with Neonatal Abstinence Syndrome (NAS) in collaboration with the medical community. The program exposes parents to positive parenting guidelines and information and access to services which address substance use and mental health needs, creating a positive impact and increasing protective factors for their children prior to giving birth and continuing thereafter.

Frontier Health has incorporated use of the *Nurturing Parenting Parent Educational Program,* an evidence based model of positive parent training, to give at risk parents additional skills and knowledge to help them be better prepared for the challenges of parenthood, especially the unique challenges of babies born with NAS. A behavioral health professional with trauma training meets the new parents at their OB/GYN and PCP offices and follows them through their hospital stay and the extended stay of their infants to provide advocacy and support. Training on ACEs is provided to nurses and medical staff to promote understanding and care for high risk parents. Parent classes and support groups are offered in other neutral locations such as area churches, community centers and housing complexes. With early intervention and prevention strategies that offer parents of NAS babies advocacy, education, and linkage to needed resources, there can be an immediate impact for these infants and mothers and a long lasting impact on their future health and wellbeing, the medical community and the population health of Northeast Tennessee.

XI

MITIGATING ACES IN PEDIATRIC PRIMARY CARE AND HOME VISITING

Vanderbilt University Medical Center

Mitigating ACEs in Pediatric Primary Care and Home Visiting is intended to affect policy and practice related to Adverse Childhood Experiences (ACEs) screening and intervention in pediatric primary care and in home visiting.

The primary care research project includes testing a newly developed ACEs screening tool, the Parenting and Child Stressors (PCS) survey, that is brief (about three minutes long), has a pediatric perspective, builds on parents' strengths, and measures parenting-related ACEs that can be treated (e.g. corporal punishment, threatening, humiliation) and family stressors (e.g. divorce, incarceration, mental illness). When complete, a research assistant will have invited up to 700 parents to complete the PCS in the Vanderbilt Pediatric Primary Care Clinic. Measures include child behavior problems hypothesized to be associated with elevated PCS scores.

Another part of the primary care project is to recruit up to 500 English and Spanish-speaking parents for a randomized controlled trial (RCT) to determine if educational interventions can help educate parents about ACEs and decrease ACE scores six months post-intervention. In preparation for the RCT, an evidence-based parent training intervention, Vanderbilt's Play Nicely online multimedia program, is being further developed so it can be viewed for free on smart phones and tablets. Parents in the intervention group receive a copy of the Play Nicely Healthy Discipline Handbook; information about how to view the Play Nicely multimedia program online; and the Tennessee ACEs Handout developed jointly by the Tennessee Chapter of the American Academy of Pediatrics and the Tennessee Department of Health. Parents in the Control Group receive routine primary care. Analysis includes correlation between PCS score and child behavior; PCS scores of children in the intervention group compared with PCS scores of children in the control group at two months; and comparison of attitudes toward spanking (ATS), parenting behaviors, and knowledge about ACEs between parents in the intervention group and parents in the control group.

The second major activity is focused on home visiting, specifically 300 parents of children less than four (4) years old enrolled in Healthy Families Tennessee. Using PCS and ATS scores, families will be randomized into intervention and control groups. Parents in the intervention group will view discipline options in the online Play Nicely multimedia program; receive the Play Nicely healthy Discipline Handbook; 20 options to respond to children hitting each other and a five (5) minute booster session one month after enrollment. Parents in the control group will receive routine home visiting services. Analysis will follow the basic approach outlined above.

Deliverables from the project include: 1) the pediatric ACEs PCS screening tool that has been tested in a pediatric primary care clinic; 2) knowledge about whether the PCS is associated with child behavior problems; 3) knowledge of the effect of office-based and home-based interventions for children with high ACE scores, and 4) further development of a free, evidence-based parent training program.

XII

PREVENTING ADVERSE CHILDHOOD EXPERIENCES (PACE)

Gibson County Special School District

The Gibson County Special School District will develop a PACE (Preventing Adverse Childhood Experiences) Project to prevent and mitigate ACEs for children, families and communities addressing philosophy, polices, programs, and professional practices through:

- Increased awareness of ACEs and their impacts by disseminating information to District employees during district-wide professional development opportunities; parents/caregivers via Parent Academies; and community at-large through public speaking venues.
- Identifying, assessing, and revising policy to ensure the Gibson County Special School District Policy promotes nurturing environments and assists in reducing detrimental environmental factors for children and families by developing a Trauma-Informed Committee (TIC).
- Ensuring safe, stable, nurturing relationships and environments of children by developing skill- building opportunities for parents of pre-k and middle school students through the development of Parent Academies that address the five protective factors, utilizing an evidence-based curriculum, *Parenting Wisely.*
- Preventing and reducing ACEs of pre-k and middle school students through in-home counseling and middle school small group interventions utilizing the evidence-based curriculum, *Skillstreaming the Adolescent.*

The PACE Project will serve 210 students and 210 parents; train 382 district staff; and impact 4,045 students and 30,442 community members at-large. Funds will be utilized to support:

- hiring a part-time Trauma Support Coordinator to oversee the PACE Project and to ensure all levels of intervention are being addressed
- purchasing research-based curricula to be utilized in Parent Academies and small group counseling sessions
- contracting with a mental health provider to provide group sessions to targeted students and in-home counseling of parents/students when applicable

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XIII

PROFESSIONAL EDUCATORS UNDERSTANDING ADVERSE CHILDHOOD EXPERIENCES

Middle Tennessee State University

Middle Tennessee State University (MTSU) Office of Early Learning Programs (ELP), College of Education will develop and implement Professional Educators Understanding Adverse Childhood Experiences (PEACE) that will leverage expertise of ELP staff and access to current and future childhood educators to increase awareness and provide training in recognizing adverse childhood experiences.

The project will develop and deliver a seminar program for MTSU ELP faculty and student teachers and faculty for all grades pre-K through college. Teachers of young children can support health brain development and teachers of older students will gain an understanding of how earlier experiences may impact brain development. *The Brain Architecture Game* will be used as a simulation for participants to understand the impact of early experiences, both positive and negative, on the brain's development and teachers' roles of providing support and experiences to build resilience and counter the potential effect of earlier traumatic experiences. Targeting current and future educators for all grades provides a unique opportunity to educate professionals who have potential to reach and make a difference for countless individuals experiencing ACEs and their effects over the course of a lifetime. Seminars planned for the project period will educate approximately 800 participants affiliated with early childhood education.

The project will be sustained using a Do-It-Yourself license for The Brain Architecture Game so MTSU can continue offering this seminar with updated learning priorities in future years. Deliverables include public relations piece and training video on ACEs to endure the project will continue to have far-reaching impact beyond the project year.

XIIII

PROTECTING CHILDREN FROM ACES AND TRAUMA (PCAT)

University of Tennessee Health Science Center

The University of Tennessee Health Science Center (UTHSC) continues to develop the Protecting Children from ACEs and Trauma (PCAT) program in FY18. PCAT incorporates a wraparound approach with trauma-focused interventions to address the needs of children and families who have been impacted by trauma and other adverse experiences in childhood. PCAT utilizes existing community organizations to provide the services and build community awareness and understanding of the impact of ACEs on child development, promote recovery from the damaging effects of childhood adversity, and recommend policy and funding changes that promote safe and nurturing environments that contribute to healthy brain development and reduce ACEs.

The PCAT provider network includes Compass Intervention Services, the Family Institute of Tennessee, Shelby County Schools and FACES of Memphis, to offer wraparound and trauma-focused therapies in school and in the community to mitigate the effects of the adverse events experienced and assist with the child and family's recovery.

PCAT also works with local groups to address childhood adversity and build on the foundation of existing ACEs and childhood exposure to violence initiatives currently being implemented. PCAT uses community education and outreach principles based on evidence-informed and culturally defined messaging to improve the community's understanding of these issues and how they can play a role in assuring that children and families get the services and supports needed.

Through PCAT, UTHSC assists families, community members, policy makers, funders, community organizations and other key stakeholders in understanding the importance of all the work underway to create trauma-informed and engaged communities throughout Memphis and Shelby County. UTHSC has joined other initiatives in support of local efforts at the community level as "change makers" in addressing ACEs and toxic stress early.

XV

TRAUMA INFORMED PRACTICES

Metropolitan Nashville Public Schools

Metro Nashville Public School's project, Trauma Informed Practices, emphasizes social-emotional support through its schools, developing social emotional learning competencies in all district initiatives. In its second year of funding, Trauma Informed Practices (TIPS) is incorporating extensive professional development (PD) to promote awareness of the impacts of adverse childhood experiences on neurobiological development and school success, and integrating evidence-informed, trauma-sensitive practices with existing school practices.

The main components of the program include:

- Promoting awareness and driving practices through widespread PD:
    - Providing ongoing PD for direct service providers within district schools
    - Providing ongoing consultation to district educational professionals, with an emphasis on pilot schools
    - Implementing a Train the Trainer model for pilot schools and target groups (e.g., trauma-informed schools committee, Behavior Support Team, STARS counselors (Project PREVENT), Community Achieves site managers, trauma-informed schools specialists)
    - Offering monthly full-day PD to all district staff
    - Monitoring and streamlining integrity of ACEs-related activities in the district
    - Participation in trauma-informed care work group
- Establishing MNPS Trauma-informed schools committee to further promote awareness and organizational change.

The efforts of this project will also prevent ACEs for children attending MNPS and younger or yet to be born siblings of school-aged children through provision of parent training on the impacts of ACEs (e.g., Parent University, Family Engagement University, and interactions among trauma-informed school staff and parents/guardians). Grant funds support a trauma support coordinator to facilitate district-wide professional development and allows the district to implement a pilot project of more targeted prevention and intervention strategies in 16 high schools.

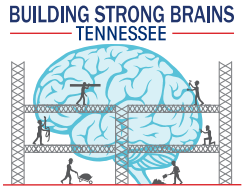
XVI

THE INFANT COURT PROJECT

Davidson County

The Infant Court Project is an evidenced based infant court team model developed to address the unique needs of infants, toddlers, and their families with court involvement. The Association of Infant Mental Health in Tennessee (AIMHiTN) developed and is now in its second year implementing the first specialized infant and toddler court docket in the state in Davidson County Juvenile Court. Modeled after Zero To Three Safe Babies Court Team demonstration projects, the team focuses on the unique needs of children in state custody between birth and age three (3). The team gives specialized attention to these children and their families, providing more frequent professional and judicial oversight and monitoring of the family's progress. Training and consultation about the negative impact of ACEs and toxic stress on brain development and the importance of safe, stable, and nurturing relationships for very young children has been provided to professionals working in or with the Court involved in cases of maltreated infants and toddlers in the child welfare system.

AIMHiTN has partnered with Tennessee's Centers of Excellence for Children in State Custody (COEs) and its COE Infant Mental Health Collaborative to provide expert clinical consultation and training support to the project.



ACEs PROJECTS FUNDED FOR FY19

July 2018

I

ALLIED BEHAVIORAL HEALTH SOLUTIONS
Nashville/Davidson County

Early Awareness Early Response will provide training to support development of a workforce with a range of skills in recognizing, assessing, and diagnosing infants and very young children to increase access to the necessary services to mitigate the negative impacts of ACEs. This project will bring Zero to Threesponsored training about diagnosis and assessment of children birth to five (DC 0:5) to home visitors, early educators, and behavioral health clinicians.

II

BAPTIST MEMORIAL HOSPITAL FOR WOMEN
Memphis/Shelby County

The Thrive by 5 program will screen all women who deliver babies at Baptist Memorial Hospital for Women for ACEs. All delivering mothers will receive ACEs education, and women with an ACE score of 4 or more will receive program interventions, be provided with hands-on support and education through scheduled in-home visits, verbal check-ins, and education on the brain development of children via the FrameWorks metaphors. In addition to in-home visits, mothers will also be encouraged to visit the Universal Parenting Place for more extensive therapeutic support to reduce depressive symptoms or other concerns.

III

BETHANY CHRISTIAN SERVICES OF GREATER CHATTANOOGA
Chattanooga/Hamilton County

Project Resilience is a combination of strategies that together will aid in mitigation of ACEs for parents by connecting with parents and parents-to-be, providing group education using Building Strong Brains, Better Brains for Babies and other child development

curricula; social support and in-home visits to pregnant women and parents of newborns up to 12 months of age; direct training utilizing the evidence-based Nurturing Parenting program, and evidence informed Safe Families for Children program in cases where temporary outside support is warranted to protect children during crisis.

IV

BETHANY CHRISTIAN SERVICES

Nashville

Safe Families for Children will recruit, screen, train and monitor volunteer families from within the community according to strict program requirements to serve as host family homes for children for whom out of home placement is needed. Socially isolated families facing a crisis will be offered an opportunity to accept trauma-informed parent mentoring and care for their children in a loving host family home. Parents will be provided education and other assistance, helping them to navigate the healing process to secure the greatest chance of success once their family is reunited through the co-parenting relationships. Parent will be provided with connections to professional and community resources.

V

BIG BROTHERS BIG SISTERS OF MIDDLE Tennessee

Nashville/Davidson County

Trauma Informed Mentoring Experiences (TIME) will make trauma-informed care the foundation of the organization's mentor training and parent support services by aligning with the Five Protective Factors, developing staff capacity to implement TIC and responsive practices through job-embedded and formal professional development; redesign of mentor and parent/guardian trainings to increase participants understanding of and capacity to help youth impacted by ACEs; creating evergreen and topical learning resources and reference materials to support trauma-informed solutions to day-to-day challenges of mentoring and parenting youth impacted by ACES; and facilitating opportunities for parents/guardians to connect about challenges and successes using trauma-informed approaches.

VI

BOYS & GIRLS CLUBS IN TENNESSEE

Statewide

Building Blocks will train Club professionals, parents and caregivers to use key strategies, techniques, and programs in providing trauma-informed care and to address the social and emotional needs of Club youth. Club professionals and caregivers of youth served will develop a comprehensive plan to bring together the "Building Blocks" from the training provided through "Build Strong Brains Tennessee",

improving outcomes of youth who have or are at-risk of experiencing ACEs.

VII
CAMELOT CARE CENTERS
Statewide

In Camelot ACEs Tennessee Toolkit, in conjunction with a consultant, Camelot will design, pilot, and evaluate additional key indicators for a Tennessee specific version of the ACEs survey. Camelot will seek to develop a multi-faceted tool kit for team members across the state to understand the impact of the assessment indicators and provide resources, specific AIM Forward © interventions, and other informal and formal services that can be used to mitigate and or prevent adverse outcomes.

VIII
CASA NASHVILLE
Nashville/Davidson County

Through Adopting the ACEs Paradigm, CASA Nashville will embed ACEs awareness throughout the CASA advocacy process by doing the following: training existing CASA advocates in the Building Strong Brains Framework and applying it to the CASA advocacy model; developing curricula and best practices for advocacy with the intent of sharing materials and lessons learned with other CASA organizations; applying the BSB TN core story to all reports and recommendations related to a child's case; and hosting a conference focused on ACEs and their impact for the child welfare community.

IX
EAST TENNESSEE STATE UNIVERSITY DEPARTMENT OF PSYCHOLOGY
Johnson City

Through the Community-Wide Trauma Informed System of Care Toolkit, the Department of Psychology at East Tennessee State University (ETSU), in partnership with Johnson City Police Department Community Crime Prevention Programs will develop a toolkit for communities to replicate success in developing a community-wide trauma informed system of care, describing the steps taken since 2015 in Northeast Tennessee, compiling and analyzing data collected over that period, with specific plans for creating trauma informed systems of care across the State of Tennessee. The basis for the Northeast system of care is 27 member agencies, all of whom have staff trained in ACEs science and trauma responsive methods.

X

EAST TENNESSEE STATE UNIVERSITY
DEPARTMENT OF BIOSTATISTICS & EPIDEMIOLOGY
Johnson City

Identifying ACEs and Resilience will identify the prevalence and types of ACEs and resilience characteristics in college students at East Tennessee State University and provide trauma-informed care training to first year students and faculty and staff. ACEs and resilience surveys will be administered to first year students at ETSU who are majoring in health professions. Upon completion of the survey if appropriate, students will be provided with information for behavioral health services on campus through University Health Services and University Counseling Services, so they may seek assistance if necessary. A nationally known speaker will be identified to provide a campus-wide lecture related to ACEs and resilience. Data from the administered survey will be used to determine what type(s) of intervention would be applicable for campus wide distribution, working with other stakeholders on campus, including students, faculty, and staff.

XI

FAMILY AND CHILDREN'S SERVICES
Nashville/Davidson County

Through Building Resilient Communities: Developing a Neighborhood Charging Station in North Nashville, Family & Children's Service (FCS) will provide targeted community programming, training and outreach about ACEs in the North Nashville neighborhood that will be home to FCS's new headquarters. FCS will convene a community ACE Task Force to raise awareness about ACEs and learn about community needs; provide Building Strong Brains trainings for schools, churches, daycare centers, and other community service providers; and provide ACE-focused, evidence-based programs and services to the target community.

XII

THE FAMILY CENTER
Davidson and Rutherford Counties

Building Trauma-Informed Systems will provide innovative, evidence-based and evidence-informed ACEs and brain science training, consultation and coaching on creating trauma-informed systems for staff at three partner sites that work with children, youth and adults with high ACEs scores: Davidson County Juvenile Court, Davidson County Sheriff's Office, and Rutherford County court and correction departments. The Project Director will consult with staff teams to assess policies and procedures and develop modifications to move toward creating trauma-informed cultures and creating better outcomes for clients and staff.

XIII
GREENE COUNTY SCHOOLS
Greeneville

Through Greene Reducing ACEs (GRACE), Greene County School System in partnership with Frontier Health will place a Masters Level School Based Mental Health Liaison to do the following: 1.) provide immediate access to behavioral health services and on-site professional consultation for students and families; 2.) work with school counselors to address issues which are escalating in the school system; 3.) assess students at school and determine need for further evaluation; 4.) serve as liaison with school counselors, Frontier Health, Law Enforcement, Health Department, and court system about ACEs screenings; and 5.) educate community members, teachers and parents/guardians on signs and symptoms of a youth in a mental health crisis.

XIV
HARMONY FAMILY CENTER
Maryville

In Regulate, Relate, and Reason—A sensory Approach to Trauma Informed Learning, Harmony Family Center will implement a trauma-informed project, Regulate, Relate, and Reason—A Sensory Approach to Trauma Informed Learning, for the Maryville City School System through the following: 1.) providing experimentally rich trainings for each of seven schools in the Maryville system and for the community; 2.) engaging staff to learn how to apply trainings in the classroom through introduction and use of evidence-based activities and tools to create a sensory area within each school, introducing movement activities designed to foster somatosensory regulation, and school-wide initiatives; 3.) designating a staff member assigned to three elementary schools to provide consultation to the schools' administration, teachers, and parents and direct clinical intervention with individual children who demonstrate the greatest challenges; 4.) developing a strategy for the replication of these processes across school systems in Tennessee

XV
HOPE CENTER, INC.
McMinn and Bradley Counties

Through ACEs Community Awareness The HOPE Center, Inc. will develop a steering committee in McMinn and Bradley Counties to raise awareness about ACEs and how the community as a whole can work together to help families affected by ACEs, and work with DCS to identify families who may need additional support in parenting by offering parenting classes. Within that goal it is the intent to host two ACEs Community Awareness

events (one in each county), hold monthly 15-minute Awareness presentation within the community organizations, quarterly ACEs training events, and provide parenting classes.

XVI
JACKSON POLICE DEPARTMENT
Jackson/Madison County

Through Protecting Children of Arrested Parents: Using a Trauma-Informed Approach in Jackson Tennessee, the Jackson Police Department, recognizing that police actions impact the physical, emotional, and psychological well-being of children, youth, and young adults will establish the program, based on the evidence based, best practices of the International Association of Chiefs of Police (IACP) program for the City of Jackson. The program will be multi-faceted. First, the Jackson Police Department will establish a Community Advisory Board for Safeguarding Children of Arrested Parents. Second, the Jackson Police Department will review existing written agreements between JPD and CPS, and using the "model policy" of IACP, create a cooperative agreement and/or memorandum of understanding with CPS and partner organizations responsible for safeguarding a child from harm when a parent is arrested and addressing trauma that has occurred. Third, the Jackson Police Department will gather statistics on the number of children who are present when a parent is arrested. Fourth, JPD, using the ACEs questionnaire, will survey all JPD POST Certified Officers and provide education, counseling, and resiliency techniques to address results. Fifth, officers will attend training to identify and respond effectively to a child who parent is arrested in order to help minimize potential trauma and support a child's physical safety and well-being following an arrest. JPD will sponsor/co-sponsor professional development workshops to train professionals across sectors in the area on ACEs with an emphasis on safe guarding children of arrested parents. Officers will be provided with a list of participant partner organizations and contact information so that they may take advantage of services provided though the interagency agreement. JPD will implement strategies and engage community resources to promote resilience, alleviate toxic stress, and reduce the accumulation of ACEs in children, youth, and young adults in the City of Jackson.

XVII
LE BONHEUR COMMUNITY HEALTH AND WELL BEING
Tipton and Crockett Counties

Le Bonheur, Crockett County Head Start, Bells City and Crestview Elementary Schools will implement Social Training for Advancing Resilience Together (START), a schools and community-wide ACEs and BSB awareness campaign in Tipton and Crockett Counties. The partners will concurrently introduce the evidence-based

Dinosaur Curriculum into pre-K through 3rd grade classrooms to increase ACEs awareness, prevention and social-emotional resiliency in children.

XVIII
LE BONHEUR COMMUNITY HEALTH AND WELL BEING
Memphis/Shelby County

Le Bonheur's Family Resiliency Initiative Program will introduce and implement the evidence-based Triple P (Positive Parenting Program) intervention as a new service for parents of children identified as being at high risk for ACEs. Triple P-PC is a brief intervention designed to build parents' skills and capacity to manage specific behaviors and parental stress that may lead to child abuse and/or emotional neglect.

XIX
MIDDLE TENNESSEE STATE UNIVERSITY
Murfreesboro

MTSU Center for Health and Human Services will create and integrate academic programs to support the project, All Children Excelling through a Comprehensive Network of Trained Providers, by doing the following: establishing a Review Committee of 10-14 faculty members and department heads to conduct a curriculum/course review; recruiting Faculty Champions from the Review Committee to act as ambassadors to their respective departments to garner widespread support for the initiative from other faculty members; coordinating and hosting a meeting with community stakeholders who serve children and families from a variety of professions; creating four curriculum modules through a partnership with the Review Committee, FrameWorks Institute, and input from Belmont University; hosting and evaluating a meeting for all faculty members from participating departments to gauge response to the curriculum and make revisions prior to the first pilot test; piloting release of the four modules, evaluating and finalizing curricula for permanent integration into core courses of participating departments

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XX
TENNESSSEE VOICES FOR CHILDREN
Macon, Trousdale and Sumner Counties

Tennessee Voices for Children will implement a Teen Parent Outreach and Support Program by doing the following in Macon, Trousdale and Sumner counties:

- Family Support Specialists will provide in home support to approximately 200 eligible families across the three counties

- Two training events will be held within each targeted county for any child serving community program or provider and parents to address ACEs information, trauma resolution within children's environments and social and emotional development
- One networking and outreach event will be conducted per county about childcare, education, medical and behavioral health and workforce development
- Additional services will be provided such as early childhood consultation for child care facilities, youth mental health screening in middle and high schools, family support for juvenile court, and outpatient counseling as identified
- Statewide Family Support will be provided through phone and website access and school IEP and meeting assistance.

A resource guide will be provided for each of the three counties both electronically and in paper form identifying organizations available and trained to work with teen parents and early child population

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XXI
UNIVERSITY OF TENNESSEE EXTENSION SERVICES
Wilson, Robertson and Campbell Counties

Through ACEs: RULER Approach, UT Extension is collaborating with Yale University to establish the nation's first implementation of the socio-emotional intelligence model in afterschool settings. RULER is an acronym that stands for the five skills of emotional intelligence: recognizing, understanding, labeling, expressing and regulating emotions. The goal is to increase socio-emotional intelligence and self-regulation abilities of youth so as to help mitigate effects of ACEs. Short-term the work is transformative to the after-school delivery model; long term the approach has the potential to alter generations of communities rooted in historical trauma and marginalization.

XXII
UNIVERSITY OF TENNESSEE COLLEGE OF SOCIAL WORK
Statewide

Resilient Tennessee is a statewide sustainability initiative to increase access to trauma informed care for all Tennesseans. Leveraging UTCSW's expertise and resources and expanding on ACE Nashville's BSB aligned Templates for Resilient Organizations, Resilient Tennessee will devise and implement strategies for statewide impact. The strategies will enhance and expand ACE Nashville's existing Templates for Resilient Organizations, develop an adaptable Organization Assessment, and build a sustainable infrastructure for ongoing training and continuing education, thus enhancing wider scale adoption of trauma informed care. Resilient Tennessee's ultimate goal is to create a comprehensive, BSB aligned, statewide network of public and private, trauma informed, and resilient human service organizations.

XXIII
UNIVERSITY OF TENNESSEE HEALTH SCIENCE CENTER
Fayette County

The vision of Fayette Forward is to create a community that supports an atmosphere where all children can thrive in stable, safe and nurturing families. The project will enhance overall child and young adult well-being by preventing ACEs and toxic stress from negatively impacting brain architecture. This will be accomplished by providing Building Strong Brains TN training to all Fayette school personnel, institute focus groups to act as community listening tours, and developing sustainability teams to ensure the continuation of service delivery.

XXIV
UNITED WAY OF METROPOLITAN NASHVILLE
Nashville/Davidson County

Zero to Five Teaching Strategies for Personal Competencies will implement Conscious Discipline as an element of United Way's Read to Succeed Program in eight sites and across all ages zero to five. This model will directly impact the children and their families, and fundamentally change culture, policies and professional practices through effective teaching and assessment and reduce community conditions that contribute to adverse childhood experiences. The Zero to Five initiative will promote self-regulation to support kindergarten readiness and school success, aligning with the Metropolitan Nashville School District standards. This model also supports and implements the Nashville Literacy Initiative's Blueprint for Early Childhood Success, twenty nine recommendations to improve success for Nashville's students.

XXV
VANDERBILT UNIVERSITY MEDICAL CENTER DIVISION OF PEDIATRICS
Northeast Nashville

Healthier Families for a Healthier TN will implement an evidence-based intervention at Rocketship Nashville Northeast School to support resilience and improve healthy behaviors among young children who are exposed to adverse childhood experiences. The intervention will apply a public health framework to target prevention efforts at critical stages of childhood social and emotional development. The goal is to develop an effectively packaged ACEs risk-prevention program that could be adopted state-wide by local schools.

XXVI
VANDERBILT UNIVERSITY MEDICAL CENTER DEPARTMENT OF PEDIATRICS
Nashville

Mitigating ACES in Pediatric Primary Care and a Home Visiting Program is intended to affect policy and practice related to ACEs screening and intervention in pediatric primary care. Clinicians involved in the project will screen for ACEs, including unhealthy parenting, and build on parents' strengths using an evidence-based parenting intervention. Three activities will be performed: 1) VU will test an ACEs algorithm in a pediatric clinic; 2) complete the FY18 studies of a parenting intervention in the clinic and a home visiting program, and 3) work with the Tennessee Chapter of the American Academy of Pediatrics (TNAAP) to distribute an ACEs algorithm and ACEs intervention materials to pediatricians in the state.

XXVII
WEST TENNESSEE HEALTHCARE FOUNDATION
Jackson/Madison County

The purpose of Building Strong Childhoods in Madison County is to mitigate and help parents in Madison County recover from ACEs, build resilience, and promote safe, stable, nurturing relationships with their children. This program will work to break the cycle of ACEs from parents to children with trauma-informed care. Partners are Healthy Start/Healthier Beginnings Program of Jackson-Madison County General Hospital, Pathways Behavioral Health Services, and Madison County Juvenile Court. The program will target parents of children age 0-17 who are before the Madison County Juvenile Court for dependency, neglect, or delinquency. A two-hour workshop will be held at least every two weeks with 10 to 15 participants, facilitated by an individual who is a certified Building Strong Brains TN trainer. The facilitator will be responsible for follow-up with parents referred to the program, scheduling, facilitating the workshops, and conducting any referral or further interaction with parents who attend the workshops.

COMMUNITY INNOVATIONS CONTINUED FROM FY17 & FY18

I
ACE HEALTH CARE PROVIDER EDUCATIONAL PROGRAM
Baptist Memorial Hospital for Women
Memphis

Baptist Memorial Hospital for Women has developed the ACE Health Care Provider Educational Program to educate physicians and other health care providers on adverse

childhood experiences (ACEs) and social determinants of health, arming them with information and tools they need to address ACEs in their practices. The program will secure inclusion of ACE risk questionnaires in initial medical assessments at physician offices, including local primary care physicians, pediatricians and obstetricians. Inclusion of the ACE questionnaire gives physicians the information they need to recommend that parents seek additional support and counseling at the Universal Parenting Place (UPP) sites, which equip families to prevent and mitigate ACEs, among other things. It also provides an opportunity for doctors to educate their patients on toxic stress and its effects, following current American Academy of Pediatrics guidelines to look for toxic stress in their patients. The goal of this program is to lessen and prevent the effects of ACEs by expanding ACE awareness within the Memphis community health care organizations and providers. For those cases where a child has already been exposed to ACEs, the program seeks to mitigate the effects of ACEs on the brains of the young children by educating their parents/caregivers on how behavior and environment impact brain architecture and brain development.

II

ADVERSE CHILDHOOD EXPERIENCE (ACES) INITIATIVE PROGRAM
Murfreesboro City Schools

The Adverse Childhood Experience (ACE) Initiative Program, funded for a second year through *Building Strong Brains: Tennessee's ACEs Initiative* grant, allows Murfreesboro City Schools (MCS) to further its vision to focus on the whole child, assuring their success in a global community. This effort encompasses a major undertaking to assist students and their families to meet academic, nutritional, medical, social and behavioral needs. The Program promotes prevention of ACEs by educating school staff, parents, and community partners regarding childhood trauma and the impact of ACEs on children's physical and social development. As a protective factor against ACEs, this program enhances social connections within the family and greater community. These programs and services help mitigate the effects of ACEs by providing small group intervention for students who are identified at-risk and then linking the students to available school-based and community services. Parents receive parent training and support and are linked with community partners to build positive social connections.

III
Belmont University's Educating Trauma Informed Professionals
Nashville

Belmont University's Educating Trauma Informed Professionals (BETIP) project addresses the need to improve professional practices and promote cross-fertilization among

professions that touch children and families during sensitive periods of development and beyond through development of a standard trauma-informed care education models for undergraduates. BETIP has two aims: 1) to develop an evidence-based, cross-disciplinary, trauma-informed care curriculum for undergraduate nursing, public health and social work students and 2) to identify and address knowledge and training needs among recent graduates and practicing professionals in these disciplines. Community stakeholders have been engaged to identify knowledge gaps about ACEs; work with ACEs content, messaging and curriculum design experts, and support faculty champions to lead development of the new curriculum. With a focus on improving long term outcomes for Tennessee's children and their families, these efforts also support Belmont's greater mission to help students from diverse backgrounds to engage and transform the world with disciplined intelligence, compassion, courage and faith.

IV
DISCOVER TOGETHER
Tracy City, Grundy County

Discover Together is a collection of programs designed to provide families with positive adaptive skills that help them thrive in the face of isolation and poverty. Discover Together includes a Community Ambassador program, which trains community members in early child development, family engagement, and ACEs awareness. Ambassadors' responsibilities are to find families in need, connect them to services in their community, and ensure families remain connected to programs and assistance. Discover Together's *Building Strong Brains* project is leveraging its Community Ambassador program to identify families experiencing or at risk for ACEs by using the school district's early warning system for chronic absenteeism. This whole-family strategy allows students to spend more time in school receiving the education and social support needed to buffer the effects of adversity and stress. It increases caregivers' social support and resources and assists them with underlying problems that led to their child's absenteeism. Discover Together is a collaboration among Sewanee: The University of the South; the Yale Child Study Center; Scholastic, and community partners in Tracy City, TN

V
MEDICAL COLLABORATIONS AND NURTURING PARENTS PROGRAM
Frontier Health
Northeast Tennessee

Frontier Health continues a program, the Medical Collaborations and Nurturing Parents Program, to support high risk mothers and infants born with Neonatal Abstinence Syndrome (NAS) in collaboration with the medical community. Utilizing *Nurturing Parenting*

Parent Educational Program, an evidence based model of positive parent training, the program exposes parents to positive parenting guidelines, and information and access to services which address substance use and mental health needs, creating a positive impact and increasing protective factors for their children prior to giving birth and continuing thereafter. A behavioral health professional with trauma training meets the new parents at their OB/GYN and PCP offices and follows them through their hospital stay and the extended stay of their infants to provide advocacy and support. Training on ACEs is provided to nurses and medical staff to promote understanding and care for high risk parents. Parent classes and support groups are offered in other neutral locations such as area churches, community centers and housing complexes.

VI

PREVENTING ADVERSE CHILDHOOD EXPERIENCES (PACE)

Gibson County Special School District

The Gibson County Special School District continues to develop a PACE (Preventing Adverse Childhood Experiences) Project to prevent and mitigate ACEs for children, families and communities addressing philosophy, polices, programs, and professional practices through:

- Increased awareness of ACEs and their impacts by disseminating information to District employees during district-wide professional development opportunities; parents/caregivers via Parent Academies; and community at-large through public speaking venues.
- Identifying, assessing, and revising policy to ensure the Gibson County Special School District Policy promotes nurturing environments and assists in reducing detrimental environmental factors for children and families by developing a Trauma-Informed Committee (TIC).
- Ensuring safe, stable, nurturing relationships and environments of children by developing skill- building opportunities for parents of pre-k and middle school students through the development of Parent Academies that address the five protective factors, utilizing an evidence-based curriculum, *Parenting Wisely.*
- Preventing and reducing ACEs of pre-k and middle school students through in-home counseling and middle school small group interventions utilizing the evidence-based curriculum, *Skillstreaming the Adolescent.*

VII

PROTECTING CHILDREN FROM ACES AND TRAUMA (PCAT)

University of Tennessee Health Science Center

The University of Tennessee Health Science Center (UTHSC) continues to develop the Protecting Children from ACEs and Trauma (PCAT) program. PCAT incorporates a wraparound approach with trauma-focused interventions to address the needs of children

and families who have been impacted by trauma and other adverse experiences in childhood utilizing existing community organizations to provide the services and build community awareness and understanding of the impact of ACEs on child development, promote recovery from the damaging effects of childhood adversity, and recommend policy and funding changes that promote safe and nurturing environments that contribute to healthy brain development and reduce ACEs. Through PCAT, UTHSC assists families, community members, policy makers, funders, community organizations and other key stakeholders in understanding the importance of all the work underway to create trauma-informed and engaged communities throughout Memphis and Shelby County. UTHSC has joined other initiatives in support of local efforts at the community level as "change makers" in addressing ACEs and toxic stress early.

VIII

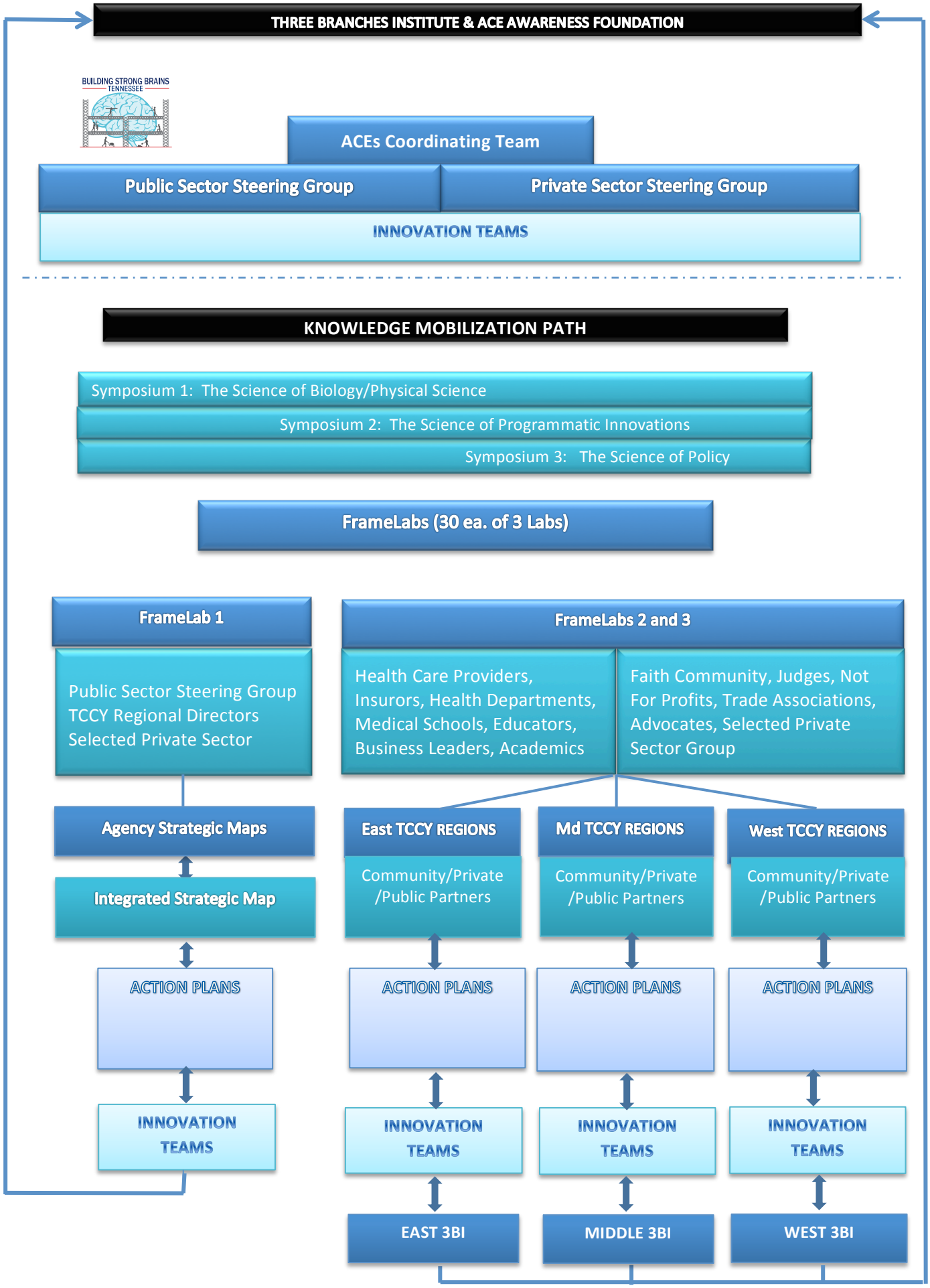
TRAUMA INFORMED PRACTICES

Metropolitan Nashville Public Schools

Metro Nashville Public School's project, Trauma Informed Practices, emphasizes social-emotional support through its schools, developing social emotional learning competencies in all district initiatives. In its third year of funding Trauma Informed Practices (TIPS) is incorporating extensive professional development (PD) to promote awareness of the impacts of adverse childhood experiences on neurobiological development and school success, and integrating evidence-informed, trauma-sensitive practices with existing school practices. The main components of the program include:

- Promoting awareness and drive practices through widespread PD:
  - Providing ongoing PD for direct service providers within district schools
  - Provide ongoing consultation to district educational professionals, with an emphasis on pilot schools
  - Implementing a Train the Trainer model for pilot schools and target groups, Community Achieves site managers, trauma-informed schools specialists)
  - Offering monthly full-day PD to all district staff
  - Monitoring and streamlining integrity of ACEs-related activities in the district
  - Participation in trauma-informed care work group
- Establishing MNPS Trauma-informed schools committee to further promote awareness and organizational change.

Grant funds support a trauma support coordinator to facilitate district-wide professional development and allow the district to implement a pilot project of more targeted prevention and intervention strategies in 16 high schools.


THREE BRANCHES INSTITUTE & ACE AWARENESS FOUNDATION
BUILDING STRONG BRAINS TENNESSEE
ACEs Coordinating Team
Public Sector Steering Group
Private Sector Steering Group
INNOVATION TEAMS
KNOWLEDGE MOBILIZATION PATH
Symposium 1: The Science of Biology/Physical Science
Symposium 2: The Science of Programmatic Innovations
Symposium 3: The Science of Policy
FrameLabs (30 ea. of 3 Labs)
FrameLab 1
Public Sector Steering Group
TCCY Regional Directors
Selected Private Sector
FrameLabs 2 and 3
Health Care Providers, Insurors, Health Departments, Medical Schools, Educators, Business Leaders, Academics
Faith Community, Judges, Not For Profits, Trade Associations, Advocates, Selected Private Sector Group
Agency Strategic Maps
Integrated Strategic Map
East TCCY REGIONS
Md TCCY REGIONS
West TCCY REGIONS
Community/Private /Public Partners
Community/Private /Public Partners
Community/Private /Public Partners
ACTION PLANS
ACTION PLANS
ACTION PLANS
ACTION PLANS
INNOVATION TEAMS
INNOVATION TEAMS
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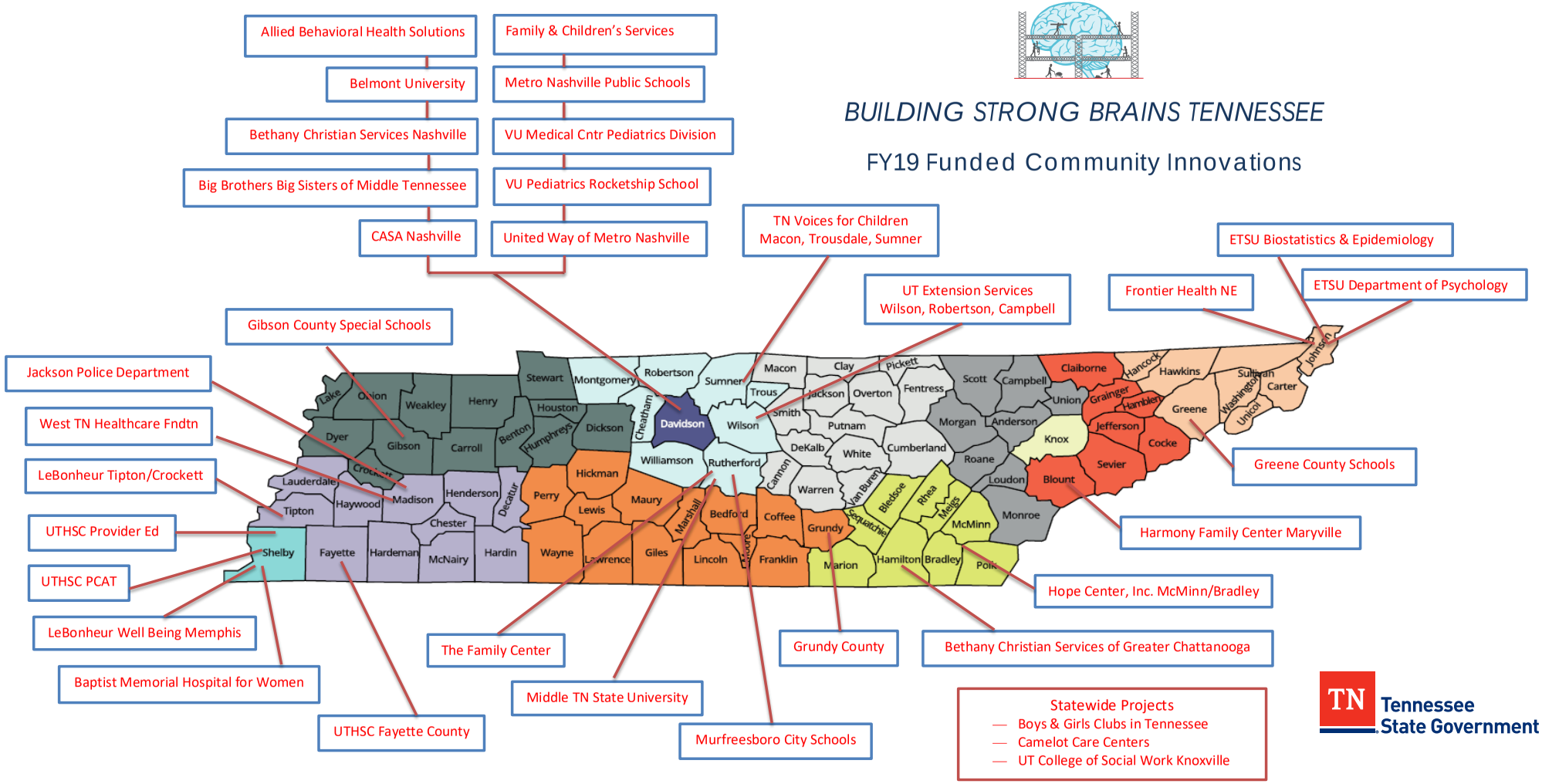
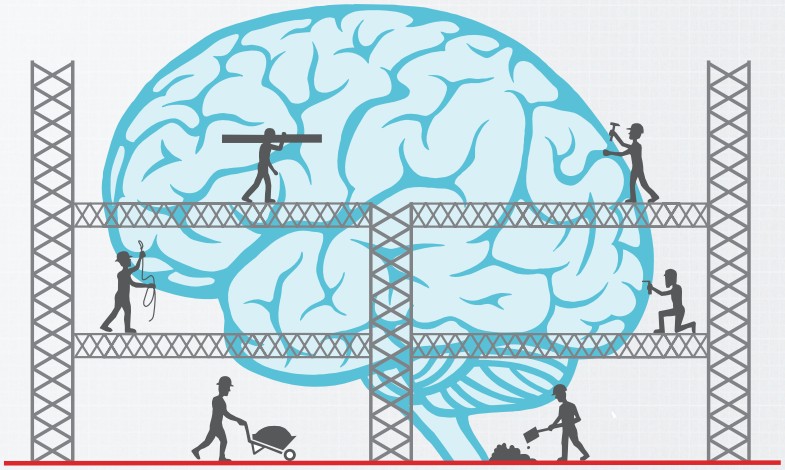
WEST 3BI

BUILDING STRONG BRAINS TENNESSEE

FY19 Funded Community Innovations



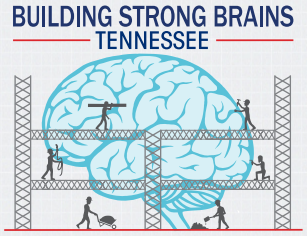
BUILDING STRONG BRAINS
TENNESSEE



Building Strong Brains Tennessee
Becoming a Trauma-Responsive State

Fall 2018

Building Strong Brains Mission



Building Strong Brains Tennessee

works to change the culture of Tennessee

so the state's overarching

philosophy, policies, programs and practices for children, youth and young adults

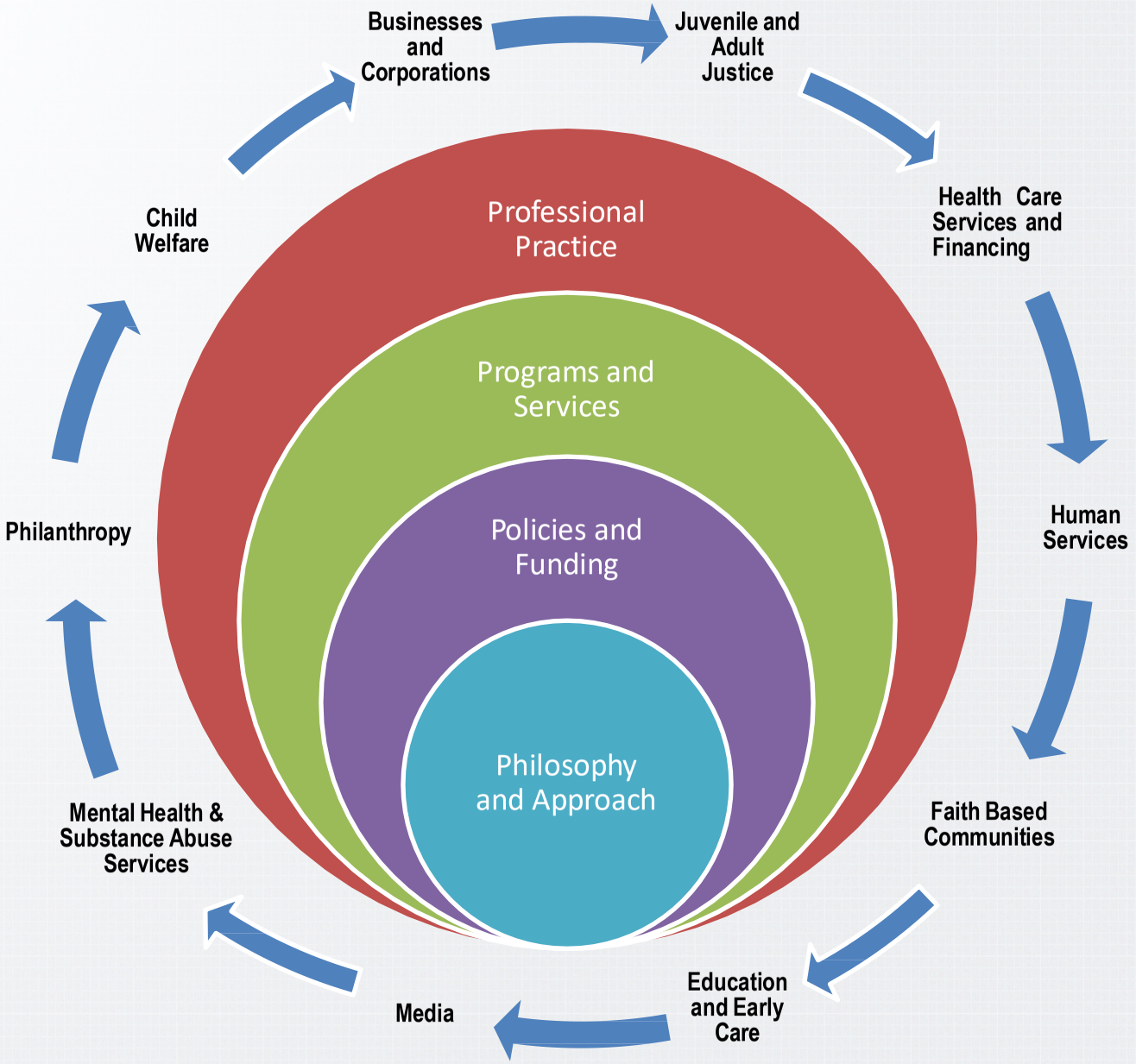
utilize the latest brain science to

prevent and mitigate the impact of

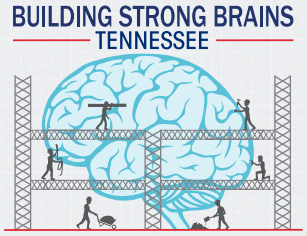
adverse childhood experiences.

BSB Intention: Transform the "4Ps"

Adverse Childhood Experiences: Prevention, Mitigation, and Recovery Anticipated Multi-Sector, Multi-Level, Public and Private Impacts



Building Strong Brains
Public Private Partnerships



- Coordinating Team

Guided by

- Public Sector Steering Group

Balanced by

- Private Sector Steering Group

Supported by

- Foundations & In-kind Resources
  Tennessee State Government

ACE AWARENESS FOUNDATION

casey family programs

THE HEALING TRUST

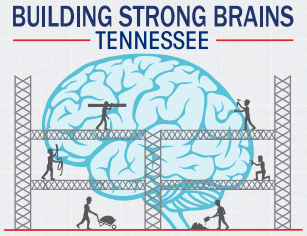
TN Tennessee State Government

What has made BSB TN unique?

- Integration of Two Sciences
  - Brain Science
  - Communication Science
- Dedicated appropriations for Community Innovations

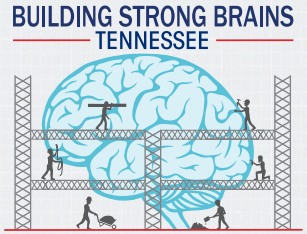
Knowledge Mobilization Path

Knowledge Mobilization Path



- Three Scientific Symposia
  - The Science of Biology/Physical Science
  - The Science of Programmatic Innovations
  - The Science of Policy Innovation
- Four “FrameLabs”
- Training For Trainers
- Building Strong Brains--Strategies for Educators

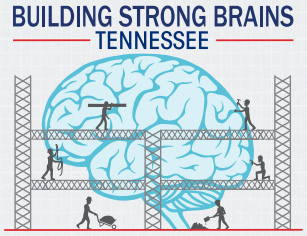
The Knowledge Mobilization Path: Major State Agency Partners



- Department of Children's Services
- Department of Correction
- Department of Education
- Department of Health
- Department of Human Services
- Department of Mental Health & Substance Abuse
- Office of Criminal Justice Programs
- TennCare Division
- Tennessee Commission on Children and Youth
- University of Tennessee College of Social Work

Community Innovations

Funds support Innovations in these sectors

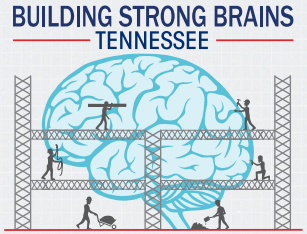


- Academia
  - Belmont University
  - ETSU Biostats/Epidemiology
  - MTSU College of Education
  - TSU COE in Learning Sciences
  - UT College of Social Work
- Child Welfare
  - Camelot Care Centers
  - CASA Nashville
- Early Childhood/Childcare
  - Allied Behavioral Health Solutions
  - Baptist Memorial Thrive By 5
  - UT Extension Services

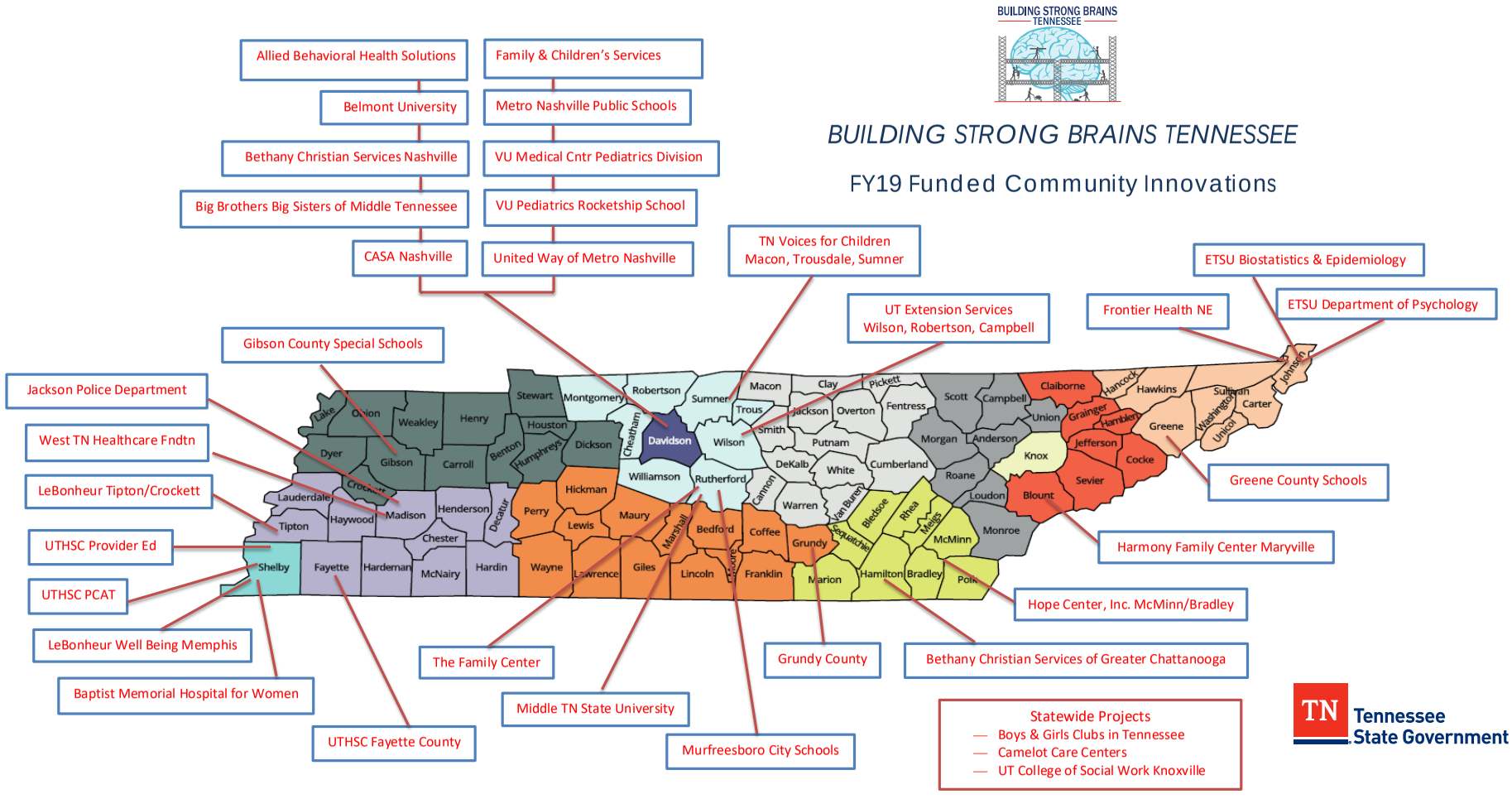
- Community
  - ACE Nashville
  - Boys & Girls Clubs Knoxville
  - ETSU/Boys and Girls Clubs
  - ETSU System of Care
  - Grundy County Discover Together
  - LeBonheur Triple P
  - LeBonheur START
  - UT Health Sciences Center Fayette County
  - UT Health Sciences Center
  - United Way of Greater Chattanooga

Community Innovations

Funds support Innovations in these sectors

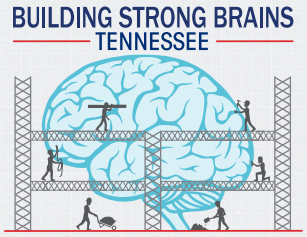


- Education
  - Gibson County School District
  - Greene County Schools
  - Metro Nashville Public Schools
  - Murfreesboro City Schools
- Justice/Courts
  - Davidson County Infant Court
  - Family Center
  - Jackson Police Department
  - West TN Healthcare Fndtn
- Media
  - WCTE Upper Cumberland
- Faith-based Community
  - Bethany Christian Services Chattanooga
  - Bethany Christian Services Nashville
- Medical
  - Baptist Memorial Health Care
  - ETSU Department of Pediatrics
  - Frontier Health
  - VU Medical Center Pediatrics Clinic
  - VU Medical Center Pediatrics Division


BUILDING STRONG BRAINS TENNESSEE
FY19 Funded Community Innovations
Allied Behavioral Health Solutions
Belmont University
Bethany Christian Services Nashville
Big Brothers Big Sisters of Middle Tennessee
CASA Nashville
Family & Children's Services
Metro Nashville Public Schools
VU Medical Cntr Pediatrics Division
VU Pediatrics Rocketship School
United Way of Metro Nashville
TN Voices for Children Macon, Trousdale, Sumner
UT Extension Services Wilson, Robertson, Campbell
ETSU Biostatistics & Epidemiology
ETSU Department of Psychology
Frontier Health NE
Gibson County Special Schools
Jackson Police Department
West TN Healthcare Fndtn
LeBonheur Tipton/Crockett
UTHSC Provider Ed
UTHSC PCAT
LeBonheur Well Being Memphis
Baptist Memorial Hospital for Women
UTHSC Fayette County
The Family Center
Middle TN State University
Murfreesboro City Schools
Grundy County
Bethany Christian Services of Greater Chattanooga
Hope Center, Inc. McMinn/Bradley
Harmony Family Center Maryville
Greene County Schools
Statewide Projects
— Boys & Girls Clubs in Tennessee
— Camelot Care Centers
— UT College of Social Work Knoxville
Tennessee State Government

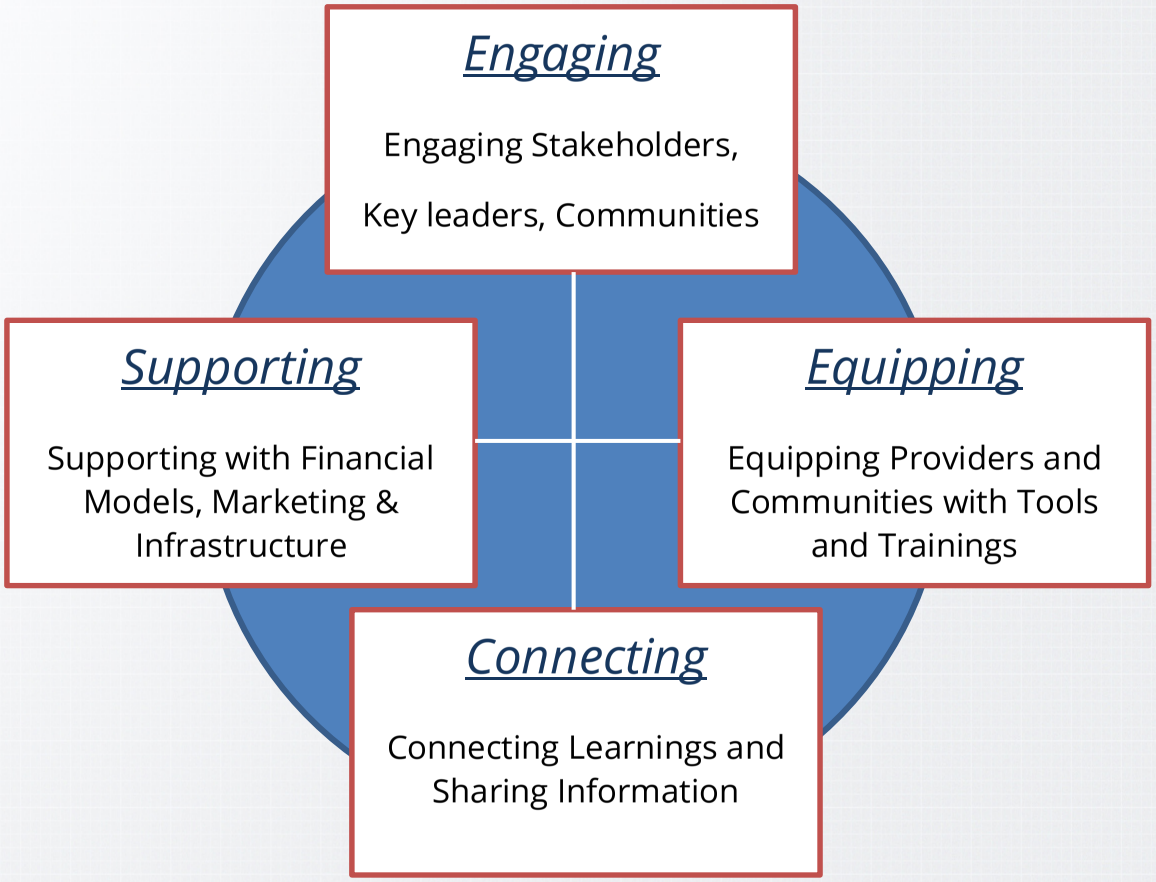
BSB TN GOING FORWARD

VISION FOR SUCCESS

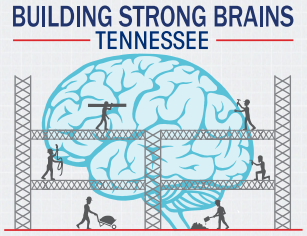


- Universal Awareness and Commitment
- Competent, Committed, Inspirational Leaders at All Levels
- Broad Community Engagement
- Common Practice Implementation
- A System to Organize Data for Analysis and Shared Results
- Targeted System-specific Marketing Strategies
- Business Engagement, Advocacy & Investment
- Formalized Infrastructure Support

STRATEGIC PRIORITIES

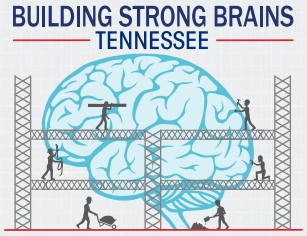


How Will We Get There?



- Sustaining and enhancing effective strategies used to date to increase public awareness and action
- Supporting extension of the scientific and practical learnings through Learning Communities
- Good stewardship of generous appropriations for ACEs-related activities
- Cultivating 2 Gen and 3 Gen approaches to community solutions
- Continuing to seek input from stakeholders
- Engaging the business community to recognize the investment in children today is an investment in the workforce of tomorrow.

Conclusion



With this Initiative, there is Confidence in Ability to Change the Culture

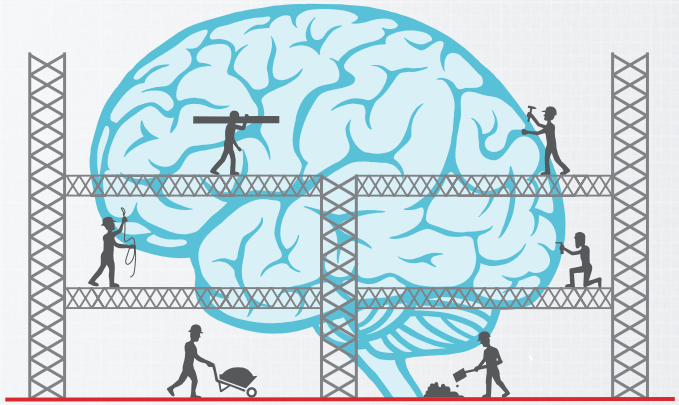
from

What is wrong with this child?

to

What happened to this child?

BUILDING STRONG BRAINS
TENNESSEE



Thank you!!

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