TAKING ON TRAUMA:
Developmental and Educational Implications of Toxic Stress

Heather C Forkey, M.D.
RTSC Making a Difference Conference
November 10, 2015
Disclosure slide

- I have no actual or potential conflict of interest in relation to this program/presentation.
Learning Objectives

• Understand the concept of toxic stress and its effects on children and their developing brains
• Be familiar with recent science on the biology of adversity and variable response to trauma
• Be able to identify the symptoms of toxic stress in children in the home and classroom
• Develop a strategy to address families and children at risk from adversity or impacted by trauma
Children have often experienced a variety of adversities
Adversities can be catastrophic
Adversities can be routine
Alex Kotlowitz: Thomas has experienced many adversities and a lot of violence
Alex Kotlowitz: Thomas has experienced many adversities and a lot of violence
Alex Kotlowitz: Thomas has experienced many adversities and a lot of violence
Overview

A. Definitions and diagnoses

B. How the Adverse Childhood Experiences Study impacted our understanding

C. The developing brain
   a) Development and Neuroscience 101
   b) Toxic stressors impact

D. A + B=C : How children exposed to toxic stress present in the home and classroom

E. How to identify and respond
Overview

A. Definitions and diagnoses

B. How the Adverse Childhood Experiences Study impacted our understanding

C. The developing brain
   a) Development and Neuroscience 101
   b) Toxic stressors impact

D. A + B=C : How children exposed to toxic stress present in the home and classroom

E. How to identify and respond
What do we mean by “trauma”

“Doc, enough with the ‘English’ — just give it to me in plain academic medical terminology!”
PTSD diagnosis arose from the experience of soldiers in Vietnam
What effect of toxic stress looks like
What effect of toxic stress looks like
What effect of toxic stress looks like
What effect of toxic stress looks like
Diagnoses seen in children exposed to trauma from NCTSN data

- Complex Posttraumatic Sequelae: Most Frequent Difficulties

- Affect Dysregulation: 61.5%
- Attention/Concentration: 59.2%
- Negative Self-image: 57.9%
- Impulse Control: 53.1%
- Aggression/Risk-taking: 45.8%
Child Trauma History: Most Frequent Exposure Types

- CEA: 59.3%
- Loss: 55.6%
- Impaired Caregiver: 47.1%
- DV: 45.8%
- CSA: 40.8%
- Neglect: 33.8%
- CPA: 28.1%
- War/Terrorism (U.S.): 18.1%
Overview

A. Definitions and diagnoses

B. How the Adverse Childhood Experiences Study impacted our understanding

C. The developing brain
   a) Development and Neuroscience 101
   b) Toxic stressors impact

D. A + B=C : How children exposed to toxic stress present in the home and classroom

E. How to identify and respond
ACE’s Study: Maltreatment and household dysfunction associated with poor health as adult

<table>
<thead>
<tr>
<th>Number of ACES</th>
<th>Women (N=9367)</th>
<th>Men (N=7970)</th>
<th>Total (N=17337)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>34.5</td>
<td>38.0</td>
<td>36.1</td>
</tr>
<tr>
<td>1</td>
<td>24.5</td>
<td>27.9</td>
<td>26.0</td>
</tr>
<tr>
<td>2</td>
<td>15.5</td>
<td>16.4</td>
<td>15.9</td>
</tr>
<tr>
<td>3</td>
<td>10.3</td>
<td>8.6</td>
<td>9.5</td>
</tr>
<tr>
<td>4 or more</td>
<td>15.2</td>
<td>9.2</td>
<td>12.5</td>
</tr>
</tbody>
</table>

1http://www.cdc.gov/violenceprevention/acesstudy/prevalence.html
Cumulative ACES & Mental Health

1 Data from the National Comorbidity Survey-Replication Sample (NCS-R).

CANarratives.org
Cumulative ACES & Chronic Disease

Prevalence %

Ischemic Heart Disease  Stroke  COPD  Diabetes  Sexually Transmitted Disease

ACES 0  1  2  3  ≥ 4

Cumulative ACES & Impaired Worker Performance

---

How the ACES Work

Adverse Childhood Experiences
- Abuse and Neglect (e.g., psychological, physical, sexual)
- Household Dysfunction (e.g., domestic violence, substance abuse, mental illness)

Impact on Child Development
- Neurobiologic Effects (e.g., brain abnormalities, stress hormone dysregulation)
- Psychosocial Effects (e.g., poor attachment, poor socialization, poor self-efficacy)
- Health Risk Behaviors (e.g., smoking, obesity, substance abuse, promiscuity)

Long-Term Consequences

Disease and Disability
- Major Depression, Suicide, PTSD
- Drug and Alcohol Abuse
- Heart Disease
- Cancer
- Chronic Lung Disease
- Sexually Transmitted Diseases
- Intergenerational transmission of abuse

Social Problems
- Homelessness
- Prostitution
- Criminal Behavior
- Unemployment
- Parenting problems
- High utilization of health and social services
- Shortened Lifespan

CANarratives.org
Overview

A. Definitions and diagnoses

B. How the Adverse Childhood Experiences Study impacted our understanding

C. The developing brain
   a) Development and Neuroscience 101
   b) Toxic stressors impact

D. A + B=C : How children exposed to toxic stress present in the home and classroom

E. How to identify and respond
Interlude on Neurodevelopment

- Brain starts as single cell – develops into ten billion cells
Migration

http://www4.utsouthwestern.edu/moleculargenetics/pages/herz/current2.html
Arborization

Sparse growth of dendrites in an aging, inactive brain

Typical dendritic growth in an active brain
Synaptogenesis and synaptic sculpting
Apoptosis

- **Proliferation**: Cells divide.
- **Differentiation and maturation**: Cells develop characteristics specific to adult neurons.
- **Survival**: Cells grow and extend toward other neurons.
- **Cell death**: Some cells die in the course of normal development, especially during proliferation and differentiation.
Neuron density over time

Myelination

- Myelin sheath
- Nodes of Ranvier
- Axon
Brain not complete at birth, development guided by environment.
<table>
<thead>
<tr>
<th>Positive Stress</th>
<th>Tolerable Stress</th>
<th>Toxic Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Normal and essential part of healthy development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Brief increases in heart rate and blood pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Mild elevations in hormonal levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ <em>Example</em>: Final exam Playoff game.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Body’s alert systems activated to a greater degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Activation is time-limited and buffered by caring adult relationships.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Brain and organs recover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ <em>Example</em>: Death of a grandparent, car accident.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Occurs with strong, frequent or prolonged adversity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Disrupts brain architecture and other organ systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Increased risk of stress-related disease and cognitive impairment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ <em>Example</em>: abuse, neglect, caregiver substance dependence or mental illness</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Intense, prolonged, repeated, unaddressed; Child or family vulnerabilities, limited supports, devel. delays**

**Social-Emotional buffering, Learned skills, Parent/Child Resilience, Early Detection, Effective Intervention**
Overview

A. Definitions and diagnoses
B. How the Adverse Childhood Experiences Study impacted our understanding
C. The developing brain
   a) Development and Neuroscience 101
   b) Toxic stressors impact
D. $A + B = C$: How children exposed to toxic stress present in the home and classroom
E. How to identify and respond
Alex Kotlowitz: Thomas has witnessed an incredible amount of violence

• **Thomas:** If it happens again, I don't think I could stop.
Neurobiology of Trauma

Hypothalamic-Pituitary-Adrenal Axis (HPA)

- Stress activates axis.
- Peripheral release of epinephrine and cortisol.
- Stimulates multiple areas of body and immune system.

Cortisol and epinephrine
Trauma

• Stress and the tiger
  • Bodies designed to respond to stress
  • Adrenalin and cortisol help us run from tiger or hide
  • Threat of short duration
Cortisol

Other body systems

Immune system

Inflammatory response

Infection fighting antibodies

HPA axis

Infection fighting antibodies

Antibodies

Inflammatory response

Immune system

Cortisol

Other body systems

HPA axis
BUT...when the tiger lives in your home, neighborhood or life
Toxic stress

CORTISOL

Other body systems

Immune system

Gene expression (epigenetics)

Gene expression (antibodies)

Inflammatory response

Infection fighting (antibodies)

Gene expression (epigenetics)
Neurobiology of Trauma

Amygdala

- Amygdala: Input from sensory, memory and attention centers
- Emotional memory system = The brain’s alarm system
Neurobiology of Trauma

Hippocampus

- Interface between cortex and lower brain areas.
- Major role in memory and learning.
  - The brain’s file cabinet or search engine.
Neurobiology of Trauma

- Frontal cortex
  - Executive function
    - Impulse control
    - Working memory
    - Cognitive flexibility
Overview

A. Definitions and diagnoses
B. How the Adverse Childhood Experiences Study impacted our understanding
C. The developing brain
   a) Development and Neuroscience 101
   b) Toxic stressors impact
D. A + B=C : How children exposed to toxic stress present in the home and classroom
E. How to identify and respond
If Thomas came for services…

• Concerns of caregiver might be:
  • Not sleeping
  • Overeating
  • Short attention span
  • Easily frustrated
  • Academic difficulty
Not sleeping

Neocortex

Basal ganglia

Thalamus

Reticular activating system - neural network that controls wakefulness

Spinal cord
Overeating
<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>CENTRAL CAUSE</th>
<th>SYMPTOM(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep</td>
<td>Stimulation of reticular activating system</td>
<td>1. Difficulty falling asleep</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Difficulty staying asleep</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Nightmares</td>
</tr>
<tr>
<td>Eating</td>
<td>Inhibition of satiety center, anxiety</td>
<td>1. Rapid eating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Lack of satiety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Food hoarding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Loss of appetite</td>
</tr>
<tr>
<td>Toileting</td>
<td>Increased sympathetic tone, increased catecholamines</td>
<td>1. Constipation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Encopresis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Enuresis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Regression of toileting skills</td>
</tr>
</tbody>
</table>
ADHD, really?
Prior to this conference – might consider

- Not getting medications
- Under-medicated ADHD – needs higher dose
- Need to switch medications
- ODD/conduct issues
- Depression
- Developmental delay
- Parenting issues
Figure 2: Learning/Behavior Problems by ACEs Score

### NICHQ Vanderbilt Assessment Scale—TEACHER Informant

**Teacher's Name:** Dan's Teacher  
**Class Time:**  
**Class Name/Period:**  
**Today's Date:**  
**Child's Name:** Dan  
**Grade Level:** 3rd

**Directions:** Each rating should be considered in the context of what is appropriate for the age of the child you are rating and should reflect that child’s behavior since the beginning of the school year. Please indicate the number of weeks or months you have been able to evaluate the behaviors:

- ✔️ was on medication  
- ☐ was not on medication  
- ☐ not sure

#### Is this evaluation based on a time when the child

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Never</th>
<th>Occasionally</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fails to give attention to details or makes careless mistakes in schoolwork</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Has difficulty sustaining attention to tasks or activities</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Does not seem to listen when spoken to directly</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Does not follow through on instructions and fails to finish schoolwork (not due to oppositional behavior or failure to understand)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Has difficulty organizing tasks and activities</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Loses things necessary for tasks or activities (school assignments, pencils, or books)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Is easily distracted by extraneous stimuli</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Is forgetful in daily activities</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10. Fidgets with hands or feet or squirms in seat</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11. Leaves seat in classroom or in other situations in which remaining seated is expected</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12. Runs about or climbs excessively in situations in which remaining seated is expected</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13. Has difficulty playing or engaging in leisure activities quietly</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14. Is &quot;on the go&quot; or often acts as if &quot;driven by a motor&quot;</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15. Talks excessively</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16. Blurs out answers before questions have been completed</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17. Has difficulty waiting in line</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18. Interrupts or intrudes on others (eg, butts into conversations/games)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19. Loses temper</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20. Actively defies or refuses to comply with adult’s requests or rules</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21. Is angry or resentful</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22. Is spiteful and vindictive</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23. Bullies, threatens, or intimidates others</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24. Initiates physical fights</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25. Lies to obtain goods for favors or to avoid obligations (eg, &quot;cons&quot; others)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26. Is physically cruel to people</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>27. Has stolen items of nontrivial value</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>28. Deliberately destroys others’ property</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29. Is fearful, anxious, or worried</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>30. Is self-conscious or easily embarrassed</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>31. Is afraid to try new things for fear of making mistakes</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

The recommendations in this publication do not constitute an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.
<table>
<thead>
<tr>
<th>AGE</th>
<th>IMPACT ON WORKING MEMORY</th>
<th>IMPACT ON INHIBITORY CONTROL</th>
<th>IMPACT ON COGNITIVE FLEXIBILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant / toddler / pre-schooler</td>
<td>Difficulty acquiring developmental milestones</td>
<td>Frequent severe tantrums</td>
<td>Easily frustrated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aggressive with other children</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Attachment may be impacted</td>
<td></td>
</tr>
<tr>
<td>School-aged child</td>
<td>Difficulty with school skill acquisition</td>
<td>Frequently in trouble at school and with peers for fighting and disrupting</td>
<td>Organizational difficulties</td>
</tr>
<tr>
<td></td>
<td>Losing details can lead to confabulation, viewed by others as lying</td>
<td></td>
<td>Can look like learning problems or ADHD</td>
</tr>
<tr>
<td>Adolescent</td>
<td>Difficulty keeping up with material as academics advance</td>
<td>Impulsive actions which can threaten health and well-being</td>
<td>Difficulty assuming tasks of young adulthood which require rapid interpretation of information: ie, driving, functioning in workforce</td>
</tr>
<tr>
<td></td>
<td>Trouble keeping school work and home life organized</td>
<td>Actions can lead to involvement with law enforcement and increasingly serious consequences</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confabulation increasingly interpreted by others as integrity issue</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tiger in the house

• When age 4 father left
• Mother’s boyfriend lived in house since then
• Witness to DV, drug use
Jana’s mom is worried about her school failure

Hx and ROS
• Depressed?
  • Was bubbly – now not.
  • Pulling back from friends
• Cutting
• Says she is ugly

Course:
• Not improving after 3 mo.
• Meds not help
Dissociative Continuum

- Defeat response
  - Dissociation describes mental mechanisms of
    - disengaging from the external world
    - attending to stimuli of the internal world
<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>MORE COMMON WITH</th>
<th>RESPONSE</th>
<th>MISIDENTIFIED AS AND/OR COMORBID WITH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissociation (Dopaminergic)</td>
<td>• Females</td>
<td>• Detachment</td>
<td>• Depression</td>
</tr>
<tr>
<td></td>
<td>• Young children</td>
<td>• Numbing</td>
<td>• ADHD inattentive type</td>
</tr>
<tr>
<td></td>
<td>• Ongoing trauma/pain</td>
<td>• Compliance</td>
<td>• Developmental delay</td>
</tr>
<tr>
<td></td>
<td>• Inability to defend self</td>
<td>• Fantasy</td>
<td></td>
</tr>
<tr>
<td>Arousal (Adrenergic)</td>
<td>• Males</td>
<td>• Hypervigilance</td>
<td>• ADHD</td>
</tr>
<tr>
<td></td>
<td>• Older children</td>
<td>• Aggression</td>
<td>• ODD</td>
</tr>
<tr>
<td></td>
<td>• Witness to violence</td>
<td>• Anxiety</td>
<td>• Conduct disorder</td>
</tr>
<tr>
<td></td>
<td>• Inability to fight or flee</td>
<td>• Exaggerated response</td>
<td>• Bipolar disorder</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Anger</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• management difficulties</td>
</tr>
</tbody>
</table>
Tiger in the house

- Chlamydia positive
Jon came in about is asthma, but...
Toxic stress

CORTISOL

Gene expression (epigenetics)

Infection fighting (antibodies)

Inflammatory response

Immune system

Other body systems
Impact of toxic stress on immune system

- Developing system is chronically pressed into action
  - Too much cortisol suppresses immunity, increasing risk of infection
  - Inflammatory response persists after it is no longer needed
- Somatic perception gets impaired
  - Headache, stomachache
Bottom line: Significant adversity: less than optimal outcomes decades later
Childhood experience not destiny
What explains variable response to adversity
Diathesis stress model: due to genetic vulnerability some do poorly with adversity
Diathesis stress: No genetic advantage, why would vulnerability alleles be conserved?
Orchids and Dandelions: Biological differential sensitivity to context

Some children less swayed by experiences
Other kids predisposed to being more sensitive or reactive to environment
Advantage to each depends on context
In Frozen we have an orchid (Elsa) and a dandelion (Anna).
Dopamine D4 receptor: externalizing behaviors when matl insensitivity BUT respond ++ to positive parenting technique

Kids with high cortisol reactivity rated as less pro-social when living in adverse contexts, more pro-social when living on more nurturing contexts.
Difficult temperaments as infants: child behavior varied by quality of childcare

Implication: The very children who struggle the most under adversity are likely to have been the luminaries of the next generation.
Brain and physiologic changes allow adversity to embed

- Ways that are adaptive in short term, maladaptive in life course
Overview

A. Definitions and diagnoses

B. How the Adverse Childhood Experiences Study impacted our understanding

C. The developing brain
   a) Development and Neuroscience 101
   b) Toxic stressors impact

D. A + B=C : How children exposed to toxic stress present in the home and classroom

E. How to identify and respond
Trauma Responses: Adaptive and Protective When in Threatening Situation

• Same bodily functions and behaviors may be maladaptive when children are removed from the stressor

• When not examined within the context of past traumas can be misinterpreted as pathologic

• “YOU MEAN IT’S NOT MY FAULT”
“Kids are doing the best they can.”
Helping families understand trauma
Invisible suitcase
I am in danger
I am worthless
I am powerless
You are not reliable
You cannot protect me
You will be dangerous or rejecting
Emotional container
• Tolerate strong emotions
• May act out with you
• but emotion not about you
• Respond calmly
• Help name feelings
Helping families understand and respond

Building capacity for emotional control

• What is needed to feel safe

• Triggers
  • Look for modifiable stressor
  • Media can often be trigger
  • Triggers that are not expected may be cause of unexpected reactions
Guidance for caregivers, not business as usual
## Therapies for the Traumatized Child

<table>
<thead>
<tr>
<th>AGE</th>
<th>THERAPY</th>
<th>GOALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young child 0-5 years</td>
<td>• PCIT — Parent Child Interactive Therapy</td>
<td>Works with caregivers and children to address child behaviors observed during play. A dyadic intervention that targets the impact of trauma on the child-parent relationship and how the parent can provide emotional safety for the child.</td>
</tr>
<tr>
<td></td>
<td>• CPP — Child Parent Psychotherapy</td>
<td></td>
</tr>
<tr>
<td>Older children</td>
<td>• TF-CBT — Trauma Focused Cognitive Behavioral Therapy (for children 5 and older)</td>
<td>Trains children and families in: relaxation techniques, skills and language to access emotion, psychoeducation. Then, child is guided to create a trauma narrative. Child develops/writes a story about what happened to him or her. When the child is able to tell or read this story to the caregiver, it indicates the trauma no longer defines the child, but is instead a story of what happened, having lost its power to continue to harm.</td>
</tr>
<tr>
<td></td>
<td>• CBITIS — Cognitive Behavioral Intervention for Trauma In Schools</td>
<td></td>
</tr>
<tr>
<td>(for high school-aged youth)</td>
<td>• ARC — Attachment, Self-Regulation, and Competency</td>
<td>To support healthy relationships between children and their caregiving systems to: support resources and safety for adult members of the family, build all family members’ ability to manage feelings, body sensations, and behaviors, improve problem solving skills, support healthy development of identity, support the child in processing/integrating stressful life experiences</td>
</tr>
</tbody>
</table>
Implications for policy and systems that support children and families

- Investment in social services – consider long term cost of not investing
Advocacy at family and community level
Alex Kotlowitz: Thomas has witnessed an incredible amount of violence

- Thomas: If it happens again, I don’t think I could stop.
Tertiary care
Quaternary care