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CHILDHOOD ADVERSITY AND TRAUMA: DEVELOPMENTAL IMPACT AND OPPORTUNITIES FOR INTERVENTION

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FOUR BASIC ASSUMPTIONS

1. The exposure of children to adverse and traumatic events in the general population is high; exposure for those involved in child welfare, juvenile justice and behavioral health is even higher
2. In the absence of support, exposure to these events causes disruption to the structure and function of the brain. Young children are particularly vulnerable to this disruption
3. Disruption to the brain negatively impacts cognitive, social, emotional, and behavioral functioning and increases the risk for life-long health problems
4. We have the ability to prevent exposure as well as build child and adult resilience to reduce the negative impacts of exposure to these events

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ADVERSITY-TRAUMA-PTSD

Adverse Childhood Experiences are events that occur before the age of 18 which create stress that may overwhelm a child's ability to cope and result in lifelong health consequences

Trauma results from exposure to an event which is experienced as physically or emotionally harmful or threatening and has lasting adverse effects on the individual's functioning in different areas of their life (e.g. physical, social, emotional)

- Complex trauma is the simultaneous or sequential occurrence of adverse events that is chronic, begins in early childhood, and occurs within the primary caregiving system (NCTSN)

Post Traumatic Stress Disorder (PTSD) is a mental health diagnosis with a specific set of symptoms and duration

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WHAT ARE ADVERSE AND TRAUMATIC EVENTS?

We typically think.....

- Abuse
- Neglect
- Car Accident
- Domestic violence
- Death of a loved one

But what about these events.....

- Parental separation/divorce
- Incarceration of a household member
- Living in a home with an adult with addiction and/or mental illness
- Witness or victim of community violence
- Racial/ethnic discrimination

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ASSUMPTION #1: BROAD EXPOSURE

Childhood exposure to adversity & trauma is pervasive:

- **26%** of children in the United States will witness or experience a traumatic event before they turn four (National Center for Mental Health Promotion and Youth Violence Prevention, 2012)
- In one year, **39%** of children between the ages of 12 and 17 reported witnessing violence; **17%** reported being a victim of physical assault and **8%** reported being the victim of sexual assault (Finkelhor, 2009)
- **40%** of children experienced a physical assault during the past year, with one in 10 receiving an assault-related injury (JAMA Pediatrics, 2013)
- **20%** of children witnessed violence in their family or the neighborhood during the previous year (JAMA Pediatrics, 2013)

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EXPOSURE BY CHILDREN IN PUBLIC SERVICE SYSTEMS

Child Welfare

- Study of foster care youth (ages 6-13) found **83%** witnessed interpersonal violence and **51%** were victims of violence
- **90%** of children in foster care have had exposure to at least one event

Juvenile Justice

- **93%** urban youth (ages 10-18) reported at least one traumatic event and **84%** reported 2 or more; multiple studies have found average of 6 events

Behavioral Health

- **84%** of children entering the Systems of Care grant have experienced at least one traumatic event
- **70%** of children served by behavioral health community agencies report exposure with children in deep end services reporting higher rates of exposure (**82%** in residential treatment)

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WHAT ABOUT DELAWARE YOUTH?

National Survey of Children's Health

- Telephone survey administered every four years to gather information about children's health and wellbeing (Maternal Child Health Bureau/DHHS/CDC)
- 2011-12 survey added "Adverse Family Experiences" including
 - Economic hardship
 - Parental divorce/separation
 - Parent death
 - Parent served time in jail or prison
 - Domestic violence
 - Lived with anyone who was mentally ill or suicidal
 - Lived with anyone who has problems with drugs or alcohol
 - Victim/witness neighborhood violence
 - Treated or judged unfairly because of race or ethnic group

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2011-12 Delaware ACE Data*

Delaware children birth to 17

- 51% had at least one adverse family experience
- 23% had two or more

Most frequent adverse family experiences

- Economic hardship (often/somewhat)=26%
- Divorce/separation=20%
- Live with someone who has problems with alcohol/drugs=11%

Exposure to adverse family experiences goes up in the presence of other factors

- Families covered by public insurance (Medicaid/SCHIP)- 33% report two or more
- Mother only family structure- 43% report two or more
- Child with one or more emotional, behavioral or developmental issue- 50% report two or more

* National Survey of Children's Health:
<http://www.childhealthdata.org/browse/survey/results?q=2257&r=1&r2=9&a=4577&q=456>

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ASSUMPTION #2: EXPOSURE IMPACTS BRAIN

Adverse childhood experiences and traumatic events trigger the body's stress response

- The stress response is helpful in the short run
 - The body's stress response turns on to respond to the danger and then turns off

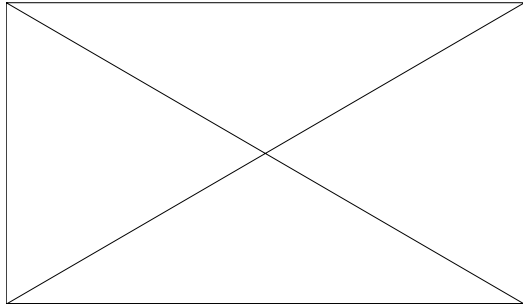
Strong, frequent and or prolonged exposure to adversity and trauma in the absence of support causes the body's stress response to stay activated

- We call this "toxic stress"

Toxic stress can disrupt the development of brain architecture and normal brain functioning

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NEURODEVELOPMENTAL IMPACT



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NEURODEVELOPMENTAL IMPACT

Toxic stress negatively impacts brain development

- Smaller brain size
- Disruption of the brain circuits
 - Lower threshold for stress/over reactivity to stress
 - Reduced production of serotonin (helps produce sense of well-being)

Damage to different areas in the brain

- Hippocampus- important for memory, learning and emotional regulation

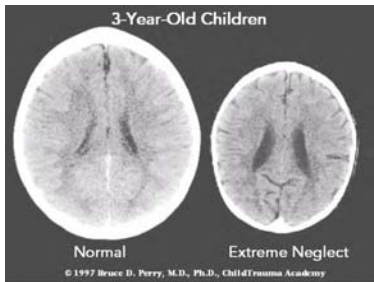
Release of high levels of the stress hormone cortisol

- Suppresses the immune system

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BRAIN GROWTH

- Slowed brain growth



3-Year-Old Children

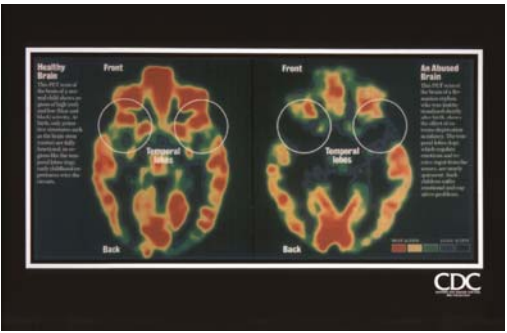
Normal Extreme Neglect

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BRAIN GROWTH

- Changes in level of activity in key areas of the brain



The image contains two side-by-side brain activity maps. The left map is labeled 'Healthy Brain' and shows a normal distribution of activity in the temporal lobes, which are circled in red. The right map is labeled 'An Abused Brain' and shows a significant reduction in activity in the temporal lobes, which are circled in blue. Text on the left side of the healthy brain map explains that the temporal lobes are involved in processing sensory information and are crucial for memory and learning. Text on the right side of the abused brain map explains that chronic stress and trauma can lead to a reduction in the volume and activity of the temporal lobes, which can impair memory and learning. The CDC logo is at the bottom right.

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TOXIC STRESS IMPACT ON ATTACHMENT

Attachment is defined as the deep and enduring emotional bond that connects one person to another across time and space (Ainsworth, 1973; Bowlby, 1969)

- We are biologically programmed to form attachments (networks of neurons dedicated to this)
- Attachment stimulates brain growth, personality development and lifelong ability to form stable relationships
- Attachments formed from birth-age 5 set the stage for the capacity to form later attachments

Toxic stress, particularly in the context of the caregiver relationship can disrupt healthy attachment which have implications for adult health including caregiving capacity

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BASIC ASSUMPTION #3: LONG TERM HEALTH IMPACTS

Adverse Childhood Experiences (ACE) Survey

- 17,337 adults surveyed between 1995-97
 - equal numbers of men and women
 - mostly white
 - primarily middle aged
 - educated and employed (with health insurance)
- Asked ten questions about childhood abuse, neglect and household dysfunction
- Tracked health outcomes over twenty years

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ADVERSE CHILDHOOD EXPERIENCES SURVEY QUESTIONS

Abuse

- Physical
- Sexual
- Emotional

Neglect

- Physical
- Emotional

Household Dysfunction

- Domestic Violence
- Household Substance Abuse
- Household Mental Illness
- Parental Separation/Divorce
- Criminal Behavior of Household Member

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ACE SURVEY FINDINGS

ACEs are common

- About **two thirds** of the participants reported at least one ACE

ACEs cluster

- About **74%** reported more than one ACE
- **12.5%** experienced four or more

ACEs have a **dose-response relationship** with many health problems

http://vetoviolence.cdc.gov/childmaltreatment/phl/resource_center_info_graphic.html

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ACE-STRESS-HEALTH RELATIONSHIP

Mechanisms by which Adverse Childhood Experiences Influence Health and Well-being throughout the Lifespan


Source: The Adverse Childhood Experiences Study website: www.acestudy.org, "About the Adverse Childhood Experiences Study."

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CHILD TOXIC STRESS INDICATORS

Cognitive

- Speech delay
- Slowed language development
- Lower IQ
- Poor verbal memory/recall
- Problems with attention
- Problems with organization and planning
- Difficulty with cause and effect relationships



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CHILD TOXIC STRESS INDICATORS

Social/Emotional

- Difficulty taking someone else's perspective
- Can't modify behavior in response to social cues
- Poor emotional regulation

Behavioral


- Demonstrate impulsivity, aggression, defiance, withdrawal
- Increased early initiation of alcohol, tobacco & other drug use
- Develop formal mental health disorders: depression (including suicide), PTSD, ADHD

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CHILD TOXIC STRESS INDICATORS

There is **no one set of indicators** for all children or for a particular event

- How children respond to toxic stress can be influenced by...
 - Event type, intensity and duration
 - Prior exposure to traumatic events
 - Developmental disabilities
 - Level of support received
- Impact of toxic stress needs to be seen in a developmental context



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TOXIC STRESS INDICATORS

Birth to age 2

- Demand attention through both positive and negative behaviors
- Demonstrate poor verbal skills and memory problems
- Display excessive temper tantrums and aggressive behavior
- Exhibit regressive behaviors
- Act withdrawn and fear adults who remind them of the traumatic event
- Experience nightmares or sleep difficulties
- Have a poor appetite, low weight and/or digestive problems
- Have poor sleep habits
- Scream or cry excessively
- Show irritability, sadness and anxiety
- Startle easily

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TOXIC STRESS INDICATORS

Ages 3-5

- Act out in social situations
- Be anxious, fearful and avoidant
- Unable to trust others or make friends
- Be verbally abusive
- Believe they are to blame for traumatic event
- Difficulties with learning and focusing at school
- Imitate the traumatic event
- Lack self-confidence
- Have stomach aches and headaches
- Be fearful of separating from caregiver

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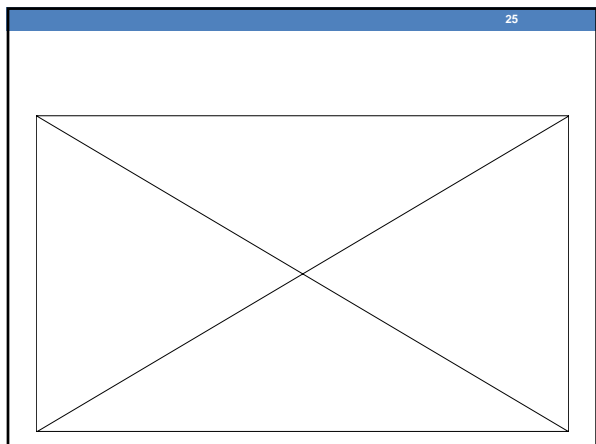
TOXIC STRESS INDICATORS

Ages 6-11

- Nightmares and sleep disruption
- Aggression and difficulties with peer relationships
- Difficulties with task completion and attention
- Withdrawal and emotional numbing
- School avoidance/truancy

Ages 12-18

- Antisocial behavior and school failure
- Impulsive and reckless behavior (e.g. running away, substance abuse, engaging in violent/abusive relationships)
- Depression, suicide, anxiety
- Non-suicidal self-injury



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POST TRAUMATIC STRESS DISORDER (PTSD) IN CHILDREN

There is a lack of good data on prevalence of PTSD in children under the age of 18.

- In a community sample of older adolescents, 14.5 percent of those who had experienced a serious trauma developed PTSD (Giaconia et al 1995)
- A review of research (Gabbay et al 2004) on children exposed to specific traumas found wide ranges in rates of PTSD:
 - 20-63% in survivors of child maltreatment
 - 12-53 % in the medically ill
 - 5-95 % in disaster survivors

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TRAUMA AND BEHAVIORAL HEALTH DISORDERS

Adversity and trauma can be a contributing factor and/or bring about symptoms consistent with a range of other behavioral health disorders in children:

- ADHD
- Anxiety
- Depression
- Bipolar Disorder
- Oppositional Defiant Disorder
- Conduct Disorder
- Specific Phobias
- Substance Use Disorders
- Specific Learning Disorders

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IMPACT TO SCHOOL FUNCTIONING

- Students with exposure to adversity and traumatic events are more likely to...
 - score lower on standardized achievement testing (Goodman et al, 2011)
 - be suspended and expelled (Sanger et al, 2000)
 - be retained- 2.5 x (Grevstad, 2007; Sanger et al 2000, Shonk et al 2001)
 - be placed in special education services. CA study found children with ACE of 4 or more were **32 times** more likely to be identified with learning and/or behavioral problems qualifying for special education (Burke Harris, 2011)

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ACE and SCHOOL ISSUES: WASHINGTON STATE

	Academic Failure	Severe Attendance Problems	Severe School Behavior Concerns	Frequent Reported Poor Health
Three or More ACEs N=248	3	5	6	4
Two ACEs N=213	2.5	2.5	4	2.5
One ACE N=476	1.5	2	2.5	2
No Known ACEs =1,164	1.0	1.0	1.0	1.0

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ADVERSITY AND TRAUMA EXPOSURE

Exposure to adverse and traumatic experiences is a major public health issue and a major driver of spending:

- In 2007, US spending on child trauma was estimated to be **\$104 billion dollars** (\$33 billion direct, \$71 billion indirect)

Childhood trauma is the....

- single most **preventable** cause of mental illness
- single most **preventable** cause of drug and alcohol abuse in women
- single most **preventable** cause of HIV high-risk behavior (IV drugs, lack of safe-sex practices)
- significant **contributor** to leading causes of death (heart disease, cancer, stroke, diabetes, suicide)

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BASIC ASSUMPTION #4: RESPONDING

We can prevent and intervene to improve outcomes for individuals exposed to adversity & trauma by...

- ✓ Strengthening resilience and protective factors for children, families and communities
- ✓ Educate everyone in the community about trauma and the opportunities for healing
- ✓ Universal screening and access to trauma-specific treatment for children and adults
- ✓ Cross System Collaboration: exposure is a community problem and requires a community solution
 - ✓ Everyone who interacts with a child and their family has a role to play

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STRENGTHEN RESILIENCE

- *Resilience* refers to achieving positive outcomes despite adverse childhood experiences, coping successfully with traumatic experiences, and avoiding adoption of health risk behaviors (e.g. substance abuse)
- Individual, family and community resilience is inhibited by risk factors and promoted by protective factors
 - *Protective factors* lead to avoidance of unhealthy responses to adverse events so that potential negative outcomes can be avoided
 - Children's resilience is promoted through
 - Strong social and emotional skills
 - Safe, stable, nurturing relationships (SSNR)
 - Caregiver resilience

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ENHANCING PROTETIVE FACTORS: CASEL

<https://www.casel.org>

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SELF-MANAGEMENT TOOL BRAIN IN THE HAND

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The Developmental Assets

External Assets

Support

1. **Family Support:** Family life provides high levels of love and support.
2. **Positive Family Communication:** Young person and her or his parents communicate positively and young person is willing to seek advice and counsel from parents.
3. **Other Adult Relationships:** Young person receives support from three or more non-parent adults.
4. **Caring Neighborhood:** Young person experiences caring neighborhood.
5. **Caring School Climate:** School provides a caring, encouraging environment.
6. **Parent Involvement in Schooling:** Parents are actively involved in helping young person succeed in school.

Engagement

7. **Community Values Youth:** Young person perceives that adults in the community value youth.
8. **Youth as Resources:** Young people are given useful roles in the community.
9. **Service to Others:** Young person serves in the community one hour or more per week.
10. **Safety:** Young person feels safe at home, school, and in the neighborhood.

Boundaries and Expectations

11. **Family Boundaries:** Family has clear rules and consequences and monitors the young person's whereabouts.
12. **School Boundaries:** School provides clear rules and consequences.
13. **Neighborhood Boundaries:** Neighbors take responsibility for monitoring young people's behavior.
14. **Adult Role Models:** Parents and other adults model positive, responsible behavior.
15. **Positive Peer Influence:** Young person's best friends model responsible behavior.
16. **High Expectations:** Both parents and teachers encourage the young person to do well.

Constructive Use of Time

17. **Creative Activities:** Young person spends three or more hours per week in leisure activities in music, theater, or other arts.
18. **Youth Programs:** Young person spends three or more hours per week in sports, clubs, or organizations at school and/or in the community.
19. **Religious Community:** Young person spends one or more hours per week in activities in religious institution.
20. **Time at Home:** Young person is out with friends "with nothing special to do" less or less than eight per week.

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The Developmental Assets

Internal Assets

Commitment to Learning

21. **Achievement Motivation:** Young person is motivated to do well in school.
22. **School Engagement:** Young person is actively engaged in learning.
23. **Homework:** Young person reports doing at least one hour of homework every school day.
24. **Reading to School:** Young person reads about her or his school.
25. **Reading for Pleasure:** Young person reads for pleasure three or more hours per week.

Positive Values

26. **Caring:** Young person places high value on helping other people.
27. **Equality and Social Justice:** Young person places high value on promoting equality and reducing hunger and poverty.
28. **Integrity:** Young person acts on convictions and stands up for her or his beliefs.
29. **Honesty:** Young person "tells the truth even when it is not easy."
30. **Responsibility:** Young person accepts and takes personal responsibility.
31. **Restraint:** Young person believes it is important not to be sexually active or to use alcohol or other drugs.

Social Competence

32. **Planning and Decision Making:** Young person knows how to plan ahead and make choices.
33. **Interpersonal Competence:** Young person has empathy, sensitivity, and friendship skills.
34. **Cultural Competence:** Young person has knowledge of and comfort with people of different cultural/racial/ethnic backgrounds.
35. **Resistance Skills:** Young person can resist negative peer pressure and dangerous situations.
36. **Peaceful Conflict Resolution:** Young person seeks to resolve conflict nonviolently.

Positive Identity


37. **Personal Power:** Young person feels he or she has control over "things that happen to me."
38. **Self-Esteem:** Young person reports having a high self-esteem.
39. **Sense of Purpose:** Young person reports that "my life has a purpose."
40. **Positive View of Personal Future:** Young person is optimistic about her or his personal future.

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COMMUNITY RESILIENCE BUILDING

- Communities and states around the country are actively working to build their resilience
 - Initiatives in Iowa, Minnesota, Arizona, Maine, Florida
 - Camden, NJ
 - Hope Works N' Camden
 - Philadelphia, PA
 - Philadelphia ACE Taskforce
 - Walla Walla, Washington
 - http://resiliencetrumpsaces.org/?page_id=641

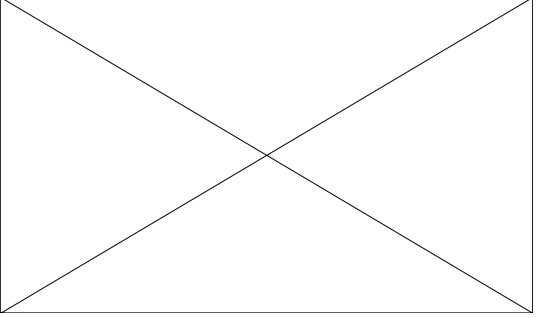


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INCREASING TRAUMA AWARENESS

- Look to natural environments to build awareness of trauma
 - Primary care and ED/hospital
 - Healing Hurt People
 - <http://www.nonviolenceandsocialjustice.org/Healing-Hurt-People/29/>
 - Nurse-family partnership/home visiting programs
 - Early childhood care and learning programs
 - Head Start Trauma Smart <http://traumasmart.org/>
 - Schools
 - Compassionate Schools
 - <http://www.k12.wa.us/compassionateschools/>

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INCREASING TRAUMA AWARENESS

- Wealth of resources to increase trauma awareness
 - ACES Connection
 - <http://www.acesconnection.org>
 - National Child Traumatic Stress Network
 - <http://www.nctsn.org>
 - Institute for Safe Families
 - <http://www.instituteforsafefamilies.org/materials>
 - Spokane Reg. Health District Community & Family Services Division
 - http://www.acesconnection.com/fileSendAction/fcType/0/fcOid/415210805193272309/filePointer/415210805203345675/fdoId/415210805203345667/ACES_handoutJan2015-v1-1.pdf
 - Center on the Developing Child at Harvard
 - <http://developingchild.harvard.edu/resources/>
 - Health Federation of Philadelphia: Community Resilience Cookbook
 - <http://communityresiliencecookbook.org>

UNIVERSAL SCREENING AND ACCESS TO TREATMENT

- To address the problem we need to embed screening into the natural environments for children and family
- Individual
 - Vermont legislature introduced House Bill 762
 - First state to propose a bill calling for integrating screening for adverse childhood experiences in health services, and for integrating the science of adverse childhood experiences into medical and health school curricula and continuing education
 - Medicaid reimbursement contingent on use of ACE screening
- State-wide
 - Incorporate screening into existing state surveys
 - Behavior Risk Factor Surveillance Survey
 - Initiate ACE specific state survey

UNIVERSAL SCREENING

- Free screening tools are available
- ACE Questionnaire
 - <http://www.theannainstitute.org/Finding%20Your%20ACE%20Score.pdf>
- Other trauma screening resources
 - Childhood Trust Events Survey (CTES)
 - http://www.ohiocando4kids.org/childhood_trauma
 - National Center for Child Traumatic Stress
 - http://www.ncswtraumaed.org/wp-content/uploads/2011/07/Child-and-Adolescent-Trauma-Measures_A-Review-with-Measures.pdf
 - U.S. Department of Veterans Affairs: National Center for Post-Traumatic Stress Disorder
 - <http://www.ptsd.va.gov/professional/assessment/child/index.asp>

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Trauma-Specific Treatment

- There are a number of trauma-specific treatments that have been shown to be effective
- Some are focused on treatment the individual child
 - Example: Trauma-Focused Cognitive Behavioral Therapy
 - http://www.kids.delaware.gov/pdfs/dscyf_DE_TFCBT_Roster_April2014.pdf
 - Example: Parent-Child Interaction Therapy
 - http://kids.delaware.gov/pdfs/broch_pcit_en_201301.pdf
- Some are focused on treating child and caregiver trauma in a family approach
 - Example: Alternatives for Families: A Cognitive Behavior Therapy (AFCBT)
- Some are focused on treating the child in a group format
 - Example: Cognitive Behavioral Intervention for Trauma in Schools (CBITS)

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CROSS-SYSTEM COLLABORATION

- Research suggests that exposure to adversity and trauma crosses generations
 - Likely a combination of genetic, social and environmental factors
 - Caregiver childhood trauma is associated with maltreatment of their offspring, particularly in the presence of maternal depression (both neglect and abuse)
 - Caregiver childhood trauma impairs healthy bonding and attachment between the caregiver and child
- However our service systems are siloed and often focus only on children or only on adults
 - To have the best change of addressing childhood adversity and trauma, we need to breakdown silos and think holistically; adopt a "two generation solution"
- Examples of cross-system collaboration
 - Integrated health care for children and adults
 - Schools offering services for adults
 - Child and adult behavioral health systems cross training/pairing to provide care

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