Adverse Childhood Experiences (ACEs): Responsive Practices in Service Delivery Across Multiple Domains

Julie Miller-Cribbs, MSW, PhD

Professor & Interim Director
Anne & Henry Zarrow School of Social Work

jmccribbs@ou.edu
Overview

• Why do we care about ACEs? In Oklahoma? For social and public services?
• Brief overview of ACE study
• Oklahoma examples: ACE data
• Connecting: ACE & Brain Science
• Promising Interventions (system/state wide examples, individuals/group examples) that target ACEs-impacted populations
Setting the Stage: Why do we care?

‘Frequent Flyers’
• High utilizers of services

‘Non-compliant’
• Misses deadlines, renewals
  • Forgets paperwork
  • Argues, hostile, conflict
  • No show for appointments

‘Treatment resistant’
• In HC: health risk persists
  • In MH: relapse
• In CW: foster care youth continually blows placements
  • In education: kids with special needs, behavior issues

‘I rather nots’
• Borderline personality disorder
  • Men who batter
  • Pedophiles
  • Prisoners

‘Uneasy Feeling’
• ‘That sinking feeling you get when that patient/client/parent/kid is headed your way’

→ Most of us in public or social services have experienced folks with high ACEs
Why do we care?

• It’s expensive
• Many of our systems and services are not responsive to the needs of this population
  – Re-traumatize, do more damage
• Impact is likely to be intergenerational without intervention
• We have increasingly better science, research and knowledge that can help us better intervene
Consequences of care for violence

- Child living at home with parent
  - Least Restrictive
  - Least Expensive
- Child living with relative
- Foster family home
- Specialized foster family home
- Private child welfare institution
- Shelter
- Mental health facility
- Correctional facility
  - Most Restrictive
  - Most Expensive
Consequences of care for ACEs/Violence

Using the number of children abused in the US in 2008

Total lifetime economic burden resulting from their maltreatment:

$124 billion
Consequences of care for ACEs/Violence

The lifetime cost for one child who was a victim of maltreatment is $210,012 (2010 dollars)

$32,648 in childhood health care costs
$10,530 in adult medical costs
$144,360 in productivity losses
$7,728 in child welfare costs
$6,747 in criminal justice costs
$7,999 in special education costs

http://www.cdc.gov/injury/
Adverse Childhood Events

- Recurrent physical abuse
- Recurrent emotional abuse
- Contact sexual abuse
- An alcohol and/or drug abuser in the household
- An incarcerated household member
- Someone who is chronically depressed, mentally ill, institutionalized, or suicidal
- Mother is treated violently
- One or no parents
- Emotional or physical neglect

http://www.cdc.gov/ace/
## ACE Epidemiology

<table>
<thead>
<tr>
<th>Abuse Type</th>
<th>% Experienced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological</td>
<td>11%</td>
</tr>
<tr>
<td>Physical</td>
<td>11%</td>
</tr>
<tr>
<td>Sexual</td>
<td>22%</td>
</tr>
</tbody>
</table>

**Household Dysfunction**

<table>
<thead>
<tr>
<th>Dysfunction</th>
<th>% Experienced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance abuse</td>
<td>26%</td>
</tr>
<tr>
<td>Mental illness</td>
<td>19%</td>
</tr>
<tr>
<td>Domestic violence</td>
<td>12%</td>
</tr>
<tr>
<td>HH member imprisoned</td>
<td>3%</td>
</tr>
</tbody>
</table>

### Ace Score Prevalence

<table>
<thead>
<tr>
<th>Ace Score</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>48%</td>
</tr>
<tr>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>2</td>
<td>13%</td>
</tr>
<tr>
<td>3</td>
<td>7%</td>
</tr>
<tr>
<td>4 or more</td>
<td>7%</td>
</tr>
</tbody>
</table>

More than a third of women in addiction treatment have been physically forced to have sex.

Patients in substance abuse facilities more likely to have experienced abuse as children.

High percentages of women in treatment for mental illness have sexual abuse histories.

In 2004, Oklahoma imprisoned 129 of every 100,000 female residents.
Summary of Major Findings

- Adverse Childhood Experiences (ACEs) are very common
- ACEs are strong predictors of later health risks and disease
- This combination makes ACEs the leading determinant of the health and social well-being of our nation
POPULATION ATTRIBUTABLE RISK

A large portion of many health, safety and prosperity conditions is attributable to Adverse Childhood Experience.

ACE reduction reliably predicts a decrease in all of these conditions simultaneously.

Bringing it Home: Oklahoma Examples

• OU-Tulsa studies (a very brief overview)
  – Clinic sample
  – Educare
  – Homeless youth
  – Public housing
# Data

<table>
<thead>
<tr>
<th>Study</th>
<th>N</th>
<th>Sample</th>
<th>Linked to</th>
</tr>
</thead>
<tbody>
<tr>
<td>OU-Tulsa, School of Community Medicine</td>
<td>354</td>
<td>Clinic patients, adults</td>
<td>Electronic Medical Record data: health conditions, medications, history</td>
</tr>
<tr>
<td>Clinic Survey</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educare Survey: Family Life and Stress</td>
<td>338</td>
<td>Parents of children enrolled in Tulsa</td>
<td>Educare data: Parent interviews, Teacher observations AND Cortisol sample from children</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Educare</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homeless Youth (title)</td>
<td>95</td>
<td>Homeless youth, YST &amp; clinic</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residents in public housing</td>
<td>64</td>
<td>Residents in public housing</td>
<td>Commanche Park</td>
</tr>
</tbody>
</table>
# Study Investigators

<table>
<thead>
<tr>
<th>Study</th>
<th>Investigators</th>
</tr>
</thead>
<tbody>
<tr>
<td>OU-Tulsa, School of Community Medicine Clinic Survey</td>
<td>Marty Jelley, MD; Frances Wen, PhD; Kim Coon, Ed, Julie Miller-Cribbs, PhD; Jennifer Hays-Grudo, PhD</td>
</tr>
<tr>
<td>Educare Survey: Family Life and Stress</td>
<td>Jennifer Hays-Grudo, PhD; Diane Horm, PhD; Kent Teague, PhD; Julie Miller-Cribbs, PhD</td>
</tr>
<tr>
<td>Residents in public housing, community health</td>
<td>Ric Munoz, MSW &amp; Mark Fox, MD</td>
</tr>
</tbody>
</table>
OU Clinic Patients: ACEs

- Verbal abuse: 42%
- Physical abuse: 32%
- Sexual abuse: 27%
- Familial ties: 34%
- Basic needs unmet: 20%
- Witness IPV: 25%
- Sep/Divorce: 41%
- Alcohol/drugs: 37%
- Mental illness: 27%
- Prison: 18%

Pie chart showing:
- 0 or 1: 35.7%
- 2 to 4: 34.2%
- 5+: 30.1%
Educare Parents: ACEs

% Parents Experiencing 0-1 ace, 2-4 aces, 5 & □ aces

- Verbal abuse: 20%
- Physical abuse: 14%
- Sexual abuse: 11%
- Familial ties: 22%
- Basic Needs Unmet: 9%
- Witness IPV: 11%
- Sep/Divorce: 47%
- Alcohol/drugs: 21%
- Mental illness: 10%
- Prison: 17%

- 0 or 1 aces: 58.5%
- 2 to 4 aces: 29.8%
- 5+ aces: 11.7%
Clinic Sample: ACEs and health

Chronic conditions (z-scores) by ACE score

0 1 2 3 4 5 6 7 8 9 10

ACE score

-0.6 -0.4 -0.2 0 0.2 0.4 0.6 0.8 1

Heart Disease Risk X Mental Health Condition
Health
Mental Health
Mental Health/Substance Abuse
Educare Survey: Health Problems by ACE score
Clinic Sample: Depression and PTSD by ACE score

Depression & PTSD (z-scores) by ACE score

- ACE score
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10

- Depression
- PTSD
Clinic Sample: Health Care Barriers

- 23% currently uninsured
- 50% needed HC, no insurance
- 36% experienced time without insurance, last 12 months
- 37% reported someone in the HH went without needed HC
- 54% needed care, no money
- 54% needed care, no insurance
- 52% used ER, no regular doctor
- 58% report medical debt
- 7% used payday lender for medical debt
# Combined Data: Health Condition, ACE Mean Score

<table>
<thead>
<tr>
<th>Health Condition</th>
<th>ACE Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthritis*</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2.3806</td>
</tr>
<tr>
<td>Yes</td>
<td><strong>2.9362</strong></td>
</tr>
<tr>
<td>Depression*</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.6225</td>
</tr>
<tr>
<td>Yes</td>
<td><strong>2.1805</strong></td>
</tr>
<tr>
<td>Substance Abuse*</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2.1591</td>
</tr>
<tr>
<td>Yes</td>
<td><strong>3.6312</strong></td>
</tr>
<tr>
<td>Hypertension*</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2.2321</td>
</tr>
<tr>
<td>Yes</td>
<td><strong>3.0457</strong></td>
</tr>
<tr>
<td>Diabetes*</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2.3801</td>
</tr>
<tr>
<td>Yes</td>
<td><strong>3.1646</strong></td>
</tr>
</tbody>
</table>

* Statistically significant difference
Combined Data: ACE & Depression

Mean ACE Score & Depression

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>0.5</th>
<th>1</th>
<th>1.5</th>
<th>2</th>
<th>2.5</th>
<th>3</th>
<th>3.5</th>
<th>4</th>
<th>4.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever Depressed?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2+ Years Depressed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Always Sad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Mean ACE Score**:
  - **No**
  - **Yes**

- **Ever Depressed?**
  - No: 2.0
  - Yes: 3.5

- **2+ Years Depressed**
  - No: 1.5
  - Yes: 3.0

- **Always Sad**
  - No: 2.5
  - Yes: 4.0
## Combined Data: Access to Health Care

<table>
<thead>
<tr>
<th># of ACEs</th>
<th>N</th>
<th>Health Care Barriers, Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>319</td>
<td>2.29 (1.59)*</td>
</tr>
<tr>
<td>2-4</td>
<td>217</td>
<td>3.22 (1.57)*</td>
</tr>
<tr>
<td>4 or above</td>
<td>140</td>
<td>3.84 (1.65)*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Doctor Regularly as a Child?*</th>
<th>N</th>
<th>ACE Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>234</td>
<td>2.95</td>
</tr>
<tr>
<td>Yes</td>
<td>419</td>
<td>2.25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dentist Regularly as a child?*</th>
<th>N</th>
<th>ACE Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>289</td>
<td>3.07</td>
</tr>
<tr>
<td>Yes</td>
<td>363</td>
<td>2.02</td>
</tr>
</tbody>
</table>

* Statistically significant difference
### Combined Data: Health Care Barrier Items

<table>
<thead>
<tr>
<th>Health Care Barriers</th>
<th>N</th>
<th>Mean Ace Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you need health care but not get it because you did not have money?*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>360</td>
<td>1.84</td>
</tr>
<tr>
<td>Yes</td>
<td>304</td>
<td>3.21</td>
</tr>
<tr>
<td>Did you use the ER because you did not have a regular doctor?*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>366</td>
<td>1.96</td>
</tr>
<tr>
<td>Yes</td>
<td>300</td>
<td>3.10</td>
</tr>
<tr>
<td>Do you have medical debt?*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>312</td>
<td>1.84</td>
</tr>
<tr>
<td>Yes</td>
<td>359</td>
<td>3.00</td>
</tr>
<tr>
<td>Did you use a payday lender to help cover medical costs?*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>615</td>
<td>2.36</td>
</tr>
<tr>
<td>Yes</td>
<td>54</td>
<td>3.69</td>
</tr>
<tr>
<td>Needed health care but no health insurance?*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>404</td>
<td>1.92</td>
</tr>
<tr>
<td>Yes</td>
<td>262</td>
<td>3.33</td>
</tr>
</tbody>
</table>
Homeless Youth & Public Housing
Sample: ACEs & Medical Trust

- High ACE scores
- ACE related to lower trust in medical providers

### Table 1: Percentage of ACEs by category among homeless youth compared to a national sample\(^2\)

<table>
<thead>
<tr>
<th>Number of Adverse Childhood Experiences (ACE Score)</th>
<th>Homeless adolescent sample (N = 95)</th>
<th>National Sample (N=17,337)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5.3</td>
<td>36.1</td>
</tr>
<tr>
<td>1</td>
<td>5.3</td>
<td>26.0</td>
</tr>
<tr>
<td>2</td>
<td>11.6</td>
<td>15.9</td>
</tr>
<tr>
<td>3</td>
<td>5.3</td>
<td>9.5</td>
</tr>
<tr>
<td>4 or more</td>
<td>72.6</td>
<td>12.5</td>
</tr>
</tbody>
</table>
Quick Summary of Oklahoma Findings

• High levels of ACEs in clinic, early childhood, homeless youth and public housing samples
• ACEs related to health, mental health and health risk behaviors
• ACEs related to access to health care, barriers to health care
• ACEs related to trust of medical providers and the medical professions
Findings continued....

• Those adults with high ACE scores much less likely to have gone to the dentist or doctor regularly as child, likely setting the stage for the lower access to health care as adults

• A very clear and significant pattern in the data emerges: the higher the ACE, the more barriers to health care, the less trust of medical professionals

http://acestoohigh.com/?s=dr+jeffrey+brenner
Tying it all Together: From ACE to Adulthood

- Social
- Psycho
- Bio

Preconception → Birth → Childhood → Adulthood
Core Concepts in Science of Early Childhood Development*

1. Child development is a critical foundation for community development and economic development
2. Experiences shape brain architecture by over production of connections ‘neural proliferation’, pruning is normal & healthy part of brain development
3. Brains build from the bottom up – skills by skill, simple to more complex.
4. Genes and experiences together build brains – the importance of serve and return relationships
5. Cognitive, emotional and social development are intertwined – and learning, behavior, and physical and mental health are related throughout life
6. Toxic stress damages brain architecture
7. For many functions, the brain’s capacity for change decreases over time – but not all functions are impacted equally

Experiences Shape Brain Architecture

Brain growth fastest in first 3 years, 700 new synapses (neural connections) are formed every second.

Pruning= synapses are reduced to make brain circuits more efficient.
Use it or lose it: Early experiences impact the nature and quality of brain architecture by determining with circuits are reinforced and which are pruned.
Connections continue and prune in order: the brain is not a blank slate.

Human Brain Development
Synapse Formation Dependent on Early Experiences

Serve and Return: Developing Competence

• Brains are not sponges –
The main way they develop
And grow is through experiences –
Competence is developed through SERVE and RETURN, or the interactive relationship of genes and environment
Development of social, emotional and cognitive skills are connected

• Emotional well being AND social competence provide foundation for cognitive abilities

• Executive functions (cognitive control)
  – Management of cognitive process
    • Working memory
    • Reasoning
    • Flexibility
    • Problem solving
Toxic Stress

• Damages brain architecture
• Long lasting impacts

Three Levels of Stress Response

Positive
Brief increases in heart rate, mild elevations in stress hormone levels.

Tolerable
Serious, temporary stress responses, buffered by supportive relationships.

Toxic
Prolonged activation of stress response systems in the absence of protective relationships.
ACEs: compromised brain development

- ↓↓ stimulation (language and learning)
- ↑↑ stimulation (stress)
Inadequate stimulation, Inadequate development

<table>
<thead>
<tr>
<th>SES</th>
<th>Average # Words a Child Hears by Age 3</th>
<th>Average # of Words a Child would say @ Age 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low SES</td>
<td>10,000,000</td>
<td>500</td>
</tr>
<tr>
<td>Middle SES</td>
<td>20,000,000</td>
<td>700</td>
</tr>
<tr>
<td>High SES</td>
<td>30,000,000</td>
<td>1100</td>
</tr>
</tbody>
</table>

Children from low SES backgrounds hear 1 million words less during their first 5 years of life due to the difference in socioeconomic status.

Children of middle class parents experience 1,000 more hours of being read to than lower SES.
Underdeveloped neural connections = weaker brain architecture

Toxic Stress Damages Developing Brain Architecture

Typical neuron: many connections

Neuron damaged by toxic stress: fewer connections
Stress Response & Allostatic Load

Environmental stressors
(work, home, neighborhood)

Major life events

Trauma, abuse

Perceived stress
(threat, helplessness, vigilance)

Behavioral responses
(fight or flight; personal behavior — diet, smoking, drinking, exercise)

Physiologic responses

Allostasis

Adaptation

Individual differences
(genes, development, experience)

Allostatic load

Seminars in Medicine of the Beth Israel Deaconess Medical Center: Protective and Damaging Effects of Stress Mediators.
Positive & Tolerable Stress

Repeated “hits”

Normal response repeated over time
Allostatic Load: Wear and tear from chronic stress
“Pay Now” or “Pay more Later”: Change gets harder & more expensive

The Ability to Change Brains and Behavior Decreases Over Time

- Normal Brain Malleability Influenced by Experiences
- Physiological “Effort” Required to Enhance Neural Connections

AGE

Birth 2 4 6 8 10 20 30 40 50 60 70
How do we help?

Promising Practices
Evolving Evidence
What works?
National Child Traumatic Stress Network

A trauma-informed child- and family-service system is one in which all parties involved recognize and respond to the impact of traumatic stress on those who have contact with the system including children, caregivers, and service providers.

Programs and agencies within such a system **infuse and sustain** trauma awareness, knowledge, and skills into their organizational **cultures, practices, and policies.**

They **act in collaboration** with all those who are involved with the child, using the best available science, to facilitate and support the recovery and resiliency of the child and family.
A service system with a trauma-informed perspective is one in which programs, agencies, and service providers

- routinely screen for trauma exposure and related symptoms;
- use culturally appropriate evidence-based assessment and treatment for traumatic stress and associated mental health symptoms
- make resources available to children, families, and providers on trauma exposure, its impact, and treatment
- engage in efforts to strengthen the resilience and protective factors of children and families impacted by and vulnerable to trauma
- address parent and caregiver trauma and its impact on the family system;
- emphasize continuity of care and collaboration across child-service systems
- maintain an environment of care for staff that addresses, minimizes, and treats secondary traumatic stress, and that increases staff resilience
What is Trauma-Informed Care?

When a human service program takes the step to become trauma-informed, every part of its organization, management, and service delivery system is assessed and potentially modified to include a basic understanding of how trauma affects the life of an individual seeking services.

Trauma-informed organizations, programs, and services are based on an understanding of the vulnerabilities or triggers of trauma survivors that traditional service delivery approaches may exacerbate, so that these services and programs can be more supportive and avoid re-traumatization.
Models & Training for Developing Trauma Informed Systems of Care

- General audiences
- Child Welfare
- Criminal Justice
- Domestic Violence
- Homelessness
- Intergenerational Trauma
- Mental Health
- Peer Support
- Sexual Assault Programs
- Youth
- Training Resources
- Online/On-demand Training Resources

Acesconnections.org
Public Campaigns & Education

• CDC
  http://vetoviolence.cdc.gov/childmaltreatment/phl/resource_center_infographic.html

• Aces too High http://aces too high.com/ (see “got your ACE score?”

• Aces Connections http://aces connection.com/

→ Impact: reducing stigma, sensitize to ACE impact, reduce isolation, heighten awareness, common language & understanding
ADVERSE CHILDHOOD EXPERIENCES

looking at how ACEs affect our lives & society

What are ACES?

Adverse Childhood Experiences (ACES) is the term given to describe all types of abuse, neglect, and other traumatic experiences that occur to individuals under the age of 18. The landmark Kaiser ACE Study examined the relationships between these experiences during childhood and reduced health and well-being later in life.

WHO PARTICIPATED IN THE ACE STUDY?

Between 1995 and 1997, over 17,000 people receiving physical exams completed confidential surveys containing information about their childhood experiences and current health status and behaviors. The information from these surveys was combined with results from their physical exams to form the study’s findings.

*Participants in this study reflected a cross-section of middle-class American adults.
### HOW COMMON ARE ACES?

Almost two-thirds of adults surveyed reported at least one Adverse Childhood Experience – and the majority of respondents who reported at least one ACE reported more than one.

### TYPES OF ACES

The ACE study looked at three categories of adverse experience: childhood abuse, which included emotional, physical, and sexual abuse; neglect, including both physical and emotional neglect; and family dysfunction, which included growing up in a household where there was substance abuse, mental illness, violent treatment of a mother or stepmother, parental separation/divorce or had a member of the household go to prison. Respondents were given an ACE score between 0 and 10 based on how many of these 10 types of adverse experience to which they reported being exposed.

#### ABUSE
- 11% EMOTIONAL ABUSE
- 21% SEXUAL ABUSE
- 28% PHYSICAL ABUSE

#### FAMILY DYSFUNCTION
- 11% INCARCERATED RELATIVE
- 13% MOTHER TREATED VIOLENTLY
- 19% MENTAL ILLNESS
- 23% PARENTAL DIVORCE
- 28% SUBSTANCE ABUSE

#### NEGLECT
- 10% PHYSICAL
- 15% EMOTIONAL
Simply put, our childhood experiences have a tremendous, lifelong impact on our health and the quality of our lives. The ACE Study showed dramatic links between adverse childhood experiences and risky behavior, psychological issues, serious illness and the leading causes of death.
HOW do ACES AFFECT OUR SOCIETY?

LIFE EXPECTANCY
People with six or more ACES died nearly 20 years earlier on average than those without ACES.

ECONOMIC TOLL
The Centers for Disease Control and Prevention (CDC) estimates that the lifetime costs associated with child maltreatment at $124 billion.
Although the study ended in 1997, between 2009 and 2011, 16 states have used a module developed by the CDC to collect information about ACEs in their populations.

WHAT can BE DONE ABOUT ACES?

These wide-ranging health and social consequences underscore the importance of preventing ACEs before they happen. Safe, stable and nurturing relationships (SSN) can have a positive impact on a broad range of health problems and on the development of skills that will help children reach their full potential. Strategies that address the needs of children and their families include:

- Home visits to pregnant women and families with newborns
- Parenting training programs
- Intimate partner violence prevention
- Social support for parents
- Parent support programs for teens and teen pregnancy prevention programs
- Mental health and substance abuse treatment
- High-quality child care
- Sufficient income support for lower-income families

REFERENCES

- ACE Study
- Economic Cost of Child Abuse and Neglect
- Essentials for Childhood
- CDC
- Children’s Bureau
Screen, Measure & Count

- State wide surveys/studies
  - Screening ACEs statewide in adults (Arkansas, California, Louisiana, New Mexico, Tennessee and Washington) - use 2009 ACE module of the Behavioral Risk Factor Surveillance System (BRFSS)

- State wide initiatives and programs
  - Washington State and Wisconsin
  - Iowa → iowasaces360 [http://www.iowaaces360.org/state-aces-work.html](http://www.iowaaces360.org/state-aces-work.html)

- Screening (Vermont)
Front Line Workers

• Reception, ER, triage, clinic staff, Intake workers (TANF/SNAP/Sooner Care), day care, paraprofessionals, ‘aides’

• Compassionate expectations
• Reassurance and acceptance
• Conflict management, support & interpersonal skills for handling difficult situations
• First responders/screeners – can make the difference between someone leaving and staying for services
• Self-care and EAP awareness

→ Impact: train staff, sensitize to ACE impact, reduce isolation, heighten awareness
Early Childhood Programs

• Proven results – many examples
  – Abecedarian project
  – High Scope/Perry preschool

• Early childhood programs +
  – Economic development for parents
  – Parent support
  – Home visiting
Intergenerational ACEs Model

Parent ACEs

Parent Life Stress (current)

Parent-Child Dysfunction

Child socioemotional development

FSS survey

Annual EduCare interview

Teacher rating (DECA)
Classic ACE Triangle

Adverse Childhood Experiences

Impaired bio/neurological functioning

Impaired social, cognitive, emotional functioning

Problematic behaviors

Chronic disease and conditions

Early death
Expand the Focus of Interventions

Most programs address observable behaviors and conditions stemming from ACEs.

- Early death
- Chronic disease and conditions
- Problematic behaviors
- Impaired social, cognitive, emotional functioning
- Impaired bio/neurological functioning
- Adverse Childhood Experiences

Traditional interventions

Preparatory interventions
Expand the Focus of Intervention

Stressed adults, who have experienced trauma in past and current life, may not respond well to educational or behavioral interventions.

These interventions are needed, but they come late (not primary prevention) and stressed adults may not be ready to participate & also have little impact on generational change.
Expand the Focus of Interventions

Most programs address observable behaviors and conditions stemming from ACEs.
Early death and chronic disease and conditions can result from problematic behaviors and impaired social, cognitive, and emotional functioning. Impaired bio/neurological functioning can also contribute to adverse childhood experiences (ACEs).

Traditional interventions often only address observable behaviors and conditions stemming from ACEs. However, recent research, including stress research, ACE studies, and animal models, has shown that biological imbedding of toxic stress, elevated cortisol levels, changes in brain structure and function can have long-lasting effects.

Interventions target what we know from stress research, ACE studies, and animal models. They aim to address the biological imbedding of toxic stress, including elevated cortisol levels and changes in brain structure and function, in addition to observable behaviors and conditions.
Examples of Promising Practices

• Meditation
• Executive functioning
• Attachment-based interventions (PCIT)
• Modified health behavior interventions (mindfulness based CBT, mindfulness based stress reduction)

Interestingly, many of these have wide application for both trauma and non-trauma affected folks. Reduces stigma, positive for all
Meditation

• Meditation? Yes.
NIH, AMA, AHA, JAMA, APA Studies

• Transcendental Meditation
  – Restful alertness
  – Promotions balance – integration between mind and body
    • Reduces cortisol, blood pressure, heart attack, anxiety, learning and memory problems

• Mindfulness Meditation
  – Reducing anxiety, pain, rumination, PTSD

These practices target the underlying stress, anxiety, imbalance. Promotes alertness, integration, calm.

Helps prepare alone, but also people along side other interventions: education, therapy, health behavior change
Growing Evidence that it Helps

• Effective on Individual Level
  – Physical health and mental health improvements
  – Blood pressure, anxiety, depression
  – Improvements in academic performance, learning, memory
  – Helps with integration, memory, organization

• Group or school Level
  – School wide impacts (Detroit study, Middle School, kids with disabilities)

• Military studies – PTSD
  – Individuals and groups

• Can be taught and used as a lifelong effective coping skill
Executive Function Interventions

- Computerized training (CogMed) – improves working memory
- Computer Based Solution
  - Program can be completed anywhere
  - 30-45 minutes daily, roughly 25 sessions
- Working memory is impacted by trauma
- Improvements in working memory help
  - Concentration & attention
  - Problem solving
  - Impulse control
  - Frustration
  - Task completion

Helps re-train the brain on needed skills. These functions can be improved and we can ‘train our brains’.
ACEs Child Welfare, Parenting

Adverse Childhood Experiences

- Biological imbedding of trauma, toxic stress
- Poor attachment, self-regulation, and executive dysfunction
- Harsh/neglecting parenting, low responsiveness, chaos
- Domestic violence, parenting stress, poor parent-child relationship, child abuse & neglect

Impaired bio/neurological functioning

- Mindfulness –based interventions (MBSR)

Impaired social, cognitive, emotional functioning

- Attachment-based programs PCIT), EF training

Problematic behaviors

- Parenting classes, anger management

Chronic disease and conditions

- Child welfare, head start, foster care, resource support

ACEs repeat

- ACEs Child Welfare, Parenting
Health Behavior Interventions

• If you go to the doctor and have high blood pressure? What is your doctor likely to tell you?
  – Exercise
  – Eat right
  – Get good sleep
  – Quick smoking
  – Lose weight

(I don’t know about you, but that is stressful enough when I think about it from a low/no ACE low score)
Now, think about it from a high ACE score perspective

• What do we know?
  – Emotional avoidance
    • Distress intolerance
    • Anxiety sensitivity
    • Focus attention
    • Lack of problem solving skills

• You want me to what??
• I am either going to argue, ask for drugs, or nod and agree and leave and not change my behavior
• Interventions that prepare me for treatment as usual will be more successful
Expand the Focus of Interventions

Most programs address observable behaviors and conditions stemming from ACEs.

- Early death
- Chronic disease and conditions
- Problematic behaviors
- Impaired social, cognitive, emotional functioning
- Impaired bio/neurological functioning
- Adverse Childhood Experiences

Traditional interventions

Preparatory interventions
Thank you!

• Acknowledgements & Collaborators
  Dr. Kim Coon
  Dr. Frances Wen
  Dr. Martina Jelley
  Dr. Diane Horm
  Dr. Jennifer Hays-Grudo
  Ric Munoz
  Dr. Mark Fox
EXTRA SLIDES if needed
Both Surveys: Example Items

- Gender, ethnicity, age, marital status, education, food stamps
- Material Hardship (11 items)
  - Example: Have you ever been behind on utility payments, rent or mortgage?
- Community Problems (7 items)
  - Example: Have any of the problems listed below been a problem in your neighborhood? (vandalism, trash)
- Social Support (7 items)
- ACE (10 items)
Health Care Barriers

1. Have you or someone in your household gone without medical care?
2. Have you ever needed health care, but did not get it because you did not have insurance?
3. Have you ever needed health care, but did not go to the doctor/clinic/hospital because you could not pay?
4. Have you ever gone to the emergency room for an illness because you did not have access to a doctor?
5. Do you have any medical debt (prescriptions, doctor bills, etc)?
6. Have you ever taken out a payday loan or title loan to pay for medical debt?
7. In the past 12 months did you experience any time without health insurance?
8. Do you currently have health insurance?

Regular HC as Children

• When I was a child I had a doctor that I would see regularly.
• I had a dentist that I would see regularly.

Health literacy

• I feel confident filling out medical forms
Clinic Study

3 Clinics

Internal Medicine (n=173), Family Medicine (n=116), Community Health (n=60)

349 patients

• 75% female
• 36% single, 26% married, 23% divorced/separated
• 24% < high school, 45% high school/GED, 14% tech/trade school
• 57% using SNAP
• 59% white, 20%, African-American, 7% Hispanic, 9% American Indian, 3% multiethnic
• Age (SD) = 45 (15) years
## Educare Study

<table>
<thead>
<tr>
<th>3 sites</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kendall-Whittier (n=164), Hawthorne (n=97), MacArthur (n=77)</td>
<td></td>
</tr>
</tbody>
</table>

### 338 parents

- 93% female
- 43% single, 48% married/ LWP, 7% divorced/separated
- 28% <high school, 38.2% high school/GED, 13% tech/trade school
- 100% EHS/HS eligible
- 41% Hispanic, 32% Afr-Am, 16% white, 5% Am Ind, 5% Asian, 5% multiethnic
- Age (SD) = 30 (7) years