Adverse Childhood Experiences (ACEs)

Bryan Samuels, Executive Director
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Chapin Hall at the University of Chicago
Policy research that benefits children, families, and their communities
Leadership Positions

1. ED, Chapin Hall at U of Chicago
2. Commissioner, HHS & ACYF
3. Chief of Staff, Chicago Public Schools
4. Director of Child Welfare, DCFS
5. Deputy Director, Nebraska DSS
6. Assistant to Governor for Human Services, State of Illinois
Adverse Childhood Experiences (ACE) Study

According to CDC:

- The Adverse Childhood Experiences study involved the Centers for Disease Control and Prevention and Kaiser Permanente's Health Appraisal Clinic in San Diego.
- More than 17,000 Health Maintenance Organization (HMO) members undergoing a comprehensive physical examination chose to provide detailed information about their childhood experience.
- Participants were mostly middle class, white adults.
- The findings suggest that certain experiences are major risk factors for the leading causes of illness and death as well as poor quality of life.
Three Types of ACEs

**ABUSE**
- Physical
- Emotional
- Sexual

**NEGLECT**
- Physical
- Emotional

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

Source: Centers for Disease Control and Prevention
Adverse Childhood Experience & Adult Outcomes

Persons who had experienced four or more categories of childhood exposure, compared to those who had experienced none, had:

• 4- to 12-fold increased health risks for alcoholism, drug abuse, depression, and suicide attempt;
• 2- to 4-fold increase in smoking, poor self-rated health, ≥50 sexual intercourse partners, and sexually transmitted disease; and
• 1.4- to 1.6-fold increase in physical inactivity and severe obesity.

The number of categories of adverse childhood exposures showed a graded relationship to the presence of adult diseases including ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease.”

## ACEs for Women and Men

<table>
<thead>
<tr>
<th>Number of ACEs</th>
<th>Women</th>
<th>Men</th>
<th>Total</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>
B>H</E>HAVIOR

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

P>H</E>YSICAL & MENTAL HEALTH

- Severe obesity
- Diabetes
- Depression
- Suicide attempts
- STDs
- Heart disease
- Cancer
- Stroke
- COPD
- Broken bones

Source: Centers for Disease Control and Prevention
## Likelihood of Behavior Health Problems

<table>
<thead>
<tr>
<th>33% with No ACEs</th>
<th>51% with 1 to 3 ACEs</th>
<th>16% with 4 to 8 ACEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 in 16 smokes</td>
<td>1 in 9 smoke</td>
<td>1 in 6 smoke</td>
</tr>
<tr>
<td>1 in 69 are alcoholic</td>
<td>1 in 9 are alcoholic</td>
<td>1 in 6 are alcoholic</td>
</tr>
<tr>
<td>1 in 480 use IV drugs</td>
<td>1 in 43 uses IV drugs</td>
<td>1 in 30 use IV drugs</td>
</tr>
<tr>
<td>1 in 96 attempts suicide</td>
<td>1 in 10 attempts suicide</td>
<td>1 in 5 attempts suicide</td>
</tr>
</tbody>
</table>
## ACEs: Odds of Having Health Conditions

<table>
<thead>
<tr>
<th>Health Condition</th>
<th>0 ACES</th>
<th>1 ACES</th>
<th>2 ACES</th>
<th>3 ACES</th>
<th>4+ ACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthritis</td>
<td>100%</td>
<td>130%</td>
<td>145%</td>
<td>155%</td>
<td>236%</td>
</tr>
<tr>
<td>Asthma</td>
<td>100%</td>
<td>115%</td>
<td>118%</td>
<td>160%</td>
<td>231%</td>
</tr>
<tr>
<td>Cancer</td>
<td>100%</td>
<td>112%</td>
<td>101%</td>
<td>111%</td>
<td>157%</td>
</tr>
<tr>
<td>COPD</td>
<td>100%</td>
<td>120%</td>
<td>161%</td>
<td>220%</td>
<td>399%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>100%</td>
<td>128%</td>
<td>132%</td>
<td>115%</td>
<td>201%</td>
</tr>
<tr>
<td>Heart Attack</td>
<td>100%</td>
<td>148%</td>
<td>144%</td>
<td>287%</td>
<td>232%</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>100%</td>
<td>123%</td>
<td>149%</td>
<td>250%</td>
<td>285%</td>
</tr>
<tr>
<td>Kidney Disease</td>
<td>100%</td>
<td>83%</td>
<td>164%</td>
<td>179%</td>
<td>263%</td>
</tr>
<tr>
<td>Stroke</td>
<td>100%</td>
<td>114%</td>
<td>117%</td>
<td>180%</td>
<td>281%</td>
</tr>
<tr>
<td>Vision</td>
<td>100%</td>
<td>167%</td>
<td>181%</td>
<td>199%</td>
<td>354%</td>
</tr>
</tbody>
</table>
LIFE EXPECTANCY

People with six or more ACEs died nearly **20 years earlier on average** than those without ACEs.

0 years 80 years

6+ years 60 years

ECONOMIC TOLL

The Centers for Disease Control and Prevention (CDC) estimates the lifetime costs associated with child maltreatment at **$124 billion**.

- **$93.5 billion** productivity loss
- **$25 billion** health care
- **$4.6 billion** special education
- **$4.4 billion** child welfare
- **$3.9 billion** criminal justice
**EPIGENETICS**

A mechanism for regulating gene activity independent of DNA sequence that determines which genes are turned on or off:

- in a particular cell type
- in different disease states
- in response to a physiological stimulus

Genes are turned on and off by modifications to the tails of histones, such as acetylation.
<table>
<thead>
<tr>
<th>Economic hardship</th>
<th>Divorce/Separation</th>
<th>Alcohol/Drug</th>
<th>Mental illness</th>
<th>Violence</th>
<th>Incarceration</th>
<th>Death</th>
<th>Domestic violence</th>
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<tr>
<td>MD 20</td>
<td>DC 15</td>
<td>NY 6</td>
<td>CA 5</td>
<td>NJ 5</td>
<td>NJ 3</td>
<td>CT 1</td>
<td>NJ 5</td>
</tr>
<tr>
<td>HI 21</td>
<td>NY 15</td>
<td>DC 7</td>
<td>FL 6</td>
<td>CT 6</td>
<td>NY 4</td>
<td>UT 2</td>
<td>CT 5</td>
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<tr>
<td>VA 21</td>
<td>NJ 15</td>
<td>VA 8</td>
<td>GA 6</td>
<td>UT 6</td>
<td>CT 5</td>
<td>ME 2</td>
<td>VT 6</td>
</tr>
<tr>
<td>SD 21</td>
<td>CT 16</td>
<td>GA 8</td>
<td>NJ 6</td>
<td>VA 7</td>
<td>RI 5</td>
<td>MN 2</td>
<td>MA 6</td>
</tr>
<tr>
<td>MA 22</td>
<td>IL 16</td>
<td>CT 8</td>
<td>NY 7</td>
<td>NE 7</td>
<td>CO 5</td>
<td>WA 2</td>
<td>VA 6</td>
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<tr>
<td>MN 22</td>
<td>CA 17</td>
<td>MD 8</td>
<td>IL 7</td>
<td>NH 7</td>
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<td>ND 2</td>
<td>IL 6</td>
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<td>ND 22</td>
<td>MD 17</td>
<td>IL 9</td>
<td>MD 7</td>
<td>TX 7</td>
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<td>NE 2</td>
<td>CO 6</td>
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<tr>
<td>IA 22</td>
<td>HI 17</td>
<td>NJ 9</td>
<td>HI 7</td>
<td>ND 7</td>
<td>MN 5</td>
<td>IA 2</td>
<td>MD 6</td>
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<td>DC 8</td>
<td>IA 7</td>
<td>HI 5</td>
<td>SD 2</td>
<td>RI 7</td>
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<tr>
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<td>VA 18</td>
<td>NC 10</td>
<td>SD 8</td>
<td>WI 8</td>
<td>NH 5</td>
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<td>RI 19</td>
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<td>RI 29</td>
<td>WY 25</td>
<td>IN 13</td>
<td>KY 11</td>
<td>NY 10</td>
<td>AR 9</td>
<td>NC 4</td>
<td>IN 8</td>
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<td>WV 14</td>
<td>NH 11</td>
<td>AK 11</td>
<td>WV 9</td>
<td>OH 4</td>
<td>OH 8</td>
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<td>TN 25</td>
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<td>IN 11</td>
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<td>HI 11</td>
<td>WY 9</td>
<td>IN 4</td>
<td>AK 9</td>
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<td>KY 30</td>
<td>AR 26</td>
<td>KY 14</td>
<td>OK 12</td>
<td>AZ 11</td>
<td>AK 10</td>
<td>SC 4</td>
<td>AR 9</td>
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<td>NV 30</td>
<td>MI 26</td>
<td>VT 15</td>
<td>WV 12</td>
<td>WV 11</td>
<td>TN 10</td>
<td>LA 4</td>
<td>AZ 9</td>
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<tr>
<td>OK 30</td>
<td>MT 26</td>
<td>AK 15</td>
<td>IA 13</td>
<td>DE 12</td>
<td>NM 10</td>
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<td>NM 9</td>
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<td>FL 30</td>
<td>VT 26</td>
<td>AZ 15</td>
<td>WY 13</td>
<td>MS 12</td>
<td>MI 10</td>
<td>GA 5</td>
<td>WV 9</td>
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<td>TN 31</td>
<td>ME 27</td>
<td>NM 17</td>
<td>ME 13</td>
<td>NM 12</td>
<td>OH 10</td>
<td>OK 5</td>
<td>KY 10</td>
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<td>MS 32</td>
<td>WV 28</td>
<td>OR 17</td>
<td>ID 13</td>
<td>OH 13</td>
<td>OK 10</td>
<td>AL 5</td>
<td>MT 10</td>
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<td>OR 14</td>
<td>OK 13</td>
<td>IN 11</td>
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<td>OK 30</td>
<td>MT 18</td>
<td>MT 14</td>
<td>DC 17</td>
<td>KY 13</td>
<td>DC 7</td>
<td>OK 11</td>
</tr>
<tr>
<td>Adverse Childhood Experiences (Birth to 18)</td>
<td>Impact of Trauma and Adoption of Health Risk Behaviors to Ease Pain of Trauma</td>
<td>Long-Term Consequences of Unaddressed Trauma</td>
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</tr>
<tr>
<td><strong>Abuse of Child</strong></td>
<td>Neurobiologic Effects of Trauma</td>
<td>Disease and Disability</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>• Emotional abuse 11%</td>
<td>• Disrupted neuro-development</td>
<td>• Ischemic heart disease</td>
<td></td>
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<td></td>
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<tr>
<td>• Physical abuse 28%</td>
<td>• Difficulty controlling</td>
<td>• Cancer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Contact sexual abuse 22%</td>
<td>• Anger – Rage</td>
<td>• Chronic lung disease</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Trauma in Child’s Household Environment</strong></td>
<td>• Hallucinations</td>
<td>• Chronic emphysema</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>• Alcohol or drug user by household member 27%</td>
<td>• Depression (and numerous other mental health problems – see below)</td>
<td>• Asthma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Chronically depressed, emotionally disturbed or suicidal household member 17%</td>
<td>• Panic reactions</td>
<td>• Liver disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Mother treated violently 13%</td>
<td>• Anxiety</td>
<td>• Skeletal fractures</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>• Imprisoned household Member 6%</td>
<td>• Multiple (6+) somatic problems</td>
<td>• Poor self rated health</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>• Not raised by both biological parents 23% (Loss of parent by separation or divorce, natural death, suicide, abandonment)</td>
<td>• Sleep problems</td>
<td>• Sexually transmitted disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Physical neglect 19%</td>
<td>• Impaired memory</td>
<td>• HIV/AIDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Emotional neglect 15%</td>
<td>• Flashbacks</td>
<td><strong>Social Problems</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Dissociation</td>
<td>• Homelessness</td>
<td></td>
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</tr>
</tbody>
</table>

**Health Risk Behaviors**
- Smoking
- Severe obesity
- Physical inactivity
- Suicide attempts
- Alcoholism
- Drug abuse
- 50+ sex partners
- Repetition of original trauma
- Self-injury
- Eating disorders
- Perpetrate interpersonal violence (aggression, bullying, etc.).

**Disease and Disability**
- Ischemic heart disease
- Cancer
- Chronic lung disease
- Chronic emphysema
- Asthma
- Liver disease
- Skeletal fractures
- Poor self rated health
- Sexually transmitted disease
- HIV/AIDS

**Social Problems**
- Homelessness
- Prostitution
- Delinquency, violence and criminal behavior
- Inability to sustain employment
- Re-victimization: by rape; DV, bullying, etc
- Compromised ability to parent
- Negative alterations in self-perception and relationships with others
- Alterations in Systems of Meaning
- Intergenerational transmission of abuse
- Long-term use of multi human service systems

**Sources:** Adverse Childhood Experiences Study
“Functional assessment—assessment of multiple aspects of a child’s social-emotional functioning (Bracken, Keith, & Walker, 1998)—involves sets of measures that account for the major domains of well-being.”

“Child welfare systems often use assessment as a point-in-time diagnostic activity to determine if a child has a particular set of symptoms or requires a specific intervention. Functional assessment, however, can be used to measure improvement in skill and competencies that contribute to well-being and allows for on-going monitoring of children’s progress towards functional outcomes.”

“Rather than using a “one size fits all” assessment for children and youth in foster care, systems serving children receiving child welfare services should have an array of assessment tools available. This allows systems to appropriately evaluate functioning across the domains of social-emotional well-being for children across age groups.” (O’Brien, 2011)
Achieving Better Outcomes

erapeutic, responsive & supportive settings & relationships

- Validated Screening
- Clinical Assessment
- Functional Assessment
  - Case Planning, Case Management or Managed Care
  - Targeted Evidence-based Intervention(s)
  - Outcomes
Linking Early-life Experiences with Adult Outcomes

Intergenerational influences:
- Parents/grandparents

Environmental influences:
- Social & Environmental Influences

Health gain:
- Childhood
  - Cognitive function/education
  - Emotional health
  - Physical health
  - Social (origins) identity/health behavior

Health decline:
- Adulthood
  - Cognitive function
  - Emotional health
  - Physical health
  - Social (destinations) identity/health behavior

Adult outcome

Different Approach: Two Generation Strategies to Policy and Practice

“Policymakers can take steps now to move two-generation strategies forward and measurably improve outcomes for both children and their parents. Unless they rise to this challenge, the next generation will be at further risk — for developmental delays, academic struggles, and, ultimately, the same challenges facing their parents for economic stability. Our long-term economic prosperity will also be at risk as children and parents struggle to achieve educational and economic success. Two-generation policies offer policymakers the chance to break the intergenerational cycle of poverty and replace it with opportunity.”
Three Tiered Approach to ACEs

Addressing traumatic stress in the pediatric healthcare setting

**CLINICAL/TREATMENT**
- Persistent and/or escalating distress
- High risk factors

**TARGETED**
- Acute distress
- Risk factors present.

**UNIVERSAL**
- Children and families are
  
  distressed but resilient

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Consult behavioral health specialist.

Provide intervention and services specific to symptoms. Monitor distress.

Provide general support – help family help themselves
Provide information and support. Screen for indicators of higher risk.
De-scaling What Doesn’t Work, Scaling Up What Does Work

Evidence-Based Parenting Interventions

Evidence-Based Trauma & Mental Health Interventions

Trauma Screening & Functional Assessment

Parenting Classes

Anger Management

Generic Counseling

INEFFECTIVE APPROACHES

RESEARCH-BASED APPROACHES

De-scaling what doesn’t work

Investing in what does
Title IV-E Waivers for Improved Outcomes

- The Child and Family Services Improvement and Innovation Act of 2011 allowed HHS to waive certain provisions of titles IV-E and IV-B to carry out demonstration projects.
- Authorized HHS to approve up to 10 new demonstrations in each of FYs 2012, 2013 and 2014.
- Unlike competitive discretionary grants, waiver demonstrations do not provide additional funding; they provide title IV-E agencies authority to spend existing resources more flexibly.
- Waiver demonstrations test new approaches to service delivery and financing structures, to improve outcomes for children and families in the child welfare system.
- Projects must be cost-neutral to the Federal government; must have a rigorous evaluation.
Matching Populations, Outcomes, and Approaches: IV-E Waiver Examples

**Population**
- Children, 8-17
- Children, 13-17
- Children, 2-7

**Screening & Assessment**
- UCLA PTSD Index
- Strengths & Difficulties Questionnaire
- Child & Adolescent Needs & Strengths
- Strengths & Difficulties Questionnaire
- Child & Adolescent Needs & Strengths
- Trauma Symptoms Checklist for Young Children
- Infant Toddler Emotional Assessment
- Child Behavior Checklist

**EBIs**
- Trauma-Focused Cognitive Behavioral Therapy
- Multisystemic Therapy
- Parent-Child Interaction Therapy

**Outcomes**
- Behavior problems
- PTS symptoms
- Depression
- Delinquency/Drugs
- Peer problems
- Family cohesion
- Conduct disorders
- Parent distress
- Parent-child interaction
Using Federal Funding to Promote Positive Outcomes

- Regional Partnership Grants to Increase Well-Being and Improve Permanency Outcomes for Children Affected by Substance Abuse
- Partnerships to Demonstrate the Effectiveness of Supportive Housing for Families in the Child Welfare System
- Permanency Innovations Initiative
- Title IV-E Child Welfare Demonstration Projects, Approved in FY 2012
- Working with Children’s Bureau for Title IV-E Child Welfare Demonstration Projects, for FY 2013

10 new states: AZ, KY, ME, MD, NV, OK, OR, TX, WV, Port Gamble. Total of 31 states with demonstration waivers addressing positive outcomes/well-being.