



**DRAFT**

# **THE HIGH COST OF ADVERSE CHILDHOOD EXPERIENCES**



## BRAIN RESEARCH

See for example: Teicher, M et al. “Neurobiological & Behavioral Consequences of Exposure to Childhood Traumatic Stress,” *Stress in Health and Disease*, BB Arnetz & R Ekman (eds). 2006.

Teicher, M. “Scars that Won’t Heal: The Neurobiology of Child Abuse,” *Scientific American*, March, 2002, pp. 68-75.



## EPIDEMIOLOGICAL RESEARCH

See for Example: Felitti, VJ, Anda, RF et al. “Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults.” *American Journal of Preventive Medicine*. 1998. (14:4)

For a full list of publications, see <http://www.cdc.gov/nccdphp/ace/publications.htm>

## RESILIENCY RESEARCH

Masten, AS. “Ordinary Magic: Resilience Process in Development.” *American Psychologist*. March, 2001 (56:3), pp. 227-238.

Luthar, SS (ed). *Resilience and Vulnerability: Adaptation in the Context of Childhood Adversities*. Cambridge University Press: New York. 2003.

## Today's workshop will:

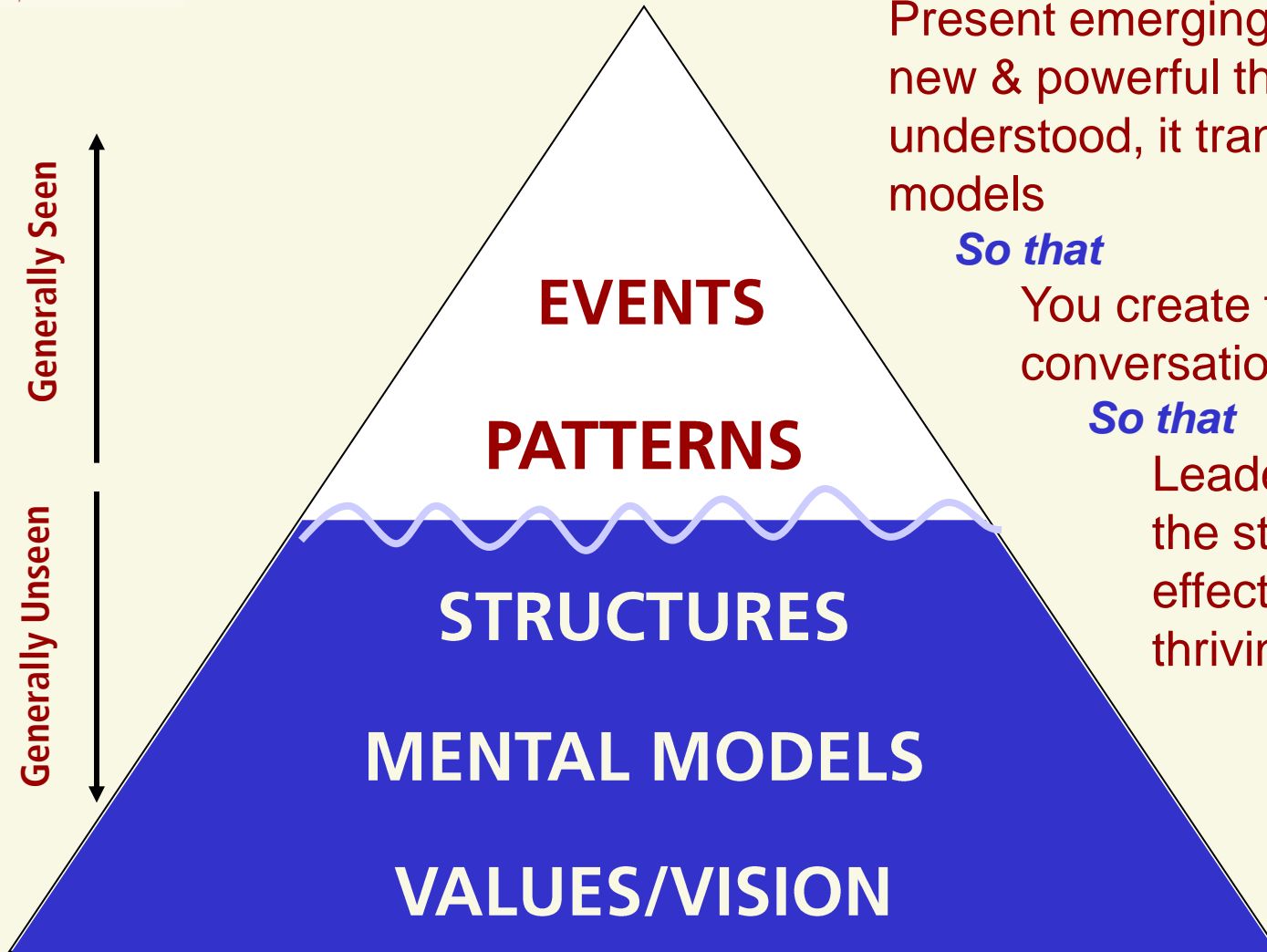
Present emerging research so new & powerful that, when understood, it transforms mental models

*So that*

You create transformative conversations

*So that*

Leaders throughout the state act most effectively to support thriving families





To ensure the best match between the individual & the conditions he/she will face, the brain adapts to experience. Adaptation is fundamental to the brain's design.

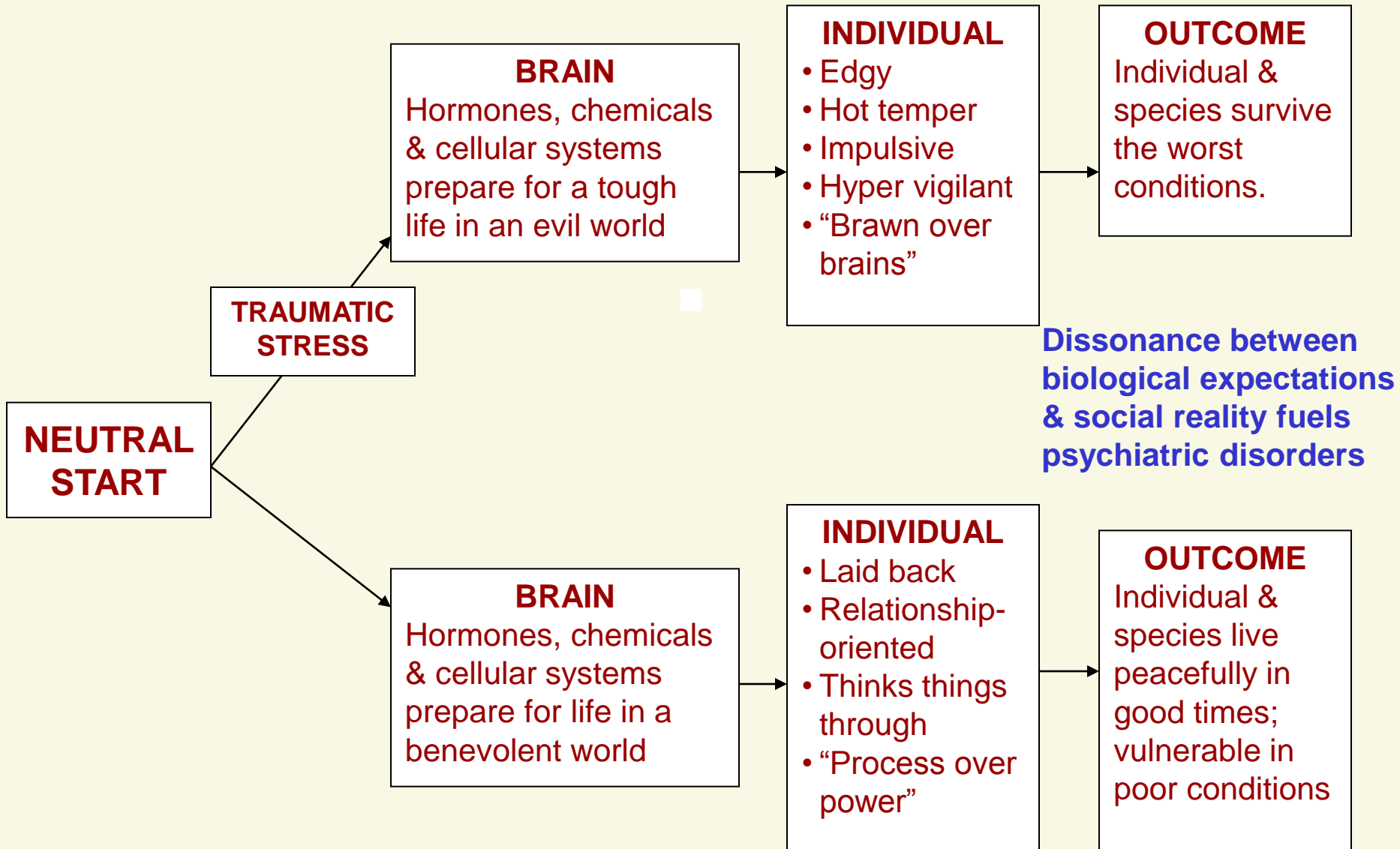


## EXPERIENCE DRIVES DEVELOPMENT

- Determines function & specialty of cells exposed to certain hormones.
- Activate systems prematurely & makes them more sensitive to future stressors.
- Regulates myelination—the coating of nerves with fat.
- Regulates the development of receptor cells—the decoder rings of the brain.
- Determines how brain cells network with each other, shaping mass & function of the brain at maturity.
- Stress-related chemicals kill off baby brain cells.

## BRAIN DEVELOPMENT PATTERNS

*Adapted from the research of Martin Teicher, MD, Ph.D*



## DISCUSSION

- In your experience, how do our major social services, health, justice, education and/or mental health systems respond to young people who act on “brawn over brains”?
- How do these systems’ responses work for children and families?



## CONSEQUENCES OF BIOLOGICAL OUTCOMES

### **COGNITIVE**

- Slowed language development
- Attention problems (ADD/ADHD)
- Speech delay
- Poor verbal memory/recall
- Loss of brain matter/IQ

### **SOCIAL**

- Aggression & violent outbursts
- Poor self-control of emotion
- Can't modify behavior in response to social cues
- Social isolation—can't navigate friendship

### **MENTAL HEALTH**

- Poor social/emotional development
- Alcohol, tobacco & other drug abuse—vulnerable to early initiation
- Adolescent & adult mental health disorders—especially depression, suicide, dissociative disorder, borderline personality disorder, PTSD



## BIOLOGICAL EFFECTS OF ABUSE & NEGLECT

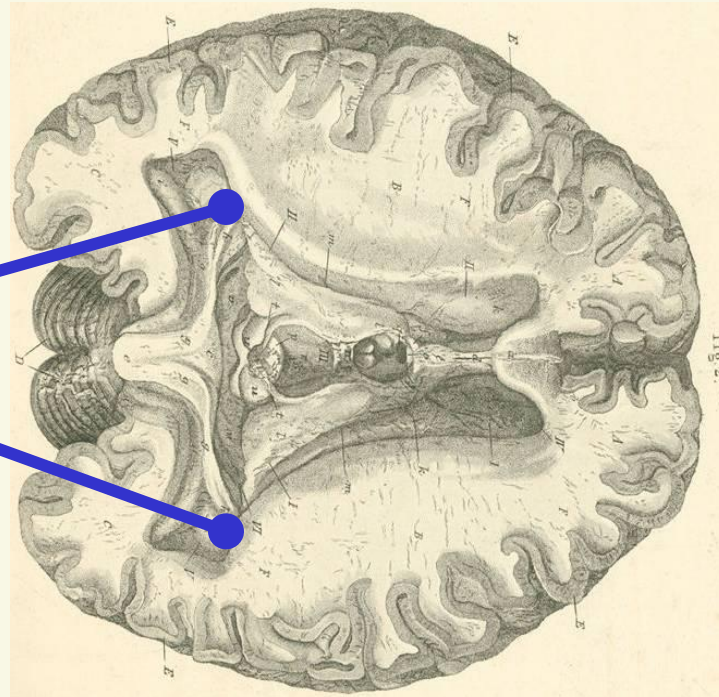
### HIPPOCAMPUS

The center for:

- Controlling emotional reactions
- Constructing verbal memory
- Constructing spatial memory

### VULNERABLE TO:

All forms of maltreatment in the first 2-3 years of life.



## BIOLOGICAL EFFECTS OF ABUSE & NEGLECT

### CORPUS CALLOSUM

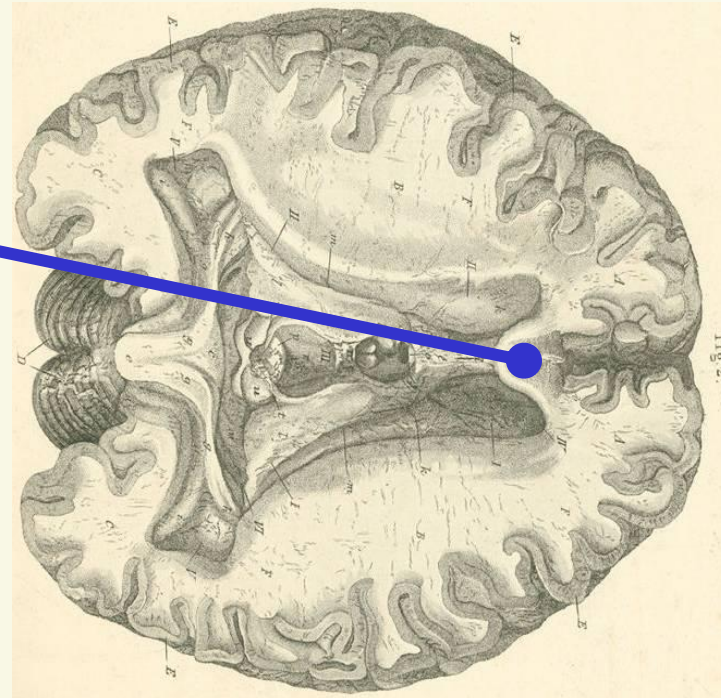
Integrates hemispheres & facilitates:

- Language development
- Proficiency in math
- Processing of social cues, such as facial expression

### VULNERABLE TO:

Neglect in infancy.

Sexual abuse in the elementary school years.



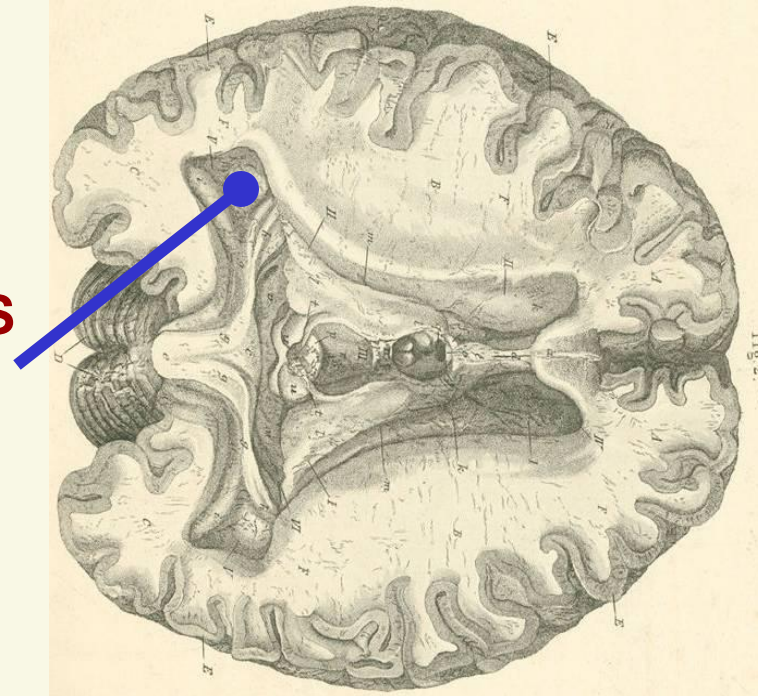
## BIOLOGICAL EFFECTS OF ABUSE & NEGLECT

### SUPERIOR TEMPORAL GYRUS

Center for spoken language.

### VULNERABLE TO:

Emotional abuse, especially between ages 7 and 9.



## BIOLOGICAL EFFECTS OF ABUSE & NEGLECT

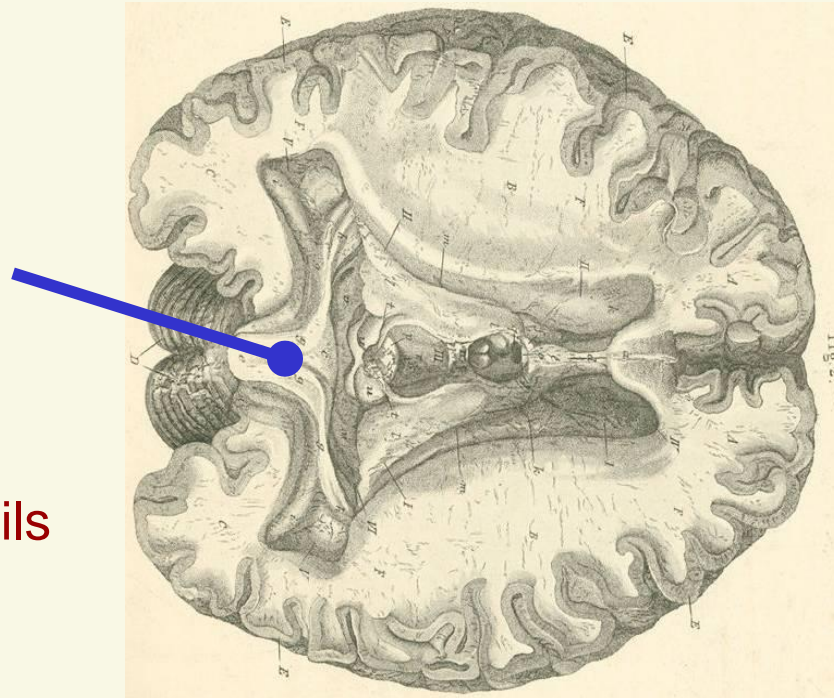
### CEREBELLAR VERMIS

Center for:

- Regulating mental health
- Regulating movement through the physical environment
- Reacting to peripheral details in the world around us

### VULNERABLE TO:

High levels of cortisol prior to puberty.



## BIOLOGICAL EFFECTS OF ABUSE & NEGLECT

### CORTEX

Center for:

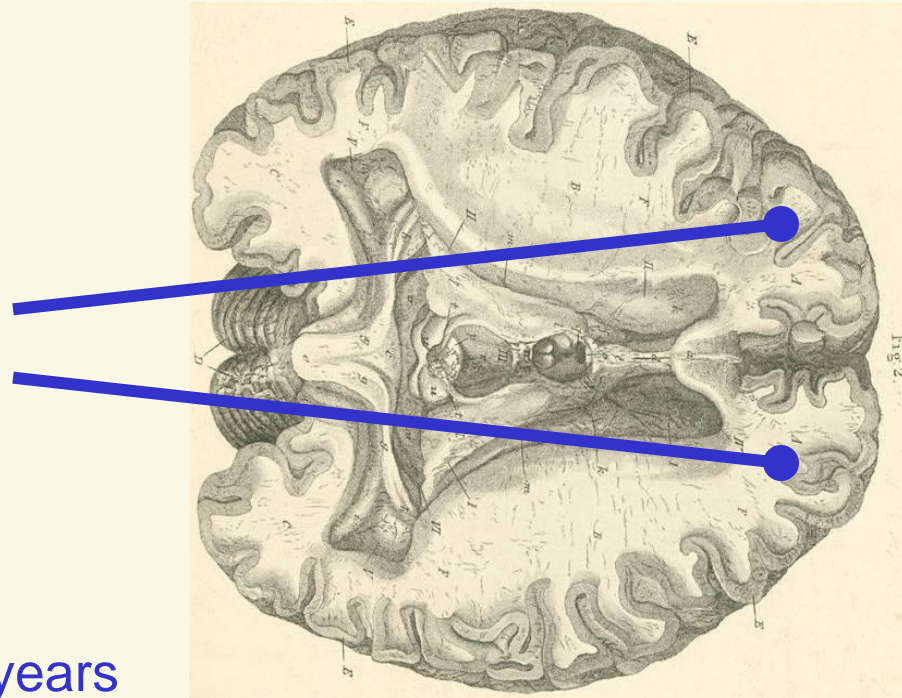
- Thinking & judgment
- Executive function
- Long term memory
- Vision

### VULNERABLE TO:

Trauma in the first several years of life affecting pre-frontal cortex.

Witnessing domestic violence in the elementary school years affecting visual cortex.

Sexual abuse at 15-16 affecting executive function.



## DISCUSSION

- In what ways does the finding that trauma is woven into our bodies and cells challenge your mental models about biology? Behavior? Psychology?
- Collectively, how might we deal with the challenges to our mental models that come with this new science?





# ADVERSE CHILDHOOD EXPERIENCES STUDY

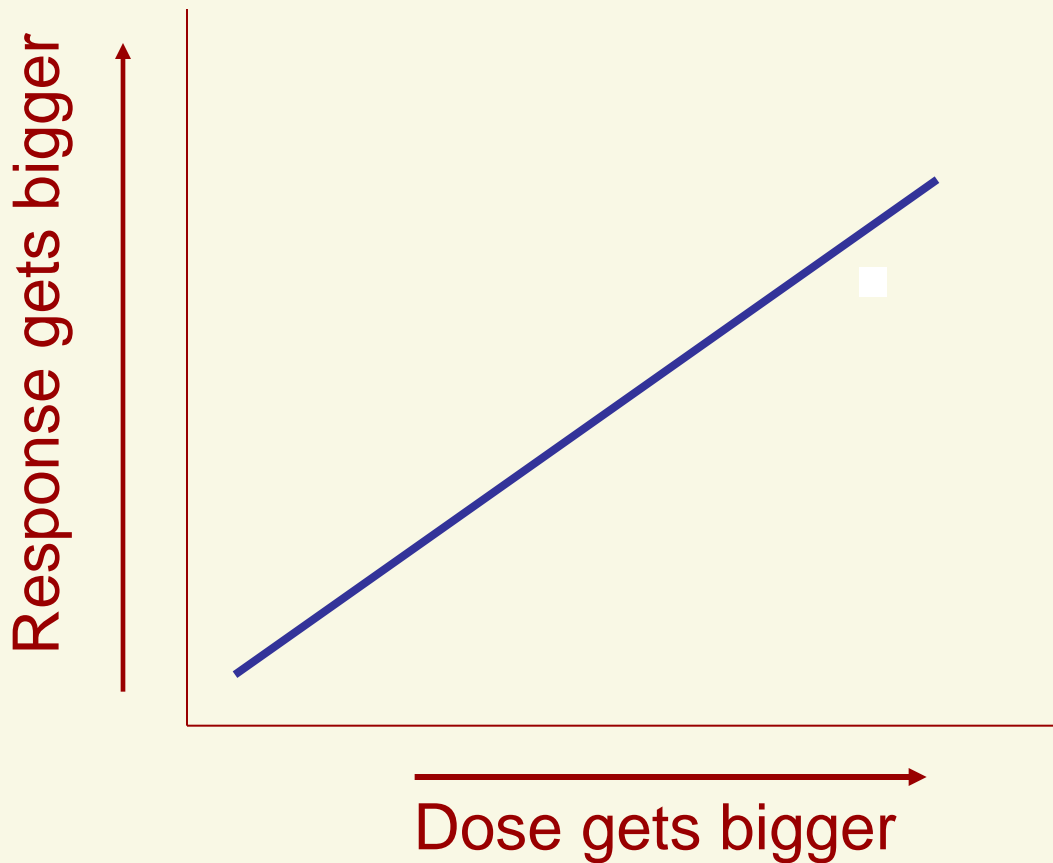
## WHAT ARE THE ADVERSE CHILDHOOD EXPERIENCES (ACEs)?

1. Child physical abuse
2. Child sexual abuse
3. Child emotional abuse
4. Neglect
5. Mentally ill, depressed or suicidal person in the home
6. Drug addicted or alcoholic family member
7. Witnessing domestic violence against the mother
8. Loss of a parent to death or abandonment, including abandonment by divorce
9. Incarceration of any family member





## A CLASSIC CAUSAL RELATIONSHIP MORE ACEs = MORE HEALTH PROBLEMS



*Dose-response* is a direct measure of cause & effect.

The “response”—in this case the occurrence of the health condition—is caused directly by the size of the “dose”—in this case, the number of ACEs.

## LIFE LONG PHYSICAL, MENTAL & BEHAVIORAL OUTCOMES OF ACEs

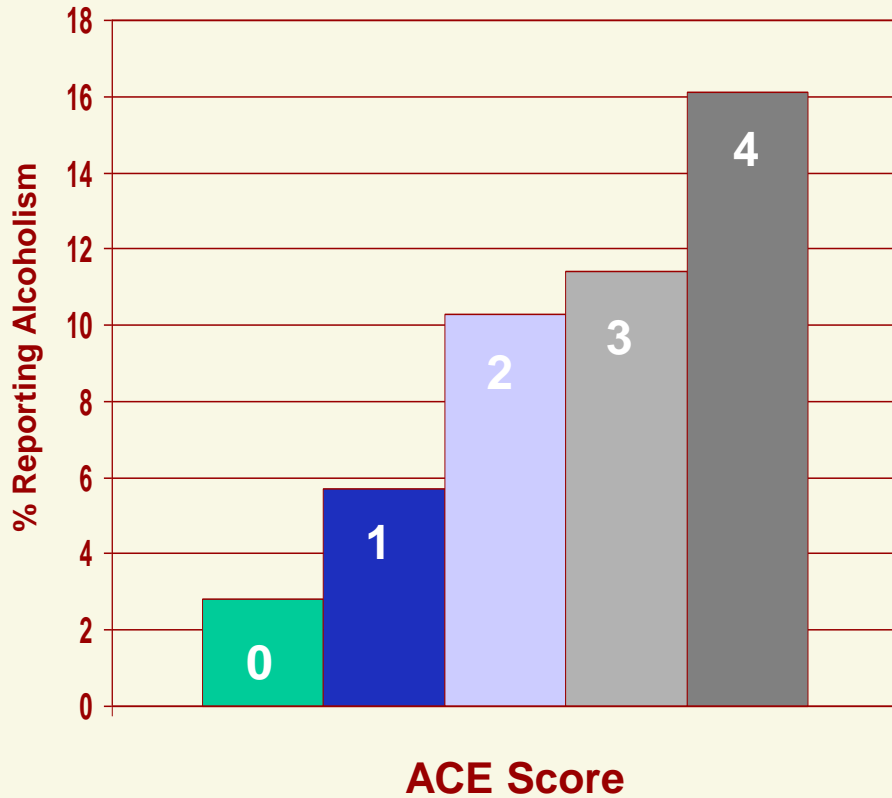
- Alcoholism & alcohol abuse
- Chronic obstructive pulmonary disease & ischemic heart disease
- Depression
- Fetal death
- High risk sexual activity
- Illicit drug use
- Intimate partner violence
- Liver disease
- Obesity
- Sexually transmitted disease
- Smoking
- Suicide attempts
- Unintended pregnancy



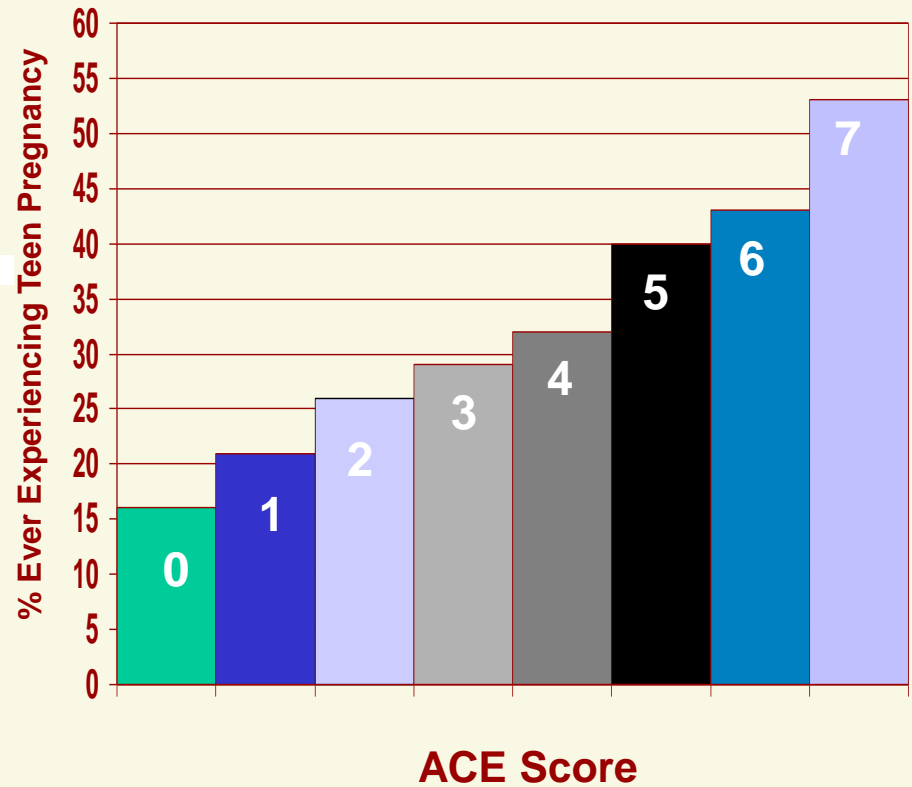
The higher the ACE Score, the greater the incidence of co-occurring conditions from this list.

# ACE STUDY DOSE-RESPONSE FINDINGS

## Adult Alcoholism

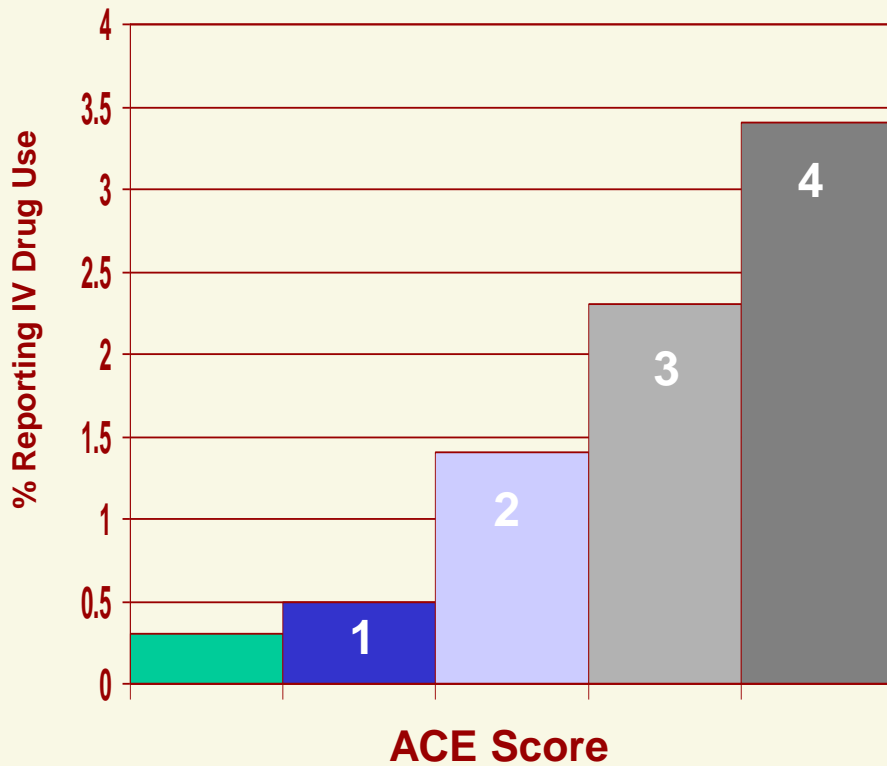


## Women & Teen Pregnancy

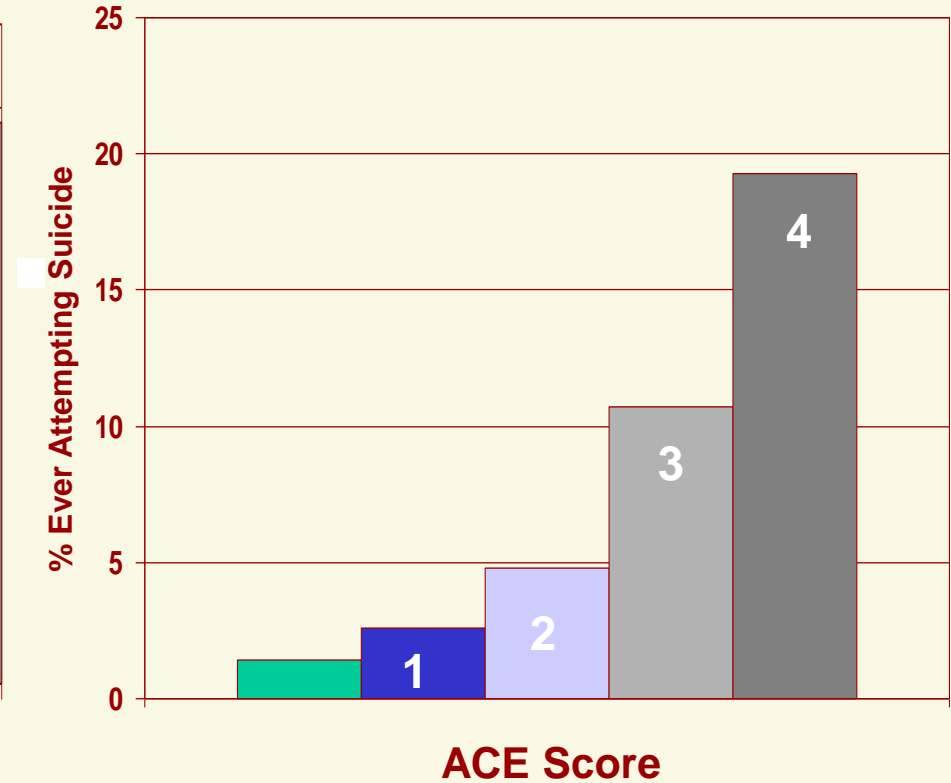


# ACE STUDY DOSE RESPONSE FINDINGS

## Intravenous Drug Use



## Attempted Suicide



## PROBABILITY OF SAMPLE OUTCOMES GIVEN 100 AMERICAN ADULTS

**33**  
**Report No ACEs**



**WITH 0 ACEs**  
**1 in 16 smokes**  
**1 in 69 are alcoholic**  
**1 in 480 uses IV drugs**  
**1 in 14 has heart disease**  
**1 in 96 attempts suicide**

**51**  
**Report 1-3 ACEs**



**WITH 3 ACEs**  
**1 in 9 smokes**  
**1 in 9 are alcoholic**  
**1 in 43 uses IV drugs**  
**1 in 7 has heart disease**  
**1 in 10 attempts suicide**

**16**  
**Report 4-8 ACEs**



**WITH 7+ ACEs**  
**1 in 6 smokes**  
**1 in 6 are alcoholic**  
**1 in 30 use IV drugs**  
**1 in 6 has heart disease**  
**1 in 5 attempts suicide**

## DISCUSSION

→ In what ways does this study affirm or challenge your life experience and/or professional understanding of mental, behavioral & physical health outcomes?

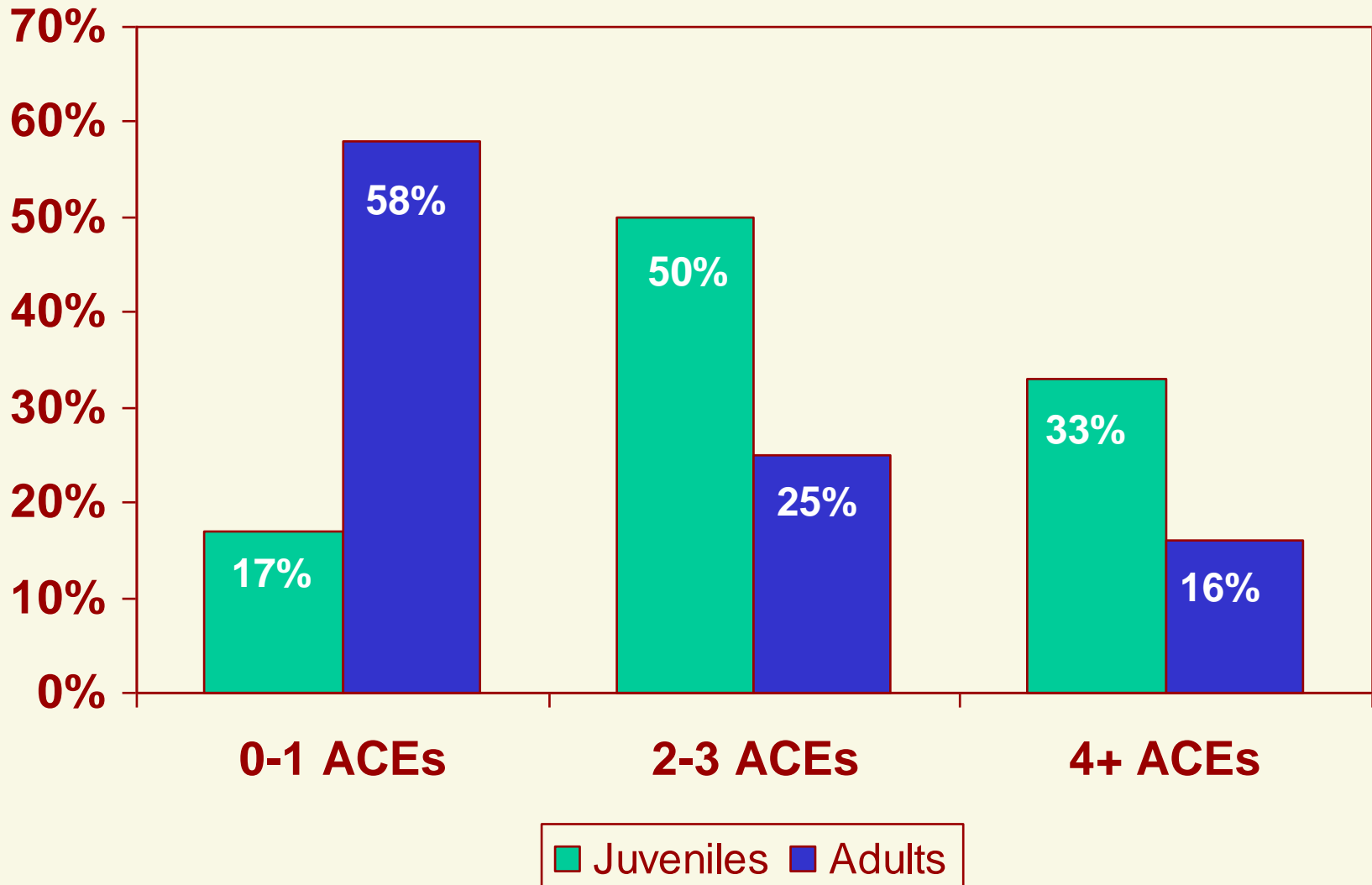




# **ACE DATA IN CONTEXT & ACTION:**

## ***Pierce County Juvenile Court Improvement Project***

## PREVALENCE of ACEs COURT INVOLVED YOUTH vs. ADULTS IN ACE STUDY





## DISTRIBUTION OF ACEs AMONG JUVENILE OFFENDERS IN PIERCE COUNTY, WASHINGTON

**17 OFFENDERS  
Report 0-1 ACEs**

**OFFENDERS WITH  
1 ACE REPORT:**

- Loss of a parent

**50 OFFENDERS  
Report 2-3 ACEs**

**OFFENDERS WITH  
3 ACEs REPORT:**

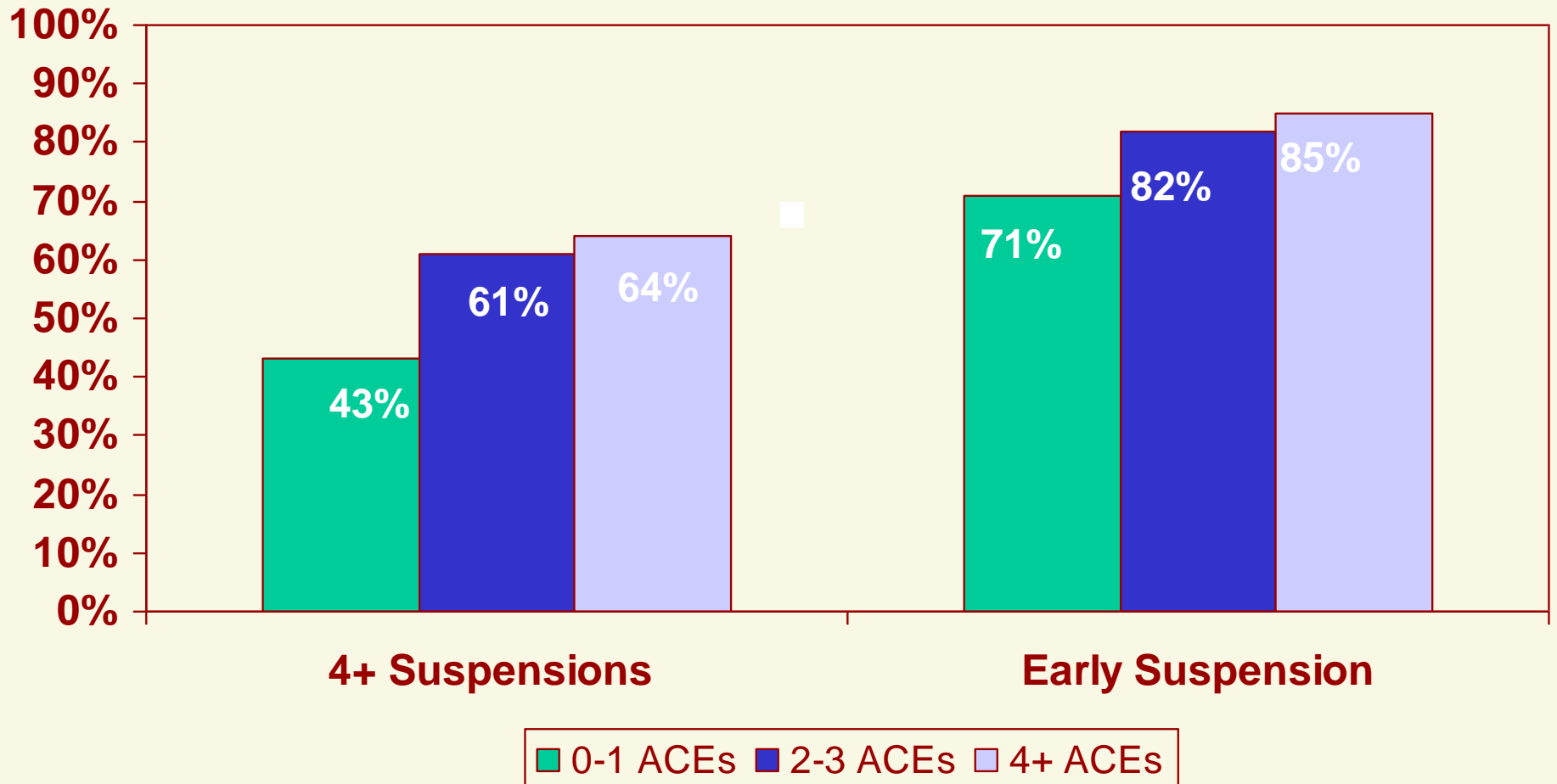
- Loss of a parent
- Incarcerated family member
- Threats/intimidation (Emotional abuse)

**33 OFFENDERS  
Report 4+ ACEs**

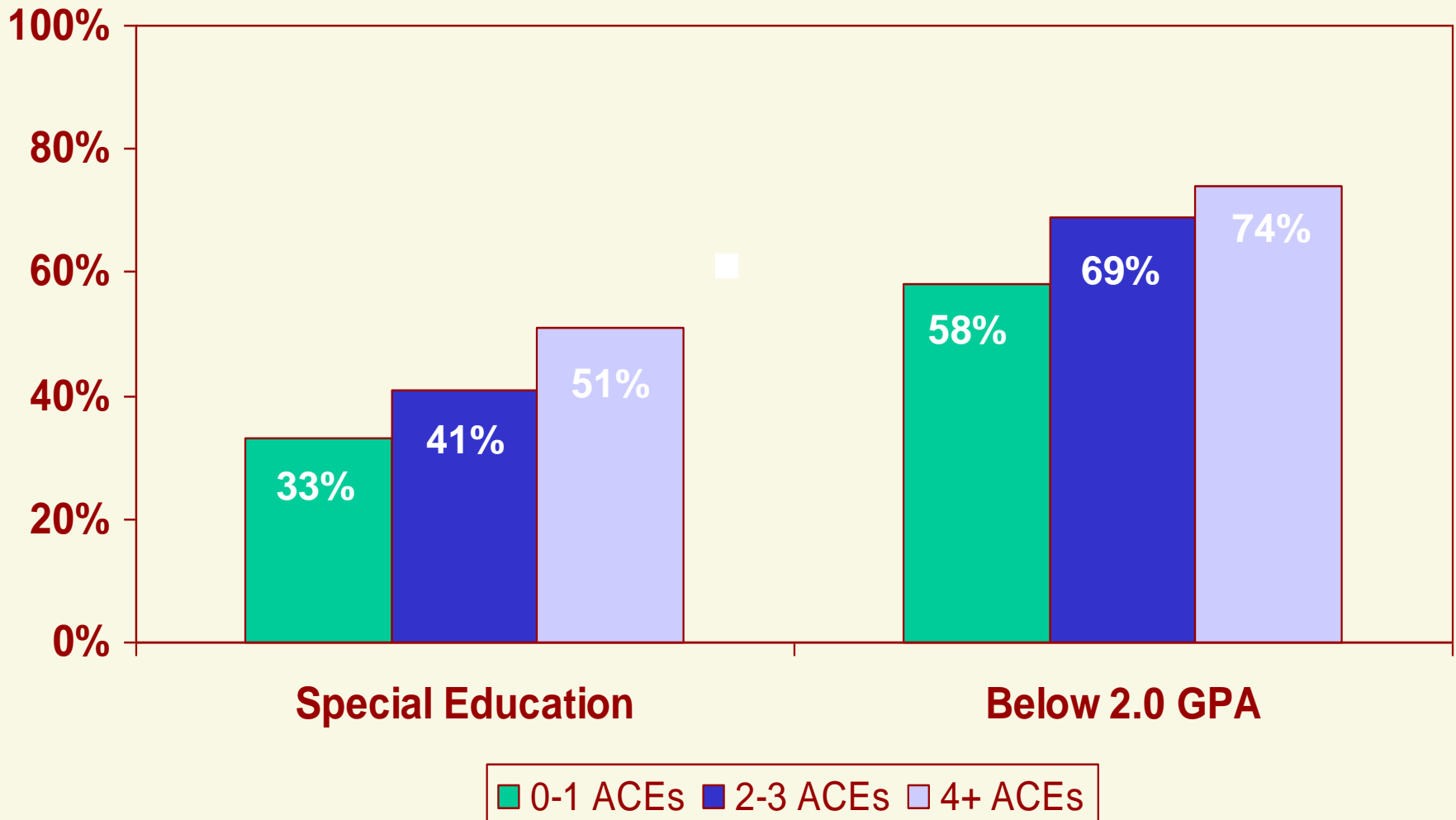
**OFFENDERS WITH  
5 ACEs REPORT:**

- Loss of a parent
- Threats/intimidation
- Incarcerated family member
- Substance abuse in the home
- Physically Abused

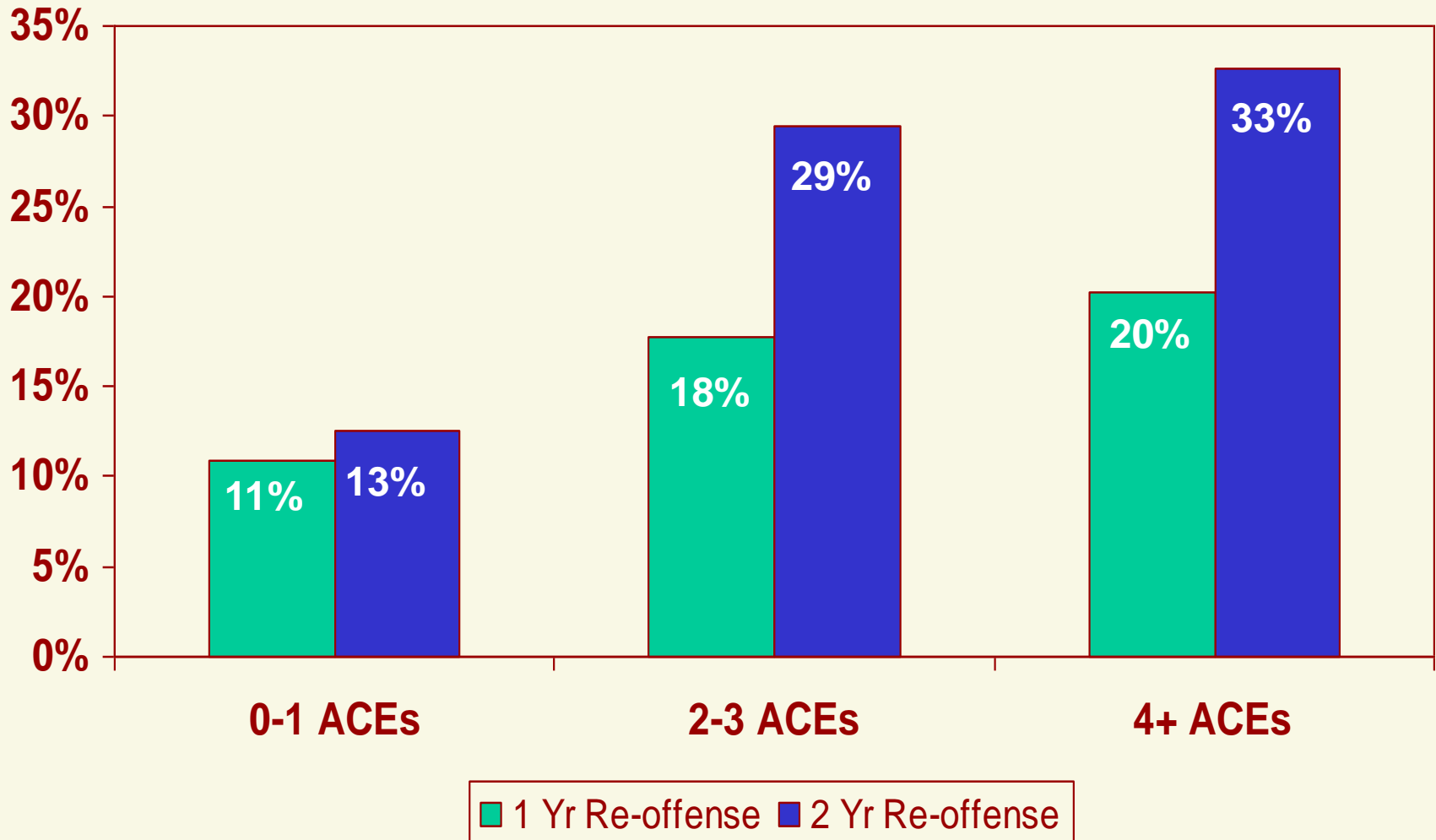
## JUVENILE OFFENDERS: ACES & SCHOOL EXPERIENCE



## JUVENILE OFFENDERS: ACES & SCHOOL EXPERIENCE



## FELONY RE-OFFENSE BY ACE CATEGORY (Males)

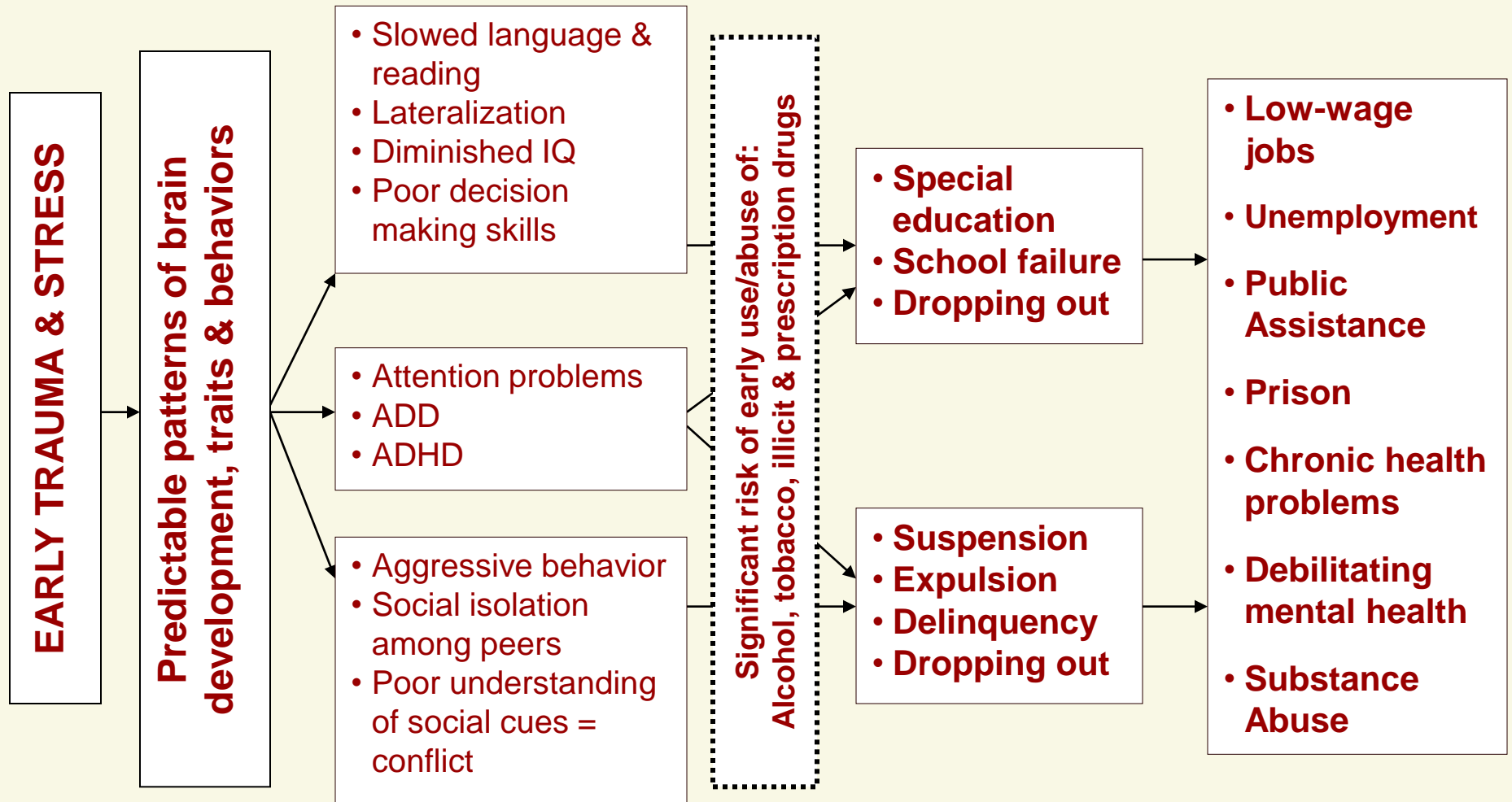


## DISCUSSION

→ In what ways does the complexity of this data—of the cases that the data represents—raise leadership questions for you?



# THE FAST TRACK TO POVERTY



# OPPORTUNITIES FOR RESILIENCE



## WHAT IS RESILIENCE?

“Resilience refers to a class of phenomena characterized by good outcomes in spite of serious threats to adaptation or development.”

*-Ann Masten, Ordinary Magic: Resilience Processes in Development*

“Resilience is the result not only of biologically given traits, but also of people’s embeddedness in complex and dynamic social contexts, contexts that are themselves more or less vulnerable to harm, more or less amenable to change, and apt focal points for intervention.”

*-Mary Harvey, Towards an Ecological Understanding of Resilience in Trauma Survivors*





## RESILIENCE AS A DEVELOPMENTAL PROCESS

- We develop competencies & characteristics that prepare us to be effective in the world we're growing into.
- We develop the capacity to adapt in the face of challenges.
- None of us is perfect—we'll all have moments when we don't appear to be very well adapted to the conditions we're facing.
- Resilience is complex; it is possible to be resilient in one setting and pathological in another.



## KEY COMPONENTS OF THE DEVELOPMENTAL PROCESS

Recent studies with diverse approaches point to a short list of global factors associated with resilience:

- Connections/attachment to competent & caring adults in the family & community
- Cognitive & self-regulation skills
- Positive view of self
- Motivation/ability to be effective in the environment



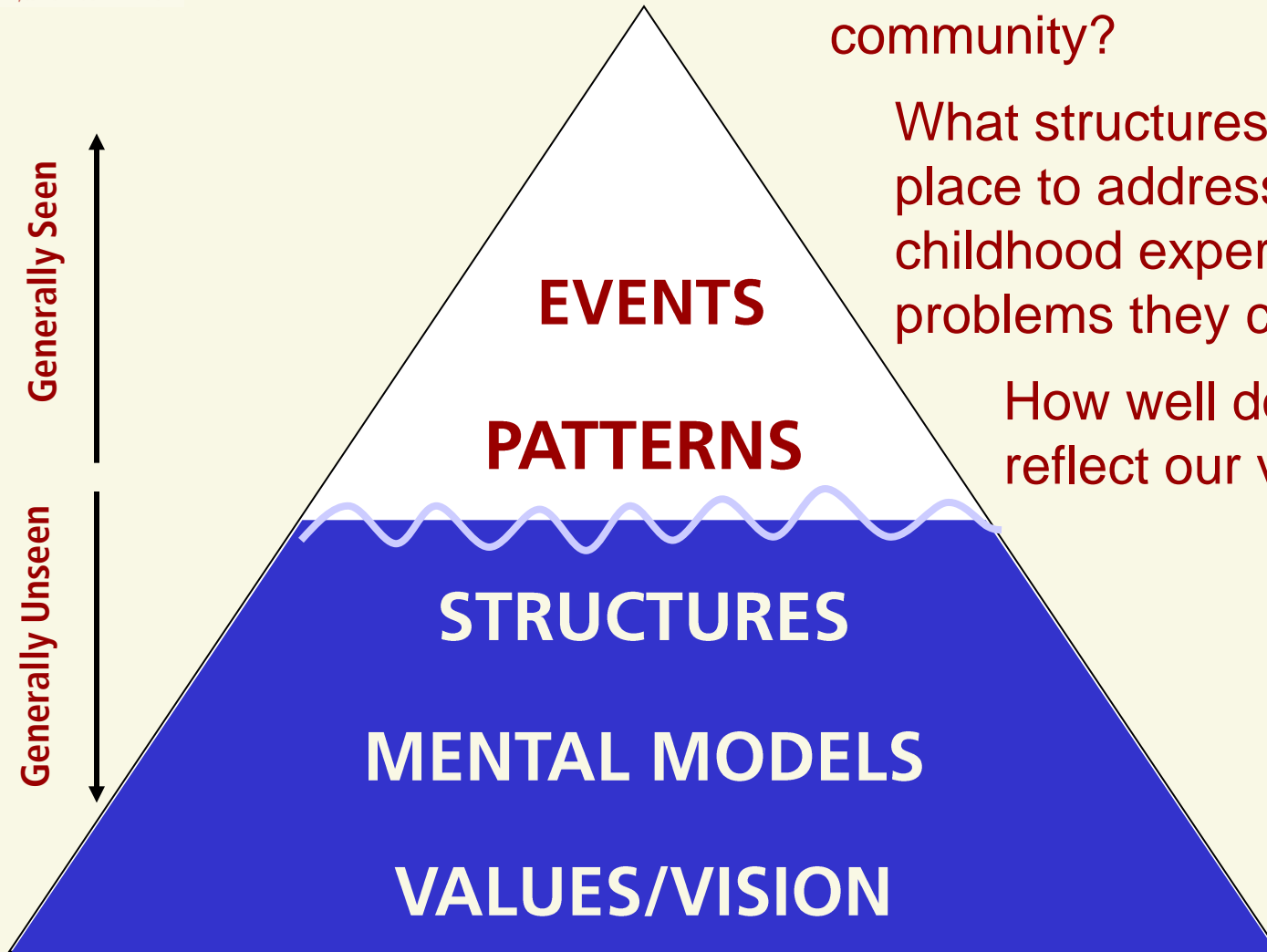
## DISCUSSION

→ In what ways do the findings regarding resilience offer you hope or possibility for the future?



# NEXT CONVERSATIONS: NEXT STEPS





What do we value as a community?

What structures do we have in place to address adverse childhood experiences & the problems they cause?

How well do our structures reflect our values?



# Washington State FAMILY POLICY COUNCIL

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