

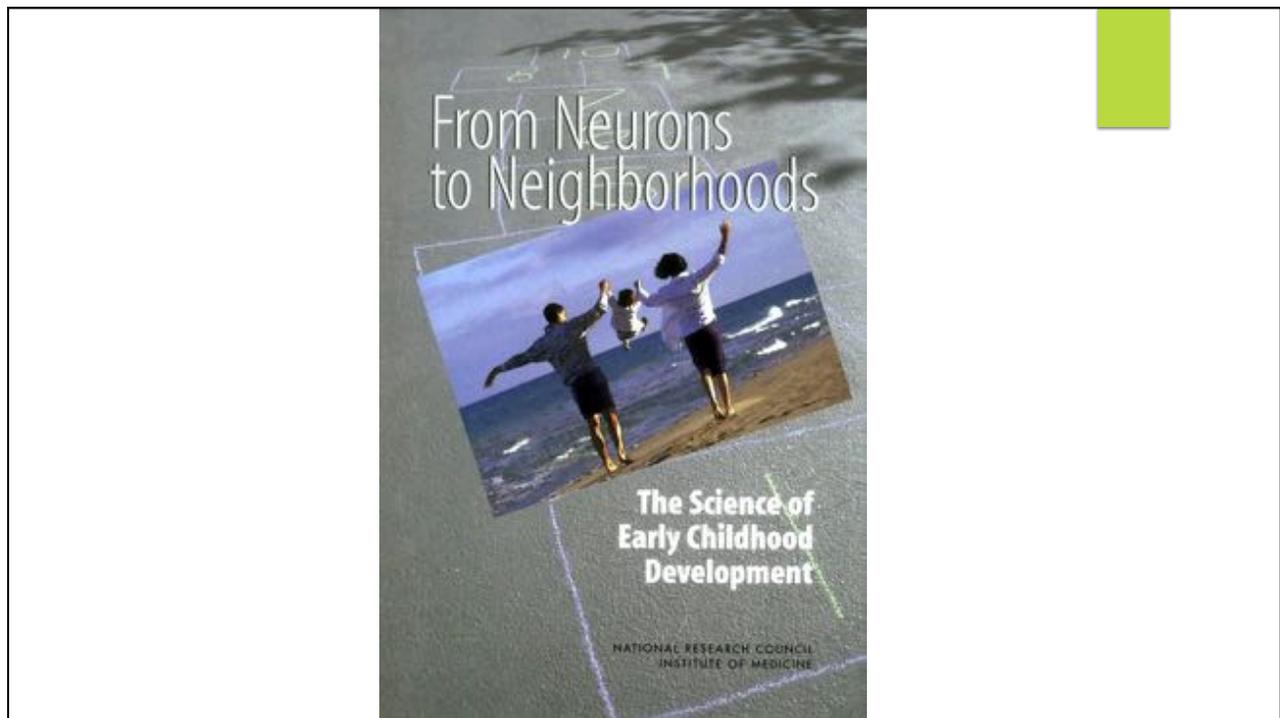
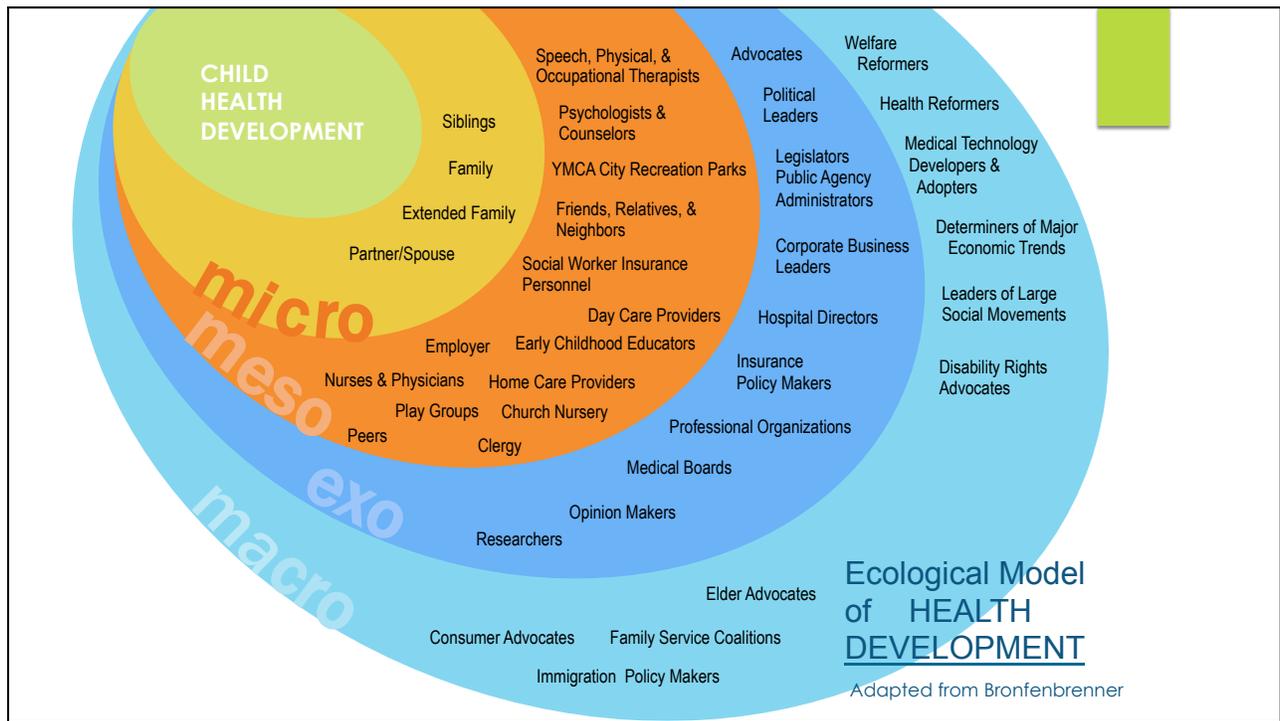
# Family Impact and Adverse Childhood Experiences

ALICE KUO, MD, PHD, MBA



**Children Live in  
the Context of  
Their Families  
& Communities**

Foundational Principles

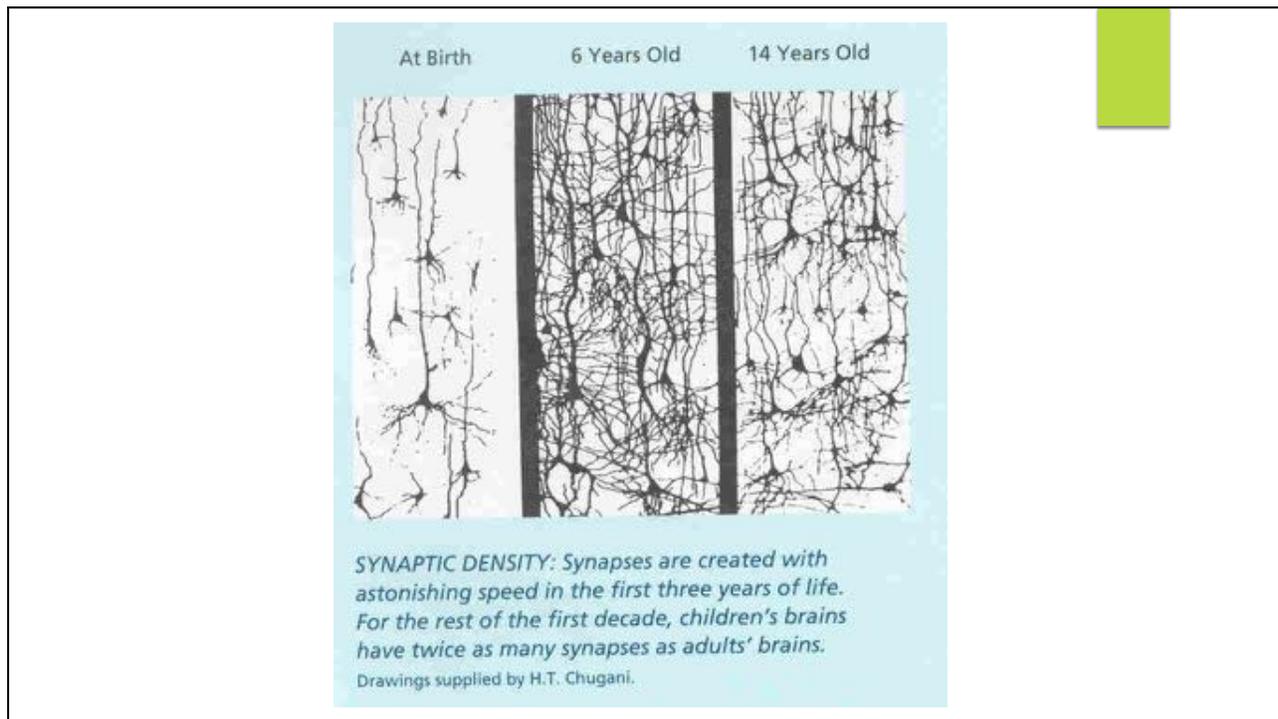


## Neurons to Neighborhoods (2000)

- ▶ How children feel is as important as how they think
- ▶ Healthy development is about nurturing and dependable relationships
- ▶ Culture influences all aspects of early development—child rearing beliefs and customs

## Neuroscience of Brain Development

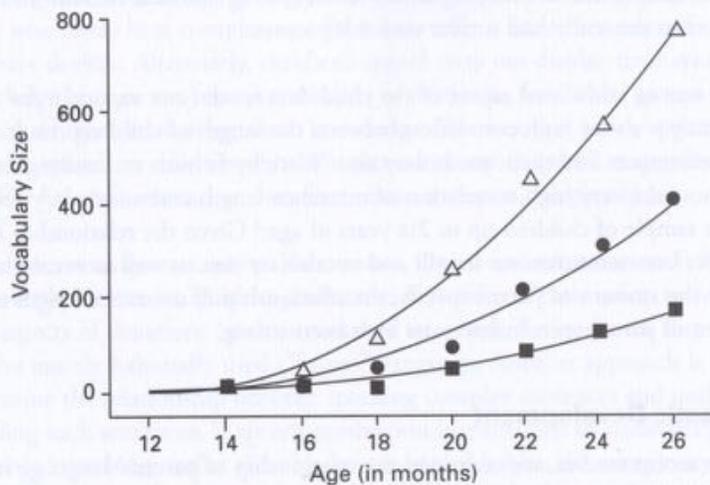
- ▶ Brain is not mature at birth
- ▶ Brain is changed by experiences
- ▶ Critical periods imply timing is important
- ▶ Relationships program social emotional function
- ▶ Adversity impacts brain development



## Neuroscience of Brain Development

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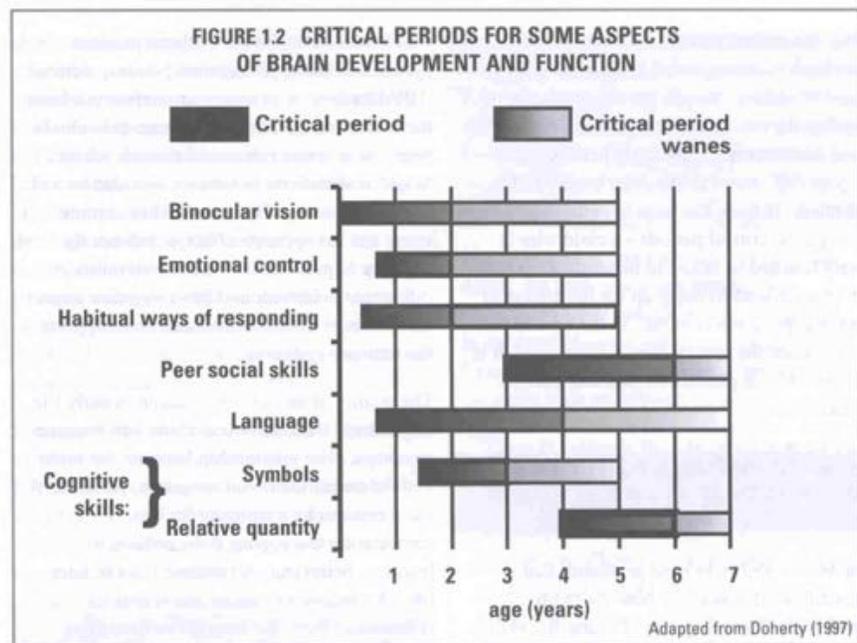
Fig 1. Vocabulary size in three children from 14 to 26 months of age.



Copyright © 1991 by the American Psychological Association. Adapted with permission. Huttenlocher J, et al. Early vocabulary growth: relation to language input and gender. *Developmental Psychology*. 1991;27:236-248.

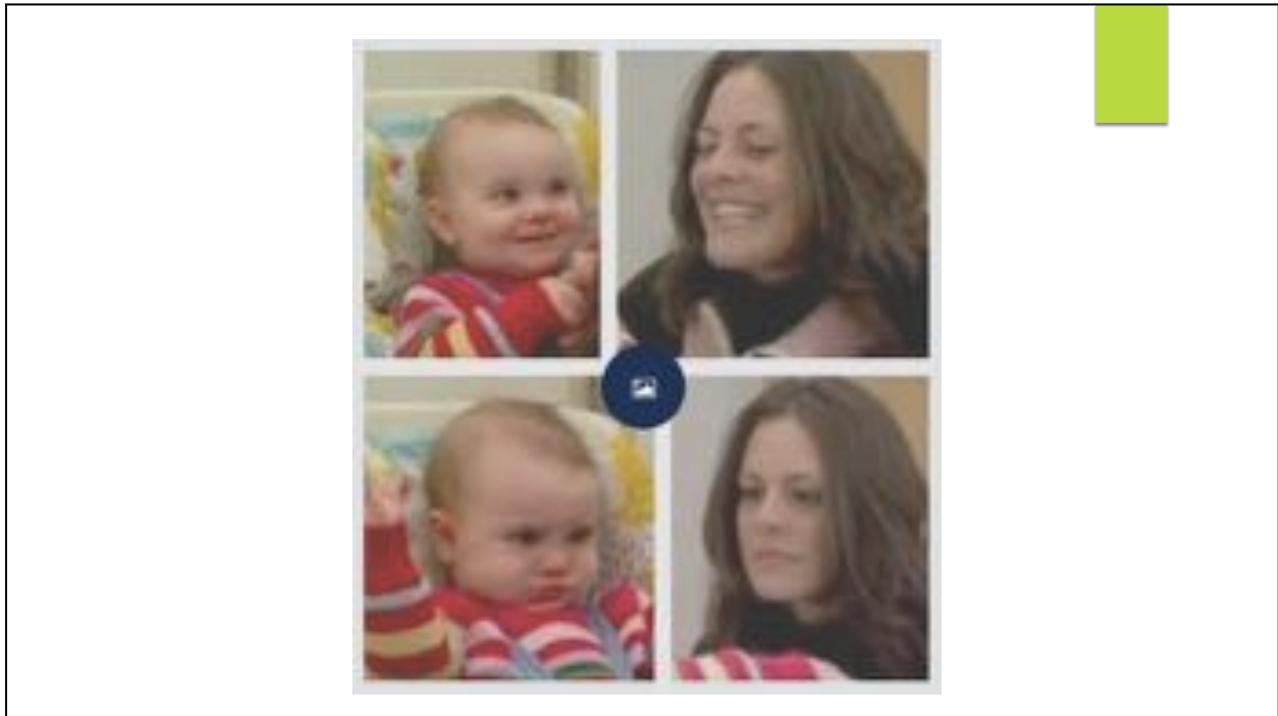
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## Depressed Mothers: Response Patterns to Infants

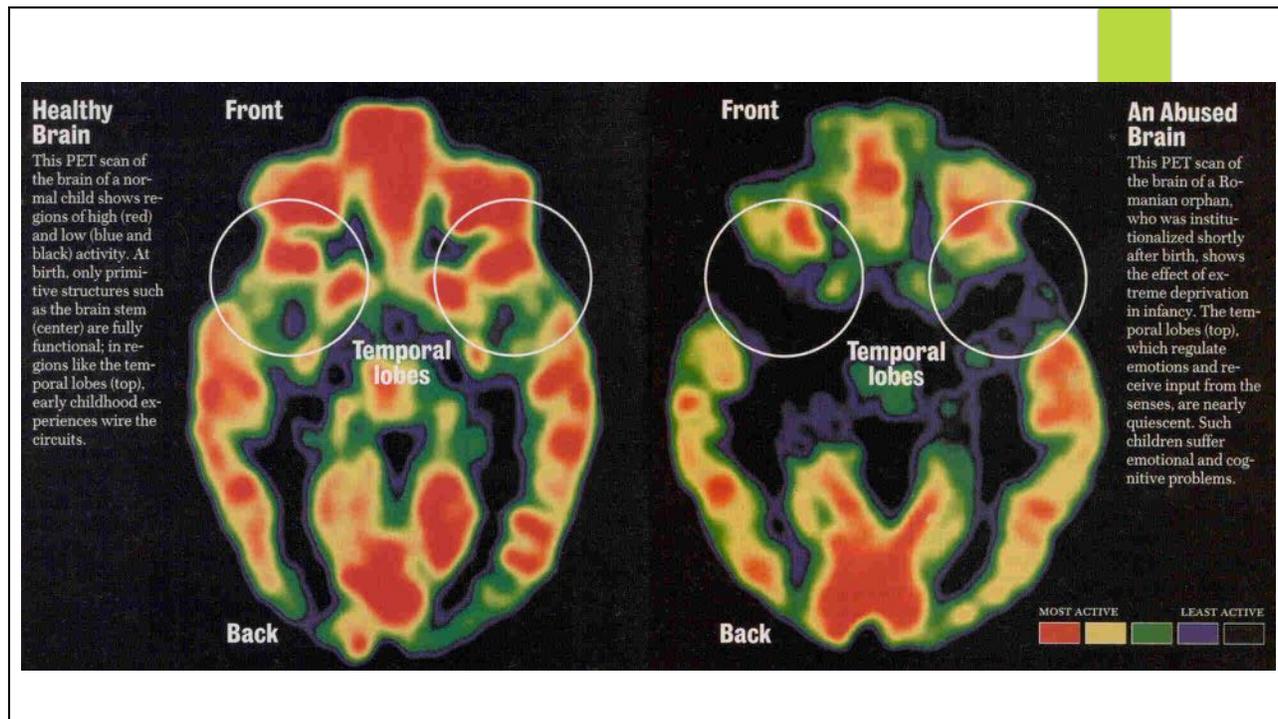
- ▶ Express less positive and more negative affects
- ▶ Less attentive and more disengaged
- ▶ When engaged are more intrusive and controlling
- ▶ Fail to respond adaptively to infant emotional signals

## Infants of Depressed Mothers

- ▶ Shorter attention spans
- ▶ Less motivation to master new tasks
- ▶ Elevated heart rates
- ▶ Elevated cortisol
- ▶ Reduce EEG activity right frontal cortex

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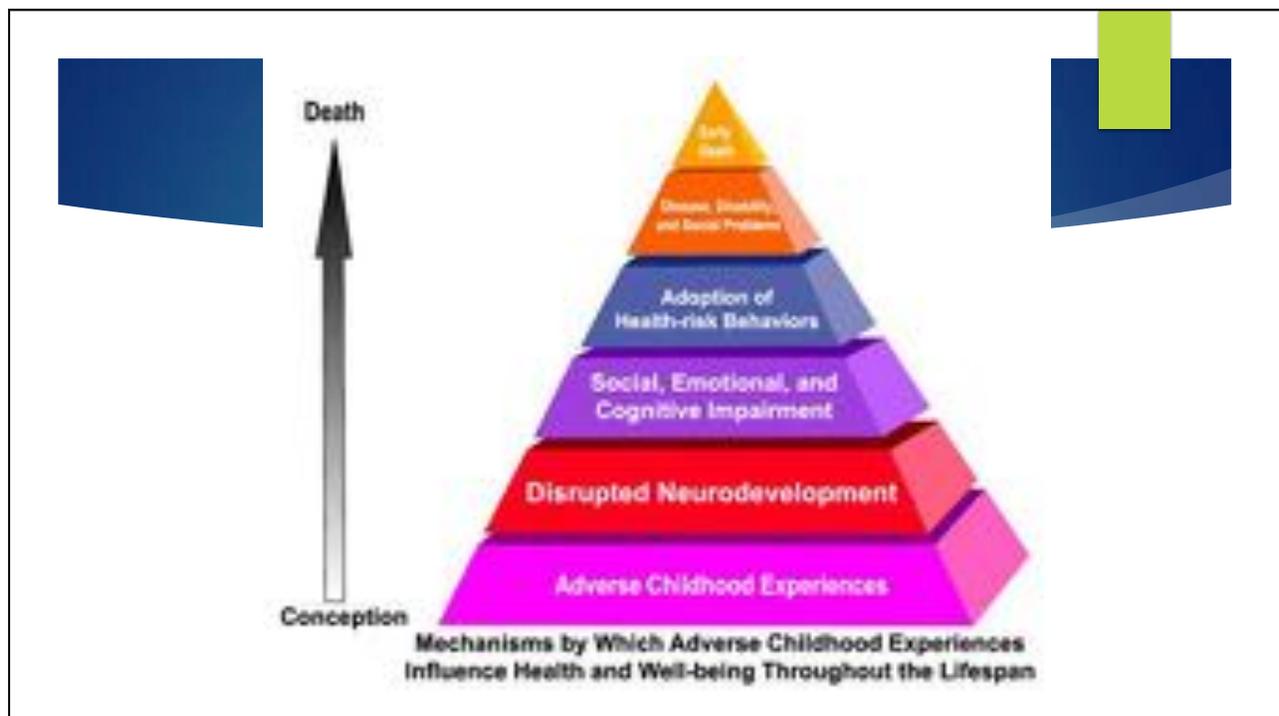


## Impact of Trauma on Health

- ▶ If the 1990's demonstrated the importance of early childhood experiences for positive brain development, what happens when a child experiences adverse events (i.e., trauma)?

## Adverse Childhood Experiences Study

- ▶ Felitti (KP Preventive Medicine) observed in obesity clinic that a majority of participants (out of 286) had experienced child sexual abuse
  - ▶ Hypothesized that weight gain related to eating due to unhealthy coping
- ▶ Felitti and Anda (CDC) partnered to survey 17,000 patients about early childhood experiences over two years, between 1995 to 1997
  - ▶ No new data being collected
  - ▶ Over 50 studies and 100 conference presentations to date
  - ▶ Largest study ever to study associations between early childhood maltreatment and later life health and well-being



## ACES Prevalence (%) of Abuse and Neglect In the Original Study<sup>1</sup>

ACE	Women N=9367	Men N=7970	Total N=17337
<b>Abuse</b>			
Physical Abuse	27.0	29.9	28.3
Sexual Abuse	24.7	16.0	20.7
Emotional Abuse	13.1	7.6	10.6
<b>Neglect</b>			
Emotional Neglect	16.7	12.4	14.8
Physical Neglect	9.2	10.7	9.9

<sup>1</sup><http://www.cdc.gov/violenceprevention/acesstudy/prevalence.html>

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## ACES Prevalence (%) of Household Dysfunction In the Original Study<sup>1</sup>

ACE	Women N=9367	Men N=7970	Total N=17337
<b>Household Dysfunction</b>			
Household Substance Abuse	29.5	23.8	26.9
Parental Separation or Divorce	24.5	21.8	23.3
Household Mental Illness	23.3	14.8	19.4
Mother Treated Violently	13.7	11.5	12.7
Incarcerated Household Member	5.2	4.1	4.7

<sup>1</sup><http://www.cdc.gov/violenceprevention/acesstudy/prevalence.html>

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## Percent of Cumulative Adverse Childhood Experiences ACES in the Original Study<sup>1</sup>

Number of ACES	Women N=9367	Men N=7970	Total N=17337
0	34.5	38.0	36.1
1	24.5	27.9	26.0
2	15.5	16.4	15.9
3	10.3	8.6	9.5
4 or more	15.2	9.2	12.5

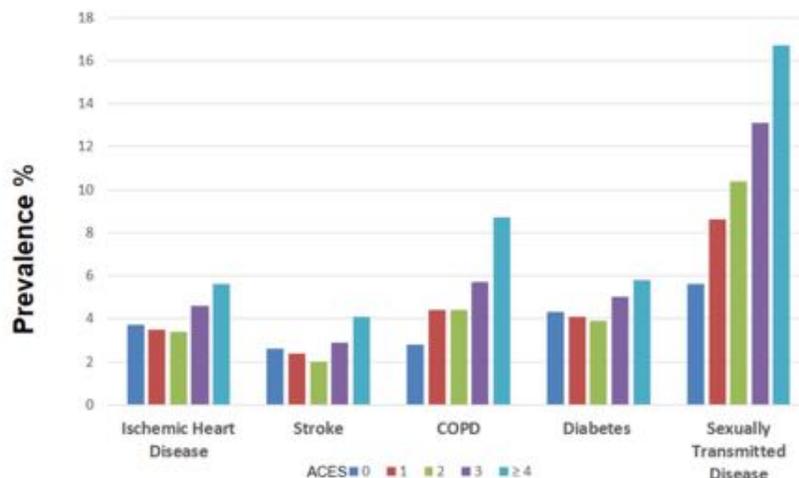
<sup>1</sup><http://www.cdc.gov/violenceprevention/cestudy/prevalence.html>

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## Increased Number of ACEs Associated with Increased Health Risks

- ▶ Severe and persistent emotional problems
- ▶ Health risk behaviors
- ▶ Serious social problems
- ▶ Adult disease and disability
- ▶ High health and mental health care costs
- ▶ Poor life expectancy

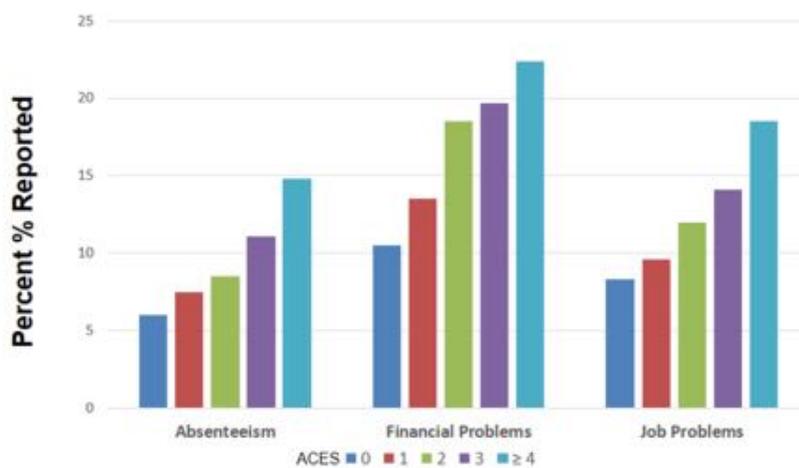
## Cumulative ACES & Chronic Disease<sup>1</sup>



<sup>1</sup>Felitti et al., (1998) American Journal of Preventive Medicine, 14:245-258.

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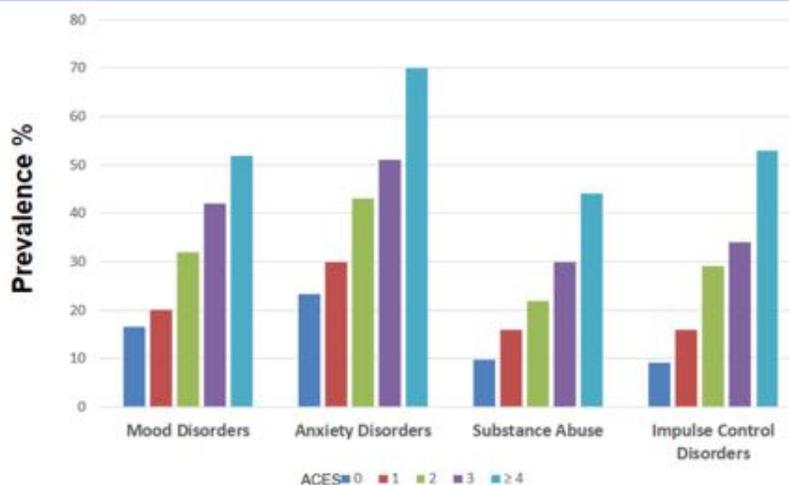
## Cumulative ACES & Impaired Worker Performance<sup>1</sup>



<sup>1</sup>Anda et al., (2004) The Permanente Journal/Winter 8:30-38.

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## Cumulative ACEs & Mental Health<sup>1,2</sup>



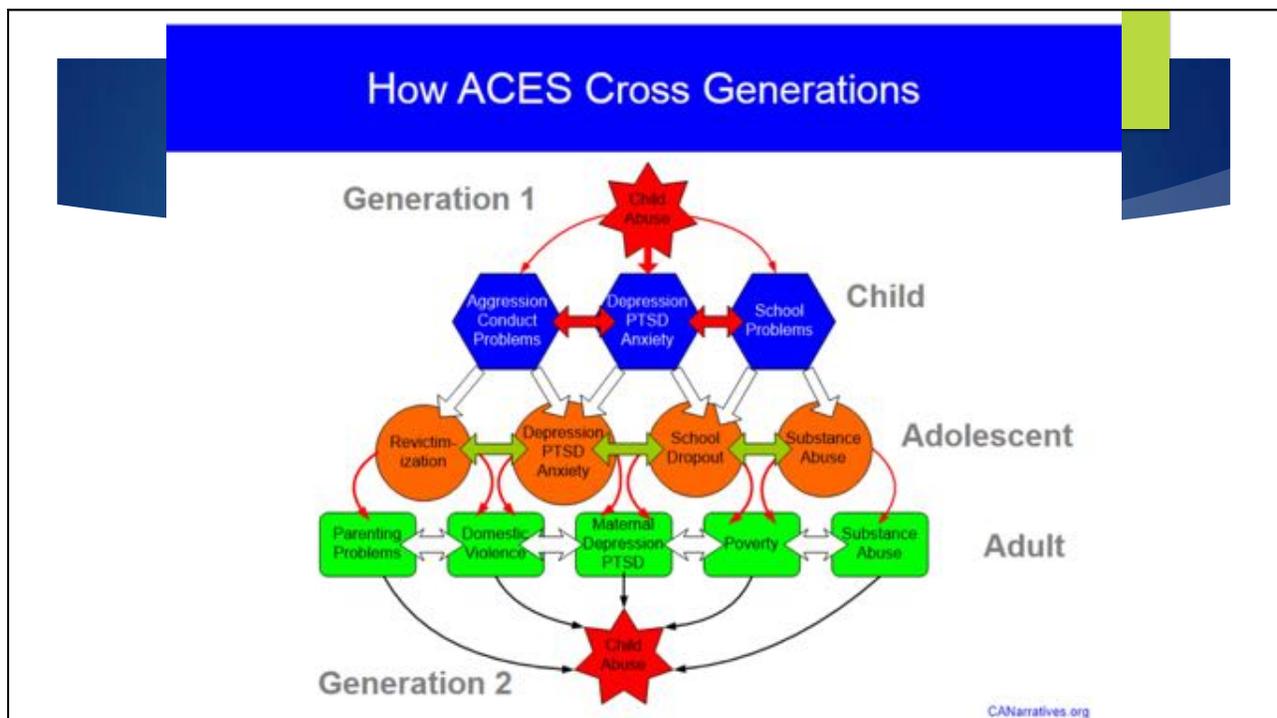
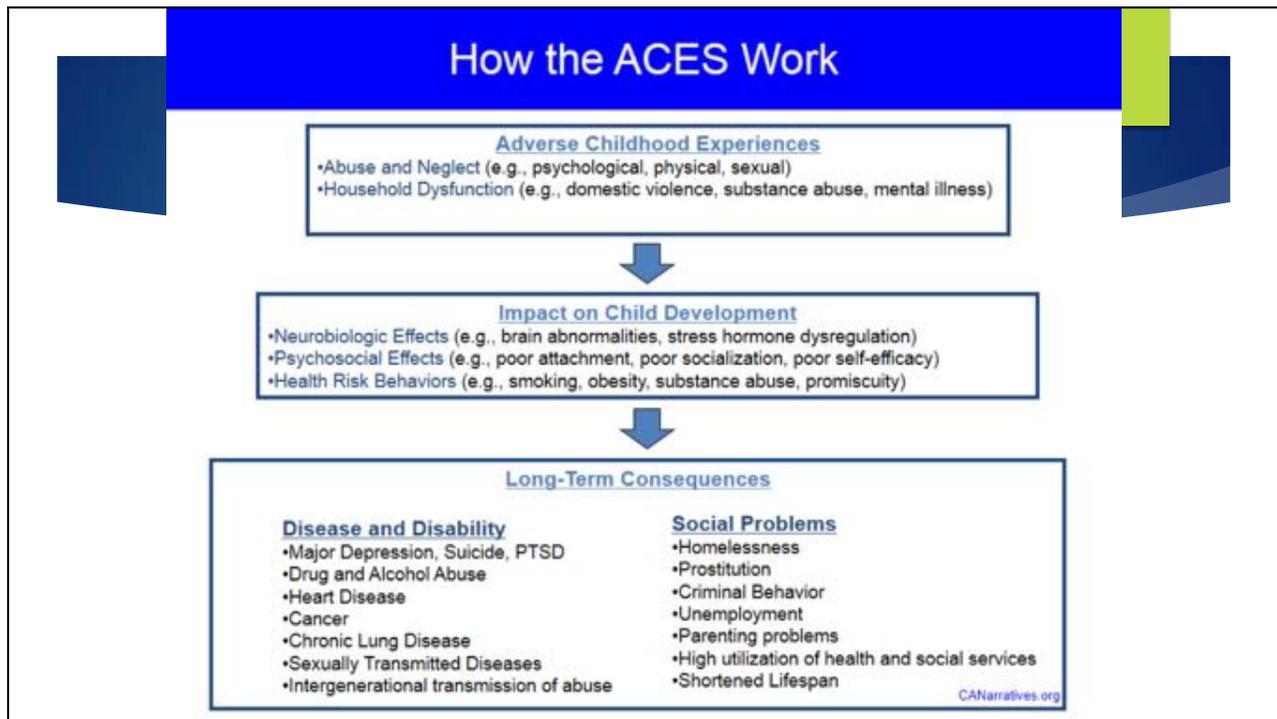
<sup>1</sup>Data from the National Comorbidity Survey-Replication Sample (NCS-R).

<sup>2</sup>Putnam, Harris, Putnam, J Traumatic Stress, 26:435-442, 2013.

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## Implications of Cumulative ACEs

- ▶ Dose-effect: increasing ACEs increases the number of problems
- ▶ Child maltreatment victims have 2-7 times higher risk of being re-victimized in the future than non-victims
- ▶ Preventing future ACEs in previously traumatized children is an important intervention
- ▶ Systems that serve traumatized children – child protection, juvenile justice, mental health – should include trauma screening and prevention interventions



## We have a PR problem...

- ▶ Original ACEs study published in 1998
- ▶ Neurons to Neighborhoods published in 2000
- ▶ In early 2000's, very little interest by policymakers
  - ▶ Recall, 2001-2009, George W Bush was president; Republicans controlled both houses in Congress from 2001-2007

## Even the Experts are Confused as to Which Term is Best



## Toxic Stress

- ▶ 2006: Jack Shonkoff founds the Center of the Developing Child at Harvard
  - ▶ Hired a PR firm to help get interest on impact of ACE's
  - ▶ Term "toxic stress" would have the most impact and resonate with policymakers

# PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

### **Early Childhood Adversity, Toxic Stress, and the Role of the Pediatrician: Translating Developmental Science Into Lifelong Health**

Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, and Section on Developmental and Behavioral Pediatrics, Andrew S. Garner, Jack P. Shonkoff, Benjamin S. Siegel, Mary I. Dobbins, Marian F. Earls, Andrew S. Garner, Laura McGuinn, John Pascoe and David L. Wood

*Pediatrics* 2012;129:e224

DOI: 10.1542/peds.2011-2662 originally published online December 26, 2011;

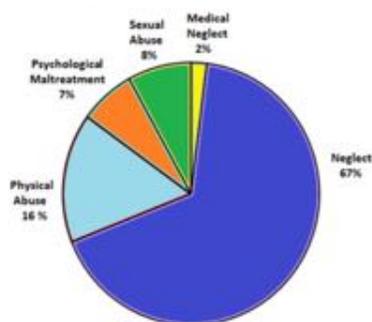
## Recommendations

1. Adopt the Early Brain Development (EBD) framework
  1. Psychosocial problems should be seen as core to health development
2. All physicians should be trained in the link between early toxic stress and later biological development and eventual adult health outcomes
3. Pediatricians should educate communities about the importance of reducing early childhood adversity and trauma and the long-term consequences
4. Pediatricians should advocate for programs that reduce or mitigate toxic stress
5. Pediatricians should identify children at-risk for toxic stress and develop tools to address these in their practices

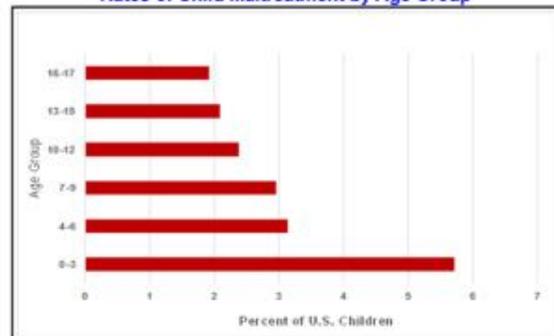
## Rates of Maltreatment by Age<sup>1</sup>

- Most maltreatment happens to younger children.
- Maltreatment has greater negative effects at younger ages.

Types of Child Maltreatment



Rates of Child Maltreatment by Age Group



<sup>1</sup>Child Maltreatment 2012. Washington, DC: US Department of Health and Human Services, 2014.

## Addressing ACEs Offers Critical Public Health Opportunities

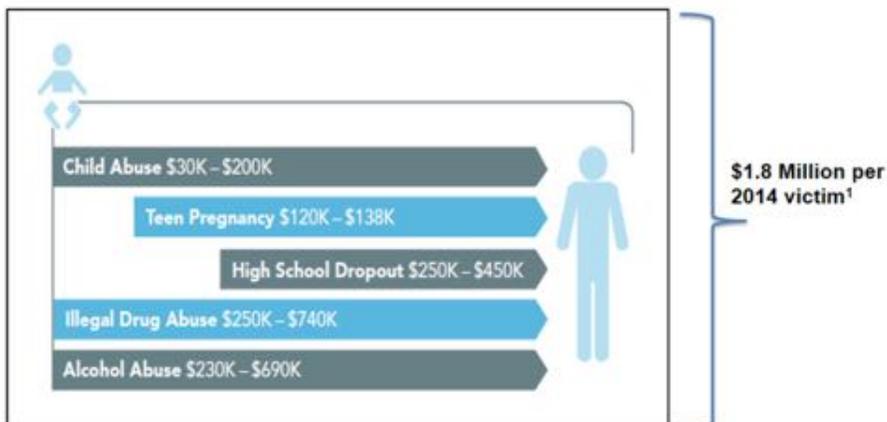
- ▶ ACEs are the most preventable cause of serious mental illness
- ▶ ACEs are the most preventable cause of drug and alcohol abuse in women
- ▶ ACEs are the most preventable cause of HIV high-risk behavior (IV drugs, promiscuity)
- ▶ ACEs are significant contributor to leading causes of death (heart disease, diabetes, cancer, stroke, suicide)

## Costs of Cumulative ACEs

- ▶ Human suffering borne by victims and their families
- ▶ Economic costs borne by society
- ▶ Social costs borne by society
- ▶ Intergenerational transmission of child adversity borne by future society

## What does it cost to do nothing?

Each 2014 First-Time Case of Child Maltreatment Costs U.S. Economy  
Approximately \$1.8 Million in Total Expenditures over their Lifetime<sup>1</sup>

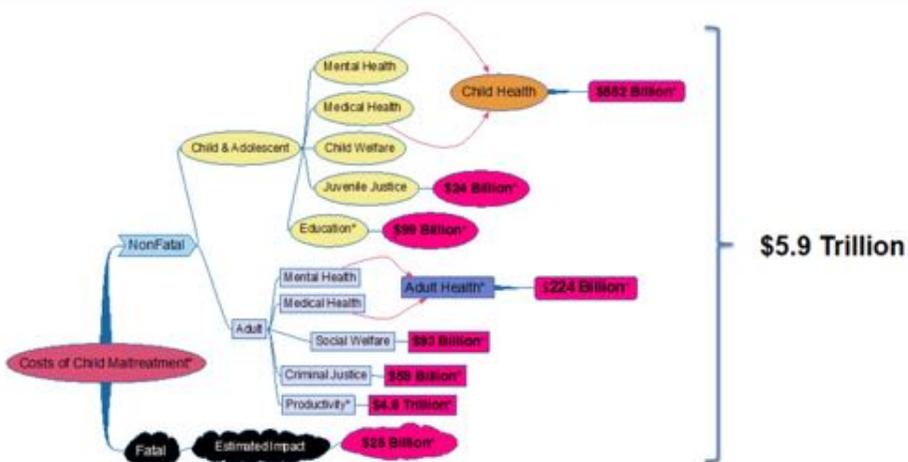


Graphic from Pew Issue Brief Jan 2011: Paying Later: High Cost of failing to Invest in Young children.

<sup>1</sup>Suffer the Little Children: An Assessment of the Economic Costs of Child Maltreatment  
The Perryman Group, Nov. 2014: <http://perrymangroup.com/special-reports/child-abuse-study/>

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## Estimated Lifetime Costs for all 2014 First Time Maltreatment Victims = \$5.9 Trillion<sup>1</sup>



<sup>1</sup>Suffer the Little Children: An Assessment of the Economic Costs of Child Maltreatment  
The Perryman Group, Nov. 2014: <http://perrymangroup.com/special-reports/child-abuse-study/>

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## What is Available Now?

- ▶ Evidence-based prevention and treatment interventions
- ▶ Existing programs within which to embed screening, prevention and treatment
- ▶ Replication strategies to expand access to services (e.g., learning collaboratives)
- ▶ Web networking and data collection systems to support large-scale interventions
- ▶ Prevention and quality improvement science to enhance interventions while they are being delivered

## Child Abuse Prevention

- ▶ Evidence-based prevention programs exist
  - ▶ Early home visiting
  - ▶ Triple P (Promoting Positive Parenting)
- ▶ CDC meta-analysis of home visiting: 40-80% reduction in abuse in official case reports
- ▶ Triple P population-based clinical trial: reduces substantiated cases, out-of-home placements, maltreatment injuries
- ▶ Dissemination strategies for "going to scale" exist
- ▶ Economic analyses demonstrate cost-effectiveness

## Preventing ACEs is Protective

- ▶ Having zero (0) ACEs significantly protects against child & adult mental illness
- ▶ Developmental models indicate that resilience decreases as the number of ACEs increases
- ▶ Positive childhood experiences can offset negative ones

## Treatment

- ▶ Evidence-based treatments exist for traumatized children
  - ▶ TF CBT: trauma-focused cognitive behavioral therapy
  - ▶ CPP: child parent psychotherapy
  - ▶ PCIT: parent child interaction therapy
- ▶ Children with 4 or more ACEs respond just as well to therapy as children with fewer
- ▶ Therapists who follow guidelines carefully get best results
- ▶ Treatments can improve both child and parent mental health outcomes
- ▶ Treatment can restore normal biological response to stress in some cases

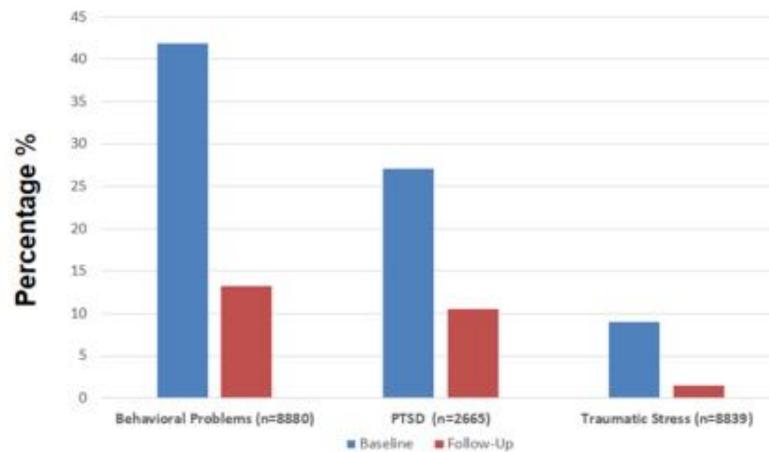
## The National Child Traumatic Stress Network (NCTSN) Centers and Affiliated Agencies Provide Proven Treatments to Traumatized Youth Nationwide<sup>1</sup>



<sup>1</sup>[www.nctsn.org](http://www.nctsn.org)

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## NCTSN Children & Adolescents At Baseline and Last Follow up<sup>1</sup>



<sup>1</sup>The National Child Traumatic Stress Network CDS September 2010 – [www.nctsn.org](http://www.nctsn.org)

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## Prevention & Treatment Costs

- ▶ Are prevention and treatment programs cost-effective?
  - ▶ High quality home visiting child abuse prevention programs return \$3.00 for every dollar spent
  - ▶ Evidence-based child trauma treatment programs such as PCIT return \$3.64 for every dollar spent

## Public Health Thresholds of Risk for Legislation, Regulation or Recommendations

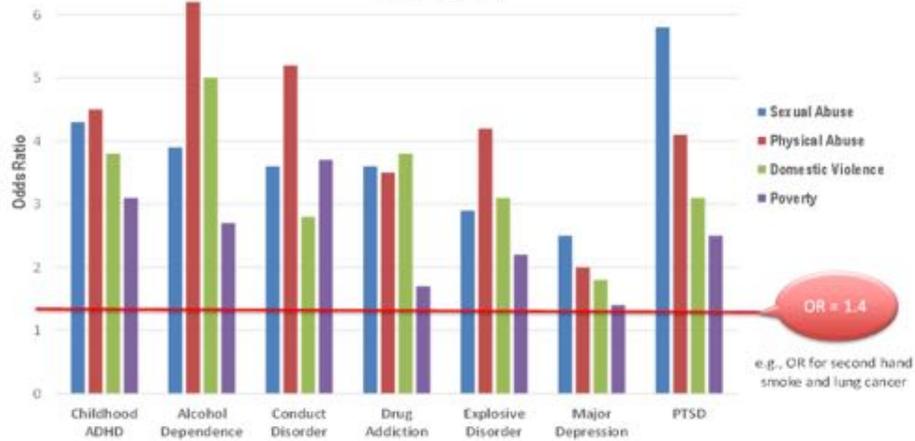


<sup>1</sup>Pulisam et al. JTS. 26:435-442,2013. <sup>2</sup>Brennan et al. Int J Cancer. 109:125-31,2004. <sup>3</sup>Klauser et al. NEJM. 370:54-59,2014. <sup>4</sup>Fryeblich et al. Pediatrics. 124:1054-1063,2009. <sup>5</sup>Lacovich et al. Cancer Epidemiol Biomarker Prev. 19:1557-1568,2010.

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## Sexual Abuse, Physical Abuse, Domestic Violence & Poverty Each Increase Risk for Mental Health Problems in Females <sup>1,2</sup>

N=3310

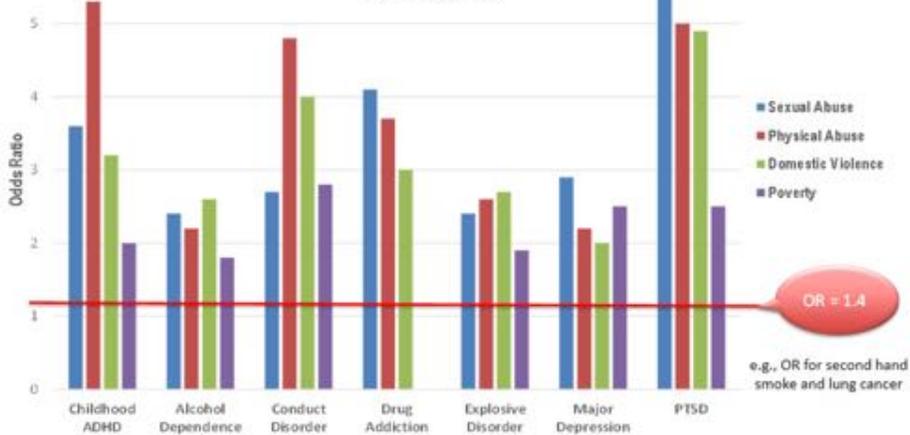


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<sup>2</sup>Putnam, Harris, Putnam, J Traumatic Stress, 26:435-442, 2013.

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## Sexual Abuse, Physical Abuse, Domestic Violence & Poverty Each Increase Risk for Mental Health Problems in Males <sup>1,2</sup>

N=2382



<sup>1</sup>Data from the National Comorbidity Survey-Replication Sample (NCS-R).  
<sup>2</sup>Putnam, Harris, Putnam, J Traumatic Stress, 26:435-442, 2013.

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## Adopt a Public Health Approach

- ▶ Screen for ACEs in systems that serve children and families
- ▶ Build capacity to prevent and treat child trauma
- ▶ Increase access to trauma-informed services for children and families
- ▶ Integrate trauma services across family-serving systems

## Summary

- ▶ Science is incontrovertible that early experiences influence brain development
- ▶ Adverse experiences (i.e., toxic stress) impact biological systems that later affect adult health outcomes
- ▶ Evidence-based prevention and treatment programs exist and are cost-effective
- ▶ System-level interventions should be implemented to integrate trauma services

## Discussion

- ▶ Governor Gavin Newsom released his first annual state budget proposal.
- ▶ In keeping with many of the promises he made during his election over the last two years the Governor's 2019-2020 budget proposal addresses many areas critical to maternal and child health.
- ▶ The \$144 billion general fund proposal initiates six months of discussions with the Legislature, with a June 15th deadline to pass a balanced budget.
- ▶ Newsom's total budget, which includes money allocated for special purpose funds, tops \$209 billion.

## MCH Highlights of Governor's Proposed Budget

- ▶ \$30.5 million General Fund to expand home visiting programs and the Black Infant Health Program in the Department of Public Health.
  - ▶ \$23 million is for the expansion of home visiting services with a focus on low-income, young mothers and the use of a wider range of home visiting models based on varying family needs.
  - ▶ \$7.5 million is to increase participation in the Black Infant Health Program to improve African-American infant and maternal health through case management services, including home visiting.
- ▶ \$50 million in Proposition 56 funds for family planning services in the Medi-Cal program.
- ▶ Increase subsidies through Covered California for individuals with incomes between 250 and 400 percent of the federal poverty level, and expand subsidies to individuals with incomes between 400 and 600 percent of the federal poverty level to increase coverage and promote affordability. The increased subsidies will be funded by revenues generated by establishing a state individual mandate, modeled on the federal requirement enacted as part of the ACA, to obtain comprehensive health care coverage or pay a penalty.
- ▶ \$260 million (\$196.5 million General Fund) to grow full-scope Medi-Cal coverage to eligible young adults (19-25) irrespective of immigration status (starting no earlier than July 1, 2019). This expansion is anticipated to provide full-scope coverage to roughly 138,000 undocumented adults in the first year.
- ▶ \$3.2 billion (\$1.05 billion Proposition 56 funds) for supplemental payments and rate increases for physicians, dentists, *family planning services*, Intermediate Care Facilities for the Developmentally Disabled, HIV/AIDS waiver services, Home Health, *pediatric day health services*, and new investments.

## MCH Highlights of Governor's Proposed Budget

- ▶ Expanding the Paid Family Leave program to 6 months of paid family leave.
- ▶ \$500 million one-time General Fund to build child care infrastructure.
- ▶ \$78.9 million to provide home visiting services to an anticipated 16,000 eligible CalWORKs families in 2019-20. Approximately 15,000 cases are estimated to be served on an annual basis beginning in 2020-21.
- ▶ \$60 million (\$30 million federal funds and \$30 million Proposition 56 funds) for the DHCS to increase developmental screenings for children.
- ▶ \$45 million (\$22.5 million federal funds and \$22.5 million Proposition 56 funds) to the DHCS for Adverse Childhood Experiences (ACEs) screenings for children and adults in the Medi-Cal program.