

## Strategies for Hospital and Community Collaboration to Prevent ACEs: Lessons learned from Houston

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*Pediatrics*

## Closing the gap in a generation

Health equity through action on the social determinants of health



World Health Organization, 2006

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## Why treat people...

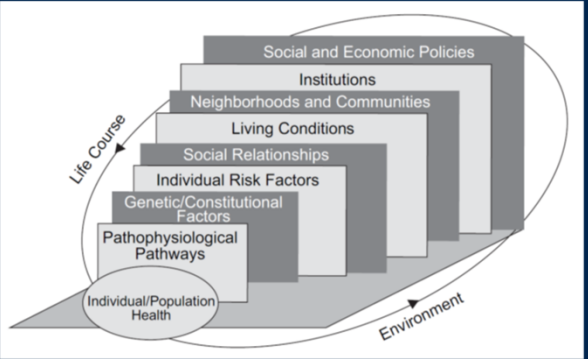


## then send them back to the conditions that made them sick?

2 | WHO Commission on Social Determinants of Health | August 28, 2008

World Health Organization

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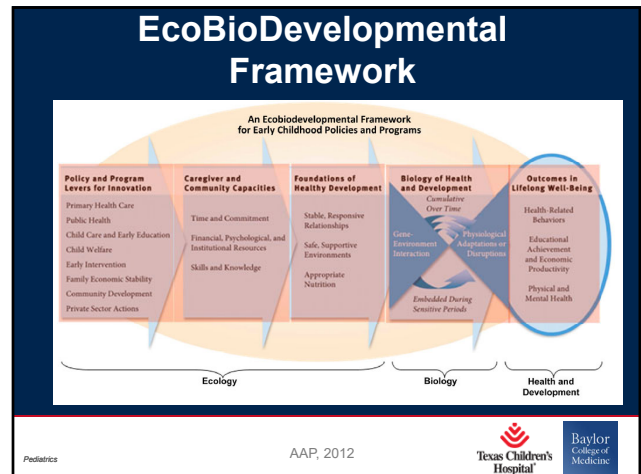


Life Course

Environment

National Academies of Science, 2014

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## Stress

- Positive Stress
  - Brief and moderate
  - Moderated by protective forces
- Tolerable Stress
  - Greater magnitude or duration
- Toxic Stress
  - Multiple stressors, severe, prolonged
  - Unmitigated

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AAP, 2012

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## Toxic Stress

- Allostatic Load
  - “the cumulative wear and tear on the body’s systems owing to repeated adaptation to stressors”\*
- Results in demonstrable brain alterations
  - Functional and anatomic
  - Particularly in the vulnerable brain
- Cortisol

\*Turner, Thomas & Brown, 2016

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## The Adverse Childhood Experiences Study

(ACE Study)

Pediatrics  
Felitti, et al. "Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study." Am J of Prev Med 14.4 (1998): 245-258.



## ACE Study

- Kaiser Health Plan in San Diego County
  - 45,000 HMO members:
- 72% had attended college
- 77% were white
- 62% were 50 or older
- Sent a survey on childhood experiences
  - 17,000 responses

Pediatrics  
Felitti, et al. "Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study." Am J of Prev Med 14.4 (1998): 245-258.



## What Are ACEs?

- Emotional/Physical Abuse
- Sexual Abuse
- Emotional/Physical Neglect
- Domestic Violence – Battered Mother
- Single Parent Homes –Separation/Divorce/Death
- Substance Abuse - One or Both Parents
- Incarcerated Parent(s)
- Parent(s) Suffering From Mental Illness
- Parent(s) Suffering From Chronic Illness

Pediatrics  
Felitti, et al. "Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study." Am J of Prev Med 14.4 (1998): 245-258.

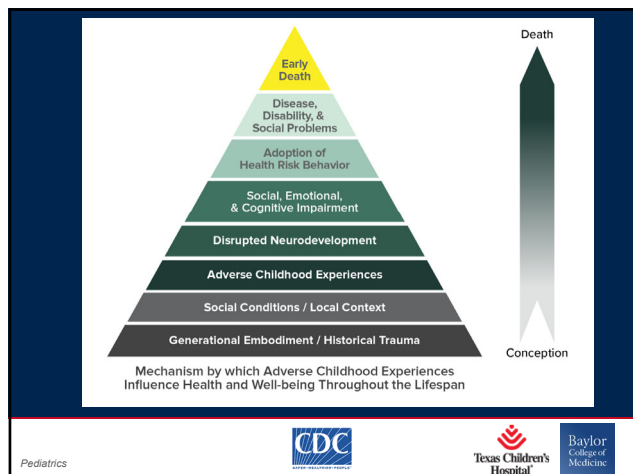


## ACE Scores Associated With

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

Pediatrics  
Felitti, et al. "Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study." Am J of Prev Med 14.4 (1998): 245-258.





**TABLE 2. Percentage of adults aged ≥18 years reporting adverse childhood experiences (ACEs), by number of ACEs reported and selected characteristics — Behavioral Risk Factor Surveillance System (BRFSS), five states, 2009**

Characteristic	Survey population	0 ACEs % (95% CI)	1 ACEs % (95% CI)	2 ACEs % (95% CI)	3 ACEs % (95% CI)	4 ACEs % (95% CI)	≥5 ACEs % (95% CI)
<b>Total*</b>	26,229	40.6 (39.5–41.7)	22.4 (21.5–23.3)	13.1 (12.3–13.9)	8.8 (8.2–9.4)	6.5 (5.9–7.2)	8.7 (8.0–9.4)
<b>Sex</b>							
Men	9,474	42.0 (40.2–43.9)	23.3 (21.8–24.8)	13.4 (12.2–14.8)	7.8 (6.9–8.7)	6.6 (5.5–7.9)	6.9 (6.0–8.0)
Women	16,755	39.2 (38.0–40.4)	21.6 (20.6–22.6)	12.8 (11.9–13.6)	9.7 (9.0–10.6)	6.4 (5.8–7.1)	10.3 (9.5–11.2)
<b>Age group (yrs)</b>							
18–24	764	35.5 (30.7–40.6)	22.6 (18.6–27.2)	13.2 (10.3–16.8)	7.6 (5.6–10.3)	8.5 (6.2–11.7)	12.5 (9.8–15.9)
25–34	2,103	31.1 (28.1–34.4)	21.9 (19.4–24.8)	14.9 (12.6–17.6)	8.9 (7.3–10.7)	8.9 (7.1–11.1)	14.2 (11.9–16.9)
35–44	3,388	35.7 (33.0–38.6)	22.2 (20.0–24.5)	13.9 (12.0–16.1)	10.9 (9.4–12.7)	7.4 (5.7–9.7)	9.8 (8.5–11.4)
45–54	11,504	41.8 (40.4–43.3)	22.4 (21.2–23.5)	13.3 (12.4–14.2)	9.3 (8.5–10.1)	5.9 (5.3–6.6)	7.4 (6.7–8.1)
≥55	8,336	56.7 (55.1–58.2)	22.9 (21.6–24.2)	9.6 (8.8–10.5)	5.4 (4.8–6.2)	3.0 (2.5–3.5)	2.5 (2.0–3.0)
<b>Race/Ethnicity</b>							
White, non-Hispanic	19,770	41.7 (40.4–43.0)	22.0 (21.0–23.0)	12.7 (11.9–13.6)	8.7 (8.0–9.4)	6.0 (5.4–6.8)	8.9 (8.1–9.7)
Black, non-Hispanic	2,662	37.3 (33.9–40.9)	27.0 (23.9–30.4)	13.8 (11.4–16.7)	8.9 (7.1–11.1)	8.0 (5.6–11.3)	4.9 (3.7–6.6)
Hispanic	2,217	35.7 (32.2–39.4)	23.1 (20.6–26.7)	13.9 (10.6–15.5)	10.3 (8.0–13.1)	8.6 (6.7–11.0)	9.1 (7.5–11.0)
Other, non-Hispanic†	1,381	37.8 (33.4–42.3)	18.2 (15.3–21.6)	16.4 (12.3–21.5)	8.4 (5.9–11.7)	7.6 (5.4–10.5)	11.7 (9.3–14.6)
<b>Education</b>							
<High school	2,646	34.5 (31.1–38.0)	19.8 (17.3–22.6)	12.6 (10.3–15.3)	10.5 (8.0–13.8)	7.7 (4.7–12.4)	14.9 (11.7–18.8)
High school	7,379	40.9 (38.7–43.1)	23.5 (21.7–25.4)	13.2 (11.7–14.9)	7.9 (6.9–8.9)	5.8 (4.8–7.0)	8.7 (7.6–10.1)
>High school	16,175	41.3 (40.0–42.7)	22.3 (21.2–23.4)	13.1 (12.2–14.1)	9.0 (8.3–9.7)	6.6 (5.9–7.4)	7.7 (7.1–8.5)
<b>State</b>							
Arkansas	3,558	46.9 (44.5–49.4)	21.0 (19.0–23.0)	11.2 (9.8–12.9)	7.1 (5.9–8.4)	5.9 (4.7–7.3)	8.0 (6.5–9.7)
Louisiana	8,147	42.6 (41.0–44.1)	24.7 (23.3–26.2)	12.9 (11.8–14.0)	7.7 (6.9–8.7)	5.5 (4.8–6.3)	6.6 (5.8–7.5)
New Mexico	5,271	39.0 (36.9–41.1)	21.9 (20.2–23.6)	12.6 (11.3–13.9)	10.1 (8.7–11.5)	7.1 (6.0–8.3)	9.5 (8.4–10.6)
Tennessee	2,327	43.5 (40.4–46.7)	20.8 (18.4–23.5)	12.6 (10.5–15.0)	8.3 (6.8–10.1)	6.2 (4.4–8.6)	8.7 (7.0–10.7)
Washington	6,926	34.6 (33.1–36.1)	23.0 (21.7–24.3)	14.6 (13.5–15.8)	10.3 (9.4–11.2)	7.5 (6.7–8.4)	10.1 (9.1–11.1)

**Centers for Disease Control and Prevention**

**MMWR** Morbidity and Mortality Weekly Report

Weekly / Vol. 59 / No. 49

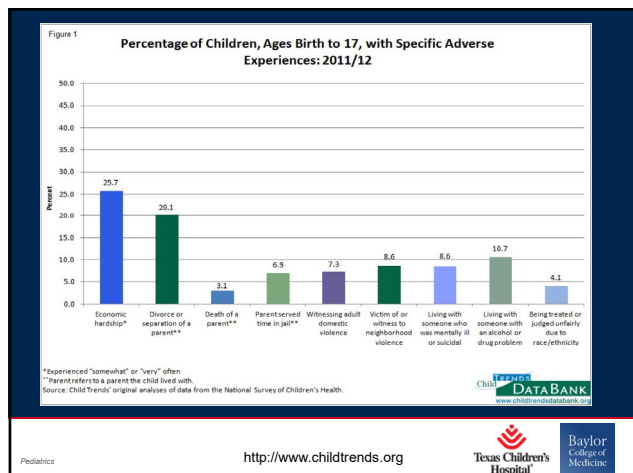
December 17, 2010

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Adverse Childhood Experiences Reported by Adults — Five States, 2009

**Texas Children's Hospital**

**Baylor College of Medicine**



## Additional Adversities

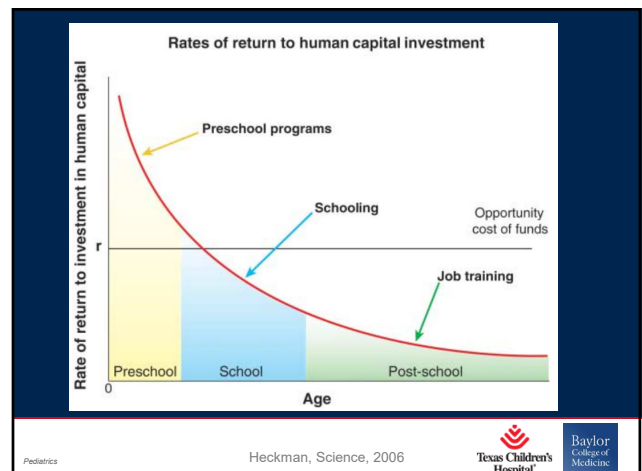
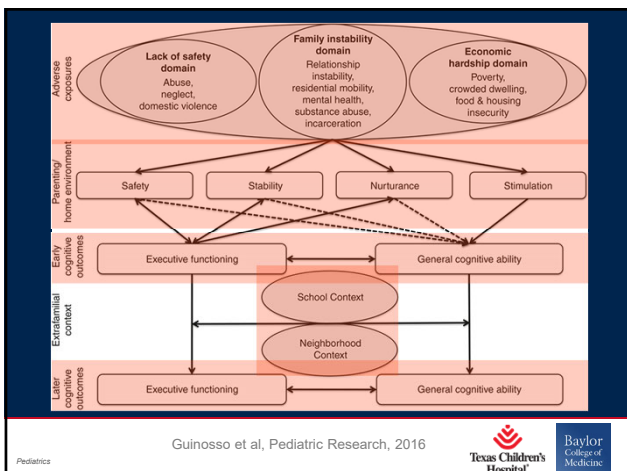
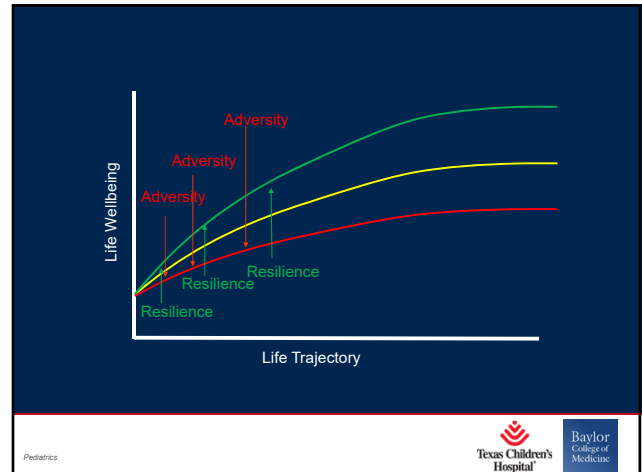
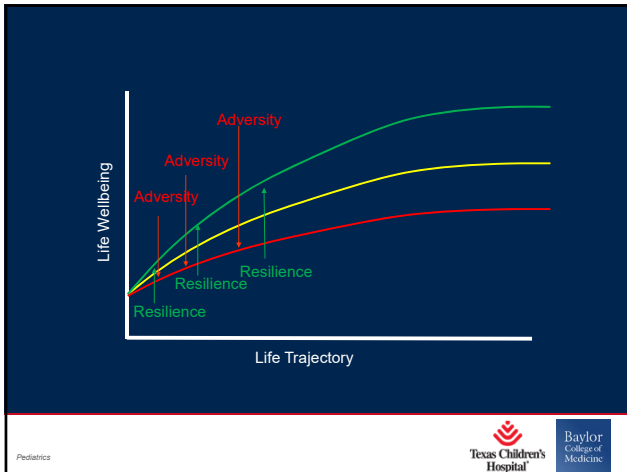
- Food Insecurity
- Peer violence, bullying
- Maternal mental health (PPD, Depression)
- Low Social Capital; unsafe neighborhoods
- Educational attainment (child, parent)
- Economic disenfranchisement
- Media, social media
- Experiencing racism

**CDC**

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## Addressing Adversities / Social Determinants of Health...

- Is complicated
  - Not a single strategy in isolation
- Requires a collective (team) effort
  - No one can do it alone
- Requires cross disciplinary/sector collaboration
  - Non-profit, government, academia
- Requires attention to data
  - Not all things that sound good are effective
- Takes Time
  - Need to develop thoughtful (realistic) sustainability models

Pediatrics



## Section of Public Health Pediatrics

Pediatrics



## Context

- Texas Population: 28.7 million (7.3 million <18y)
- Greater Houston: 7 million (1.9 million <18y)
  - 10,000 square miles
  - GDP: \$490 billion (7<sup>th</sup> highest in the US)
  - Harris County: 4.7 million (1.3 million <18y)
    - Third most populous county in the US
- Ethnicity: 44% Hispanic, 26% AA, 26% White
- Birth rate: 103,000 births (> than 40 states)
- Hurricane Harvey (55-61 inches of rain in 5 days)

Pediatrics



Pediatrics





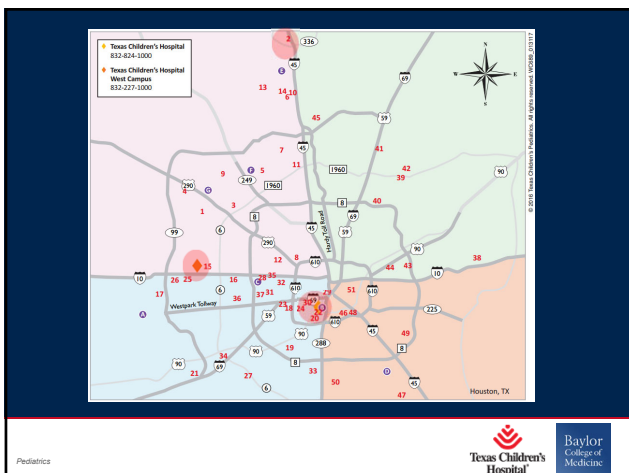
## Texas Children's System

- Hospitals
  - 3 hospitals with 3.5 million patient encounters / year
- Texas Children's Pediatrics
  - 53 pediatric practices, 260 pediatricians, largest pediatric primary care network in the nation
  - Provides care to 400,000+ each year
- Texas Children's Health Plan
  - 400,000 members, provides >50% of Medicaid coverage to children in Harris County
- TCH Pavilion for Women
  - 6,000 births /year
- Baylor College of Medicine
  - Department of Pediatrics, >1,400 faculty members

Pediatrics

Texas Children's Hospital

Baylor College of Medicine



## Section of Public Health Pediatrics

- October, 2015

Pediatrics

Texas Children's Hospital

Baylor College of Medicine

## Background

*Medicine is concerned with the new individual before he is born, while he is being born, and after...it is not enough, however, to work at an individual bedside in a hospital. In the near or dim future, the pediatrician is to sit in and control school boards, health departments, and legislatures. A legitimate advisor to the judge and jury, and a seat for the physician in the republic is what the people have a right to demand.*

Dr. Abraham Jacobi (1904)

Pediatrics



## Section Mission

To create a healthier future for Texas's children and families by leading in patient care, education and research that seeks to mitigate childhood adversities and to accentuate individual, family and community resilience.

Pediatrics



## Section of Public Health Pediatrics

- October, 2015
- How?
  - Social Determinants of Health (Marmot)
  - Childhood Adversity (ACEs)
  - Toxic Stress (AAP)
- Guiding Principles
  - Address "upstream" causes of disease and disability
  - Collaborate with internal and external partners
  - “Greatest good for the greatest number of kids and families”
  - An emphasis on early brain development

Pediatrics



## Section of Public Health Pediatrics

- Goals
  - To be action oriented
  - To be a resource/service for TCH/TCPW
  - To fill gaps in knowledge or practice
  - To actively partner with community agencies

Pediatrics





## Section of Public Health Pediatrics

- 4 Pillars of the Section
  - Clinical Care
  - Education and Training
  - Scholarship/New Knowledge
  - Community Engagement

Pediatrics



## Section of Public Health Pediatrics

- Clinical service
  - Child Abuse Pediatrics Program
- Public Health service

Pediatrics



## Section of Public Health Pediatrics

- Clinical service
  - Child Abuse Pediatrics Program
- Public Health service

Pediatrics



## Section of Public Health Pediatrics

- Child Abuse Pediatrics (CAP) Program
  - 6 Child Abuse Pediatricians
  - 1 General Pediatrician
  - 2 Nurse Practitioners
  - 1 Social Worker
  - 1 Nurse/Nurse Manager
  - 1 Nurse Coordinator
  - 1 Medical Assistant
  - 2 Clinical CAP Fellows

Pediatrics



## Section of Public Health Pediatrics

### •Child Abuse Pediatrics (CAP) Program

- Provide an excellent inpatient consultative service
  - See patients admitted to Texas Children's Hospital for concerns for abuse or neglect
- 250-300 children per year
- MD available 24/7
- Most children are <1 year of age
- Provide phone consultation support for our 2 community hospitals

Pediatrics



## Section of Public Health Pediatrics

### •Child Abuse Pediatrics (CAP) Program

- Provide an excellent inpatient consultative service
- Provide a dynamic outpatient service
  - Outpatient clinic, open 5 days per week
  - See ~60 children per month
  - Hospitalization follow-up, at-risk evaluation, sibling evaluation
- 2 Children's Assessment Centers (CACs)
  - Medical evaluation of ~1,100 children/year for suspected sexual abuse

Pediatrics



## Section of Public Health Pediatrics

### •Child Abuse Pediatrics (CAP) Program

- Provide an excellent inpatient consultative service
- Provide a dynamic outpatient service
- Foster Care Center of Excellence and at-risk children and families
  - Available 5 days/week
  - ~60 children/month
- Intake examinations, court mandated evaluations
- Integrated behavioral, mental health and developmental assessments

Pediatrics



## Section of Public Health Pediatrics

### •Child Abuse Pediatrics (CAP) Program

- Provide an excellent inpatient consultative service
- Provide a dynamic outpatient service
- Foster Care Center of Excellence and at-risk children and families
- Robust clinical research agenda
  - Research on risk factors of traumatic death, improved diagnostic tests for suspected abuse, infant autopsy findings associated with trauma, child sexual abuse disclosures, child trafficking, diseases mimicking abuse

Pediatrics



## Section of Public Health Pediatrics

- Child Abuse Pediatrics (CAP) Program
  - Provide an excellent inpatient consultative service
  - Provide a dynamic outpatient service
  - Foster Care Center of Excellence and at-risk children and families
  - Robust clinical research agenda
  - Comprehensive training and education portfolio
    - 1 clinical fellowship position per year (currently with 2 fellows)
    - Regular learners: medical students, residents, non-CAP fellows (Ob-Gyn, PEM)

Pediatrics



## Section of Public Health Pediatrics

- Clinical service
  - Child Abuse Pediatrics Program
- Public Health service

Pediatrics



## Section of Public Health Pediatrics

- Public Health Pediatrics service
  - 4 doctoral faculty
    - Director of Research
  - 2 masters researchers
  - 1 SLP

Pediatrics



## Section of Public Health Pediatrics

- Public Health Guidelines
  - To be action oriented
  - To be a resource/service for TCH, TMC and Houston
    - Provide a platform for collaboration
  - To fill gaps in knowledge or practice
  - To actively partner with community child serving organizations, governmental agencies, faith community
  - To have an eye on policy and sustainability

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