

# The Philadelphia ACE Study: Building Trauma Informed Systems of Care

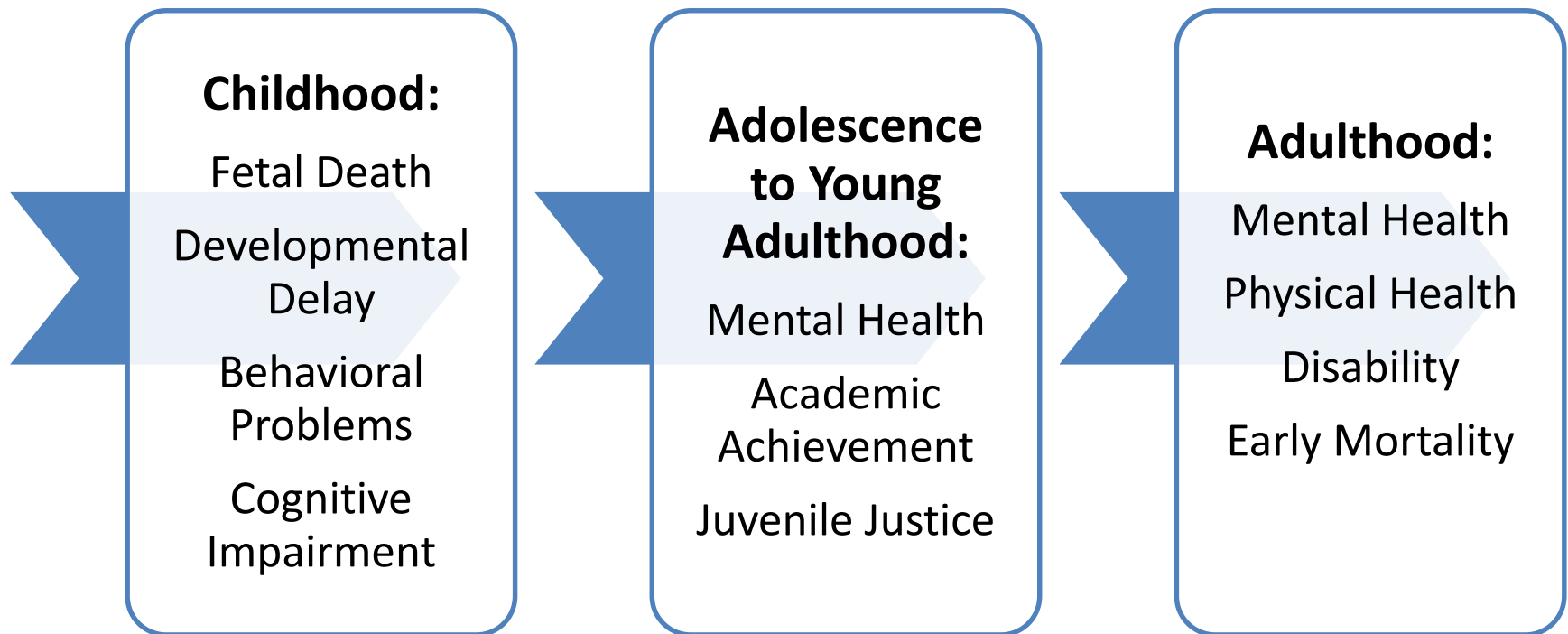
2016 Midwest Regional Summit on Adverse Childhood Experiences  
Healing Communities Together  
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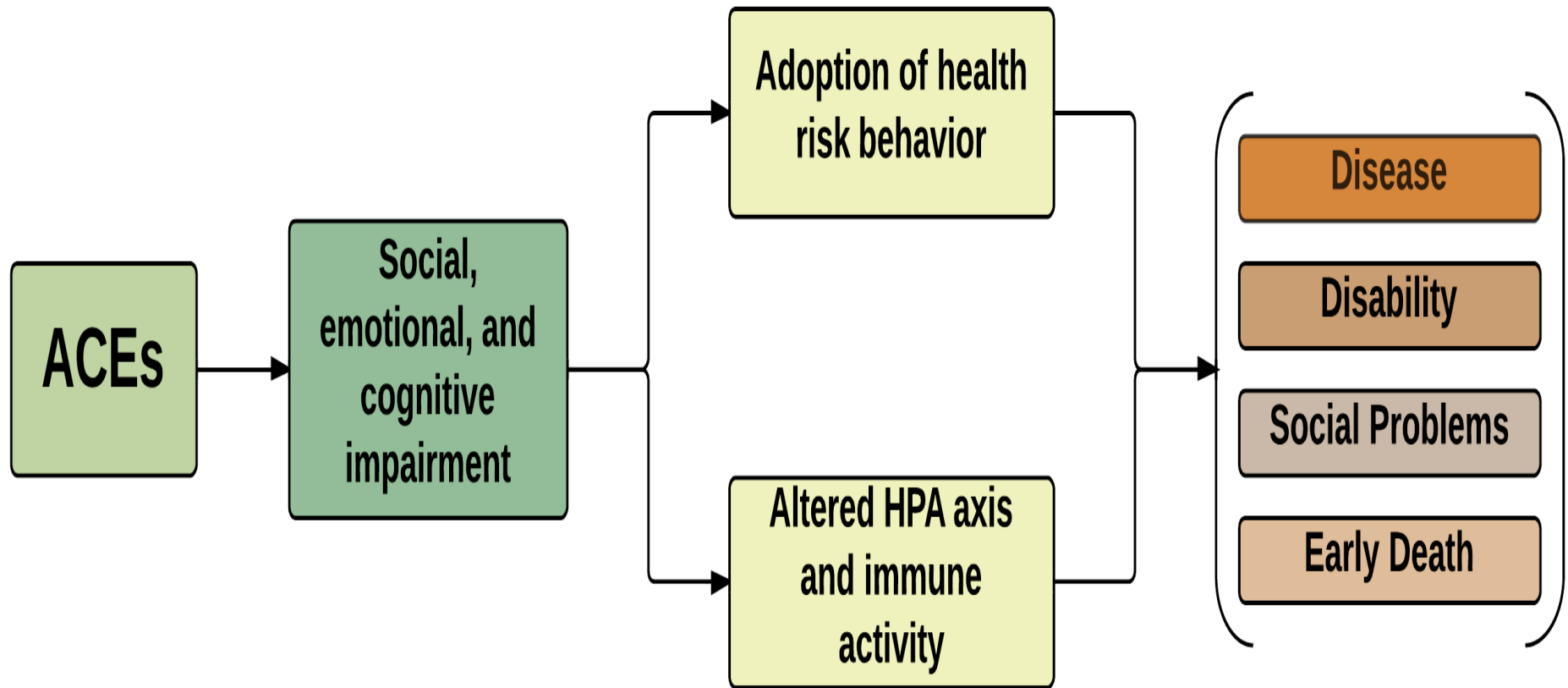
# Overview

- The Adverse Childhood Experience Study
- The Philadelphia Adverse Childhood Experience Study
- Keys to Addressing Toxic Stress
- Examples of Cross Systems Trauma Informed Approaches

# Outcomes Associated with Adverse Childhood Experiences: A Life Course Perspective



# How Does Childhood Stress Get Under the Skin?



# Adverse Childhood Experience Study

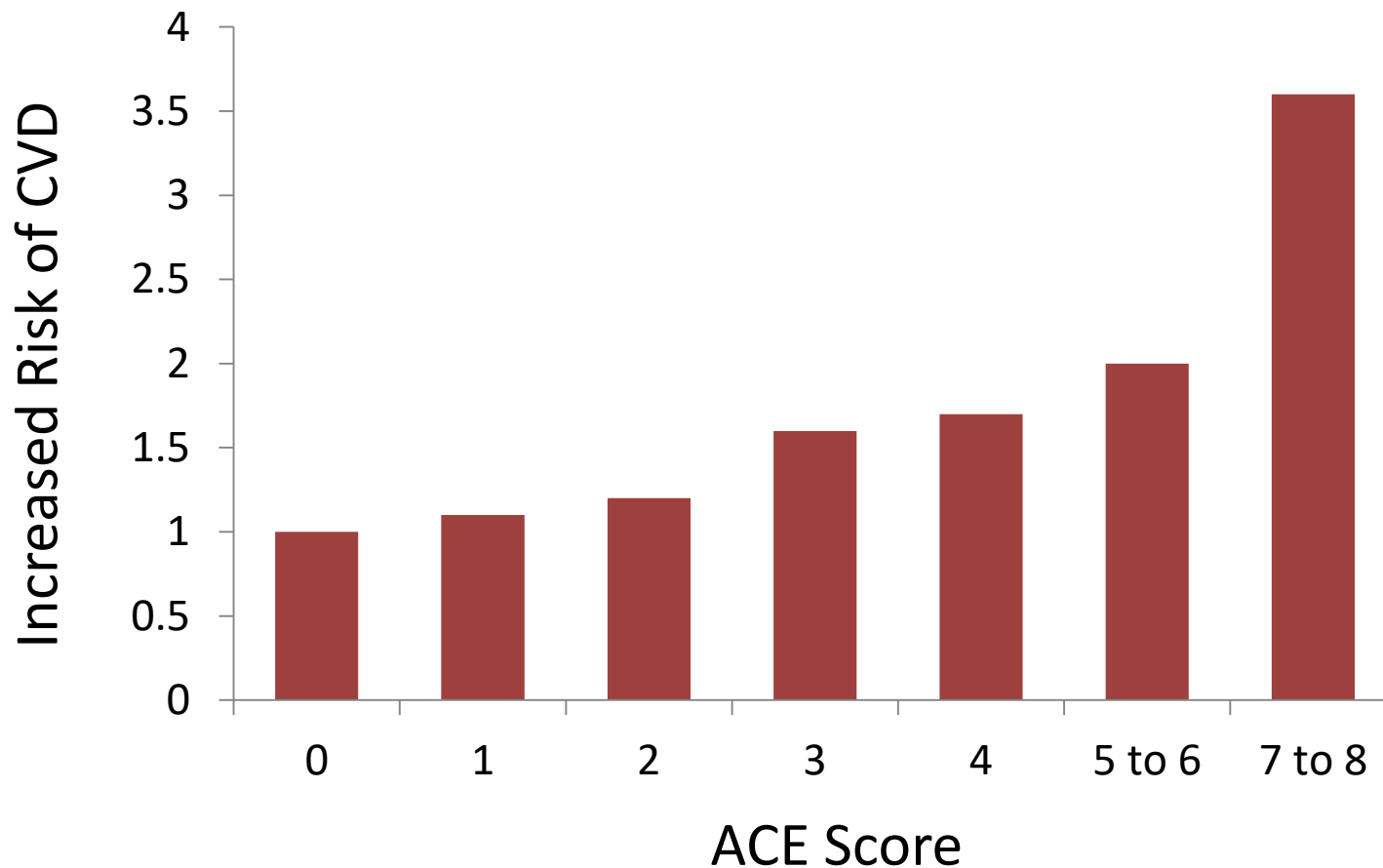
- Published by CDC/Kaiser in 1998
- Surveyed 17,000 policy holders
- Understand relationship between childhood adversity & adult health outcomes

Adapted from Felitti et al., 1998

Childhood Exposure	Subcategory
Abuse	Psychological
	Physical
	Sexual
Household dysfunction	Substance abuse
	Mental illness
	Intimate partner violence
	Criminal behavior
	Divorce
Neglect	Emotional
	Physical

# Graded Relationship Between ACE Score and Cardiovascular Disease

**Association between ACE Score and Risk for Cardiovascular Disease**



# Graded Relationship Between ACE Score and Health Outcomes

Health Risk Behaviors	Mental Health Conditions	Physical Health Conditions
Smoking	Depression	Cardiovascular Disease
		Diabetes
Alcohol Abuse	Anxiety	Emphysema
	PTSD	Cancer
Drug Abuse/Illicit Drug Use	Hallucinations	Obesity
		Liver Disease
		Headaches
High Risk Sexual Behavior	Suicide	Autoimmune Disease
		Sexually Transmitted Infections
		Self-Reported Health Disability
		Fetal Death

Health outcomes highlighted in red are among the top ten leading causes of death in the US

# Individuals with 4 or More ACEs are at Highest Risk for Poor Outcomes

- 4- to 12-fold increased risk for health risk behaviors
- 1.4- to 1.6-fold increased risk for adult diseases



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# ACE Study Population is not Representative of Urban Populations

Demographics	ACE Study	Philadelphia
Mean age	56	34
Race/ethnicity	79% White	45% White
	5% African American	44% African American
	5% Hispanic	14% Hispanic
High school graduates	94%	81%
College graduates	43%	24%
Percent below FPL	Not measured	27%

# ACE Scale Can Be Improved by Adding Additional Adversities to the Measure

## Original

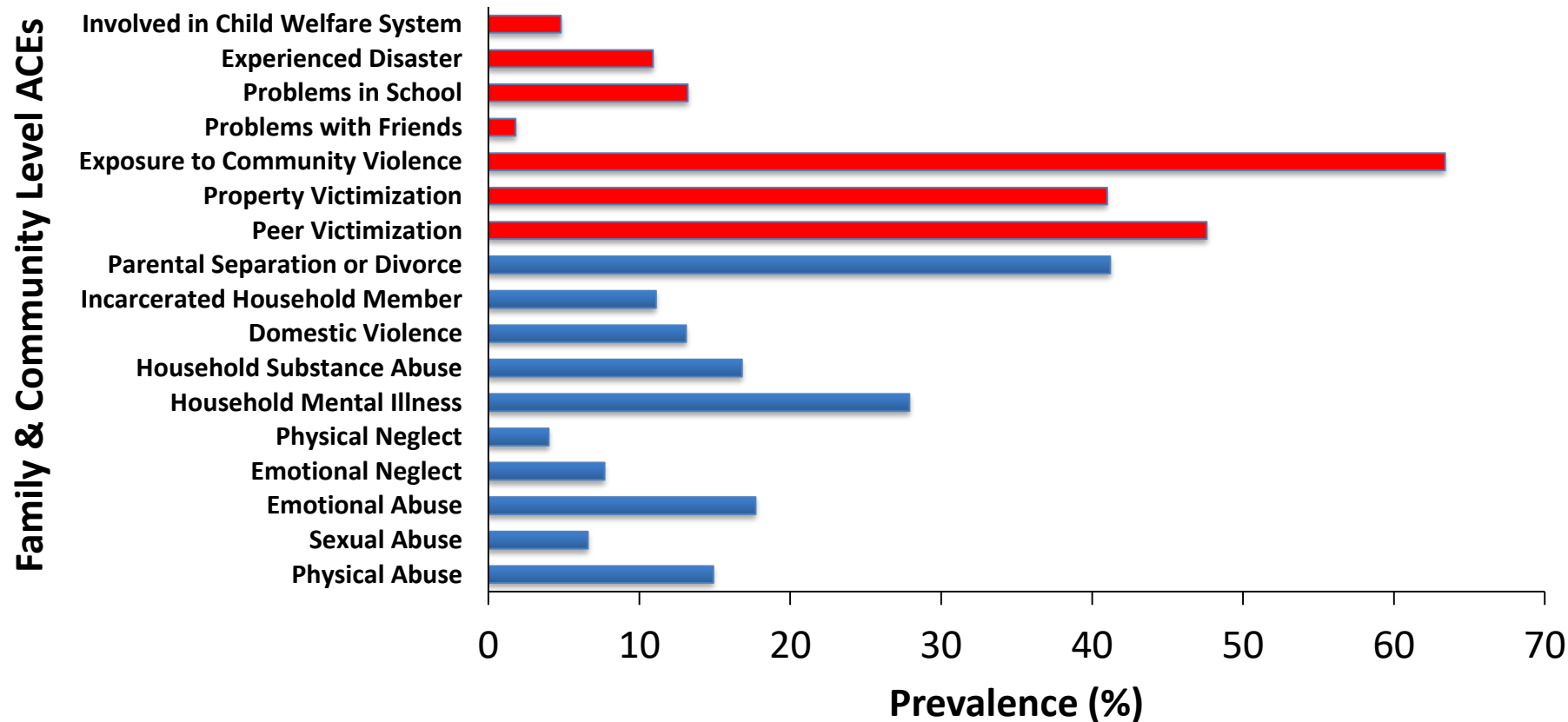
- Emotional abuse
- Physical abuse
- Sexual abuse
- Physical neglect
- Emotional neglect
- Mother treated violently
- Household substance abuse
- Household mental illness
- Incarcerated household member
- Parental separation or divorce

## Additional Adversities

- Property victimization
- Peer victimization
- Exposure to community violence
- Socioeconomic status
- Someone close had a bad accident or illness
- Below-average grades
- Parents always arguing
- No good friends

# Exposure to Community Level ACEs is Common Amongst Youth

**Prevalence of Family & Community Level ACEs Amongst a Nationally Representative Sample of Youth (N = 2030)**



Blue – Family Level ACEs

Red – Community Level ACEs

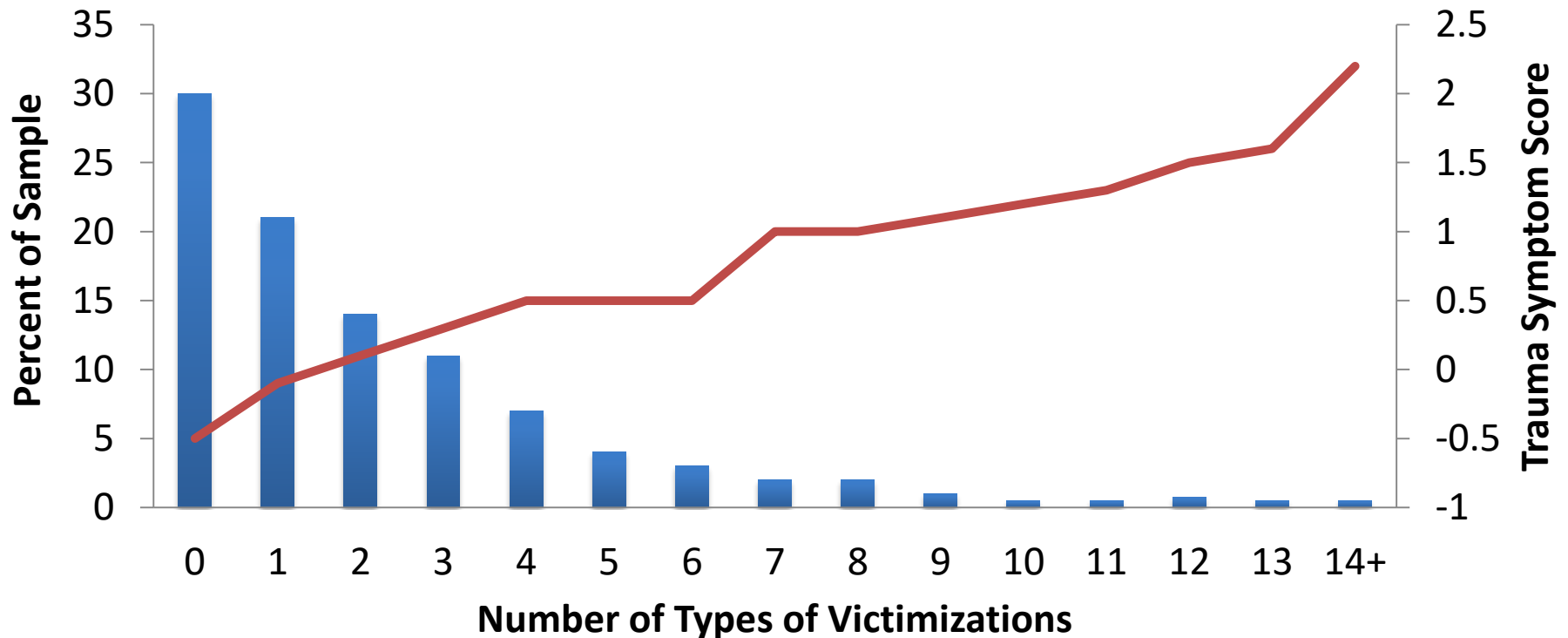
Adapted from Finkelhor et al., *Arch Pediatr Adolesc Med* 2013

# Childhood Exposure to Community Level ACEs Associated with Poor Health

- Community level stressors associated with childhood behavior problems and mental health conditions
  - Childhood exposure to community violence associated with adolescent depression, anger, anxiety, and posttraumatic stress (explains ~30% of variance) - Singer et al., *JAMA* 1995.
- Association of community level ACEs with child physical health outcomes unclear
  - Adolescent perceived racial discrimination associated insulin resistance among African American girls but not boys – Chambers et al., *J Natl Med Assoc* 2004.
  - Perceived neighborhood safety associated with adolescent obesity in some studies but not others – Lumeng et al., *Pediatrics* 2010; Romero et al., *JAMA Pediatr* 2001.
- Few studies examining impact of childhood stressors across the life course
  - Adolescent exposure to community violence associated with poor health among women but not men – Olofsson et al., *BMC Public Health*, 2012

# Childhood Exposure to Multiple Forms of Victimization is Common

**Relationship Between Multiple Types of Victimization and Trauma Symptom Scores in the Past Year**



Adapted from Finkelhor et al., *OJJDP Bulletin* 2011

# The Philadelphia ACE Study

A collaborative, led by the Institute for Safe Families (ISF), to develop and implement research, practice, and policies in urban pediatric settings based on the Adverse Childhood Experiences (ACE) study.



# Survey Methods

- Survey was completed as a follow up to the Southeastern Pennsylvania Household Health Survey (SEPA HHS).
  - Survey of over 13,000 children and adults in Southeastern Pennsylvania
  - Comprehensive survey on a broad range of topics
- Philadelphia ACE Survey re-contacted original SEPA HHS Philadelphia respondents who were 18 years or older
- Telephone survey (landline and cell phones)
- Completed by trained male and female interviewers
- Interviews were conducted in English and Spanish
- Interviewed 1,784 Philadelphia adults age 18 and older
- Response rate 67.1%



# Philadelphia ACE Study Questions

Conventional ACEs	Expanded ACEs
Physical Abuse	Witnessing Violence
Emotional Abuse	
Sexual Abuse	Living in Unsafe Neighborhoods
Emotional Neglect	
Physical Neglect	Experiencing Racism
Domestic Violence	
Household Substance Abuse	Living in Foster Care
Incarcerated Care Provider	
Mental Illness in the Home	Experiencing Bullying

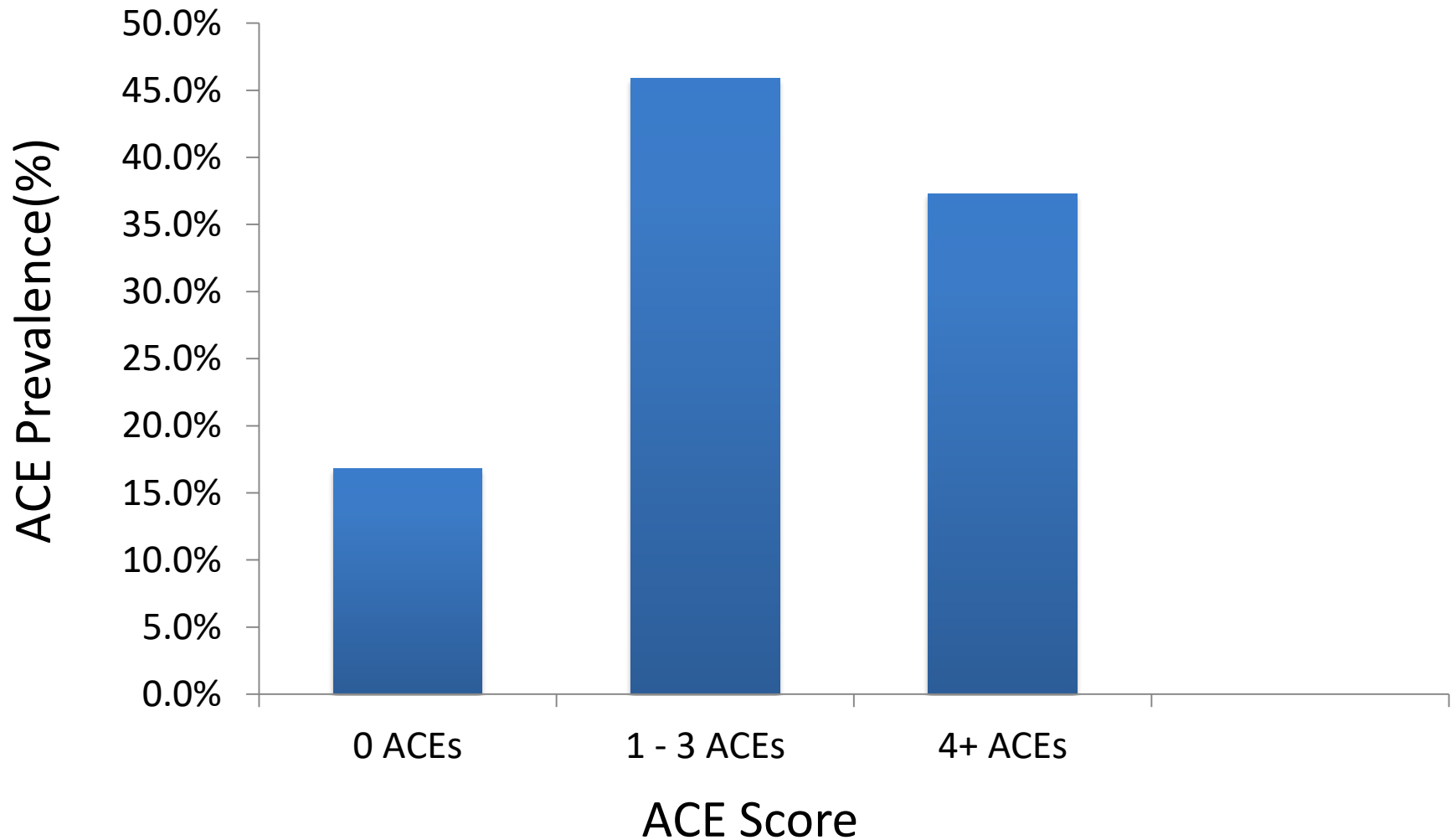
# Many of the Traditional ACEs are More Prevalent in an Urban Setting

	Philadelphia ACE Study (N = 1,784)	CDC-Kaiser ACE Study (N = 17,337)
Emotional abuse	33.2%	10.6%
Physical abuse	35.0%	28.3%
Sexual abuse	16.2%	20.7%
Physical neglect	19.1%	14.8%
Emotional neglect	7.7%	9.9%
Substance abusing household member	34.8%	26.9%
Mentally ill household member	24.1%	19.4%
Witnessed domestic violence	17.9%	12.7%
Household member in prison	12.9%	4.7%

# Prevalence of Expanded ACEs

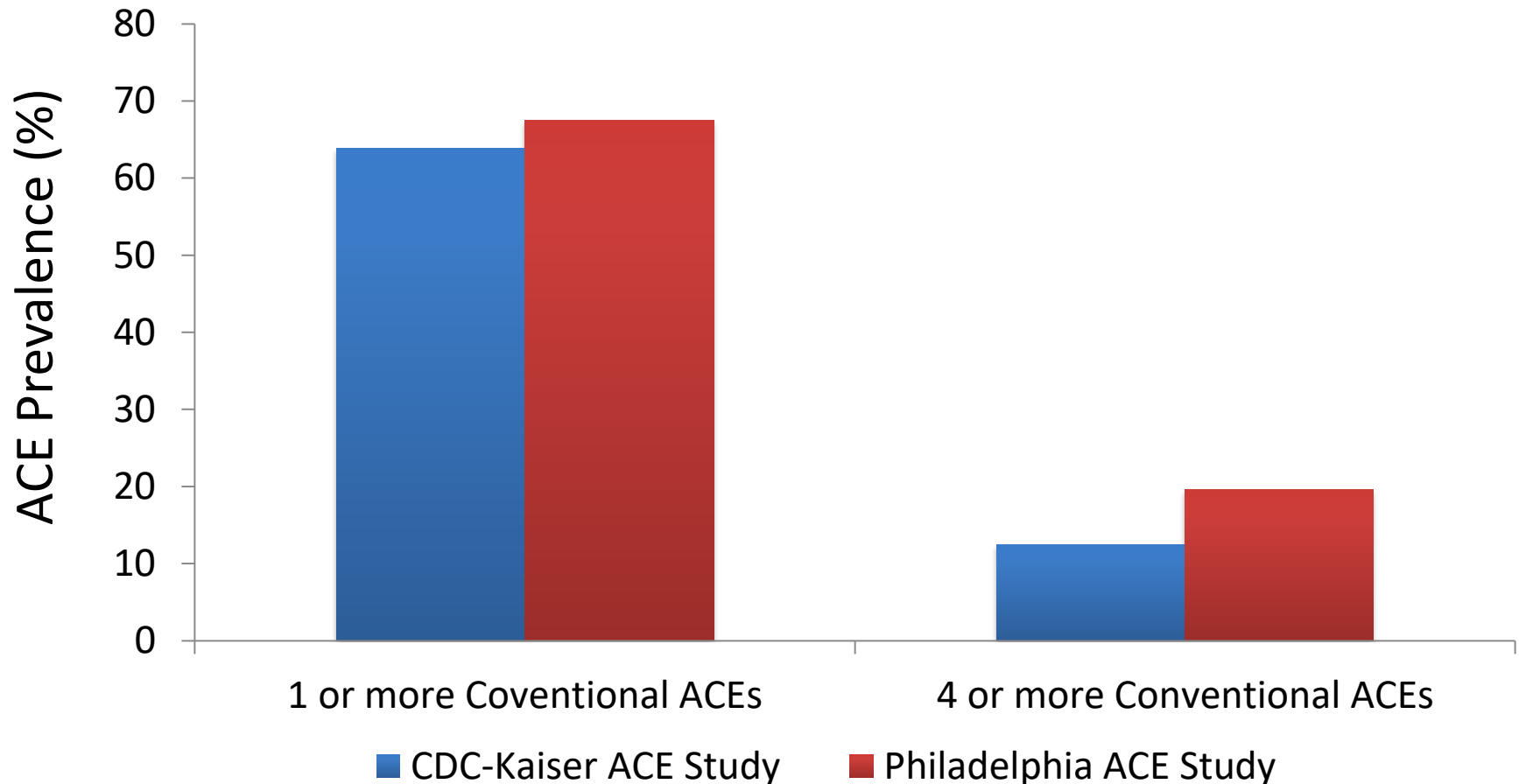
Expanded ACE Indicators	Respondents (N = 1,784)
Witnessed violence	40.5%
Felt discrimination	34.5%
Adverse neighborhood experience	27.3%
Bullied	7.9%
Lived in foster care	2.5%

# Distribution of Total ACE Scores

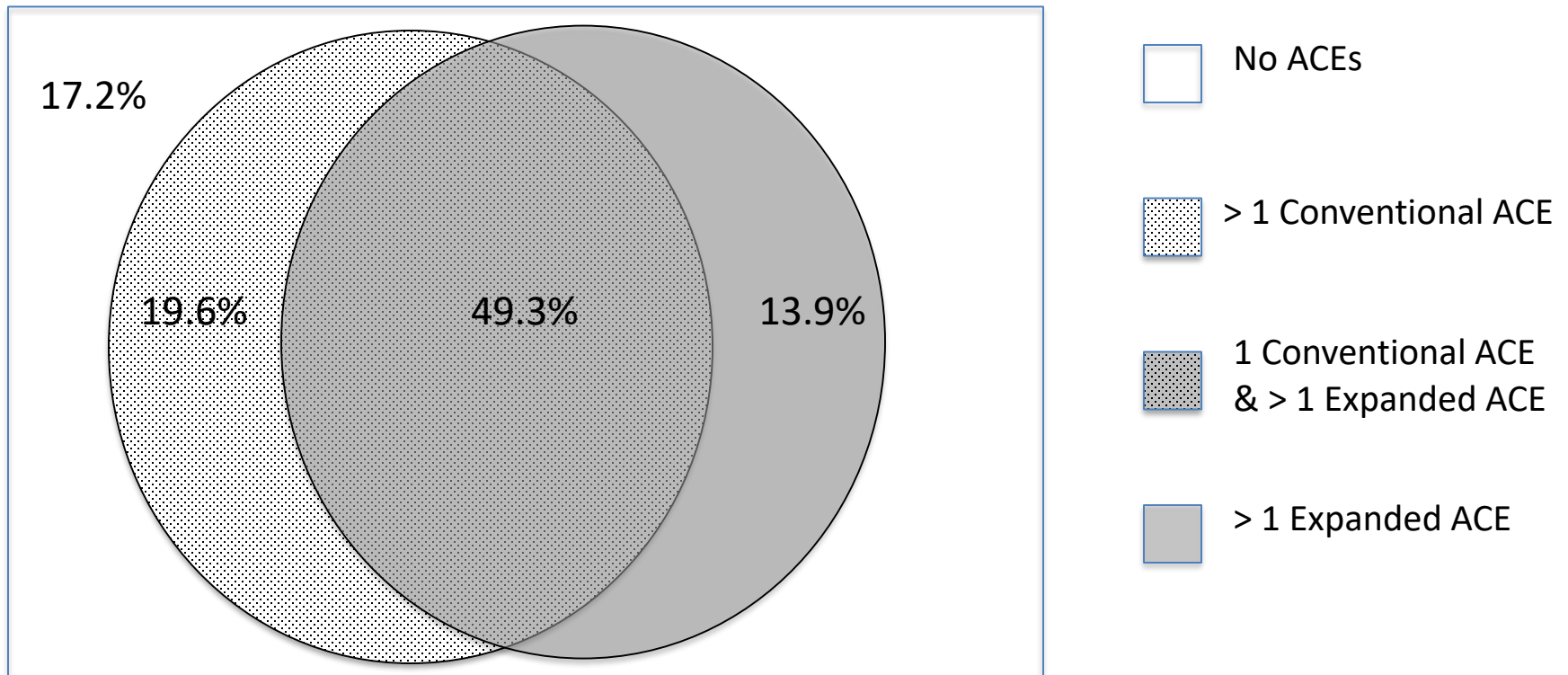


# Prevalence of Conventional ACEs

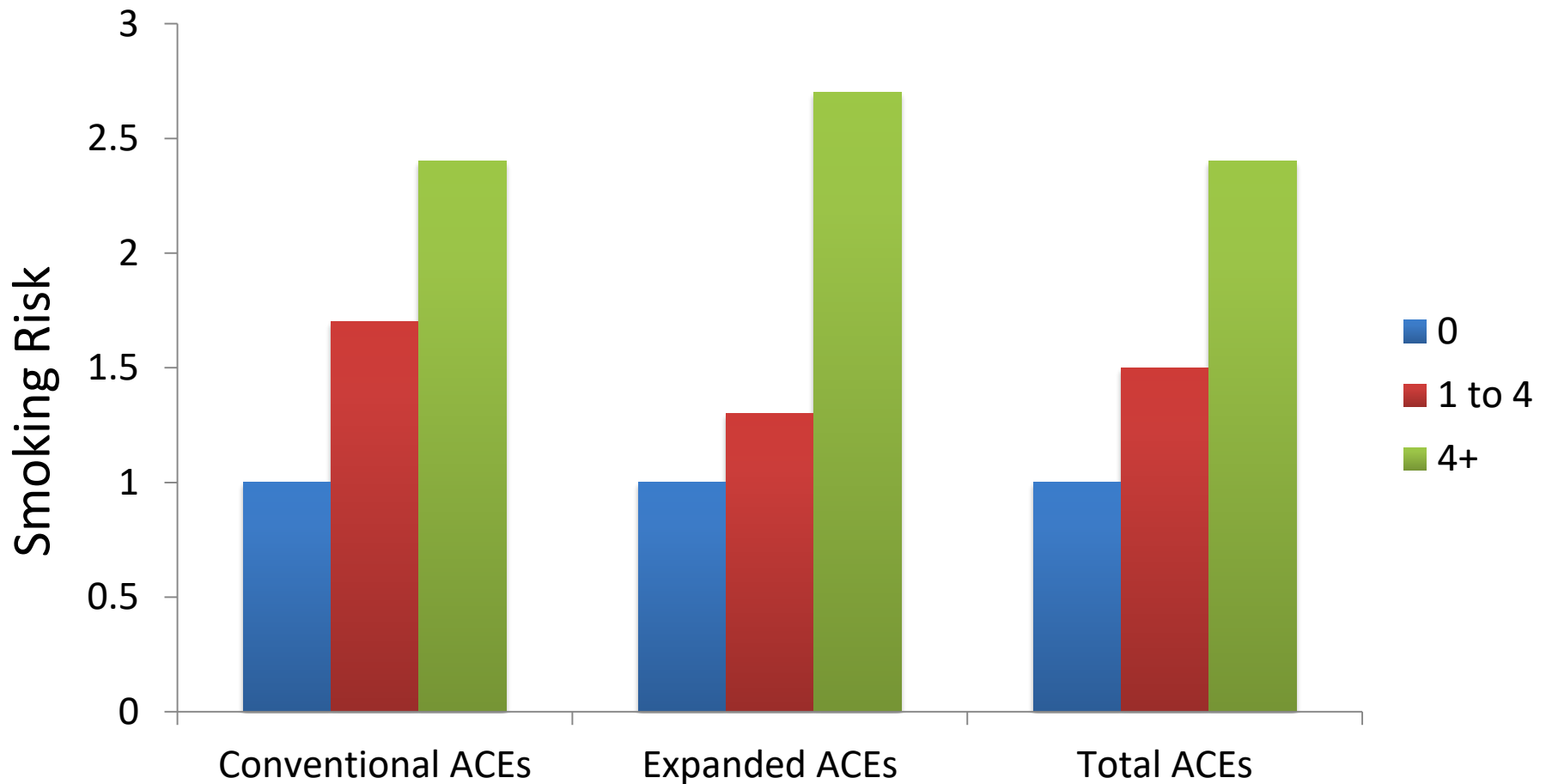
## CDC-Kaiser vs. Philadelphia ACE Study



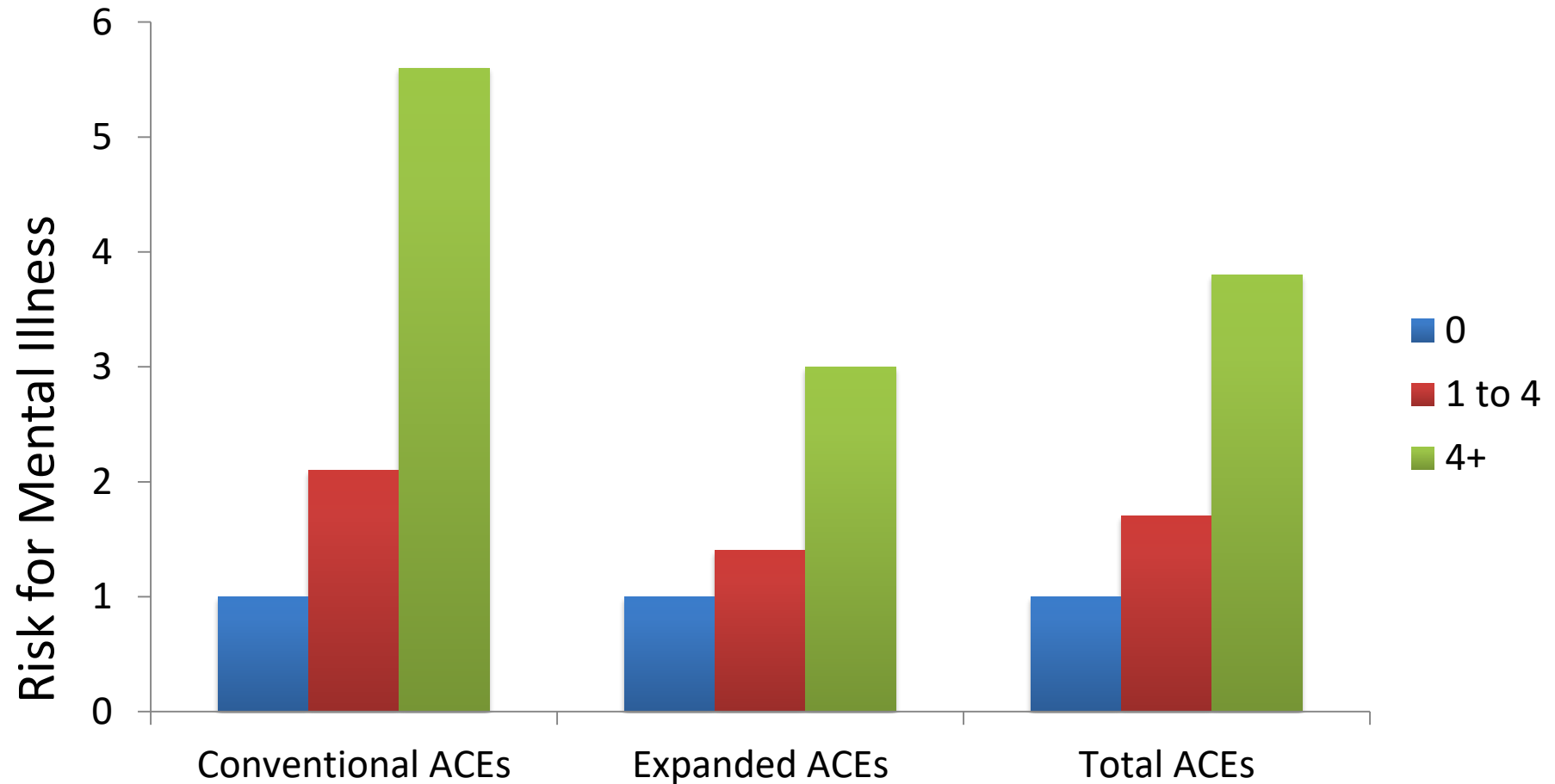
# Overlap Between Exposure to Conventional and Expanded ACEs



# Relationship Between Philadelphia ACE Score and Smoking History

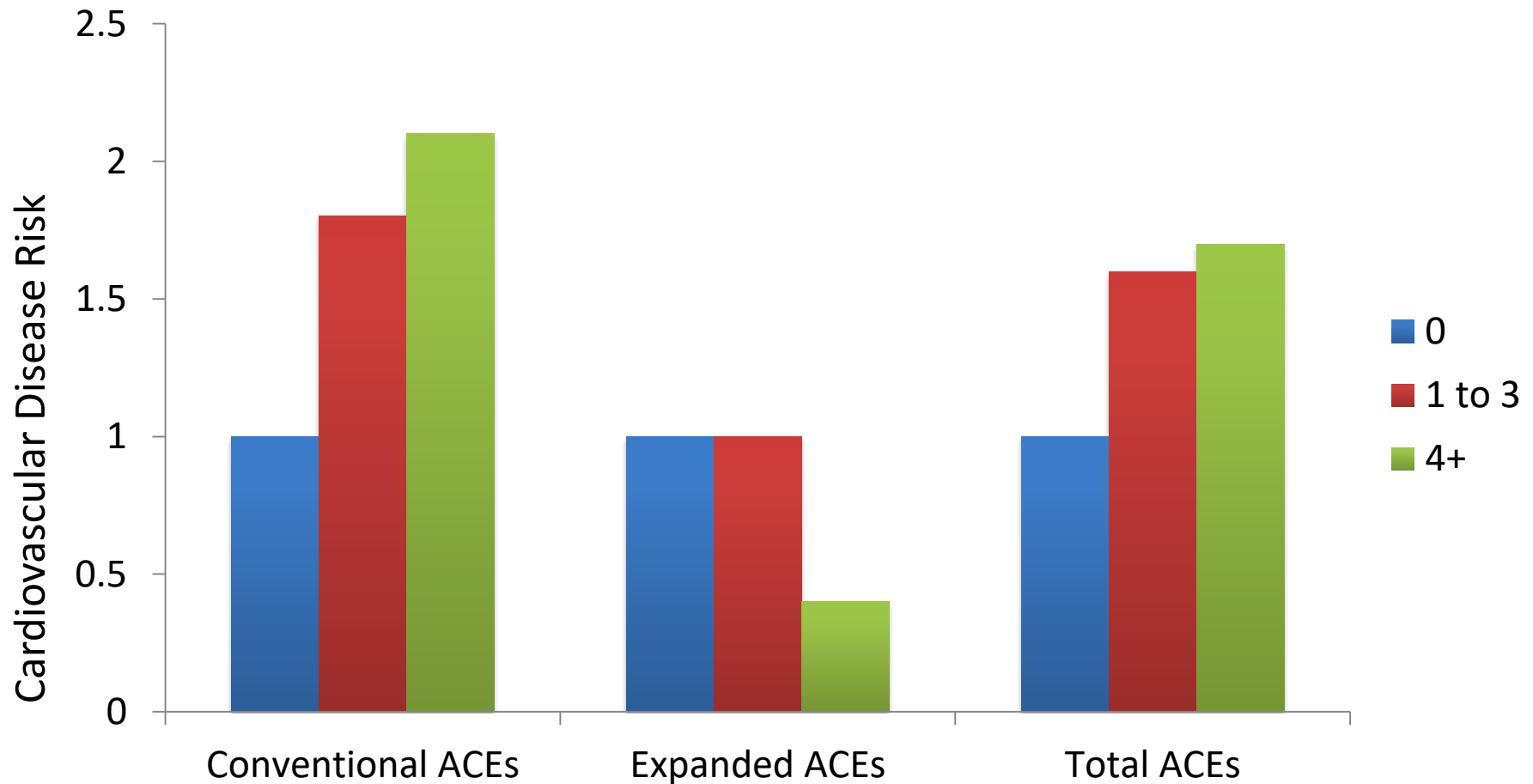


# Relationship Between Philadelphia ACE Score and Mental Health

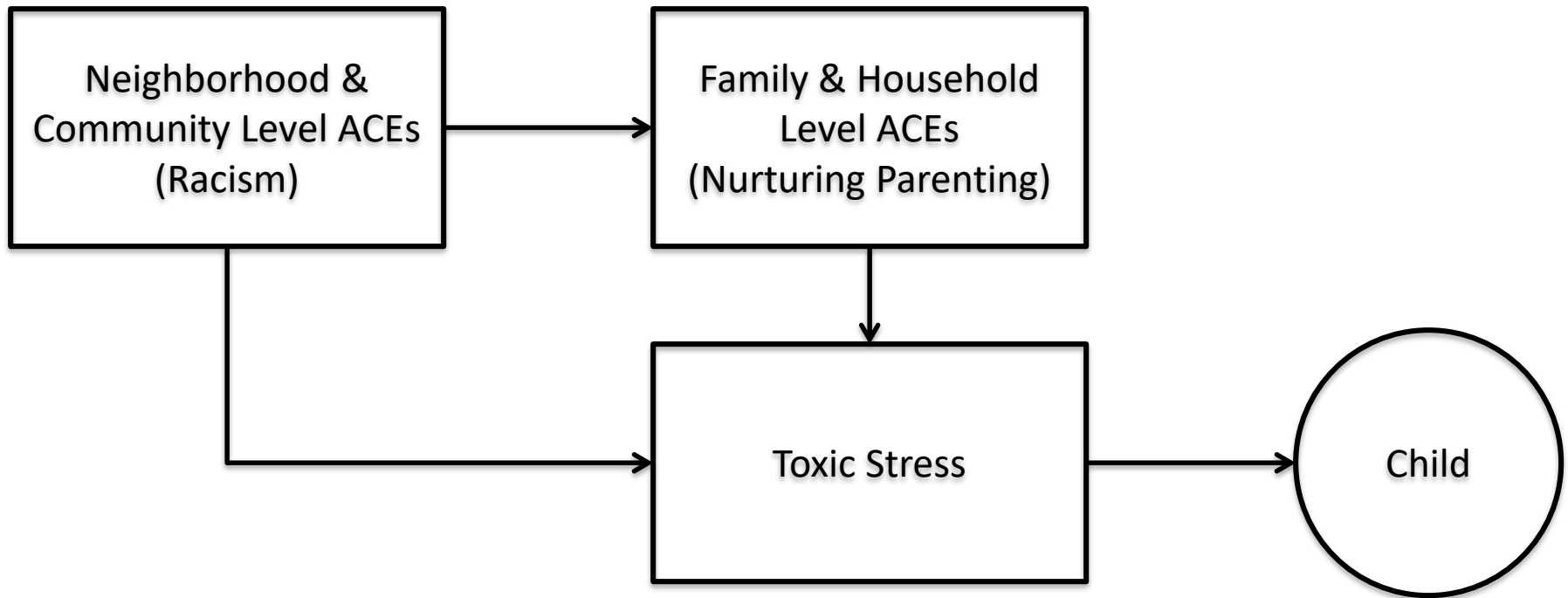




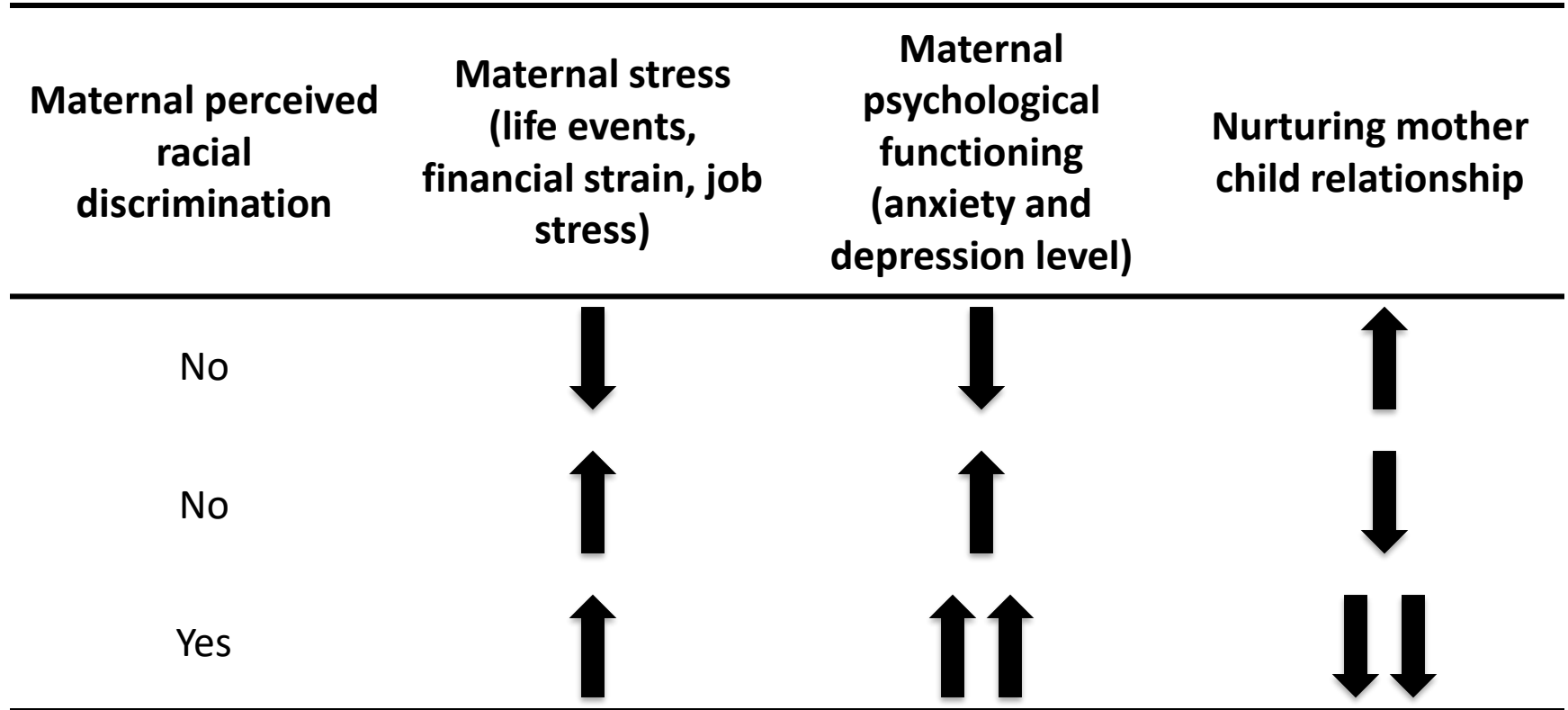
# Relationship Between Philadelphia ACE Score and Cardiovascular Disease



# Direct and Indirect Influences of Neighborhood ACEs on Toxic Stress



# Perceived Discrimination Decreases the Quality of Mother-Child Relationships



Adapted from Murry et al., *Journal of Marriage and Family* 2001

# Demographic Characteristics for Philadelphia Adults with Four or More ACEs

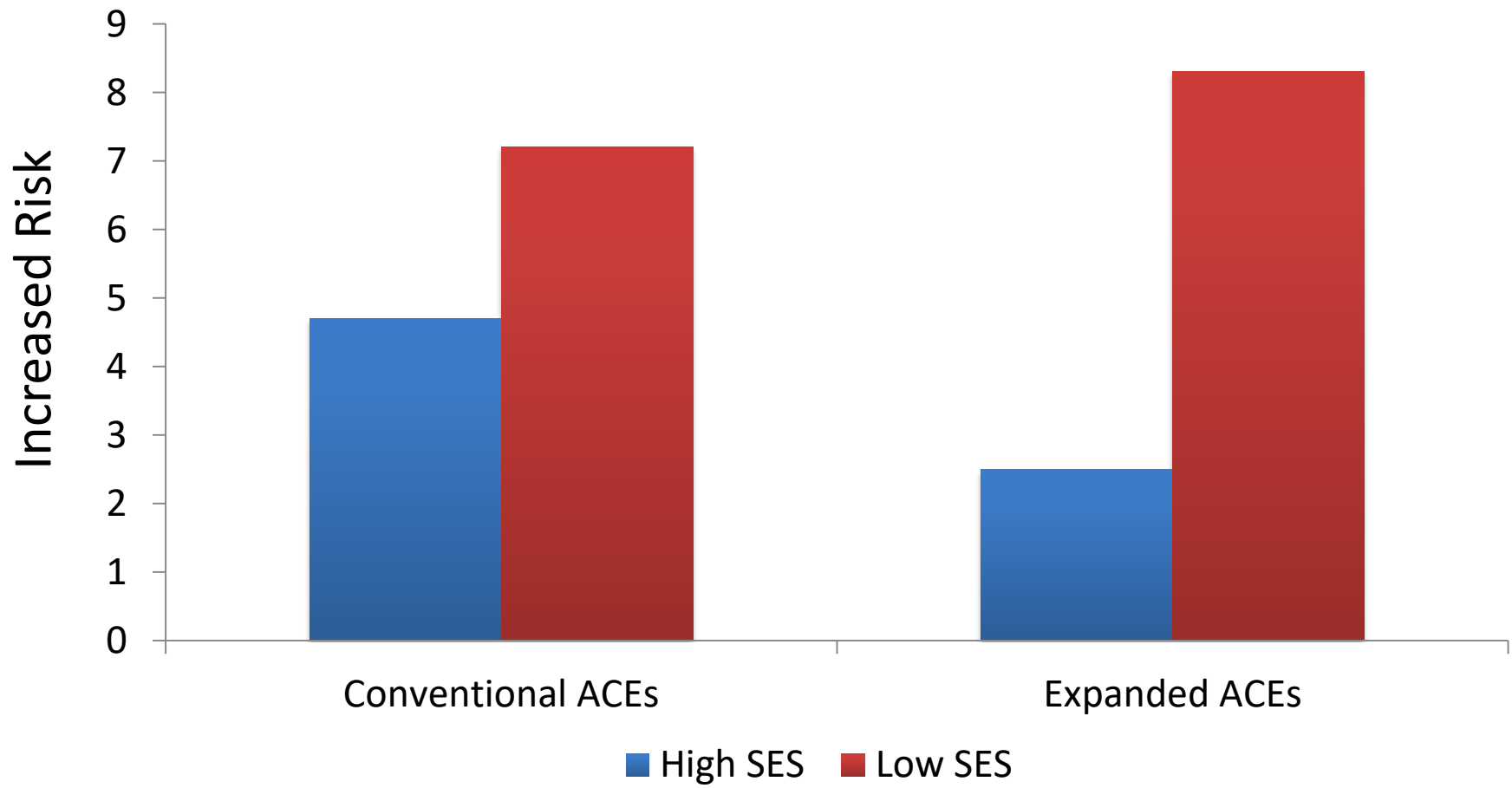
Demographics		Respondents (N = 1,784)
Sex**	Male	58.2%
	Female	41.8%
Race***	Black	48.6%
	White	34.0%
Poverty Level***	Below 150% of poverty guidelines	68.2%
	Above 150% of poverty guidelines	31.8%

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

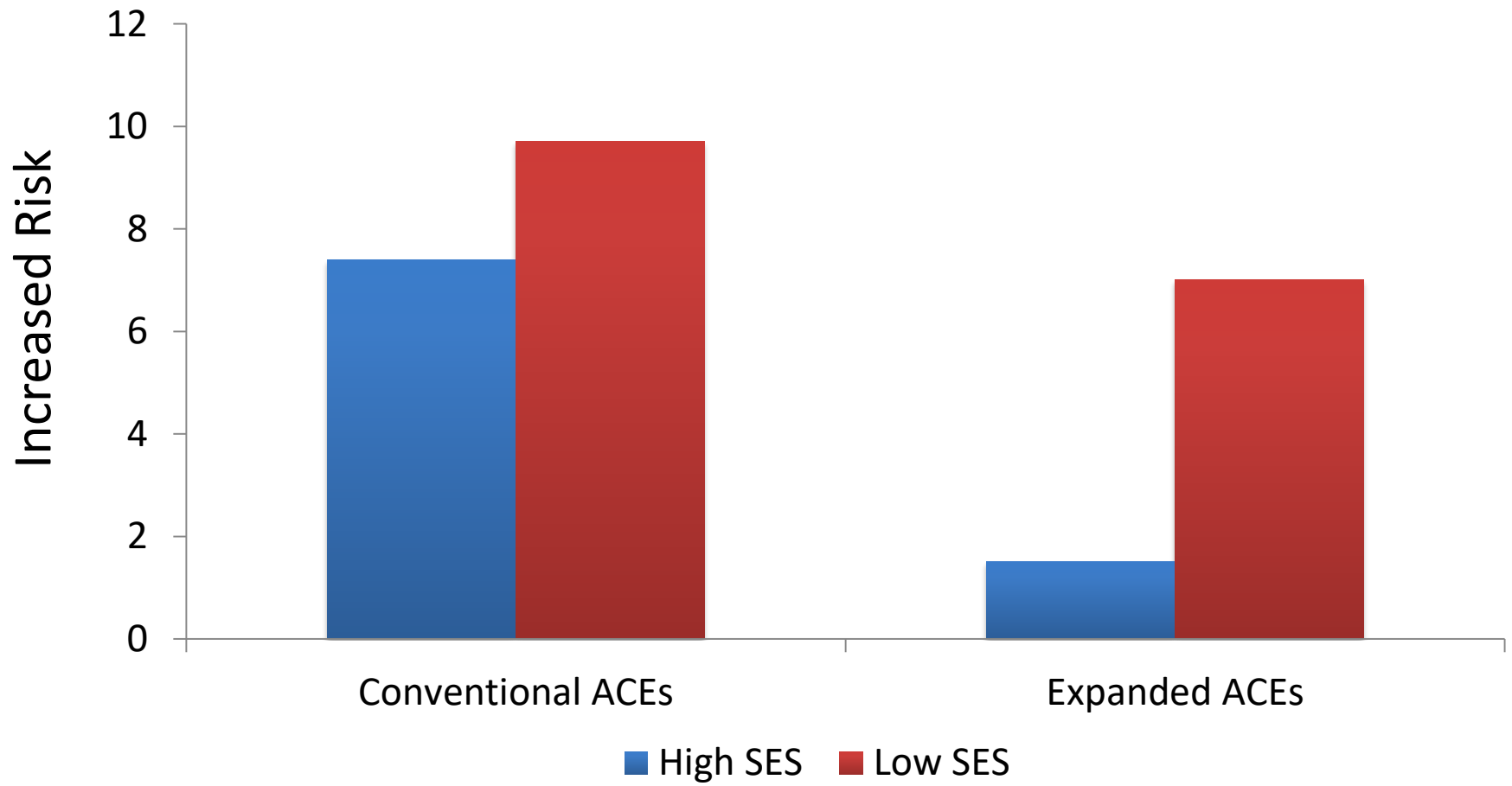
# Socioeconomic status, ACEs, & Health

- ACEs increase risk for adult poverty
- Adult SES and ACEs have separate influences on poor health
- Low SES adults with a significant history of childhood adversity may be at increased risk for poor health outcomes

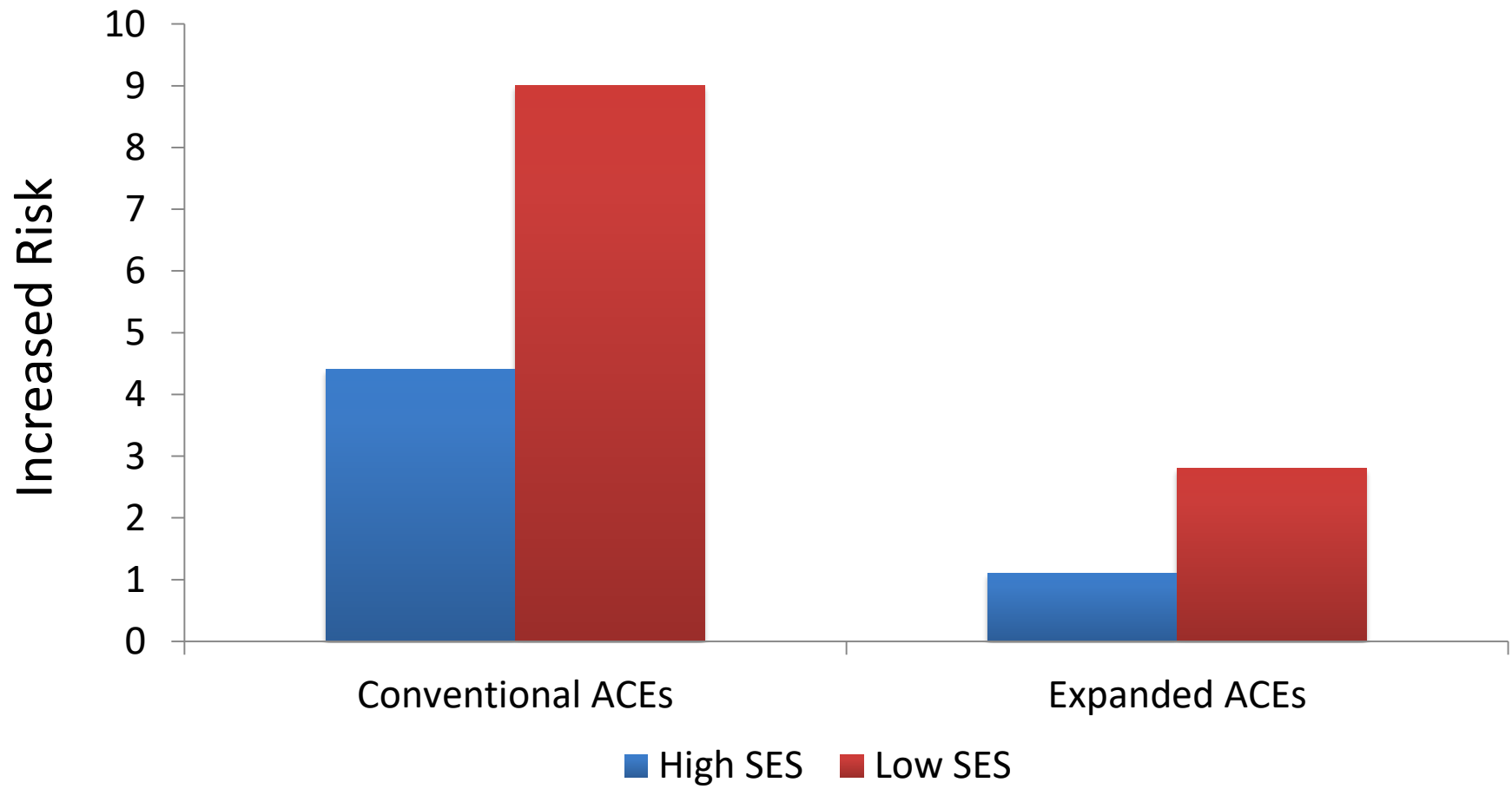
# SES Magnifies Risk for Sexually Transmitted Infections Among High ACE Individuals



# SES Magnifies Risk for Substance Abuse Problems Among High ACE Individuals



# SES Magnifies Risk for Mental Illness Among High ACE Individuals



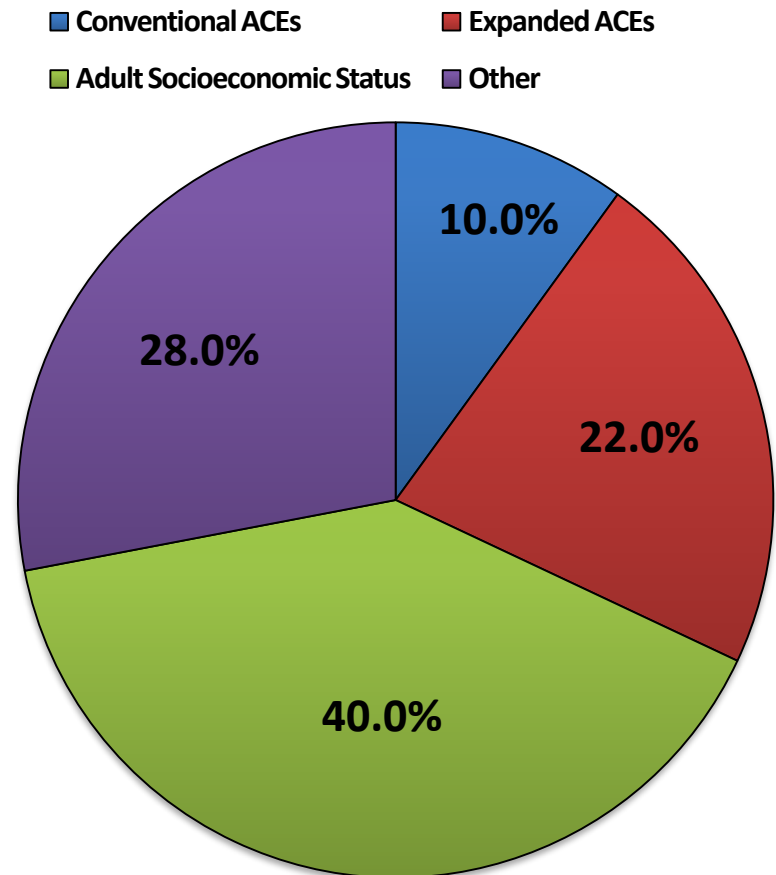


# ACEs Explain Racial Disparities in Health Outcomes

## Prevalence of Health Outcomes by Race - Philadelphia

Health Outcome	Blacks	White	p-value
Sexually transmitted infections	21.4	7.1	<0.01
History of substance abuse problems	16.5	7.6	<0.01
Diabetes	23.2	11.7	<0.01
Obesity	46.6	26.1	<0.01

## Percentage of black-white difference in adult substance abuse attributable to ACEs & SES

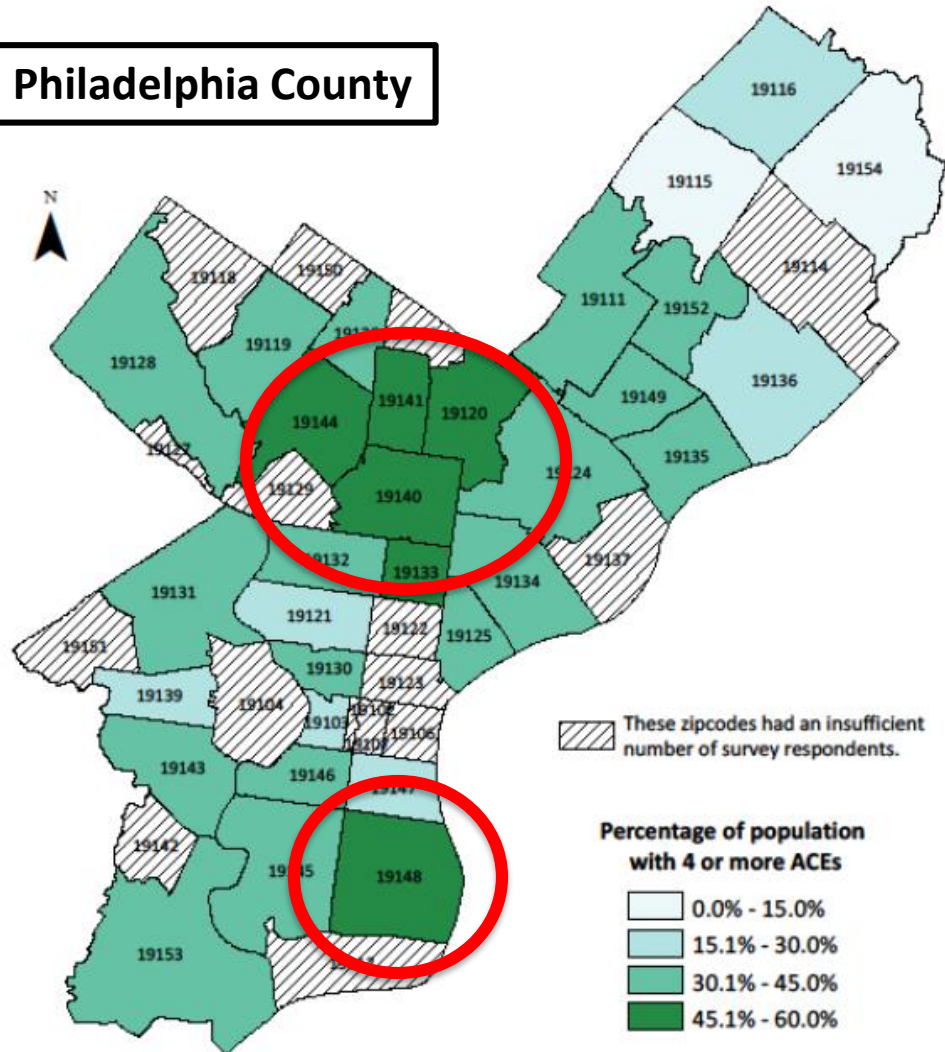


# Total ACE Score $\geq 4$ by Zip Code

## Health Statistics from these 5 Zip Codes

- 22% of adults unemployed
- 46% of residents live in poverty
- Life expectancy for males age 68
- 22% of children obese
- Homicide rate 30 to 40 deaths per 100,000

## Philadelphia County



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# Three Levels of Stress

## Positive Stress:

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

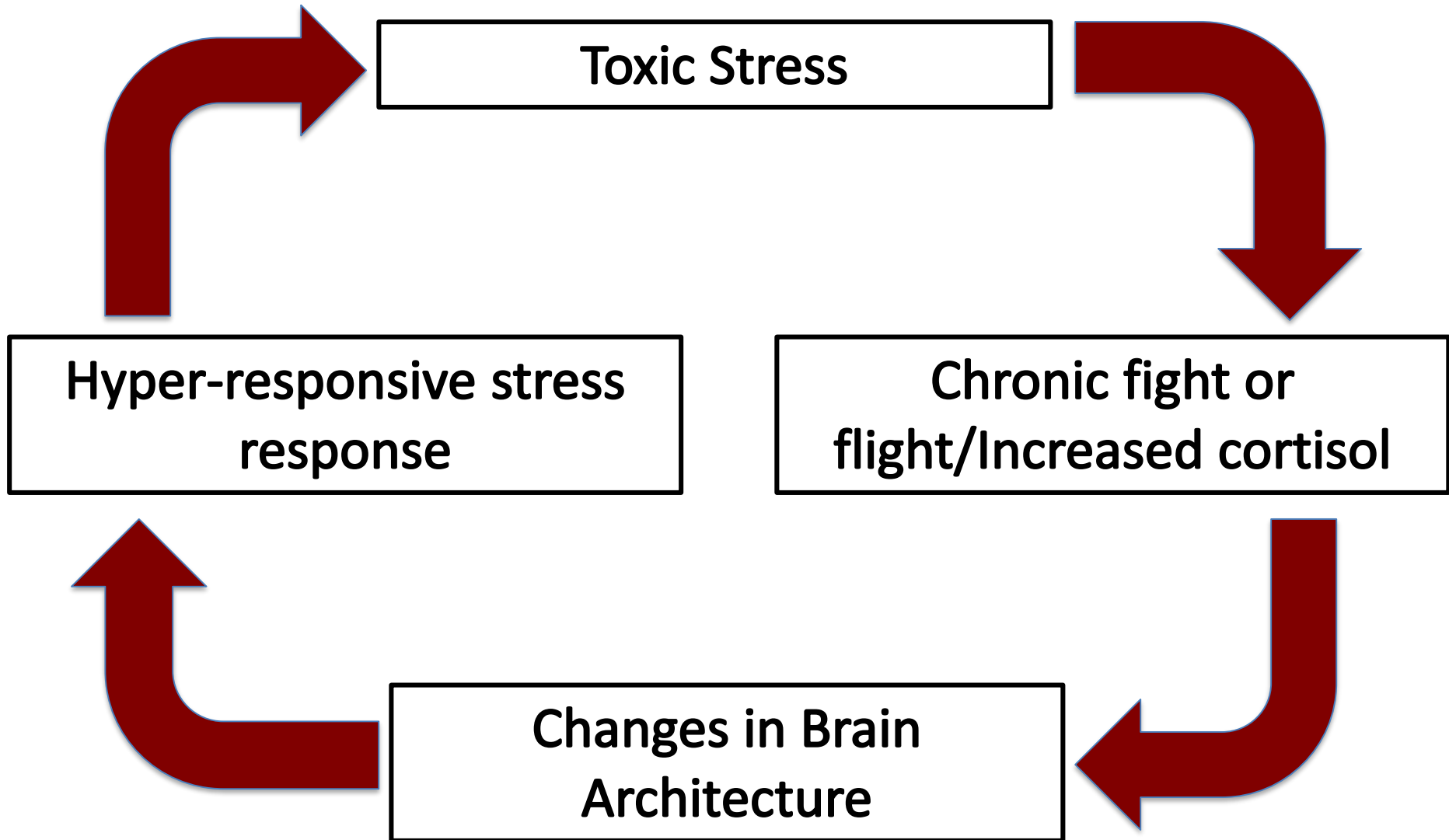
## Tolerable Stress:

Serious, temporary stress responses buffered by supportive relationships

## Toxic Stress:

Prolonged activation of stress response systems in the absence of protective relationships

# Impact of Toxic Stress



# Breaking the Cycle of Trauma

## Nurturing Supportive Relationships



# Approaches to ACE Informed Care

- Assessment
- Anticipatory guidance
- Promoting awareness
- Referral to community services
- Training for providers
- Guidance on decision making

# The Importance of ACEs Knowing

- Trauma informed approaches
  - Adjusting office/provider processes to decrease patient stress
  - Morning huddles to anticipate patient needs
  - Provider mindfulness
- Helping patients rewrite their narrative
- Helping patients build capacity for emotional control
  - Learn self regulations skills
  - Identify triggers
  - Effective use of mindfulness and exercise
- Collaborative care plans



# Strategies to Address Toxic Stress

- Parenting programs
  - Home Visiting programs
  - Parent Child Interaction Therapy
- Trauma Focused Cognitive Behavior Therapy
- Mindfulness training
- Promoting Non-Cognitive skills

# AAP Policy Statement on ACE

## POLICY STATEMENT

Identifying children at high risk for toxic stress is the first step in providing targeted

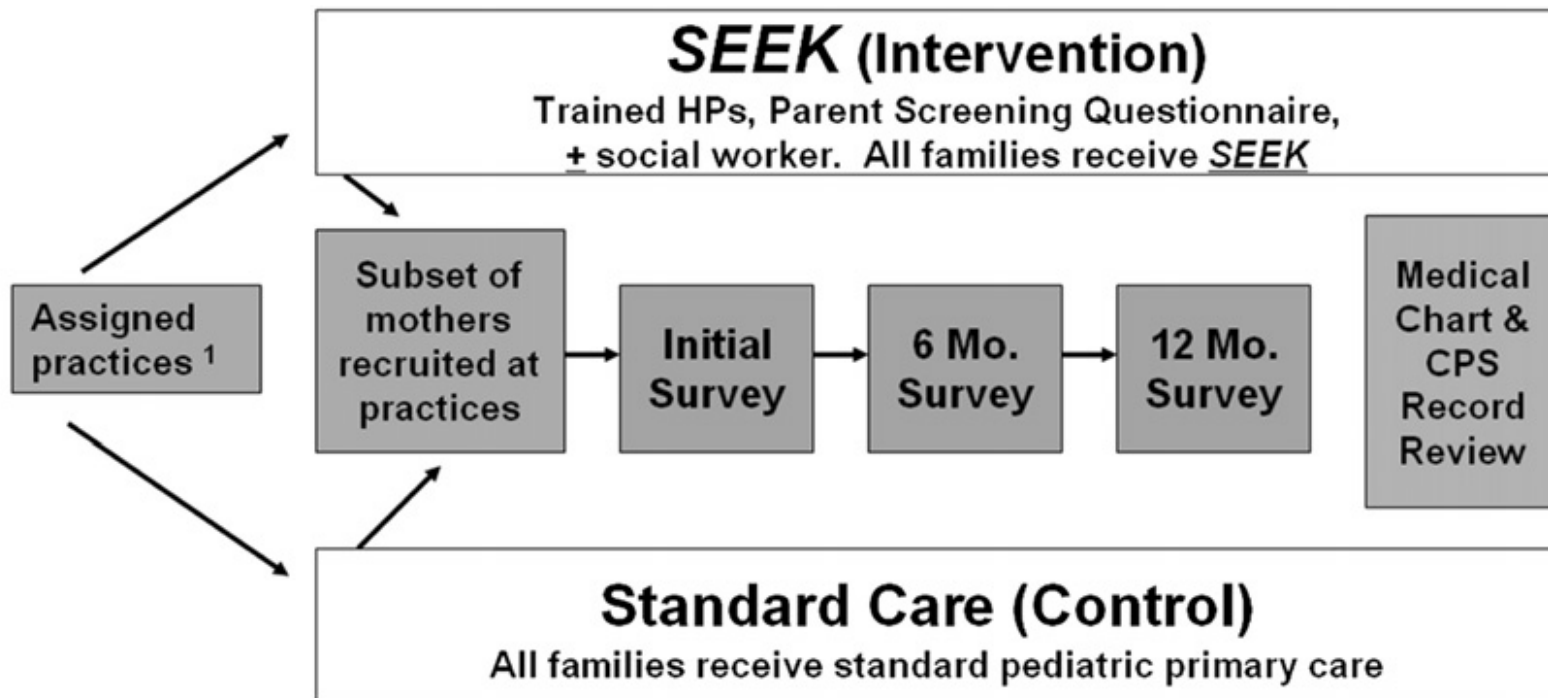
the Role of  
Science

... Pediatric practices have been asked to consider implementing standardized measures to identify other family- or community-level factors that put

... the AAP and others have encouraged pediatric providers to develop a screening schedule that uses age-appropriate, standardized tools to identify risk factors that are highly prevalent or relevant to their particular practice setting.

innovative strategies to reduce the precipitants of toxic stress in young children and to mitigate their negative effects on the course of development and health across the life span. *Pediatrics* 2012;129:e224–e231

# The Safe Environment for Every Kid Model



Adapted from Dubowitz et al., 2012

# Decreased CPS Reports and Physical Assault in SEEK Intervention Group

	Intervention (N = 308)	Control (N = 250)	Odds Ratio	p
Families With at Least 1 CPS Report, n(%)	41 (13.3)	48 (19.2)	1.5	0.045
Physical assault severe or very severe, Mean (SD)*	0.11 (0.75)	0.33 (1.96)	--	0.04

\* Scores from Parent-Child Conflict Tactics Scale

- Health professionals endorsed increased comfort in screening and addressing risk factors for ACEs
- Intervention increased clinic screening rates for risk factors for ACEs – 25% increase
- Addressing patient psychosocial problems DID NOT require additional provider time
- Implementation of SEEK cost approximately \$5.12 per family

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# Philadelphia ACE Task Force

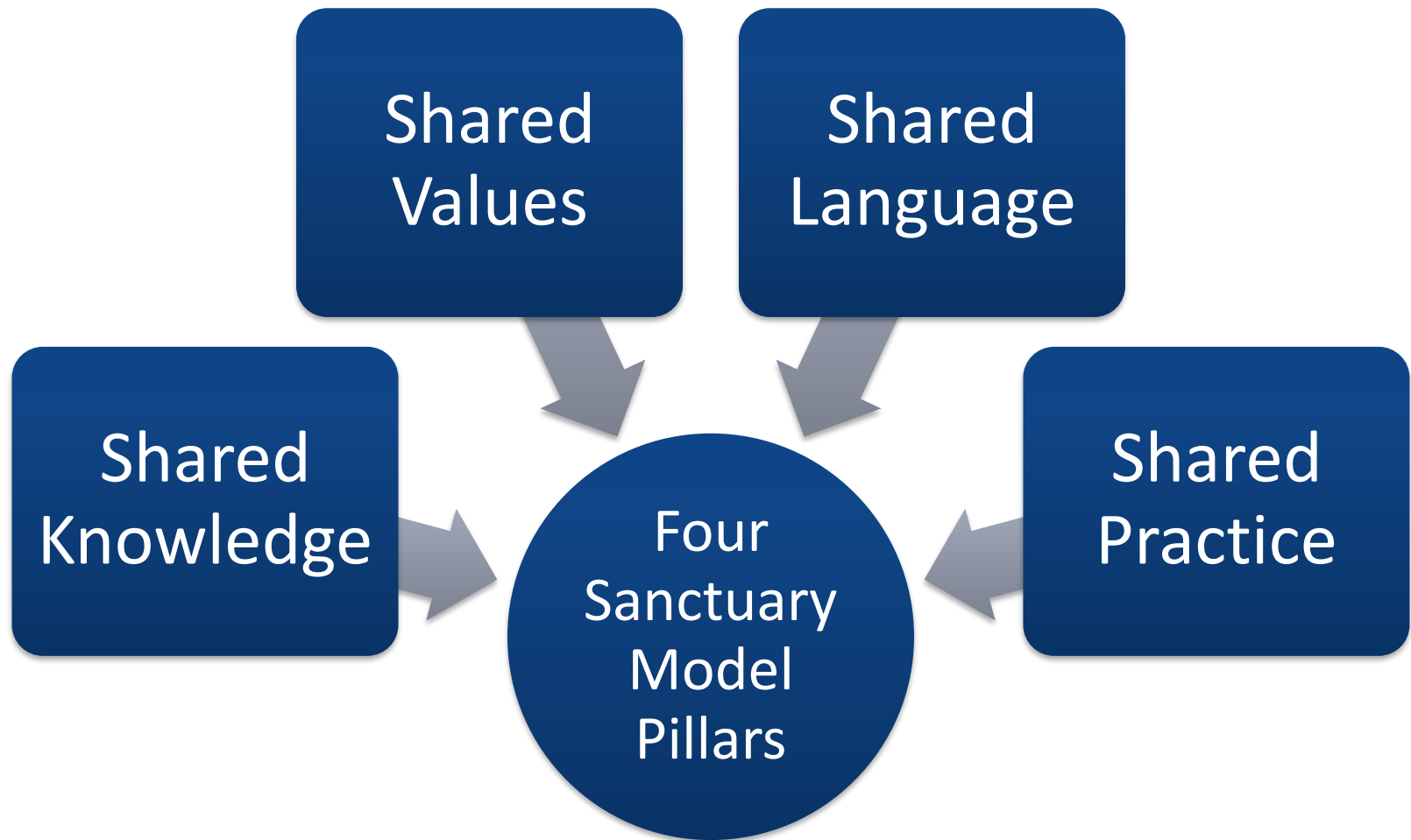


# Philadelphia Alliance for Child Trauma Services

- Network of child serving systems and organizations providing the most effective practices for traumatized youth and their families
- Led by Philadelphia DBHIDS and funded SAMHSA
- Goals
  - Develop a system of care for traumatized children
  - Provided trauma-informed and trauma-focused services
  - Increase number of Philadelphia children receiving trauma focused and informed care



# Strawberry Mansions Sanctuary for Hope





# A Youth Informed Approach to Assessing ACEs

- Series of focus groups with young adults
- Nominal Group Technique
  - Generate list of adverse childhood experiences
  - Prioritize items on list based on relative significance
- Analyze ranked lists for common themes
- Develop final ranked list of adverse experiences
- Member checking process & discussion of context surrounding each theme

# Study Participant Demographics

Demographics		Percent of Individuals (N = 119)
Sex	Male	55%
	Female	45%
Race/Ethnicity	Caucasian	5%
	Hispanic	18%
	Non-Hispanic Black	71%
	Other	6%
	Unknown	0%
Neighborhood Poverty Level (100% FPL)	Less than 10%	5%
	10 to 20%	11%
	20 to 40%	51%
	Greater than 40%	33%

# Domains of Most Stressful Experiences

Domain	Number of Responses
Family Relationships	195
Community Stressors	119
Personal Victimization	72
Economic Hardship	67
Peer Relationships	35
Discrimination	23
School	22
Health	17
Child Welfare/Juvenile Justice	8
Media/Technology	5

# Family Relationships

Family Relationship Subdomains	Number of Responses
Family Members Abusing Alcohol & Drugs	37
Lack of Love & Support in the Family	33
Single Parent Homes	30
Death & Illness of Family Members	21
Violence in the Home	20
Poor Parenting & Lack of Guidance	20
Criminal Activity by Family Members	15
Having to Take on Adult Responsibilities	14
Violent Victimization of Family Members by Individuals Outside of the Home	4

# Developing a New Childhood Adversity Measure

- Literature review and key informant interviews
- Semi-structured interviews children ages 8 to 18
  - Revise childhood adversity framework
  - Develop additional childhood adversity measures
- Cognitive interviews and reading level analysis with children and parents

Context	Domain
Personal	Discrimination Illness Personal Stressors Victimization
Home/Family	Household safety Family relationships Family belonging Family involvement Family structure Food insecurity Housing insecurity Job insecurity Family stressors
Peers	Peer relationships Social isolation Bullying Peer stressors
School	Teacher connectedness School engagement Academic performance Attendance School environment
Community	Crime Neighborhood safety Community violence Social and health service systems

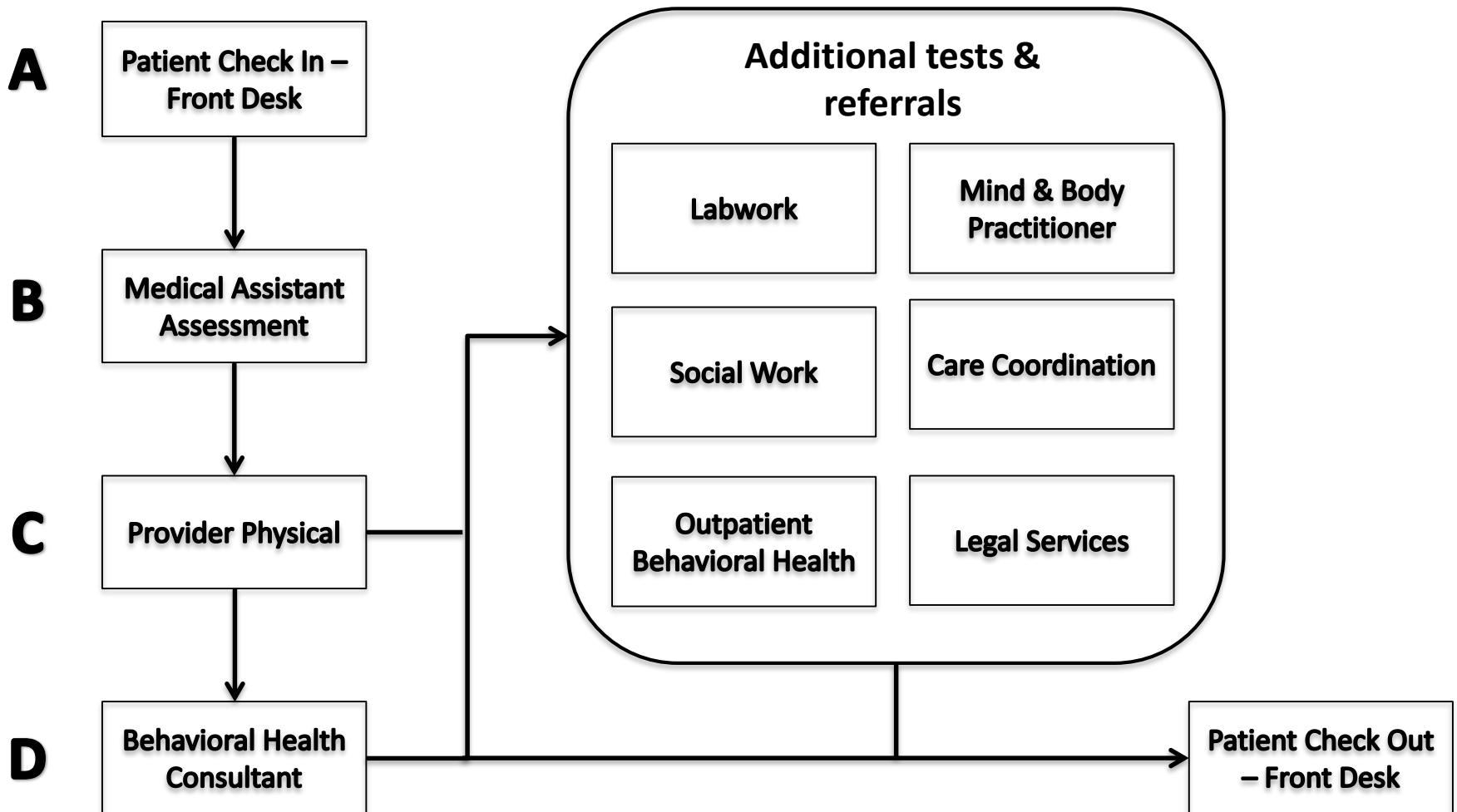
# Barriers to Universal Childhood Adversity Assessment

- Limited time
- Limited skills in addressing ACEs
- Concerns for patient confidentiality and privacy
- Respondent honesty to screening questions
- Lack of education in assessing childhood adversities

# Developing an ACE Screening Tool

- CDC state survey of ACEs 2011 – 2012
- Total respondents 71, 412
- 97% of individuals with four or more ACEs endorsed
  - Living with anyone who was a problem drinker or alcoholic
  - Parents or adults in home swore at them, insulted them, or put them down more than once
- Tool composed of these two items shows equivalent odds ratios to full measure when tested for association with health outcomes

# Implementation of Childhood Adversity Screening in Primary Care





# Accuracy and Acceptability of ACE Screening in Primary Care

- Self administered and provider approach most accurate approach to assessment
- Provider approach least acceptable
  - Too much time
  - Limited provider comfort
- Patients concerned that providers don't acknowledge ACEs using self administered approach

# Summary

- ACEs are common across sociodemographic backgrounds
- ACEs impact outcomes across sectors and throughout the lifecourse
- Important to broaden understanding of childhood adversity
- Certain populations at higher risk for ACEs
- Numerous approaches to addressing ACEs & building trauma informed systems of care

# Acknowledgements

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