



**PUBLIC HEALTH**  
management corporation

**FINDINGS FROM THE  
PHILADELPHIA URBAN ACE SURVEY**

**PREPARED FOR  
INSTITUTE FOR SAFE FAMILIES**

**PREPARED BY  
THE RESEARCH AND EVALUATION GROUP  
AT  
PUBLIC HEALTH MANAGEMENT CORPORATION  
260 SOUTH BROAD STREET, 18<sup>TH</sup> FLOOR  
PHILADELPHIA, PA 19102**

**SEPTEMBER 18, 2013**



## **ACKNOWLEDGEMENTS**

The Philadelphia Urban ACE Study was supported by a generous grant from the Robert Wood Johnson Foundation.

Additional support for the Philadelphia ACE Task Force efforts has been provided by the CHG Charitable Trust, the First Hospital Foundation, the Stoneleigh Foundation, and the Scattergood Foundation.

The authors would like to thank members of the Philadelphia ACE Task Force who helped guide the Philadelphia Urban Ace Study. Specifically, Megan Bair Merritt , Sandra Bloom, Peter Cronholm, Martha Davis, Sandy Dempsey, Joel Fein, Sara Ann Kuykendall, Lee Pachter, and Roy Wade assisted in drafting the Philadelphia Urban Ace Study, reviewing the findings and the commenting on the final report.



## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>i</b>
<b>I. INTRODUCTION .....</b>	<b>1</b>
<b>II. METHODOLOGY .....</b>	<b>3</b>
<b>III. FINDINGS.....</b>	<b>7</b>
<b>IV. DISCUSSION .....</b>	<b>24</b>
 <b>APPENDIX A: PHILADELPHIA URBAN ACE SURVEY QUESTIONNAIRE</b>	
 <b>APPENDIX B: COMPARISON OF ACE QUESTIONS FROM THE PHILADELPHIA URBAN ACE SURVEY, KAISER ACE STUDY, AND BRFSS ACE MODULE</b>	



## EXECUTIVE SUMMARY

This report provides findings on the adverse childhood experiences (ACEs) of Philadelphia residents. Past studies, including the seminal 1998 Kaiser study by Felitti and Anda, have confirmed the negative impact of ACEs, such as physical, emotional and sexual abuse and household dysfunction, on health behaviors and health outcomes in adulthood. However, most of these findings have been confirmed in studies composed of primarily white, middle-class, and highly educated individuals. The Institute for Safe Families (ISF)<sup>1</sup> formed the ACE Task Force in 2012 with an interest in examining the prevalence and impact of ACEs in Philadelphia, an urban city with a socially and racially diverse population.

ISF contracted with Public Health Management Corporation (PHMC) to develop and conduct a survey of childhood adversity exposures among Philadelphia residents in the fall of 2012. PHMC contracted Social Science Research Solutions to conduct the survey as a follow-up to PHMC's 2012 Southeastern Pennsylvania Household Health Survey (SEPA HHS).

A total of 1,784 adults completed the Philadelphia Urban ACE Survey for a response rate of 67.1%. The survey found a higher prevalence of ACEs than found in previous studies. In particular, 33.2% of Philadelphia adults experienced emotional abuse and 35% experienced physical abuse during their childhood. Approximately 35% of adults grew up in a household with a substance-abusing member; 24.1% lived in a household with someone who was mentally ill; and 12.9% lived in a household with someone who served time or was sentenced to serve time in prison.

The Philadelphia Urban ACE Survey also examined the stressors that exist in the communities where people live. The study found that 40.5% of Philadelphia adults witnessed violence while growing up, which includes seeing or hearing someone being beaten, stabbed or shot. Over one-third (34.5%) of adults reported experiencing discrimination based on their race or ethnicity, while almost three in ten adults (27.3%) reported having felt unsafe in their neighborhoods or not trusting their neighbors during childhood. In all, over 37% of Philadelphia respondents reported four or more ACEs. The findings from this study suggest the need for services that address the unique environmental stressors experienced in urban neighborhoods to mitigate their impact on individuals and prevent ACEs.

---

<sup>1</sup> <http://www.instituteforsafefamilies.org>



## I. INTRODUCTION

Traumatic events in childhood, such as experiencing physical or sexual abuse, witnessing domestic violence among adults at home, and living in a household where someone abuses alcohol or other drugs have obvious negative impacts on children while they are growing up. The impact from these events continues to affect individuals' adult lives. Persons who experience adverse events during childhood are more likely to have poorer mental and physical health in adulthood compared to adults who do not experience traumatic events during childhood.

Beginning in 1995, physicians Vincent Felitti and Robert Anda led a collaborative study between the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente to assess the association between adverse childhood experiences and subsequent health and wellbeing in adulthood.<sup>i</sup> Over 17,000 patients who were members of Kaiser Permanente's Health Maintenance Organization (HMO) underwent a comprehensive physical examination at Kaiser Permanente's Health Appraisal Clinic in San Diego and completed a confidential survey about their childhood experiences with abuse, neglect and family dysfunction.

Felitti and Anda found that adverse childhood experiences (ACEs), specifically psychological, physical, or sexual abuse; violence against one's mother; or living with household members who were substance abusers, mentally ill or suicidal, or ever imprisoned were prevalent among the population. More than half of the respondents reported experiencing at least one ACE and one-fourth experienced two or more ACEs. The study also found a dose response relationship between ACE scores and risky health behaviors, such as smoking, physical inactivity and multiple sexual partners. Adults who had experienced four or more categories of ACE, compared to those who had experienced none, had the following increased risk for negative health behaviors:

- 1.4- to 1.6-fold increase in physical inactivity and severe obesity;
- 2- to 4-fold increase in smoking, poor self-rated health, multiple sexual partners (i.e.,  $\geq 50$  sexual intercourse partners), and sexually transmitted disease; and
- 4- to 12-fold increased risk for alcoholism, drug abuse, depression, and suicide attempt.

ACEs were found to be linked in a dose response relationship to poor health outcomes in adulthood.<sup>ii</sup> As the number of ACEs a person experienced increased the likelihood of cardiovascular disease; cancer; AIDS and other sexually transmitted diseases; chronic obstructive pulmonary disease; skeletal fractures; and liver disease increased as well. The seven categories of adverse childhood experiences were also found to be strongly interrelated and persons with multiple categories of childhood exposure were likely to have multiple health risk factors later in life.

In 2008, the Centers for Disease Control and Prevention (CDC) developed an ACE module for use in the Behavioral Risk Factor Surveillance System (BRFSS), a state-based system of telephone surveys, established by the CDC. This survey collects information on health risk behaviors, prevalence of chronic diseases, use of preventive health practices, injury, and health care access. The ACE module was administered in five states (Arkansas, Louisiana, New Mexico, Tennessee, and Washington)<sup>iii</sup> in 2009 and Wisconsin<sup>iv</sup> and Pennsylvania<sup>v</sup> in 2010. In the original five states



that incorporated the ACE module, 59% of respondents reported having at least one ACE and 15% had four or more ACEs. Among Wisconsin residents, 56% of the adult population experienced at least one ACE and 14% had an ACE score of four or more. Approximately 53% of Pennsylvania residents experienced at least one ACE and 13% experienced four or more ACEs.

The majority of the respondents of the original Kaiser study, five-state BRFSS survey, and the Wisconsin and Pennsylvania surveys were primarily White non-Hispanic, middle-class, and had more than a high school education.<sup>vi</sup> Four out of five participants in the Kaiser study were white (80%) and three out of four participants in the BRFSS study were white (75%) (Table 1). The majority of the Kaiser study participants had more than a high school education; 32% had completed some college and 43% were college graduates. Three out of five BRFSS study participants (62%) had more than a high school education. The respondents to the Kaiser and five-state BRFSS survey are less racially and socioeconomically diverse than residents of urban communities. For example, in Philadelphia only two out of five residents 18 years and older are white (38.8%) (Table 1). More than three out of ten residents are Black (36.1%) and 11.4% are Latino. Less than half of the adult population has completed more than a high school education. Approximately one out of five Philadelphia residents has completed some college and 22.5% are college graduates.

**Table 1. Demographic Characteristics of Participants in the Kaiser Study and BRFSS ACE Survey, and Philadelphia Residents, 18 years and older, 2013**

Kaiser Study		BRFSS ACE Survey		Philadelphia Residents	
<b>Race</b>		<b>Race</b>		<b>Race</b>	
White	74.8% (n=12,968)	White, non-Hispanic	75% (N=19,770)	White	38.8% (N=466,677)
Black	4.6% (n=798)	Black, non-Hispanic	10% (N=2,662)	Black	36.1% (N=434,312)
Hispanic	11.2% (n=1,942)	Hispanic	8.5% (N=2,217)	Latino	11.4% (N=136,697)
Asian	7.2% (n=1,248)	Other, non-Hispanic	5% (N=1,381)	Asian	6.2% (N=74,916)
Other	1.9% (n=329)			Biracial	7.4% (N=88,939)
<b>Education</b>		<b>Education</b>		<b>Education</b>	
Not HS graduate	7.2% (n=1,248)	<High school	10% (N=2,646)	<High school	20.0% (N=202,166)
HS graduate	17.6% (n=3,051)	High school	28% (N=7,379)	HS graduate	35.7% (N=359,983)
Some college	35.9% (n=6,224)	> High school	62% (N=16,175)	Some college	21.8% (N=220,191)
College graduate or higher	39.3% (n=6,813)			College graduate	22.5% (N=226,748)
<b>All Participants</b>	17,337		26,229	<b>Total Residents</b>	1,201,541

Data Source: Felitti, et al.<sup>vii</sup> and Centers for Disease Control and Prevention<sup>viii</sup> and Nielsen-Claritas 2013 Pop-Facts Database. Prepared by the Research and Evaluation Group at PHMC



Researchers and advocates, including the World Health Organization and the CDC have begun to explore the prevalence of ACEs in other populations, such as low-income, low-education, and non-White populations.<sup>ix</sup> They have examined the prevalence of ACEs in developing countries and have pushed to expand ACEs to include other sources of adverse stress, such as bullying, peer-to-peer violence, experiencing acts of war, collective violence in the community, and forced marriage.

The Institute for Safe Families formed the ACE Task Force to look at the prevalence of ACEs in Philadelphia, an urban community that is more ethnically diverse and of lower-income than populations previously studied for ACEs. In addition, ISF and the ACE Task Force were interested in examining how ACEs and other adversities and stressors of growing up in an urban community may impact health behaviors and health outcomes. To address these needs, ISF contracted Public Health Management Corporation (PHMC) to conduct an urban ACE study to assess the prevalence of ACEs in Philadelphia, assess the adversities related to growing up in an urban environment, and examine the impact of ACEs and the additional urban adversities on health behaviors and health outcomes. The urban ACE study was funded by the Robert Wood Johnson Foundation.

## **II. METHODOLOGY**

The Philadelphia Urban ACE Survey was a follow-up to PHMC's Southeastern Pennsylvania Household Health Survey (SEPA HHS) – one of the largest local health surveys in the country and a unique regional resource. The SEPA HHS, a part of PHMC's Community Health Data Base, is a representative, community-based telephone survey of over 13,000 residents – both children and adults – living in the Southeastern Pennsylvania region, which includes Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties. The HHS is a comprehensive survey providing information on a broad range of topics such as health status and chronic health conditions, access to care, health behaviors and health screenings. The HHS is conducted by telephone and uses a dual frame random digit dial telephone survey including both landline and cell phones. The last SEPA HHS was fielded during summer of 2012.

The Philadelphia Urban ACE survey was able to leverage significant resources by following up on the SEPA HHS. The follow-up survey allowed responses from the ACE survey to be linked with demographic and health information already collected through the HHS. In addition, the initial work of developing a sample frame and screening for callers who are 18 years and older had already been accomplished.

The Philadelphia Urban ACE survey re-contacted Philadelphia residents who participated in the HHS. The study includes interviews with 1,784 Philadelphia adults age 18 and older conducted between November 2012 and January 2013. Interviews were conducted in English and Spanish and included both landlines and cell phones. The average length of interviews was approximately 12 minutes.

With the goal of enhancing cooperation rates, male interviewers were assigned to call male respondents and female interviewers were assigned to call female respondents. An advance



letter was sent to all respondents inviting them to call a 1-800 number or schedule a convenient time to complete the survey. Refusal conversion letters and two refusal conversion attempts were implemented to ensure maximum response rates. Respondents who initially declined the survey were offered five dollars as an incentive to participate. In addition, respondents in the cell phone sample who requested, without prompting, to be paid or reimbursed for their cell phone minutes were offered five dollars. The response rate for the Urban ACE Survey was 67.1% and was calculated using AAPOR’s RR3 formula.<sup>x</sup> Interviews were conducted by employees of Social Science Research Solutions an experienced survey research firm.

Given the delicate nature of some of the topics discussed, information, referrals, and emergency numbers for any of the issues were provided.

Due to some over and under-representation of particular demographic sectors, which is typical in random telephone-based survey samples, the data were slightly adjusted with a projection weight to match the proportion of adult age, poverty status, gender, race, and Hispanic ethnicity distributions within Philadelphia and to project census population totals (Table 2). Additionally, survey weights were utilized for calculations to ensure that the findings from the survey were applicable to the Philadelphia population.

**Table 2. Demographic Characteristics of Philadelphia Residents, 18 years and older and Philadelphia Urban ACE Survey Respondents, 2013**

	<b>Philadelphia Residents</b>	<b>Philadelphia Urban ACE Survey</b>
<b>Race</b>		
White	38.8% (N=466,677)	44.1% (n=786)
Black	36.1% (N=434,312)	42.5% (n=758)
Latino	11.4% (N=136,697)	3.5% (n=63)
Asian	6.2% (N=74,916)	3.6% (n=63)
Biracial	2.1% (N=24,778)	3.8% (n=68)
Other	5.3% (N=64,161)	2.4% (n=43)
<b>Education</b>		
<High school	20.0% (N=202,166)	10.3% (n=184)
HS graduate	35.7% (N=359,983)	31.4% (n=558)
Some college	21.8% (N=220,191)	22.7% (n=402)
College graduate	22.5% (N=226,748)	35.7% (n=634)
<b>Gender</b>		
Male	46.3% (N=556,149)	41.7% (n=744)



	<b>Philadelphia Residents</b>	<b>Philadelphia Urban ACE Survey</b>
Female	53.7% (N=645,392)	58.3% (n=1,040)
<b>Age (years)</b>		
18-34	36.8% (N=442,735)	29.7% (n=529)
35-64	46.7% (N=561,536)	52.2% (n=931)
65+	16.4% (N=197,270)	18.1% (n=323)
<b>Total</b>	<b>1,201,541</b>	<b>1,784</b>

Data Source: Nielsen-Claritas Pop-Facts Database and Philadelphia Urban ACE Survey, 2013. Data prepared by the Research and Evaluation Group at PHMC

### Questionnaire Design

The survey questionnaire was designed by the ACE Task Force and PHMC (Appendix A). The questionnaire included questions from the original ACE study and the ACE module used in BRFSS. Differences in wording between the Philadelphia Urban ACE study, the original Kaiser ACE study and the BRFSS ACE module can be found in Appendix B.

To assess the presence of ACEs, adults were asked about the following during their first 18 years of life:

### Abuse and neglect

- Physical abuse
  - A parent, step-parent or another adult living in the household more than once pushed, grabbed, slapped, or shoved you or hit you so hard you had marks or were injured
- Emotional abuse
  - A parent, step-parent or another adult living in the household more than once swore at you, insulted you, or put you down or made you afraid that you would be physically hurt
- Sexual abuse
  - An adult or someone at least five years older touched or fondled you in a sexual way or had you touch their body in a sexual way or attempted to have or actually had any type of sexual intercourse
- Emotional neglect
  - There was someone in your life who made you feel important or special



- Physical neglect<sup>2</sup>
  - Your family cut meals because there was not enough money in the budget for food

### **Household Dysfunction**

- Substance abusing household member
  - Lived with anyone who was a problem drinker or an alcoholic
  - Lived with anyone who used illicit street drugs or abused prescriptions
- Mentally ill household member
  - Lived with anyone who was depressed or mentally ill
  - Lived with anyone who was suicidal
- Domestic violence
  - Saw or heard in your home a parent, step parent or another adult who was helping raise you being slapped, kicked, punched or beaten up
  - Saw or heard a parent, step parent or another adult who was helping to raise you being hit or cut with an object, such as a stick or cane, bottle, club, knife, or gun

### **Household member in prison**

- Lived with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility

In addition to the standard ACE indicators described above, the survey also asked questions to measure stresses associated with growing up in an urban community. PHMC conducted a literature review to identify themes associated with living in an urban community. In addition, physicians Lee Pachter and Roy Wade, members of the ACE Task Force, conducted qualitative focus groups with urban youth to identify common causes of stress in the community as well as a study of racism and discrimination in children. The primary urban themes the ACE task force selected to measure were experiencing racism, witnessing violence, and living in unsafe neighborhoods. The ACE task force and PHMC developed questions to measure these concepts. These urban ACE questions were taken from the California Health Interview Survey Adult Questionnaire; the Adverse Childhood Experiences International Questionnaire; the National Survey on Children’s Exposure to Violence; and the CDC Family Health History and Health Appraisal questionnaire and revised by the ACE task force.

Specifically the urban ACE measures assess:

- Neighborhood safety and trust
  - Felt safe in your neighborhood
  - People in your neighborhood looked out for each other, stood up for each other, and could be trusted

---

<sup>2</sup> Due to space and time limitations on the Philadelphia Urban ACE survey the indicator for physical neglect was limited to the question “How often did your family cut meals because there was not enough money in the budget for food?”



- Bullying
  - Bullied by a peer or classmate
- Witness violence
  - Saw or heard someone being beaten up, stabbed, or shot in real life
- Racism
  - Treated badly or unfairly because of your race or ethnicity
- Foster care
  - Ever in foster care

The ACE questionnaire also included questions about current health behaviors (e.g., number of sexual health partners, age of first pregnancy, and use of illicit drugs) and current health conditions (e.g., coronary heart disease, stroke, emphysema, broken bones, sexually transmitted infection).

### **Analysis**

This report presents the initial analyses of the Philadelphia Urban ACE study. It includes descriptive statistics and Chi Square statistics where appropriate. More advanced statistical analyses, such as logistical regression to control for poverty, gender, race, and ethnicity are planned to be conducted on this data set and the findings to be published in peer-reviewed journals.

## **III. FINDINGS**

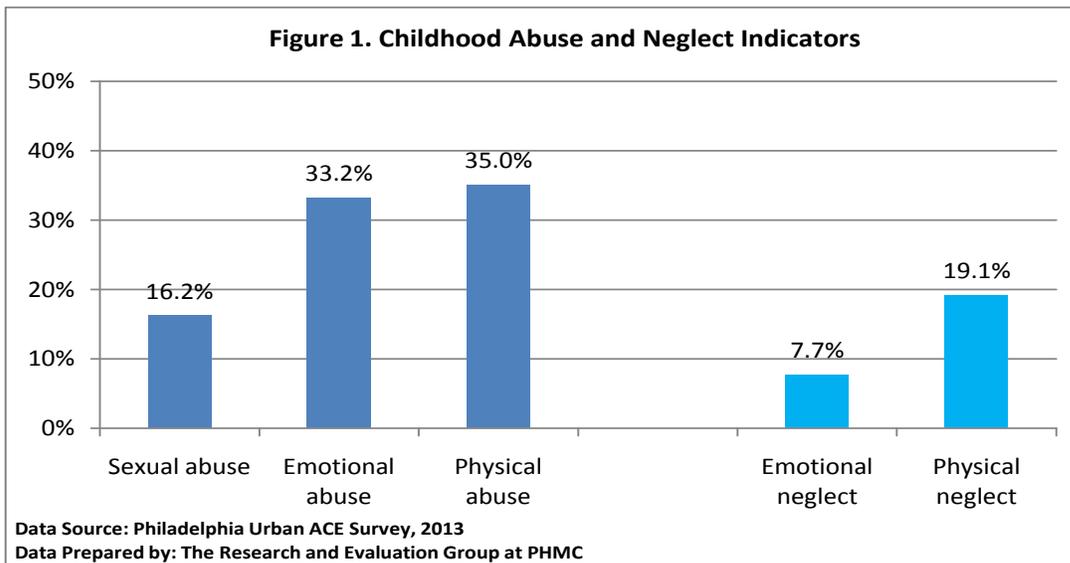
Adverse childhood experiences are common among Philadelphia residents. On most measures, the rate of ACEs in Philadelphia is higher compared to the rates found in the original Kaiser study and the states' BRFSS ACE surveys. The Urban ACE findings show that many Philadelphians experienced stressors related to the community where they grew up. These findings are described in more detail below.

### ***Child Abuse and Neglect***

One in six (16.2%, n=289) Philadelphia adults experienced sexual abuse during their childhood. Sexual abuse included having been touched or fondled in a sexual way; were told by an adult to touch their body in a sexual way; or an adult attempted to have or actually had any type of sexual intercourse while growing up. Philadelphia adults experienced higher rates of emotional and physical abuse during childhood compared with sexual abuse. One third of adults (33.2%, n=591) experienced emotional abuse while growing up. They were sworn at, insulted, or put down by an adult in their lives while growing up or were afraid that they would be physically hurt by an adult. Philadelphia adults experienced physical abuse (35.0%, n=624) at a higher rate than other types of abuse. More than one-third of respondents reported being pushed, grabbed, slapped, or shoved as a child or received an injury from physical abuse (Figure 1).



Philadelphia adults also reported emotional and physical neglect during their childhood. Approximately one out of five (19.1%, n=340) of Philadelphia adults experienced physical neglect, which is often or very often their family had to cut the down on the size of a meal or skip a meal because of insufficient funds for food during childhood. Approximately 8% of Philadelphia adults (7.7%, n=136) reported emotional neglect that is they rarely or never had someone who made them feel important or special during their childhood.



Compared to the original Kaiser population, Philadelphia adults had higher rates of emotional and physical abuse (Table 3). The rate for sexual abuse is lower among Philadelphia adults than among the Kaiser ACE study population.



**Table 3. Abuse and Neglect Indicators among Philadelphia Urban ACE Survey and Kaiser ACE Study**

	Philadelphia ACE Survey (N=1,784)	Kaiser ACE Study (N=17,337) <sup>3</sup>
Emotional abuse <sup>4</sup>	33.2% (n=1,190)	10.6% (n=1,838)
Physical abuse <sup>5</sup>	35.0% (n=624)	28.3% (n=4,906)
Sexual abuse	16.2% (n=289)	20.7% (n=3,589)
Physical neglect <sup>6</sup>	19.1% (n=340)	14.8% (n=2,566)
Emotional neglect <sup>7</sup>	7.7% (n=136)	9.9% (n=1,716)

Data Source: Philadelphia Urban ACE Survey, 2013 and Felitti et al., 1998  
Data Prepared by: The Research and Evaluation Group at PHMC

Male adults in Philadelphia were more likely than female adults to report emotional abuse during childhood (36.4% compared to 30.9%) (Table 4). Males were also more likely to report physical abuse during childhood compared to females (40.2% compared to 31.2%). However, females reported sexual abuse at twice the rate of males (20.3% compared with 10.5%). Males and females were similarly as likely to report physical and emotional neglect.

<sup>3</sup> Survey sample size for each ACE Indicator in the Kaiser ACE Study was calculated by multiplying the overall number of survey respondents by the reported percentage for each ACE indicator.

<sup>4</sup> Philly ACE asked if emotional abuse happened *more than once*. Responses were dichotomized to reflect either 'ever' or 'never' having been emotionally abused. Kaiser ACE asked if emotional abuse happened *often* or *very often*.

<sup>5</sup> Philly ACE asked if physical abuse happened *more than once*. Responses were dichotomized to reflect either 'ever' or 'never' having been physically abused. Kaiser ACE asked if physical abuse happened *sometimes*, *often*, or *very often*.

<sup>6</sup> Philly ACE defined physical neglect as whether their family cut the size of meals or skipped meals because there was not enough money in the budget for food. Kaiser ACE defined physical neglect as whether there was enough to eat, if their parents drinking interfered with their care, if they ever wore dirty clothes, and if there was someone to take them to the doctor.

<sup>7</sup> Philly ACE defined emotional neglect as whether someone in your life helped you feel important or special. Kaiser ACE defined emotional neglect as to whether their family made them feel special, loved, and if their family was a source of strength, support, and protection.



**Table 4. Child Abuse and Neglect Indicators by Sex**

	<b>Male</b>	<b>Female</b>
Emotional abuse	36.4%** (n=271)	30.9% (n=320)
Physical abuse	40.2%*** (n=299)	31.2% (n=324)
Sexual abuse	10.5% (n=78)	20.3%*** (n=211)
Physical neglect	19.5% (n=144)	18.8% (n=196)
Emotional neglect	9.2% (n=68)	6.6% (n=68)

Notes: \*p<.05 \*\*p<.01 \*\*\*p<.001, Chi-square

Data Source: Philadelphia Urban ACE Survey, 2013

Data Prepared by: The Research and Evaluation Group at PHMC

White adults reported a higher rate of emotional abuse during childhood than black adults. Thirty five percent of white adults reported emotional (35.0%) abuse during childhood and 29.2% of black adults reported emotional abuse (Table 5). Black adults reported higher rates of sexual abuse and physical neglect during childhood than white adults. One out of five black adults reported sexual abuse and one out of five reported physical neglect. Among white adults 12% reported sexual abuse and 15.4% reported physical neglect. Child abuse and neglect indicators for Asian, Latino, and Biracial/Multiracial race and ethnicity were not tested for statistical significance because some of the sample sizes were too small.

**Table 5. Child Abuse and Neglect Indicators by Race**

	<b>White</b>	<b>Black</b>
Emotional abuse	35.0%* (n=275)	29.2% (n=221)
Physical abuse	33.5% (n=264)	34.2% (n=259)
Sexual abuse	12.0% (n=94)	20.9%*** (n=158)
Physical neglect	15.4% (n=121)	21.9%** (n=165)
Emotional neglect	7.0% (n=55)	8.7% (n=65)

Notes: \*p<.05 \*\*p<.01 \*\*\*p<.001, Chi-square

Data Source: Philadelphia Urban ACE Survey, 2013

Data Prepared by: The Research and Evaluation Group at PHMC



**Household Dysfunction**

Dysfunction in the household, such as living with a substance-abusing member, living with someone who has a mental illness, witnessing domestic violence or having a household member be incarcerated, is also a childhood stressor. Approximately 35% of Philadelphia adults grew up in a household where someone abused substances (Table 6). This is higher than the approximate one-fourth (26.9%) of the Kaiser study participants. The second highest indicator of household dysfunction was living with someone mentally ill (24.1%); this was higher than the percentage found in the original Kaiser study (19.4%). Philadelphia adults witnessed domestic violence at a slightly higher rate than found in the original Kaiser study (17.9% and 12.7%, respectively). Finally, 12.9% of Philadelphia adults grew up in a household where someone served time or was sentenced to serve time in prison, jail, or other correctional facility. This rate was higher than the Kaiser study which found that 4.7% of the respondents grew up in a household where a household member went to prison.

**Table 6. Indicators of Household Dysfunction among Philadelphia Urban ACE Survey and Kaiser ACE Study**

	<b>Philadelphia ACE Survey (N=1,784)</b>	<b>Kaiser ACE Study (N=17,337<sup>8</sup>)</b>
Substance abusing household member	34.8% (n=620)	26.9% (n=4,664)
Mentally ill household member	24.1% (n=429)	19.4% (n=3,363)
Witnessed domestic violence	17.9% (n=319)	12.7% (N=2,202)
Household member in prison	12.9% (n=229)	4.7% (n=815)

Data Source: Philadelphia Urban ACE Survey, 2013 and Felitti et al., 1998  
Data Prepared by: The Research and Evaluation Group at PHMC

Among Philadelphia adults differences in household dysfunction while growing up were not found to be statistically significant by gender (Table 7).

<sup>8</sup> Survey sample size for each ACE Indicator in the Kaiser ACE Study was calculated by multiplying the overall number of survey respondents by the reported percentage for each ACE indicator.



**Table 7. Indicators of Household Dysfunction by Sex**

	Male	Female
Substance abusing household member	34.3% (n=255)	35.2% (n=365)
Mentally ill household member	24.1% (n=179)	24.0% (n=250)
Witnessed domestic violence	18.1% (n=134)	17.8% (n=185)
Household member in prison	14.0% (n=104)	12.0% (n=125)

Notes: The differences were not statistically significant.

Data Source: Philadelphia Urban ACE Survey, 2013

Data Prepared by: The Research and Evaluation Group at PHMC

Black adults were more likely to have grown up in a household with where someone abused substances (37.8%) compared to white adults (30.7%) (Table 8). Black adults were also more likely to have grown up in a household where they witnessed domestic violence (20.7%) or a household member went to or was sentenced to prison (15.9%) compared to White adults. Among white adults 13.2% witnessed domestic violence and 6.9% grew up in a house hold where someone served time or was sentenced to serve time in prison. White adults were more likely to have lived with a mentally ill household member (26.2%) compared to black adults (20.1%). Indicators for household dysfunction among Asian, Latino, and Biracial/Multiracial race and ethnicity were not tested for statistical significance because the size of the sample was too small.

**Table 8. Indicators of Household Dysfunction by Race**

	White	Black
Substance abusing household member	30.7% (n=241)	37.8%** (n=286)
Mentally ill household member	26.2%** (n=206)	20.1% (n=152)
Witnessed domestic violence	13.2% (n=104)	20.7%*** (n=157)
Household member in prison	6.9% (n=54)	15.9%*** (n=120)

Notes: \*p<.05 \*\*p<.01 \*\*\*p<.001, Chi-square

Data Source: Philadelphia Urban ACE Survey, 2013

Data Prepared by: The Research and Evaluation Group at PHMC

### **Urban ACE Indicators**

In addition to the standard ACE variables from the original Kaiser study, the Urban ACE Task Force developed additional items to assess the impact of stressors in urban environments. The



Philadelphia Urban ACE Survey’s additional five indicators of childhood stress created fourteen ACE items compared to the nine indicators included in the survey from the original Kaiser study.<sup>9</sup>

These additional indicators included: witnessing violence in one’s neighborhood, feeling discrimination based on race/ethnicity, feeling unsafe in one’s neighborhood, being bullied, and living in foster care. Among Philadelphia adults the most highly experienced urban ACE indicator was witnessing violence at 40.5% followed by experiencing discrimination (34.5%) (Table 9). Twenty-eight percent of Philadelphia adults grew up in a neighborhood where they didn’t feel safe or that people looked out for each other, 7.9% were bullied, and 2.4% spent time in foster care while growing up.

Males witnessed violence at a higher rate than females (49.2% and 34.3%, respectively). Similarly, one-third of males grew up in adverse neighborhood, which included feeling unsafe or not trusting one’s neighbors, compared with 23% of female adults (Table 9). Males also reported a higher rate of experiencing discrimination while growing up than females (37.5% and 32.3%, respectively).

**Table 9. Urban ACE Indicators by Gender**

	<i>Male</i>	<i>Female</i>	<i>All Respondents</i>
Witnessed violence	49.2%*** (n=363)	34.3% (n=355)	40.5% (n=718)
Felt discrimination	37.5%* (n=278)	32.3% (n=335)	34.5% (n=613)
Adverse neighborhood experience	33.3%*** (n=248)	23.0% (n=239)	27.3% (n=487)
Bullied	8.0% (n=59)	7.8% (n=81)	7.9% (n=140)
Lived in foster care	2.7% (n=20)	2.3% (n=24)	2.5% (n=44)

Notes: \*p<.05 \*\*p<.01 \*\*\*p<.001, Chi Square

Data Source: Philadelphia Urban ACE Survey, 2013

Data Prepared by: The Research and Evaluation Group at PHMC

Black adults were more likely to report adverse urban ACE experiences than white adults (Table 10). One out of two black adults (52.0%) reported witnessing violence compared to one out of every four white adults (25.9%). One out of every two black adults reported experiencing discrimination based on their race or ethnicity while growing up (49.5%). Only 15.8% of white adults reported experiencing discrimination. Approximately three out of ten black adults (29.2%) grew up in an adverse neighborhood where they didn’t feel safe or that people looked out for each other. Less than one out of five white adults reported that they grew up in an adverse neighborhood (19.3%). Among black adults 4.1% lived in foster care while growing up compared

<sup>9</sup> The Philadelphia Urban ACE Survey did not include a question about parents’ marital status that was included in the original ACE questionnaire.



to 1.0% of white adults. Differences in experiencing bullying while growing up were not found to be statistically significant. Differences in the rates of Urban ACE Indicators among Asian, Latino, and Biracial/Multiracial race and ethnicity were not tested for statistical significance because the size of the sample was too small.

**Table 10. Urban ACE Indicators by Race**

	<b>White</b>	<b>Black</b>
Witnessed violence	25.9% (n=203)	52.0%*** (n=390)
Felt discrimination	15.8% (n=124)	49.5%*** (n=372)
Adverse neighborhood experience	19.3% (n=152)	29.2%*** (n=221)
Bullied	9.0% (n=70)	6.4% (n=48)
Lived in foster care	1.0% (n=8)	4.1%*** (n=31)

Notes: \*p<.05 \*\*p<.01 \*\*\*p<.001, Chi-square  
Data Source: Philadelphia Urban ACE Survey, 2013  
Data Prepared by: The Research and Evaluation Group at PHMC

**Number of ACE Indicators**

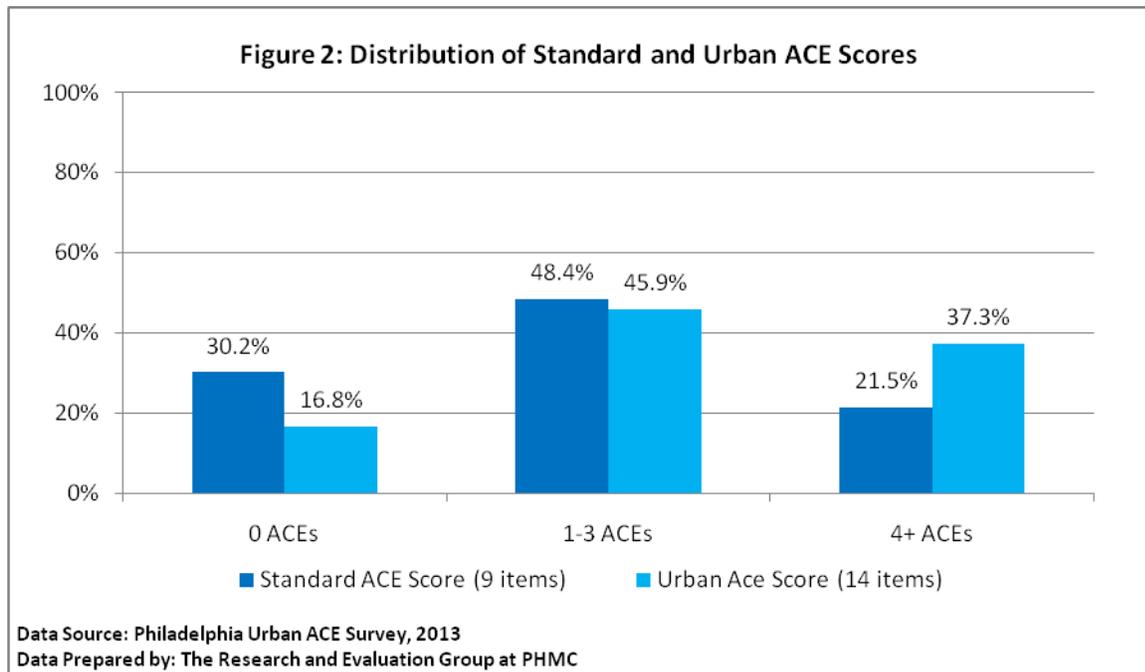
Philadelphia adults had higher rates of ACE compared to rates from the original Kaiser study.<sup>10</sup> In Philadelphia, three out of ten adults have no ACEs (30.2%, n=528) compared to 47.9% of participants in the original Kaiser study. Almost one-half of Philadelphia adults (48.4%, n=847) experienced between one and three ACEs, which is slightly higher than the 45.3% of the original Kaiser study sample. Finally, more than two in five (21.5%, n=376) Philadelphia adults experienced four or more ACEs compared to only 6.8% of respondents from the original Kaiser study who reported four or more ACEs. Overall over two-thirds (69.9%) of Philadelphia adults experienced at least one adverse childhood experience (ACE) when looking only at indicators from the original Kaiser study.

When the additional urban ACE indicators were included, Philadelphia adults reported experiencing more adverse childhood experiences compared to looking only at the standard ACE indicators. Approximately 17% Philadelphia adults reported no ACEs using the urban ACE score (n=289) (Figure 2). Approximately 46% of Philadelphia adults (n=790) experienced one to three urban ACEs. Overall 37.3% of Philadelphia adults (n=641) experienced four or more urban ACEs; this represents approximately 432,100 adults.

<sup>10</sup> Previous studies examining ACE have looked at the overall number of ACE indicators a person has accumulated. The Kaiser study, as well as other studies, have categorized ACE exposure as 0 or no ACEs, 1-3 ACEs, and 4 or more ACEs.



The percentage of Philadelphia adults who experienced at least one ACE increased to 83.2% using the additional urban ACE survey indicators. Approximately 63% of Philadelphia adults had a higher ACE score when including the urban ACE items demonstrating the possible additional stressors found in urban environments.



When looking at demographic characteristics of respondents who had an urban ACE score of four or more, males are more likely to have four or more ACEs (41.8%) compared to females (34.1%) (Table 11). This differs from what was found in the original Kaiser study. This may be true because as shown previously in Table 9, males are more likely to have experienced and witnessed community violence, more likely to report that they grew up in a neighborhood where they were not safe or that their neighbors didn't look out for each other, and were more likely to report experiencing discrimination. Black adults were more likely to have four or more urban ACEs (48.6%) compared to white adults (34%). Additionally, Philadelphia adults living below 150% of the Federal Poverty Level (FPL) were significantly more likely to have four or more ACEs (50.0%) compared to 31.8% of respondents who lived at or above 150% of the FPL.



**Table 11. Demographic Characteristics Among Philadelphia Adults Having an Urban ACE score of Four or More**

<b>Gender</b>	
<u>Male</u>	<u>Female</u>
41.8%** (n=297)	34.1% (n=344)
<b>Race</b>	
<u>White</u>	<u>Black</u>
34% (n=214)	48.6%** (n=306)
<b>Poverty<sup>11</sup></b>	
<u>Below 150% of poverty guidelines</u>	<u>Above 150% of poverty guidelines</u>
50.5%*** (n=254)	31.8% (n=387)

Notes: \*p<.05 \*\*p<.01 \*\*\*p<.001, Chi Square  
Data Source: Philadelphia Urban ACE Survey, 2013  
Data Prepared by: The Research and Evaluation Group at PHMC

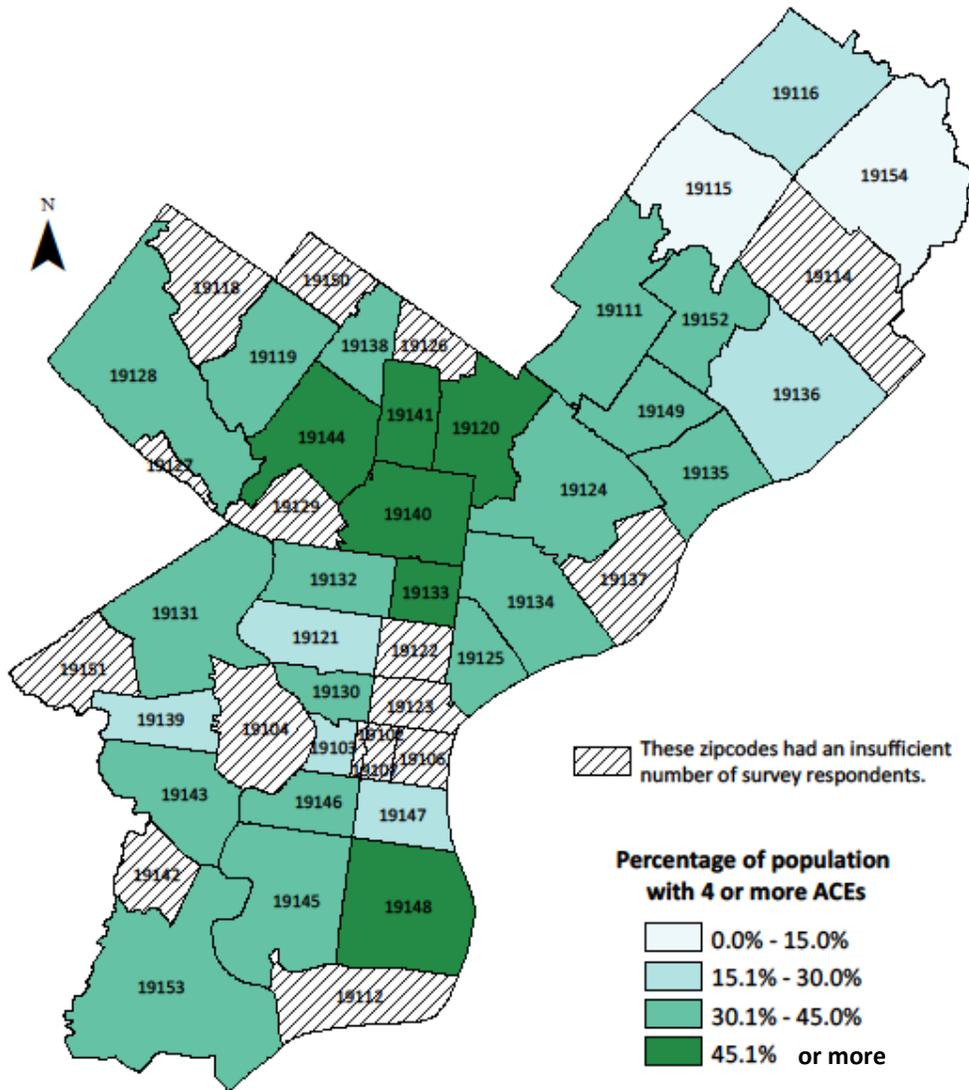
Looking at the distribution of Philadelphia residents with four or more ACEs, clusters of zipcodes with over 45% of their population having four or more ACEs demonstrate possible areas for intervention<sup>12</sup>. These zip code clusters surround the neighborhoods of northern Philadelphia and southeast Philadelphia as shown in the following map (Figure 3).

<sup>11</sup> 150% of the Federal poverty level was chosen in this study to be an indicator for poverty. The Health and Human Services Poverty Guidelines of 100% of the Federal Poverty Level is stringent; in this study 150% of the Federal Poverty Level was judged to be a more accurate gauge of poverty (\$16,755 versus \$11,170 for single dwellers, and \$34,575 instead of \$23,050 for a family of 4 in 2012). Many social services take into account percentages from 125% to 185% of poverty guidelines for eligibility. For example, Medicaid eligibility is 133% Federal poverty guidelines.

<sup>12</sup> The percentage of population with four or more ACEs was categorized as 0-15%, 15.1%-30% 30.1%-45% and 45.1%-60%. These categories were created based on the distribution of the data by zip code.



**Figure 3. Percentage of Population with Four or More ACEs by Zipcode, Philadelphia Urban ACE Survey, 2013**



Prepared by The Research and Evaluation Group at PHMC





The northern Philadelphia zip codes in which over 45% of the population have four or more ACEs include areas of the city of Philadelphia that have the highest percentage of families with children below the poverty level and with the highest percentage of adults who have a low educational level. As seen in table 12 the top five zip codes with the highest percentage of families with children below the poverty line include two zip codes in which 45.1% or more of the population has 4 or more ACEs. In Philadelphia 61.8% of the families with children living in zip code 19133 live below the poverty line and 46.4% of the families with children in zip code 19140 live below the poverty line.

**Table 12. Top Five Philadelphia Zip Codes with the Highest Percentage of Families with Children Below the Poverty Level, 2013**

Rank	Zip code	Percentage of Families with Children Below the Poverty Level	Percentage of population with 4 or more ACEs
1	19133	61.8%	45.1% +
2	19121	61.6%	30.1%-45%
3	19134	56.3%	30.1%-45%
4	19122	53.0%	Insufficient # of respondents
5	19140	46.4%	45.1% +

Data Source: Nielsen-Claritas Pop-Facts Database and Philadelphia Urban ACE Survey, 2013  
Data prepared by the Research and Evaluation Group at PHMC

The five zip codes in Philadelphia with the largest percentage of adults 25 years and older who are not high school graduates includes zip codes 19133 and 19140 in north Philadelphia and 19148 in South Philadelphia all of which have 45.1% or more of the population who have 4 or more ACEs (Table 13).

**Table 13. Top Five Philadelphia Zip Codes with the Highest Percentage of Adults Ages 25+ Who Did Not graduate from High School, 2013**

Rank	Zip code	Percentage of Adults 25+ Who Did Not Graduate from High School	Percentage of population with 4 or more ACEs
1	19133	45.6%	45.1% +
2	19134	37.5%	30.1%-45%
3	19140	33.6%	45.1% +
4	19122	32.1%	Insufficient # of respondents
5	19148	29.4%	45.1% +

Data Source: Nielsen-Claritas Pop-Facts Database and Philadelphia Urban ACE Survey, 2013  
Data prepared by the Research and Evaluation Group at PHMC

Three of the five zip codes in Philadelphia with the highest percentage of Hispanic adults (19133, 19140, and 19120) have a population in which 45.1% of the population has four or more ACEs. These zip codes are in the north Philadelphia cluster (Table 14).



**Table 14. Top Five Philadelphia Zip Codes with the Highest Percentage of Hispanic Adults, 2013**

Rank	Zip code	Percentage of Hispanic Adults	Percentage of population with 4 or more ACEs
1	19133	61.3%	45.1% +
2	19134	47.0%	30.1%-45%
3	19140	40.9%	45.1% +
4	19124	36.2%	30.1%-45%
5	19120	28.5%	45.1% +

Data Source: Nielsen-Claritas Pop-Facts Database and Philadelphia Urban ACE Survey, 2013  
Data prepared by the Research and Evaluation Group at PHMC

Zip code 19141 has the fifth highest percentage of Black, Non-Hispanic adults in the city of Philadelphia. In this zip code 45.1% or more of the population has four or more ACEs (Table 15).

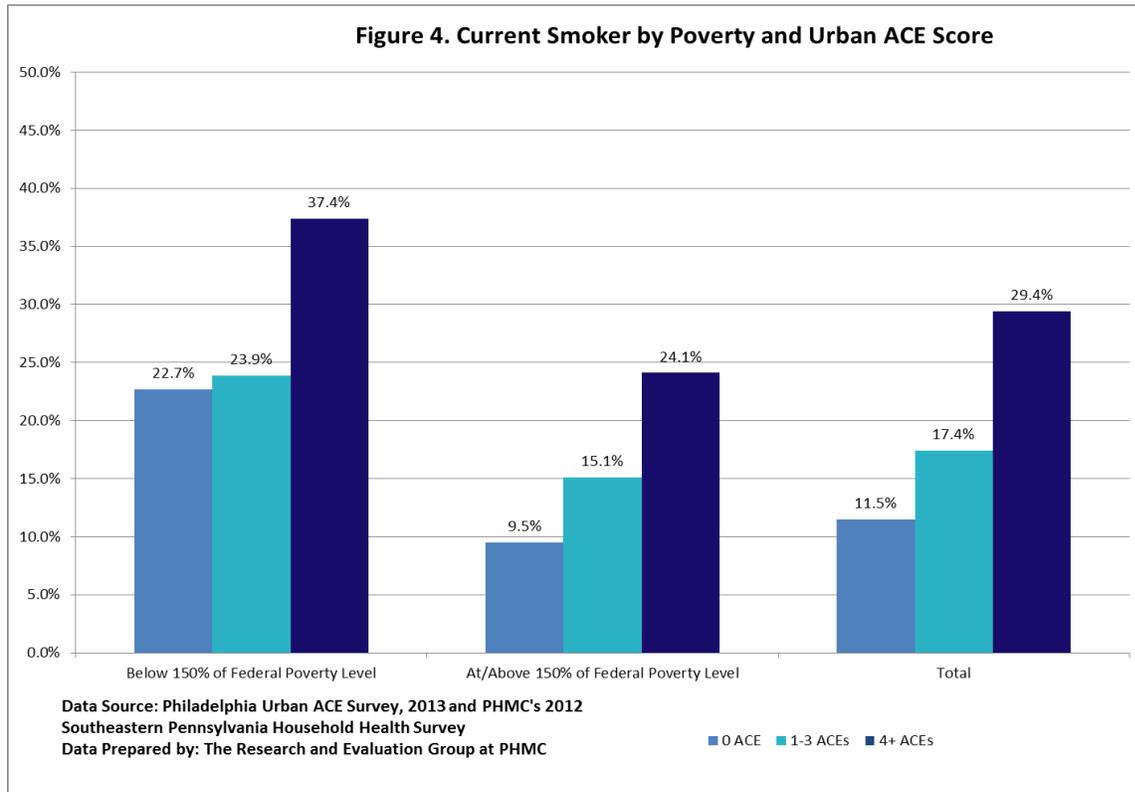
**Table 15. Top Five Philadelphia Zip Codes with the Highest Percentage of Black, Non-Hispanic Adults, 2013**

Rank	Zip code	Percentage of Black, Non-Hispanic Adults	Percentage of population with 4 or more ACEs
1	19150	93.6%	Insufficient # of respondents
2	19138	92.1%	30.1%-45%
3	19132	91.6%	30.1%-45%
4	19139	88.4%	15.1%-30%
5	19141	85.2%	45.1% +

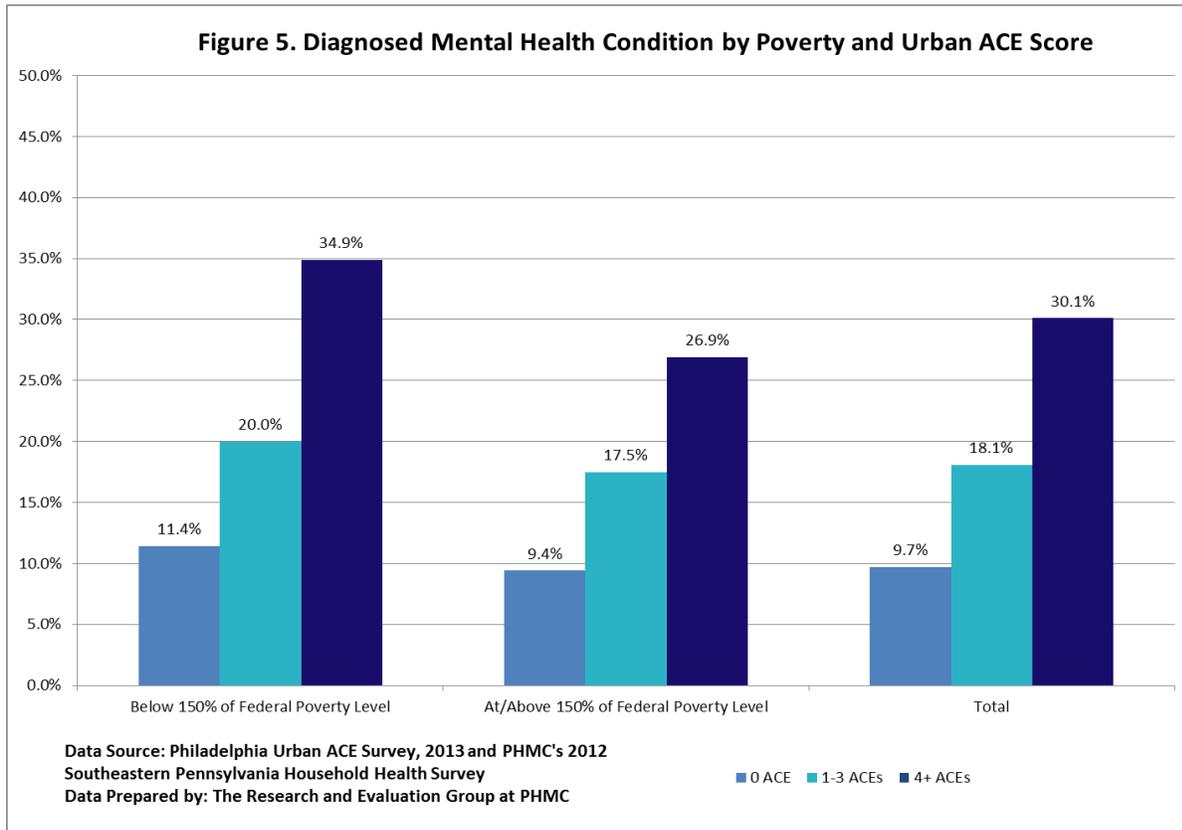
Data Source: Nielsen-Claritas Pop-Facts Database and Philadelphia Urban ACE Survey, 2013  
Data prepared by the Research and Evaluation Group at PHMC

***Health Behaviors and Physical Health Outcomes***

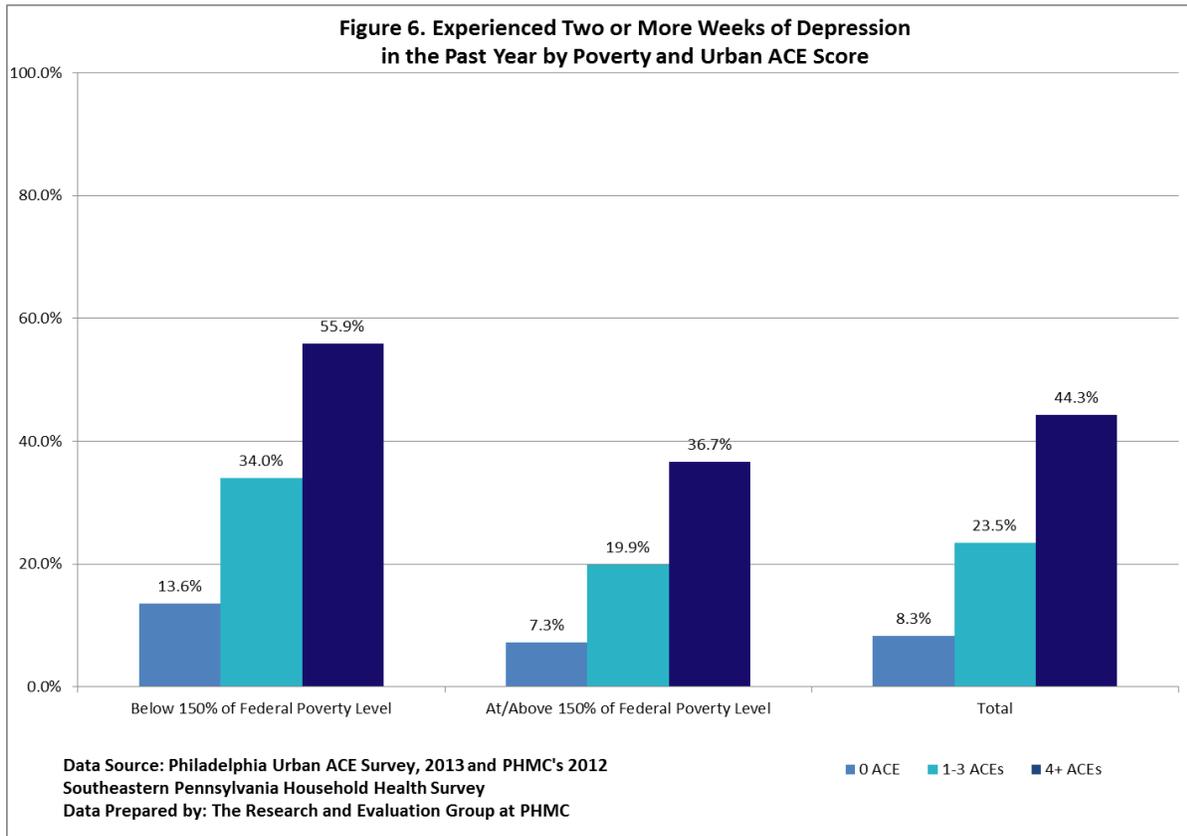
Risky health behaviors and poor health outcomes have been found to be related to ACEs. The Philadelphia Urban Ace Survey found that adults with four or more ACEs smoked at a higher rate than adults with 0 or 1-3 ACEs (Figure 4). Income is associated with smoking behavior. To assess how income, in this case poverty level impacted ACE and smoking behavior we looked at the rates of smoking among adults with 0, 1-3 and 4 or more ACEs at different levels of poverty. Among Philadelphia adults who are below 150% of the federal poverty level 22.7% of those who have no ACEs were smokers, 23.9% of those who have one to three ACEs were smokers, and 37.4% of those who have four or more ACEs were smokers. Among those who were at or above 150% of the federal poverty level 9.5% of those adults who have no ACEs were smokers, 15.1% of those who had 1-3 ACEs were smokers while 24.1% of those who had 4 or more ACEs were smokers. Specific differences between groups were not tested for statistical significance on the data presented in Figure 4.



Additionally, individuals who reported experiencing at least four ACEs showed higher rates of diagnosis with a mental health condition, similar to findings from the Kaiser study (Figure 5). In addition, the relationship was particularly noticeable for persons living in poverty. Those adults with four or more ACEs living below 150% of the federal poverty level reported a mental health condition diagnosis at a higher percentage than those that live at or above 150% of the federal poverty level (34.9% compared to 26.9%). Specific differences between groups were not tested for statistical significance on the data presented in Figure 5.



Similarly, respondents who reported four or more ACEs also reported had higher rates of experiencing two or more weeks of depression in the past year compared to those with 0 or 1-3 ACEs (Figure 6). Among respondents with 4 or more ACEs 44.3% experienced two or more weeks of depression in the past year. This is higher than those with 0 or 1-3 ACEs (8.3% and 23.5% respectively). This pattern held true regardless of poverty level. More than half (55.9%) of individuals with four or more ACEs living 150% below the federal poverty level reported depressive symptoms. This rate was higher than those with 0 or 1-3 ACEs (13.6% and 34% respectively). Among those living at or above 150% of the Federal Poverty Level 36.7% of respondents with four or more ACEs reported depressive symptoms while only 7.3% of those with 0 ACEs and 19.9% of those with 1-3 ACEs reported depressive symptoms. Specific differences between groups were not tested for statistical significance on the data presented in Figure 6.



High risk health behaviors, such as multiple sex partners, history of suicide attempt, and substance abuse have been shown to be related to ACE scores. Felitti et al found that those with 4 or more ACEs are more likely as adults to have had multiple sexual partners, a history of substance abuse, and higher rate of attempted suicide than those with lower ACE scores (Table 17).<sup>xi</sup> That pattern held true in Philadelphia. Among Philadelphia adults with no ACEs 0.8% had multiple sexual partners and 0.7% had attempted suicide. These rates increased among those with 1-3 ACEs. Among those with 1-3 ACEs 7.2% had multiple sexual partners and 2.3% had attempted suicide. These rates increased yet again among those with 4 or more ACEs. Among those with 4 or more ACEs 14.1% had multiple sexual partners and 17.8% had attempted suicide. A history of substance abuse was less than 2% among Philadelphia adults with 0 and 1-3 ACEs. The rate increased among those adults with 4 or more ACEs to 6.1%. Due to the small cell size (<5) specific differences between groups were not tested for statistical significance on the data presented in Table 16.



**Table 16. Health Risk Behaviors by ACE Score**

Health Risk Behavior	ACE Score		
	0 ACE	1-3 ACE	4+ ACE
Multiple Sexual Partners	0.8% (n=2)	7.2% (n=48)	14.1% (n=76)
Suicide Attempt	0.7% (n=2)	2.3% (n=18)	17.8% (n=114)
Substance Abuse Problem	1.7% (n=5)	0.9% (n=7)	6.1% (n=39)

Data Source: Philadelphia Urban ACE Survey, 2013 and PHMC's 2012 Southeastern Pennsylvania Household Health Survey. Data Prepared by: The Research and Evaluation Group at PHMC

Poor health outcomes, such as diagnoses of cancer, diabetes, severe obesity, asthma have been shown to be related to ACE scores. Previous studies have found that those with 4 or more ACEs are more likely as adults to have poor health outcomes than those with lower ACE scores. The Kaiser study found a dose response relationship between ACE score and health outcome.<sup>xii</sup> The initial analyses examining number of ACE and health outcome did not find a dose response pattern for ACE score and poor health outcome.

Among Philadelphia adults those with 1-3 ACEs had higher rates of diabetes and severe obesity<sup>13</sup> than those with 4 or more ACEs (Table 17). Among adults with 1-3 ACEs 17% had diabetes while only 15.9% of those with 4 or more ACEs had diabetes. Eighteen percent of Philadelphia adults with 1-3 ACEs were severely obese while only 16.1% of adults with 4 or more ACEs were severely obese.

The rate of asthma did increase as ACE score increased. Among Philadelphia adults with 0 ACEs 16.6% had asthma. Eighteen percent of adults with 1-3 ACEs had asthma and 21.4% of adults with 4 or more ACEs had asthma. Specific differences between groups were not tested for statistical significance on the data presented in Table 17.

**Table 17. Health Outcome by ACE Score**

Health Outcome	ACE Score		
	0 ACE	1-3 ACE	4+ ACE
Cancer	6.9% (n=20)	9% (n=71)	9.2% (n=59)
Diabetes	14.9% (n=43)	17% (n=134)	15.9% (n=102)
Severe obesity	16.1% (n=45)	18.7% (n=144)	16.1% (n=101)
Asthma	16.6% (n=48)	18% (n=142)	21.4% (n=137)

Data Source: Philadelphia Urban ACE Survey, 2013 and PHMC's 2012 Southeastern Pennsylvania Household Health Survey. Data Prepared by: The Research and Evaluation Group at PHMC

<sup>13</sup> Severe obesity was defined as BMI  $\geq 35$ . This is the definition that was used in the Kaiser ACE study.



## IV. DISCUSSION

Adverse childhood experiences, such as psychological, physical, or sexual abuse; violence against one's parent or caregiver; or living with household members who were substance abusers, mentally ill or suicidal, or ever imprisoned have been found to have a relationship with risky health behaviors, such as smoking, and physical inactivity as well as associated with negative health outcomes in adulthood. Previous studies have found that 50% of the population has experienced at least one ACE and a quarter has experienced two or more ACEs. These studies have been composed of primarily white, middle-class, and highly educated individuals. The Philadelphia Urban ACE study was one of the first studies to examine ACEs in an urban location with a racially and socio-economically diverse population.

The Philadelphia Urban ACE study found that ACEs are prevalent in Philadelphia and found at a higher rate than has been reported in other studies. In Philadelphia 69.9% of the population experienced at least one ACE when looking only at indicators from the original Kaiser study. In particular, the rates of emotional abuse and physical abuse are higher among Philadelphia adults than seen in other populations. The proportion of Philadelphians who grew up in a household with a substance abusing member or who grew up in a household where someone was sentenced to serve time in prison is also higher than has been seen in other populations. The prevalence of ACEs in Philadelphia suggests urban communities with disadvantaged populations are at high risk for ACEs and suggests these populations warrant targeted interventions to reduce the impact of ACEs and to prevent ACEs. Additional research is needed to confirm the findings from this study in other urban communities.

The Philadelphia Urban ACE Survey expanded the assessment of toxic childhood experiences from the traditional ACEs to examine the stressors or toxicity that are related to the community settings in which residents grew up, such as witnessing violence; feeling unsafe in their neighborhood; feeling that people in their neighborhood did not look out for each other, stand up for each other, or could be trusted; and experiencing discrimination based on their race or ethnicity. The Philadelphia Urban ACE Survey found that while growing up people experienced multiple stressors related to their neighborhoods and that these urban ACE indicators are prevalent. For example, two out of five adults (40.5%) saw or heard violence – that is they saw or heard someone being beaten up, stabbed or shot while growing up. More than a third (34.5%) felt discrimination while growing up; among black respondents 49.5% felt discrimination while growing up. Almost three out of ten respondents (27.3%) grew up in a neighborhood where they didn't feel safe or that their neighbors looked out for each other and could be trusted. Further research should continue to expand the initial work examining urban ACEs that was set forth in this study. Research should explore the impact of adverse experiences that children encounter growing up in an urban environment and the impact of the experiences on their health behaviors and health outcomes in adulthood.

Results from the Philadelphia Urban ACE Survey suggest that ACEs are related to risky health behaviors, such as smoking and multiple sexual partners and poor health outcomes, such as experiencing depression. Although this report primarily presented descriptive analyses, results suggest that those with four or more ACEs may have a higher rate of smoking and higher rates of



having a poor health outcome, such as a diagnosis of a mental health condition or have experienced depression in the past year than those adults with 3 or less ACEs. The relationship between ACEs and other health conditions, such as cancer and heart attack were not found in this analysis. The findings presented in this report controlled only for poverty level. Further analyses are planned to test for statistical significant relationships between ACE scores in Philadelphia and health behaviors and outcomes. These further analyses will be planned to control for potential interactions between poverty and variables, such as age, race, sex, and educational attainment.

### **Limitations of the current study**

The sample size of the Philadelphia Urban ACE Survey was limited. The sample size may be too small to clearly show a connection between ACE scores and physical health outcomes. Repeated studies of ACEs in Philadelphia will increase the sample size and improve the statistical strength of analyses. In particular repeated studies of ACEs in Philadelphia will allow for the possibility of examining the relationship between ACEs and physical health outcomes and assessing ACEs by smaller geographic variables, such as planning analysis section or health district.

The Philadelphia Urban ACE Study found that the rate for sexual abuse is lower among Philadelphia adults than among the Kaiser ACE study population. The Philadelphia rate may be lower due to people being reticent to disclose their experiences of childhood sexual abuse over the phone to an interviewer. Respondents may feel more comfortable disclosing that information in a paper and pencil survey as was completed during the Kaiser ACE study.

The definition of physical neglect used in the Philadelphia urban ACE study was very limited. Due to limited time and space on the survey we were unable to include multiple questions to measure physical neglect. The indicator for physical neglect used in Philadelphia urban ACE study – *How often did your family cut the size of meals or skip meals because there was not enough money in the budget for food* was not as broad as the question about physical neglect used by Felitti et al – *whether there was enough to eat, if their parents drinking interfered with their care, if they ever wore dirty clothes, and if there was someone to take them to the doctor*. If the ACE study is repeated in Philadelphia, an assessment should be made to determine the best measure of physical neglect.

Comparisons between the Philadelphia urban ACE study and the Kaiser ACE study should be done with caution. The questions were worded slightly differently on the Philadelphia Urban ACE Survey and the Kaiser ACE Study. For emotional neglect, the Philadelphia ACE question was broader than the Kaiser ACE question. The Philadelphia ACE asked if someone in their life made them feel important or special. The Kaiser study asked if a family member made them feel important or special. For physical neglect, the Philadelphia ACE question was more specific than the Kaiser ACE question. The Philadelphia ACE asked about cutting or skipping meals because there was not enough money for food. The Kaiser study, in addition to assessing if there was enough food to eat, asked whether parental drinking interfered with their care, if they wore dirty clothes, and if someone was available to take them to the doctor.

This report presents the initial analyses of the Philadelphia Urban ACE study. It includes descriptive statistics and Chi Square statistics where appropriate. Where comparisons were not



statistically tested, in particular in comparisons of respondents with 0, 1-3, and 4+ urban ACEs differences identified may not be statistically significant and findings not highlighted may actually be statistically significant. More advanced statistical analyses, such as logistical regression to control for poverty, gender, race, and ethnicity are planned to be conducted on this data set and the findings to be published in peer-reviewed journals.

## **Conclusion**

This report presents the initial analysis of the data from the Philadelphia Urban ACE Study and is being presented to ISF and the ACE Task Force. The findings from this study may be used by ISF and the ACE Task Force to establish research priorities and develop policy and practice recommendations. ISF and the ACE Task Force are planning additional analyses using data from the Philadelphia Urban ACE Study to further explore the relationship between ACE, health outcomes and the urban community

---

<sup>i</sup> Felitti, V, Anda, R, Nordenberg, D, Williamson, D, Spitz, A, Edwards, V, Koss, M and Marks, J. 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 Prev Med.* 1998; 14(4):245-258.

<sup>ii</sup> Felitti, V, Anda, R, Nordenberg, D, Williamson, D, Spitz, A, Edwards, V, Koss, M and Marks, J. 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 Prev Med.* 1998; 14(4):245-258.

<sup>iii</sup> Centers for Disease Control and Prevention. Adverse Childhood Experiences Reported by Adults – Five States, 2009. *Morbidity and Mortality Weekly Report (MMWR).* 59(49); 1609-1613.

<sup>iv</sup> Children’s Trust Fund. Adverse Childhood Experiences in Wisconsin: Findings from the 2010 Behavioral Risk Factor Survey.

<sup>v</sup> 2010 Pennsylvania BRFSS. Bureau of Health Statistics and Research. Pennsylvania Department of Health.

<sup>vi</sup> <http://www.portal.state.pa.us/portal/server.pt?open=514&objID=615148&mode=2>

<sup>vii</sup> Felitti, V, Anda, R, Nordenberg, D, Williamson, D, Spitz, A, Edwards, V, Koss, M and Marks, J. 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 Prev Med.* 1998; 14(4):245-258.

<sup>viii</sup> Centers for Disease Control and Prevention. Adverse Childhood Experiences Reported by Adults – Five States, 2009. *Morbidity and Mortality Weekly Report (MMWR).* 59(49); 1609-1613.

<sup>ix</sup> World Health Organization. Addressing adverse childhood experiences to improve public health. Expert consultation, 4-5 May 2009 [Meeting report]. Geneva, Switzerland: WHO, 2009.

[http://www.who.int/violence\\_injury\\_prevention/violence/activities/adverse\\_childhood\\_experiences/global\\_research\\_network\\_may\\_2009.pdf](http://www.who.int/violence_injury_prevention/violence/activities/adverse_childhood_experiences/global_research_network_may_2009.pdf)

<sup>x</sup> The response rate for the original 2012 HHS was 22%.

<sup>xi</sup> Felitti, V, Anda, R, Nordenberg, D, Williamson, D, Spitz, A, Edwards, V, Koss, M and Marks, J. 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 Prev Med.* 1998; 14(4):245-258.

<sup>xii</sup> Felitti, V, Anda, R, Nordenberg, D, Williamson, D, Spitz, A, Edwards, V, Koss, M and Marks, J. 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 Prev Med.* 1998; 14(4):245-258.



## **APPENDIX A**

### **PHILADELPHIA URBAN ACE SURVEY QUESTIONNAIRE**



## Philadelphia ACE follow-up Survey Questions

### Source

Prepared by Public Health Management Corporation, the Institute for Safe Families, and the ACE Task Force

FOR Qs1-4: While you were growing up, that is during your first 18 years of life...

1. Did you feel safe in your neighborhood (READ LIST)?  
(IF RESPONDENT MENTIONS HAVING LIVED IN MULTIPLE NEIGHBORHOODS WHILE GROWING UP ASK: Overall, did you feel safe in the neighborhoods you grew up in?)
  - 1 All of the time
  - 2 Most of the time
  - 3 Some of the time, or
  - 4 None of the time
  - D (DO NOT READ) Don't know
  - R (DO NOT READ) Refused
  
2. Did you feel people in your neighborhood looked out for each other, stood up for each other, and could be trusted (READ LIST, IF NECESSARY)?  
(IF RESPONDENT MENTIONS HAVING LIVED IN MULTIPLE NEIGHBORHOODS WHILE GROWING UP ASK: Overall, did you feel people in the neighborhoods you grew up in looked out for each other...?)
  - 1 All of the time
  - 2 Most of the time
  - 3 Some of the time, or
  - 4 None of the time
  - D (DO NOT READ) Don't know
  - R (DO NOT READ) Refused

3. How often were you bullied by a peer or classmate? (READ LIST, IF NECESSARY)?

- 1 All of the time
- 2 Most of the time
- 3 Some of the time, or
- 4 None of the time
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

4. How often, if ever did you see or hear someone being beaten up, stabbed, or shot in real life? Would you say (READ LIST)?

- 1 Many times
- 2 A few times
- 3 Once, or
- 4 Never
- R (DO NOT READ) Refused

Now please think about your childhood, in general, not just your neighborhood or community.

FOR Q5-6: While you were growing up, during your first 18 years of life, how true were each of the following statements?

5. There was someone in your life who helped you feel important or special. Was this (READ LIST)?

- 1 Very often true
- 2 Often true
- 3 Sometimes true
- 4 Rarely true, or
- 5 Never true
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

6. Your family sometimes cut the size of meals or skipped meals because there was not enough money in the budget for food. Was this (READ LIST)?

- 1 Very often true
- 2 Often true
- 3 Sometimes true
- 4 Rarely true, or
- 5 Never true
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

Sometimes people are treated badly, not given respect, or are considered inferior because of the color of their skin, because they speak a different language or have an accent, or because they come from a different country or culture.

7. While you were growing up during your first 18 years of life how often did you feel that you were treated badly or unfairly because of your race or ethnicity? Would you say...?

(READ LIST)

- 1 Very often true
- 2 Often true
- 3 Sometimes true
- 4 Rarely true, or
- 5 Never true
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

Again, I want to remind you that the next questions refer to the time period while you were growing up in your first 18 years of life. During your first 18 years of life:

8. Did you live with anyone who was depressed or mentally ill?

- 1 Yes
- 2 No
- D (DO NOT READ) Don't know/Not Sure
- R (DO NOT READ) Refused

9. Did you live with anyone who was suicidal (IF NECESSARY: during your first 18 years of life)?
- 1 Yes
  - 2 No
  - D (DO NOT READ) Don't know/Not Sure
  - R (DO NOT READ) Refused
10. Did you live with anyone who was a problem drinker or alcoholic (IF NECESSARY: during your first 18 years of life)?
- 1 Yes
  - 2 No
  - D (DO NOT READ) Don't know/Not Sure
  - R (DO NOT READ) Refused

Still looking back to your first 18 years of life...

11. Did you live with anyone who used illegal street drugs or who abused prescription medications?
- 1 Yes
  - 2 No
  - D (DO NOT READ) Don't know/Not Sure
  - R (DO NOT READ) Refused
12. Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?
- 1 Yes
  - 2 No
  - D (DO NOT READ) Don't know/Not Sure
  - R (DO NOT READ) Refused
13. Were you ever in foster care? (IF NECESSARY: during your first 18 years of life)?
- 1 Yes
  - 2 No
  - D (DO NOT READ) Don't know/Not Sure
  - R (DO NOT READ) Refused

Sometimes physical blows occur between parents or other adults in the house.  
FOR Q14-Q16: While you were growing up, that is during your first 18 years of life...

14. How often, if ever, did you see or hear a parent, step parent or another adult who was helping to raise you being yelled at, screamed at, sworn at, insulted or humiliated?  
Would you say...(READ LIST)

1 Many times  
2 A few times  
3 Once, or  
4 Never  
D (DO NOT READ) Don't know/Not Sure  
R (DO NOT READ) Refused

15. How often, if ever, did you see or hear in your home a parent, step parent or another adult who was helping raise you being slapped, kicked, punched or beaten up? (READ LIST)

1 Many times  
2 A few times  
3 Once, or  
4 Never  
D (DO NOT READ) Don't know/Not Sure  
R (DO NOT READ) Refused

16. How often, if ever, did you see or hear a parent, step parent or another adult who was helping to raise you being hit or cut with an object, such as a stick or cane, bottle, club, knife, or gun? (READ LIST, IF NECESSARY)

1 Many times  
2 A few times  
3 Once, or  
4 Never  
D (DO NOT READ) Don't know/Not Sure  
R (DO NOT READ) Refused

Sometimes parents or other adults hurt children.

While you were growing up, that is during your first 18 years of life, how often, if ever, did a parent, step-parent, or another adult living in your home...

17. Swear at you, insult you, or put you down? (READ LIST)

- 1 More than once
- 2 Once, or
- 3 Never
- D (DO NOT READ) Don't know/Not Sure
- R (DO NOT READ) Refused

How often, if ever, did a parent, step-parent, or another adult living in your home...

18. Push, grab, shove, or slap you? (READ LIST)

- 1 More than once
- 2 Once, or
- 3 Never
- D (DO NOT READ) Don't know/Not Sure
- R (DO NOT READ) Refused

19. Hit you so hard that you had marks or were injured? (READ LIST)

- 1 More than once
- 2 Once, or
- 3 Never
- D (DO NOT READ) Don't know/Not Sure
- R (DO NOT READ) Refused

20. Act in a way that made you afraid that you would be physically hurt? (READ LIST)

- 1 More than once
- 2 Once, or
- 3 Never
- D (DO NOT READ) Don't know/Not Sure
- R (DO NOT READ) Refused

Some people, while growing up in their first 18 years of life, had a sexual experience with an adult or someone at least five years older than themselves. These experiences may have involved a relative, family friend, or stranger.

During the first 18 years of life, did an adult or older relative, family friend or stranger who was **at least five years older than yourself** ever...?

21. Touch or fondle you in a sexual way or have you touch their body in a sexual way?

- 1 Yes
- 2 No
- D (DO NOT READ) Don't know/Not Sure
- R (DO NOT READ) Refused

22. Attempt to have or actually have any type of sexual intercourse, oral, anal, or vaginal, with you?

- 1 Yes
- 2 No
- D (DO NOT READ) Don't know/Not Sure
- R (DO NOT READ) Refused

We are almost done with the interview but have a few more questions about your health and well-being over your entire lifetime.

Have you EVER been told by a doctor or other health professional that you have or had any of these medical conditions or illnesses?

How about...?

23. Angina, coronary heart disease, or a heart attack also called a myocardial infarction?

- 1 Yes
- 2 No
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

24. A stroke or “small stroke?”

- 1 Yes
- 2 No
- D (DO NOT READ) Don’t know
- R (DO NOT READ) Refused

25. Chronic bronchitis or emphysema?

- 1 Yes
- 2 No
- D (DO NOT READ) Don’t know
- R (DO NOT READ) Refused

26. Broken any bones?

- 1 Yes
- 2 No
- D (DO NOT READ) Don’t know
- R (DO NOT READ) Refused

27. Yellow jaundice, hepatitis, or any liver trouble?

- 1 Yes
- 2 No
- D (DO NOT READ) Don’t know
- R (DO NOT READ) Refused

28. A sexually transmitted infection, such as chlamydia, gonorrhea, syphilis, or trichomoniasis (also known as Trich)?

- 1 Yes
- 2 No
- D (DO NOT READ) Don’t know
- R (DO NOT READ) Refused

Our next few questions are about your sexual relationships and practices. Remember that your answers will be kept strictly confidential. When we talk about a sex partner, we mean any person, male or female, with whom you had sex, even if it was just once. By sex, we mean oral sex, vaginal sex, or anal sex. The next questions are about your VOLUNTARY sex experiences.

29. How old were you the first time you had sex?

\_\_\_\_\_ (age 9-60)

- N (DO NOT READ) Never had sex(GO TO Q.35)
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

31. How many different sex partners have you ever had? Remember, we are talking about people you had oral, vaginal or anal sex with. If you don't know the exact number, please give your best estimate.

\_\_\_\_\_ (RANGE 1-100)

- 101 More than 100
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

31a. I am going to read some ranges. You can just stop me when I get to the right category.

Can you tell me if you have had:

- 1 Five or fewer
- 2 Six to ten
- 3 Eleven to 29, or
- 4 Thirty or more sexual partners
- D(DO NOT READ) Don't know
- R(DO NOT READ) Refused

Again I want to remind you that these questions are asking about your sexual relationships and practices over your entire lifetime.

32. Female: Have you ever been pregnant?/Male: Have you ever gotten someone pregnant?

- 1 Yes
- 2 No
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

(ASK Q33 IF Q32 = 1)

33. Female: When your first pregnancy began, did you intend to get pregnant at that time in your life?/ Male: When you got someone pregnant for the first time, did you intend to get them pregnant at that time in your life?

- 1 Yes
- 2 No
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

(ASK Q34 IF Q32 = 1)

34. Female: How old were you when you first became pregnant?/ Male: How old were you when you first got someone pregnant?

- \_\_\_\_\_ (age 9-60)
- D (DO NOT READ) Don't know
  - R (DO NOT READ) Refused

(ASK Q34a IF Q34 = D)

34a. We understand that you may not remember your exact age. Please try to recall your age range. Were you...(READ LIST)?

- 1 Less than 15 years old
- 2 Between 15 and 19 years
- 3 Between 20 and 24 years
- 4 Between 25 and 29 years
- 5 Between 30 and 34 years
- 6 35 years or older
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

Now, a few questions about various personal health behaviors.

35. Have you ever used or injected illicit drugs, such as marijuana, cocaine, including crack, hallucinogens, inhalants, heroin, or prescription drugs that were not prescribed for you, including OxyContin, Xanax, or Adderall?

- 1 Yes
- 2 No
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

36. In the past year, have you had two or more weeks of being in a depressed mood, that is feeling down, depressed, or hopeless, or had little interest in doing things?

- 1 Yes
- 2 No
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

37. Have you ever attempted to commit suicide?

- 1 Yes
- 2 No
- D (DO NOT READ) Don't know
- R (DO NOT READ) Refused

And now, a couple general questions:

38. Did you grow up in the city of Philadelphia? (PROBE, IF RESPONDENT IS UNSURE: Did you live in Philadelphia for at least a significant amount of time, when you were growing up, during the first 18 years of your life?)

- 1 Yes, grew up or spent a significant part of first 18 years of life in Philadelphia
- 2 No
- D (DO NOT READ) Don't know/Not Sure
- R (DO NOT READ) Refused

(ASK Q39 IF Q38 = 2,D,R)

39. What State did you grow up in?

(PROBE, IF RESPONDENT IS UNSURE: What state did you live in for most of the first 18 years of your life?)

01 \_\_\_\_\_ (State)

6 (DO NOT READ) Grew up in another country (Specify) \_\_\_\_\_

N (DO NOT READ) Moved around all of the time – didn't grow up any particular place

D (DO NOT READ) Don't know

R (DO NOT READ) Refused

40. And what city or county did you grow up in?

01 Baltimore, MD

02 Boston, MA

03 Camden, NJ

04 Chicago, IL

05 Las Vegas, NV

06 Los Angeles, CA

07 New York, NJ

08 Newark, NJ

09 Norristown, PA

10 Seattle, WA

11 Trenton, NJ

12 Wilmington, DE

13 Washington, DC

97 \_\_\_\_\_ (Specify city or county)

NN Moved around all of the time – didn't grow up any particular city or county

DD don't know

RR refused

**For information about the Philadelphia ACE Telephone Survey, contact:**

**Martha Davis**

**Executive Director**

**Institute for Safe Families**

**215-843-2046**

**Mary Harkins-Schwarz**

**Senior Research Associate**

**Public Health Management Corporation**

**215-985-2082**



## **APPENDIX B**

# **COMPARISON OF ACE QUESTIONS FROM THE PHILADELPHIA URBAN ACE SURVEY, KAISER ACE STUDY, AND BRFSS ACE MODULE**

COMPARISON OF ACE QUESTIONS FROM THE PHILADELPHIA URBAN ACE SURVEY, KAISER ACE STUDY, AND BRFSS ACE MODULE

Indicator	Philadelphia Urban ACE Survey	Kaiser ACE	BRFSS ACE
<b>ABUSE</b>			
Emotional Abuse	While you were growing up how often did a parent, step-parent, or another adult living in your home swear at you, insult you, or put you down? <b>More than once</b> , once, never	Did a parent or other adult in the household... Often or very often swear at, insult, or put you down? Often or very often act in a way that made you afraid that you would be physically hurt?	How often did a parent or adult in your home ever swear at you, insult you, or put you down? <b>More than once</b> , once, never
	While you were growing up how often did a parent, step-parent, or another adult living in your home act in a way that made you afraid that you would be physically hurt? <b>More than once</b> , once, never		
Physical Abuse	While you were growing up did a parent, step-parent, or another adult living in your home push, grab, shove, or slap you? <b>More than once,once</b> , never	Did a parent or other adult in the household... Often or very often push, grab, shove, or slap you? Often or very often hit you so hard that you had marks or were injured?	How often did your parents or an adult in your home ever hit, beat, kick or physically hurt you in any way? <u>Do not include spanking.</u> <b>More than once,once</b> , never
	While you were growing up did a parent, step-parent, or another adult living in your home hit you so hard that you had marks or were injured? <b>More than once,once</b> , never		
Sexual Abuse	During the first 18 years of life, did an adult or older relative, family friend, or stranger who was at least five years older than yourself ever touch or fondle you in a sexual way or have you touch their body in a sexual way? Attempt to have or actually have any type of sexual intercourse, oral, anal or vaginal with you?	Did an adult or person at least 5 years older ever... Touch or fondle you in a sexual way? Have you touch their body in a sexual way? Attempt oral, anal, or vaginal intercourse with you? Actually have oral, anal, or vaginal intercourse with you?	How often did anyone at least 5 years older than you or an adult ever touch you sexually?... try to make you touch them sexually?...force you to have sex?... <b>More than once, once</b> , never
<b>NEGLECT</b>			
Emotional Neglect	There was someone in your life who helped you feel important or special. Very often true, often true, sometimes true, <b>rarely true, never true</b>	Did you <b>often</b> feel that no one in your family loved you or thought you were important or special? Did you <b>often</b> feel that your family didn't look out for each other, feel close to each other, or support each other?	Not asked

Indicator	Philadelphia Urban ACE Survey	Kaiser ACE	BRFSS ACE
Physical Neglect	Your family sometimes cut the size of meals or skipped meal because there was not enough money in the budget for food. <b>Very often true, often true, sometimes true, rarely true, never true</b>	Did you <b>often</b> feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? Did you <b>often</b> feel that your parents were too drunk or high to take care of you or take you to the doctor if you needed it?	Not asked
<b>HOUSEHOLD DYSFUNCTION</b>			
Domestic Violence	How often, if ever, did you see or hear in your home a parent, step parent, or another adult who was helping to raise you being slapped, kicked, punched, or beaten up? <b>Many times, a few times, once, never</b>	Was your mother or stepmother Sometimes, often, or very often pushed, grabbed, slapped, or had something thrown at her? Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something very hard? Ever repeatedly hit over at least a few minutes? Ever threatened with, or hurt by, a knife or gun?	How often did your parents or adults in your home ever slap, hit, kick, punch, or beat each other up? <b>More than once, once</b>
Household Substance Abuse	Did you live with anyone who was a problem drinker or alcoholic? Did you live with anyone who used illegal street drugs or who abused prescription medications?	Live with anyone who was a problem drinker or alcoholic? Live with anyone who used street drugs?	Did you live with anyone who was a problem drinker or alcoholic? Did you live with anyone who used illegal street drugs or who abused prescription medications?
Household Mental Illness	While you were growing up.. Did you live with anyone who was depressed or mentally ill? Did you live with anyone who was suicidal?	Was a household member depressed or mentally ill? Did a household member attempt suicide?	Did you live with anyone who was depressed, mentally ill, or suicidal?
Parental Separation or Divorce	Not asked	Were your parents ever separated or divorced?	Were your parents separated or divorced?
Incarcerated Household Member	Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility? <b>Yes or No</b>	Did a household member go to prison?	Did you live with anyone who served time or was sentenced to serve time in prison, jail, or other correctional facility?
<b>URBAN ACE INDICATOR</b>			
Witness Violence	How often, if ever, did you see or hear someone being beaten up, stabbed, or host in real life? <b>Many times, a few times, once, never</b>	Not asked	Not asked

Indicator	Philadelphia Urban ACE Survey	Kaiser ACE	BRFSS ACE
Felt discrimination	While you were growing up...How often did you feel that you were treated badly or unfairly because of your race or ethnicity? <b>Very often true, often true, sometimes true, rarely true, never true</b>	Not asked	Not asked
Adverse Neighborhood experience	Did you feel safe in your neighborhood? All of the time, most of the time, <b>some of the time, none of the time</b> Did you feel people in your neighborhood looked out for each other, stood up for each other, and could be trusted? All of the time, most, <b>some, none of the time</b>	Not asked	Not asked
Bullied	How often were you bullied by a peer or classmate? <b>All of the time, most of the time, some of the time, none of the time</b>	Not asked	Not asked
Lived in foster care	Were you ever in foster care?	Not asked	Not asked