

# THE ECONOMICS OF CHILD ABUSE

A STUDY OF SAN FRANCISCO

A REPORT BY:



# INTRODUCTION

## APPRECIATION

This report was prepared in collaboration between the San Francisco Child Abuse Prevention Center and the Haas School of Business at University of California, Berkeley.

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In 2015, as many as one out of every 25 children in San Francisco was involved in a case of alleged or suspected abuse.<sup>iii</sup> Signs of child abuse are often difficult to detect, and many victims cannot or do not speak up because of young age, fear, shame, or guilt. The physical, mental, and emotional effects persist long after maltreatment occurs.

Moreover, child abuse has serious effects far beyond those for the direct victim. Maltreatment also results in ongoing costs to taxpayers, institutions, businesses, and society at large. Local communities bear the brunt of these costs in the form of medical, educational, and judicial costs as well as the diminished economic productivity of its workforce. We estimate that the annual economic burden of child maltreatment to the community of San Francisco was **\$400,533 per child victim** in 2015, equivalent to a **total annual burden of \$301.6 million**. Given that child abuse is vastly underreported, the total economic burden to the city could be **as much as \$5.6 billion per year**. Moreover, not all costs resulting from maltreatment can be quantified, which indicates that both the cost per victim and total cost are likely significantly higher.

By identifying and quantifying the extent of these costs and exploring the ways in which they ripple through our community, this report aims to:

- Spark widespread discussion around the devastating long-term impact of child abuse on the San Francisco community
- Shed light on the extent of risk factors for maltreatment in San Francisco and highlight the need to target high-risk groups and develop community and family protective factors
- Articulate the significant and negative impact of child abuse on the community and provide a foundation for future research that will enhance our collective understanding of the extent and nature of child maltreatment costs

We believe that the destructive effects of child abuse to victims, their families, and our community as a whole can be avoided. Through the collective action of everyone in every sector in our city, we can eliminate child abuse in San Francisco.



# OVERVIEW OF CHILD ABUSE

## WHAT DOES CHILD ABUSE LOOK LIKE IN SAN FRANCISCO?

Across the United States, child abuse remains a pervasive — though largely invisible — burden on communities. Although the symptoms of maltreatment can be difficult to detect, the impact to victims is devastating. Indeed, while victims of neglect may not bear obvious wounds, they comprise the majority of maltreatment victims<sup>[2]</sup> and suffer long term consequences that are equally as harmful as other types of abuse.<sup>[3]</sup> Even in San Francisco, a city with one of the highest average incomes and one of the lowest number of children per capita in the country, child abuse has a significant and undeniable impact. In 2015, there were **5,545 reports** of child abuse

in San Francisco, of which **753 cases were substantiated** (confirmed to be maltreatment after investigation by Child Protective Services). In other words, four percent of the city's children were suspected victims of child maltreatment, and 14 percent of suspected cases were confirmed.<sup>[4]</sup> Rates of reporting and substantiation can also vary across types of abuse — for example, emotional abuse can be more difficult to detect and thus is more likely to lack the evidence necessary for substantiation than physical abuse. In addition, per reports, child abuse disproportionately affects minorities and people of color.

## WHAT IS CHILD ABUSE?

ANY ACT THAT ENDANGERS A CHILD'S PHYSICAL OR EMOTIONAL HEALTH OR DEVELOPMENT

TYPE	DEFINITION <sup>[5]</sup>	% OF CASES IN SF IN 2015 <sup>[6]</sup>
NEGLECT	Failure to provide for a child's basic physical, educational, or emotional needs	<b>REPORTED</b> <ul style="list-style-type: none"> <li>PHYSICAL 26.9%</li> <li>SEXUAL 7.3%</li> <li>EMOTIONAL 3.7%</li> <li>NEGLECT 62.1%</li> </ul>
PHYSICAL	Physical injury resulting from hitting, kicking, shaking, burning, or otherwise harming a child	
SEXUAL	Includes indecent exposure, fondling, rape, or commercial exploitation through prostitution or the production of pornographic materials	
EMOTIONAL	Any pattern of behavior that impairs a child's emotional development or sense of self-worth, including constant criticism, threats, rejection, and exposure to family violence	
		<b>SUBSTANTIATED</b> <ul style="list-style-type: none"> <li>PHYSICAL 12.4%</li> <li>SEXUAL 3.5%</li> <li>EMOTIONAL 2.7%</li> <li>NEGLECT 81.6%</li> </ul>

## WHO IS AT RISK FOR CHILD ABUSE?

A widely accepted and longstanding body of research points to a multitude of child, parent / caregiver, family, and community factors that can increase the likelihood of child maltreatment. The presence of these risk factors does not automatically lead to abuse — rather, recent research suggests that child maltreatment arises from the interaction of risk factors across these domains by compounding families' stressors. Additionally, factors may play different roles in various forms of child maltreatment.<sup>[7]</sup>

Conversely, research is proving that there are five commonalities that healthy families, free from abuse, share. These five protective factors can be supported and strengthened within vulnerable families to combat risk factors and prevent incidences of child abuse.

### RISK FACTORS<sup>[8]</sup>

#### CHILDREN

- Younger than 4-years-old (particularly for fatal incidents)
- Adolescents (particularly for sexual abuse)
- Special physical or mental needs

#### PARENTS & CAREGIVERS

- Lack of understanding about children's needs, child development, and parenting skills
- History of child abuse in the family
- Substance abuse or mental health issues
- Young, single, non-biological parents, or transient caregivers
- Low levels of education
- Large number of dependent children
- Low levels of income / financial difficulties
- Thoughts and emotions supporting abusive behaviors

#### FAMILIES

- Social isolation
- Family disorganization, dissolution, and violence (including intimate partner violence)
- Parenting stress
- Poor parent-child relationships and negative interactions

#### COMMUNITIES

- Social and socioeconomic inequality
- High poverty
- High residential instability / lack of adequate housing
- Poor social connections
- Community violence
- High unemployment rates
- High density of alcohol outlets

### PROTECTIVE FACTORS<sup>[9]</sup>

#### SOCIAL & EMOTIONAL COMPETENCE OF CHILDREN

Family and child interactions that help children develop the ability to communicate clearly, recognize and regulate their emotions, and establish and maintain relationships

#### KNOWLEDGE OF CHILD DEVELOPMENT

Understanding parenting strategies that support physical, cognitive, language, social, and emotional development

#### PARENTAL RESILIENCE

Managing stress and functioning well when faced with challenges, adversity, and trauma

#### SOCIAL CONNECTIONS

Positive relationships that provide emotional, informational, instrumental, and spiritual support

#### CONCRETE SUPPORT IN TIMES OF NEED

Access to concrete support and services that address a family's needs and help minimize stress caused by challenges



## WHAT DOES THIS MEAN FOR THE SAN FRANCISCO COMMUNITY?

Despite San Francisco's relative affluence and progressive social policies, community risk factors for child maltreatment are particularly prevalent in the city. Growing income disparities increase the likelihood of child maltreatment across the city, especially for low income communities, and exacerbate residential instability and the lack of affordable housing. At the same time, social isolation resulting from low rates of families with young children, emigration, and large immigrant populations can hinder social connections and support networks for families.

### HIGH INCOME INEQUALITY

Based on 2014 household income, San Francisco had the ninth highest income inequality of all major cities in the U.S., and the San Francisco-Oakland-Hayward area was ranked third relative to all metropolitan areas in the country.<sup>[11]</sup> While inequality increases the risk for child maltreatment across the socio-economic spectrum, low-income communities are disproportionately affected.<sup>[12]</sup>

### POOR HOUSING AFFORDABILITY

In 2015, the California Association of Realtors ranked San Francisco the least affordable county in California to live in.<sup>[13]</sup> Since the 1980s, the growth of housing prices in San Francisco has outpaced that of every other major city but New York City. And since 2010, the ratio of house prices to median household income has outstripped every other city.<sup>[14]</sup> In addition to increasing families' stress, a deficiency of affordable housing often leads to co-habitation of families. Increasing the number of transient caregivers in a child's life can lead to a higher risk of abuse.

### HOMELESSNESS

As an extreme consequence of insufficient housing, in 2015, an estimated 3,222 homeless children lived in San Francisco. This represents a 94 percent increase — an alarming rate of growth — since 2007.<sup>[15]</sup> Like the rest of California, the percentage of San Francisco public school students who were homeless was nearly five percent in 2013-14, compared to a national average of less than three percent.<sup>[16]</sup> Moreover, on a single night, measuring a point-in-time of acuity, nearly half of all homeless families in San Francisco reported having experienced domestic abuse.<sup>[17]</sup>

### EMIGRATION TO SURROUNDING COMMUNITIES

Faced with rising housing costs, families are increasingly being pushed out of San Francisco into the surrounding Bay Area. This ongoing trend has long been recognized as problematic, and impacts not just low-income families, but also middle-income families who struggle with the city's high prices of healthcare, food, transportation, and childcare.<sup>[18]</sup> This contributes to the low percentage of families and children in the city, leading to deteriorated social and support networks for both families who stay and those who leave.

## BUILDING PROTECTIVE FACTORS

**In 2009, the Family Resource Center Initiative jointly led and funded by Department of Children, Youth and Their Families, First Five San Francisco, and Human Services Agency of Francisco established a coordinated, city-wide system of agencies and community organizations to:**

- **Provide families access to needed services to build family resilience, concrete supports & social connections**
- **Build parent knowledge & skills**
- **Provide intensive support for families in need, including case management & counseling**
- **Promote community development<sup>[10]</sup>**





## LOW NUMBER OF FAMILIES & YOUNG CHILDREN

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In part due to skyrocketing housing costs, San Francisco has become a city composed primarily of working-age adults without children. As of July 2014, only 13 percent of San Francisco's population were children under 18, compared to state and national averages of 24 percent and 23 percent, respectively.<sup>[19]</sup> Indeed, according to the last census estimate available for all cities, San Francisco had the lowest percentage of both children under 18 and children under 5 out of the 50 largest cities in the U.S.<sup>[20]</sup> Similarly, only 18 percent of households in San Francisco in 2014 had children, compared to 36 percent in California and 32 percent nationwide.<sup>[21]</sup> As a result, issues related to child welfare are not top of mind in San Francisco, and the consequences of child maltreatment may be even less perceptible to the average resident. Moreover, low numbers of families with children weaken social networks and limit support systems available to families and children, which can be critical for guarding against parental and familial stressors.

## LARGE IMMIGRANT POPULATION

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Like many urban areas, San Francisco has a large and diverse immigrant population. Thirty five percent of San Francisco residents are either naturalized U.S. citizens or non-U.S. citizens.<sup>[22]</sup> Immigrants and their children comprise 43 percent of the Bay Area population, while 42 percent of Bay Area residents speak a language other than English at home.<sup>[23]</sup> Immigrant status alone is not a risk factor for maltreatment, it is however, frequently associated with stressors such as cultural and language differences, prejudice and discrimination, family disruption, confusing interactions with institutions (such as schools, courts, and hospitals), fear of deportation for undocumented immigrants, social isolation,<sup>[24]</sup> and residential segregation. And, while immigrants in San Francisco are, on average, more highly-skilled and highly-educated than not,<sup>[25]</sup> certain immigrant groups have remained trapped in low-wage sectors with little to no opportunity for upward mobility.<sup>[26]</sup>

## COMMUNITY VIOLENCE

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In 2012, the latest year for which the FBI has crime statistics on a county level, there were 704 incidents of violent crime per 100,000 in San Francisco, compared with a national average rate of 388 per 100,000 and a state average rate of 423 per 100,000, driven largely by above average rates of homicide and

robbery.<sup>[27]</sup> A culture of violence leads to a higher incidence of trauma, strain, and fear, and can increase the likelihood of child maltreatment occurring.

## HIGH UNEMPLOYMENT RATES

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The average rate of unemployment in San Francisco tends to closely mirror the national average,<sup>[28]</sup> however, unemployment rates for certain groups within the city fare significantly worse. For example, in July 2015, the unemployment rate for African Americans in San Francisco was more than double the city's average, while the unemployment rate for young workers (age 16-19) was four times the average.<sup>[29]</sup> High levels of unemployment increase economic uncertainty and stress levels for parents and families.

## HIGH DENSITY OF ALCOHOL OUTLETS

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The ratio of liquor stores to residents in San Francisco is 20 to 30 percent higher than both the state and national average,<sup>[30]</sup> and greater than more than half of all counties nationwide.<sup>[31]</sup> Harmful levels of alcohol use can increase interpersonal violence, impair parents' sense of responsibility toward their children, and reduce the amount of time and money available to spend on children.<sup>[32]</sup>

## INDIVIDUALS SERVED BY SAN FRANCISCO FAMILY RESOURCE CENTERS IN 2014-15<sup>[33]</sup>:

67% WERE IN NEIGHBORHOODS WITH HOUSEHOLD INCOMES LESS THAN THE CITY MEDIAN

68% WERE NON-ENGLISH SPEAKERS  
THE MAJORITY WERE SPANISH, MANDARIN, OR CANTONESE

39% WERE LATINO,  
38% ASIAN,  
12% AFRICAN AMERICAN,  
& 6% WHITE

## HOW PROTECTIVE FACTORS ADDRESS RISK OF ABUSE BEFORE IT OCCURS

Prevention programs aim to provide emotional, social, and financial support in concert with the education and community needed to mitigate risk factors and prevent potential incidences of child maltreatment. In addition to directly addressing risk factors, research has identified five protective factors that should be strengthened within families to reduce the likelihood of abuse.<sup>[34]</sup>

Providing children and families with counseling, parenting skills, social-emotional learning, and concrete support has been shown to increase known **family protective factors**: child's social and emotional competence; knowledge of parenting and child development; parental resilience; social connections; and concrete support in times of need. These outcomes in turn decrease the likelihood of abuse and the effects of adverse childhood experiences.<sup>[35]</sup> Targeted interventions and support boost protective factors that give families the stability they need to keep their children safe and enable them to overcome adversity and thrive — socially, emotionally, and intellectually.

Equally true, strong community protective factors decrease the likelihood for abuse. **Community protective factors** include: strengthening economic supports to families; changing social norms to support parents and positive parenting; ensuring stable housing, access to healthcare, social services, safe parks and community activities; and, providing quality care and education at the start and throughout school.<sup>[36]</sup>

If maltreatment occurs, however, early intervention and effective treatment is crucial for mitigating negative consequences and limiting the cyclical effects of abuse. For victims, early identification and intervention is essential to prevent chronic maltreatment (i.e., recurrent incidents or a prolonged period of maltreatment) that can lead to even worse outcomes.<sup>[37]</sup> For families, access to counseling and supportive services can help reduce the likelihood of perpetuating abuse across generations.



# QUANTIFYING THE ECONOMIC IMPACT OF CHILD ABUSE

## RESULTS

The lifelong physical, mental, and emotional harm felt by child abuse victims ripples throughout communities and burdens governments, institutions, businesses, and community members.

We estimate that the **total economic burden was \$400,533 per victim** of child maltreatment in San Francisco in 2015. This translates into an **annual burden of \$301.6 million** for the 753 substantiated cases of child maltreatment in the city in 2015.

## METHODOLOGY

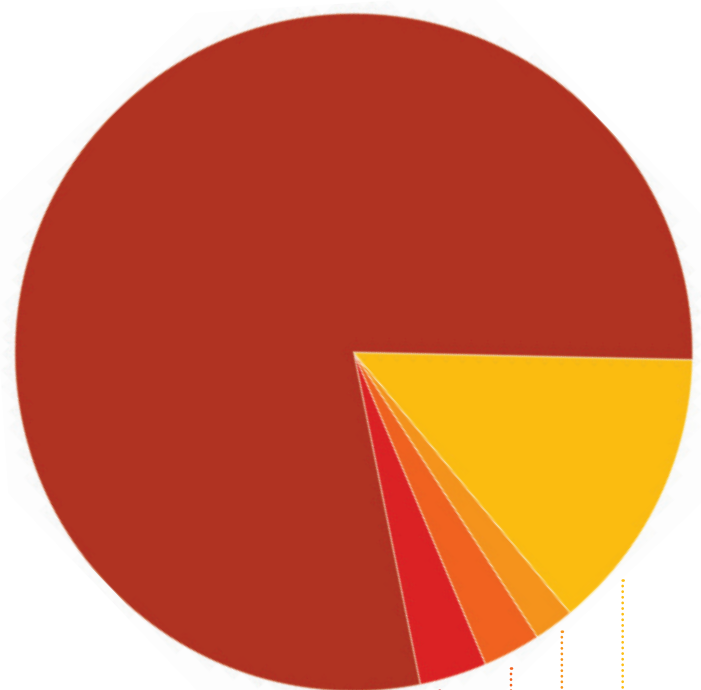
Our analysis employs an incidence-based approach, meaning that we estimate the total lifetime costs resulting from new cases of child maltreatment that occur within a specific time period.<sup>[38]</sup> Using this approach, we employed the following steps to estimate the total economic burden of child maltreatment in 2015:

1. We calculated the present value of the economic burden resulting from each broad category of adverse outcomes for each case of child maltreatment.
2. We calculated the total lifetime impact per victim as the sum of these economic burdens.
3. We calculated the annual economic burden by multiplying the lifetime impact per victim by the number of cases substantiated in 2015.

To calculate the economic burden of each category of costs, we drew on several research studies that estimate the cost to taxpayers or loss to businesses as a result of each category.<sup>[39]</sup> Utilizing these research studies had two primary limitations: 1) older studies may not accurately reflect current costs, and 2) studies may not fully capture all of the costs resulting from child maltreatment due to lack of data.

For a more detailed description of the methodology used to estimate the economic burden, including assumptions underlying the calculations and limitations of the available research and data, see the Technical Appendix.

### PER VICTIM COST BREAKDOWN OF THE ECONOMIC BURDEN



**\$314,417**  
LIFETIME PRODUCTIVITY

**\$12,891**  
EDUCATION

**\$11,035**  
CHILD WELFARE

**\$7,637**  
CRIMINAL JUSTICE

**\$54,553**  
HEALTHCARE



# WHAT ARE THE PRIMARY COST CATEGORIES?

Cases of child maltreatment result in economic costs that continue throughout a victim’s childhood and adulthood. The following section provides a summary of each cost included in non-fatal, as well as fatal cases of child maltreatment.

## CHILD WELFARE

The estimation for an average cost of child welfare services provided throughout a victim’s childhood is **\$11,035**. This number includes intervention services, foster care, and counseling services provided by child welfare agencies to victims of maltreatment. Child welfare costs are calculated by dividing California’s total expenditure on child maltreatment cases in a year<sup>[40]</sup> by the number of cases investigated in that year.<sup>[40]</sup> It is important to note that this estimate masks the huge range of costs, particularly those associated for children who enter the foster care system.



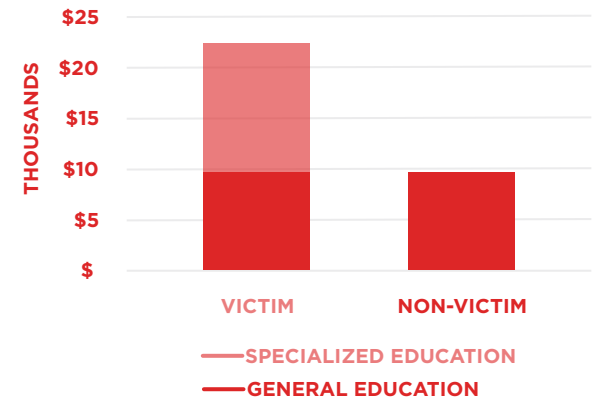
## EDUCATION

The estimation for the average cost of special education services per victim is **\$12,891**. Previous research has found that, as a result of poor behavioral outcomes and / or learning disabilities stemming from the trauma of abuse, maltreated children are 77 percent more likely to require special education than non-maltreated children.<sup>[42]</sup> Victims also exhibit higher rates of school absenteeism and poorer academic performance.<sup>[43]</sup> The economic cost of these impacts is manifested in victims’ future employment and earnings (see lifetime productivity). Special education costs are estimated by multiplying the annual cost of special education in California by the increased chance of a child receiving special education, multiplied by the average number of a victim’s remaining years in the education system.<sup>[44]</sup>

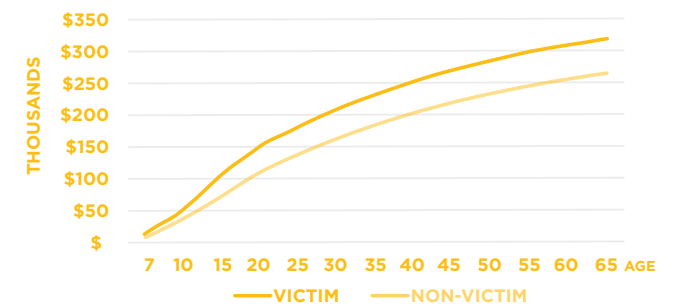
## HEALTHCARE

The estimation for the total childhood and adulthood healthcare costs are **\$41,025** and **\$13,528** on average per victim, respectively. In the short term, victims of child abuse may require inpatient hospital care, mental health services, prescription drugs, or chronic disease care. Victims also suffer negative health impacts throughout their lives, including higher incidence of chronic health problems, mental health issues, substance abuse, and risky sexual behavior.<sup>[45]</sup> To estimate increased healthcare costs during childhood, we relied on research that calculates the difference between Medicaid claims for children who were maltreated and comparable children who were not maltreated.<sup>[46]</sup> For adult healthcare costs, we relied on research that found that long-term healthcare costs for victims of physical and sexual abuse were 21 percent higher than for non-victims.<sup>[47]</sup> Both childhood and adulthood figures were adjusted to account for higher healthcare costs in San Francisco.<sup>[48]</sup>

### EDUCATION COSTS



### CUMULATIVE HEALTHCARE COSTS



## CRIMINAL JUSTICE

The estimation for the total childhood and adulthood criminal justice costs are **\$2,188** and **\$5,450** per victim on average, respectively. Victims of child abuse are more likely to be involved in the juvenile justice system, more likely to be involved in criminal behavior, and more likely to be arrested or incarcerated as adults. Research has found that maltreated children are 59 percent more likely to be arrested as juveniles than their non-maltreated peers.<sup>[49]</sup> We used the average cost of a juvenile arrest to the criminal justice system to estimate the cost of increased juvenile criminality.<sup>[50]</sup> Similarly, child abuse victims are 28 percent more likely to have an adult criminal record than non-victims.<sup>[51]</sup> We used the average social cost of an adult crime — including the costs of arrest, judicial processing, and treatment — to estimate the cost of increased adult criminality.<sup>[52]</sup>

**59%**

**MORE LIKELY TO BE ARRESTED  
AS A CHILD / JUVENILE  
\$26,000 AVERAGE COST  
OF CHILDHOOD / JUVENILE  
ARREST**

**28%**

**MORE LIKELY TO BE ARRESTED  
AS AN ADULT  
\$95,000 AVERAGE COST OF  
ADULT ARREST**

## FATAL CASES

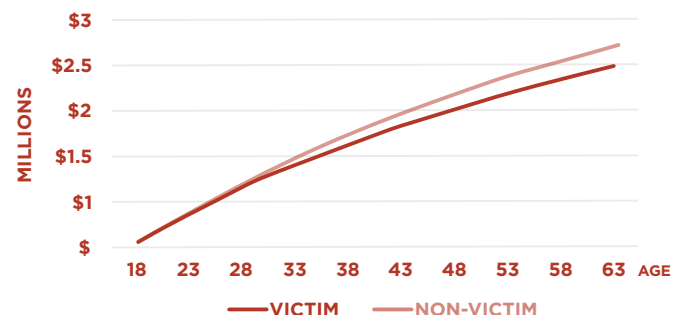
Fatal cases of child maltreatment, which tragically involve children less than 4-years-old in approximately 80 percent of cases,<sup>[58]</sup> result in a one-time medical cost of **\$17,654**<sup>[59]</sup> and the loss of that child's potential lifetime earnings of **\$2,641,995**.<sup>[60]</sup>

**\$2,659,649** COST PER FATAL CASE  
OF CHILD ABUSE

## LIFETIME PRODUCTIVITY

The estimation for the total lifetime loss of productivity per victim is **\$314,417**. Not only does this indicate worse economic outcomes for victims and their families, it also reflects value lost to businesses in San Francisco and harm to the economic vitality of the city. By the time victims enter the workforce as adults, the confluence of the negative impacts discussed in this report can significantly hinder their employment opportunities and lifetime productivity. Victims of child maltreatment are more likely to be absent from school and more likely to perform poorly in school as adolescents,<sup>[53]</sup> chronic health problems can make it more difficult to remain employed, while having a criminal record can limit their employability. Previous research has found that adolescent victims of child abuse were twice as likely to be unemployed as adults than their non-maltreated peers and are more likely to receive public assistance.<sup>[54]</sup> Using lifetime wages as a proxy for productivity (a common approach in labor economic theory<sup>[55]</sup>), we relied on existing research to estimate the annual loss of earnings for victims of child abuse compared to non-victims.<sup>[56]</sup> We then multiplied this annual loss by an adult's expected number of years in the workforce and adjusted this figure to account for higher expected earnings in San Francisco, resulting in an annual loss of \$12,421.<sup>[57]</sup>

### LIFETIME EARNINGS



## A CONSERVATIVE ESTIMATE

The methodology described results in a conservative estimate of the total economic burden, primarily because 1) not all cases meet the evidentiary threshold to be confirmed as a case of abuse even if maltreatment may have occurred, 2) child maltreatment incidents are widely underreported; and 3) child maltreatment results in a number of costs that have not yet been quantified.

### UNDER-SUBSTANTIATION

A certain number of reported cases of child abuse cannot be fully investigated by child welfare agencies, do not have the necessary evidence, or do not meet the threshold of severity to warrant official action, but can still cause significant trauma to the child involved and can result in many of the costs described previously.

## \$2.2 BILLION

Using the number of reported cases (instead of substantiated cases) to estimate the total economic burden implies an annual cost of \$2.2 billion.

### UNDERREPORTING

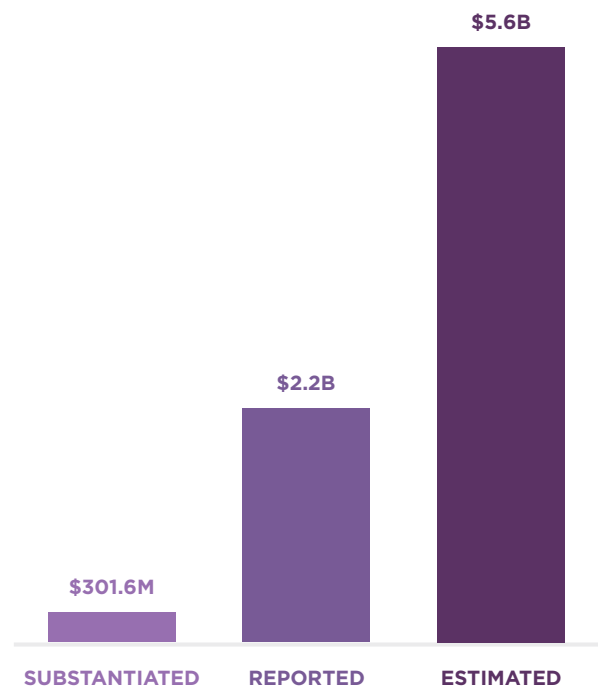
Cases of child maltreatment can go unreported for a number of reasons. Victims may be too young to speak up or to recognize a perpetrator's actions as abuse, or they may remain silent out of fear, guilt, or shame. Adults may be reluctant to report suspected cases of maltreatment for fear of interfering or because they are not able to recognize less obvious signs of maltreatment.

## \$5.6 BILLION

By one well-respected estimate, 11.5 percent of all children will become a victim of abuse,<sup>[6]</sup> which implies that the total economic burden in San Francisco could be as high as \$5.6 billion.

### UNQUANTIFIED COSTS

Research suggests that child maltreatment may be associated with a host of additional consequences for victims throughout their lives, such as reduced life expectancy, decreased quality of life, negative parenting behaviors, and an increased likelihood of homelessness, divorce, and domestic abuse.<sup>[62]</sup> While there is currently insufficient research to quantify the costs resulting from these effects, they are likely to significantly increase the actual cost of maltreatment. In particular, research suggests that about one-third of all individuals who were abused as children will subject their own children to abuse,<sup>[63]</sup> which has important intergenerational consequences. This implies that the social cost of child maltreatment continues across generations, and that preventing a single case of child maltreatment in the present can save future children from the same fate.



# IMPLICATIONS OF REPORT

## RESEARCH

While this report lays the groundwork for understanding the impact that child abuse has on our community, further research needs to be done to paint a more complete picture. In particular, the following research would improve the understanding of the full extent and nature of the economic burden:

- Accurate assessments of local costs, based on spending by local institutions and agencies and local markets and economic conditions
- Estimates of costs that have not yet been quantified, such as reduced life expectancy, decreased quality of life, increased risk of homelessness, divorce, and domestic abuse, and negative parenting behaviors and intergenerational effects of maltreatment
- The extent to which prevention and intervention programs can mitigate or avoid economic costs resulting from child abuse

## POLICY

A robust public-private collaborative is needed to create policies and practices that:

- Develop and implement effective screening tools and services that identify families and individuals most at-risk for abuse
- Bolster individual, family, and community protective factors, particularly for high-risk groups
- Address local risk factors and root causes of child maltreatment
- Raise community awareness of all of the above

## COLLECTIVE ACTION

The economic cost per victim is a conservative estimate of the value to our community of preventing a single case of child maltreatment. We believe that the economic burden of child maltreatment to San Francisco is avoidable, and that everyone in our community has a role to play in prevention. Child abuse in San Francisco can be eliminated by:

- Implementing a systemic public health approach, which focuses on identifying and reducing the relative level of risk for both individuals and entire population, as well as enhancing and building protective factors within families and the community at-large
- Linking existing services to ensure that victims receive needed care to heal and break the cycle of abuse and that all children and caregivers have support to strengthen their protective factors
- Promoting prevention education that focus on increasing the general awareness of risk for maltreatment and individual and community protective factors — ensuring that everyone knows how to take action to protect children from child abuse

In January 2015, the San Francisco Child Abuse Prevention Center set a goal of eliminating child abuse in San Francisco within two generations, or about 50 years. By ensuring that every family in San Francisco has access to effective prevention and intervention services, we can all play a part in ensuring that the city's 122,000 children live up to their fullest potential.

**122,000**  
CHILDREN IN SAN FRANCISCO  
DESERVE TO BE SAFE





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# TECHNICAL APPENDIX

## INTRODUCTION

The purpose of the Technical Appendix is to provide a more detailed discussion on the methodologies, assumptions, and sources used to complete the cost estimate for the economic burden of child maltreatment in San Francisco.

## THE ANALYSIS

To determine our final methodology, we performed a broad literature review of reports written on the economic cost of child maltreatment or similar social issues and closely analyzed their methodologies and data sources. Reports covered a wide range of topics — child maltreatment, incarceration, education, and substance abuse — and spanned multiple geographies. We compared the different approaches and underlying studies used to support each analysis and determined best practices for our analysis.

## STUDIES REVIEWED

*A Cost-Savings Analysis of a Statewide Parenting Education Program in Child Welfare*  
Casey Family Programs 2012

*Economic burden of occupational injury and illness in the United States*  
Center for Healthcare Policy and Research and Department of Public Health Sciences 2010

*The economic burden of child maltreatment in the United States and implications for prevention*  
Centers for Disease Control and Prevention 2011

*Social Cost of Child Abuse in Japan*  
Child Abuse and Neglect: The International Journal 2014

*The Influence of Geographical and Economic Factors in Estimates of Childhood Abuse*  
Child Abuse and Neglect: The International Journal 2016

*Long-Term Consequences of Child Abuse and Neglect*  
Child Welfare Information Gateway 2013

*Child Maltreatment 2013*  
Children's Bureau 2013

*Cumulative Risk of Child Protective Service Involvement before Age 5: A Population-Based Examination*  
Children's Data Network 2013

*The nature of economic costs from child abuse and neglect in New Zealand*  
Every Child Counts 2010

*The economic costs of substance abuse treatment: Updated estimates and cost bands for program assessment and reimbursement*  
Journal of Substance Abuse Treatment 2008

*Guidelines and challenges for estimating the economic costs and benefits of adolescent substance abuse treatments*  
Journal of Substance Abuse Treatment 2008

*Economic and Fiscal Impacts of Child Sexual Abuse in Florida*  
Lauren's Kids 2015

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*The Cost of Child Abuse in Australia*  
Monash University 2008

*The economic impact of child maltreatment in the United States: Are the estimates credible?*  
Phaedra S. Corso, Angela R. Ferti 2010

*Estimated annual cost of child abuse and neglect*  
Prevent Child Abuse America 2012

*Domestic Violence: An Economic Analysis*  
Review of Social Economy, 55(3):337-58 1997

*Cost effectiveness of early intervention programs in Queensland*  
Social Policy Research Centre, UNSW 2007

*Blueprint of a Cost Analysis Approach for Early Intervention*  
St. Lawrence University 2007

*Child Abuse Prevention in the Greater Bay Area*  
Stanford Student Group 2015

*Total Estimated Cost of Child Abuse and Neglect in the United States*  
Suzette Fromm Reed, Ph. D., Purdue 2000

*An Assessment of the Economic Cost of Child Maltreatment*  
The Perryman Group 2014

*Child Maltreatment in Colorado: The Value of Prevention and the Cost of Failure to Prevent*  
University of Colorado 1995

*What incarceration costs taxpayers*  
VERA & Center on Sentencing and Corrections 2012

## KEY ASSUMPTIONS

We considered the following assumptions while performing this analysis:

### APPROACH

There are generally two methods used for economic burden estimates: a prevalence-based approach or an incidence-based approach.<sup>[1]</sup> A prevalence-based method provides an estimate of the direct and indirect costs incurred in a given period resulting from all current and prior cases of child abuse, regardless of the onset of child maltreatment. In contrast, an incidence-based method estimates the total lifetime costs resulting from new cases of child maltreatment that occur within a given time period. While both methods are relevant, an incidence-based approach is more useful for the economic evaluation of prevention and intervention activities. For example, the economic burden resulting from a single case of child maltreatment could be compared with the cost of preventing a single case of child maltreatment in a benefit-cost analysis of prevention. In addition, the incidence-based approach was the most commonly used approach applied in the other cost estimation reports we reviewed.

### SUBSTANTIATED CASES

Each state defines the types of child abuse and neglect in its statutes and policies. Child protective services (CPS) agencies determine the appropriate response for the alleged maltreatment based on those statutes and policies. In most states, the majority of reports receive an investigation, which results in a determination about the alleged child maltreatment. The two most prevalent determinations are:

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**Substantiated:** An investigation determination that concludes the allegation of maltreatment or risk of maltreatment was supported or founded by state law or policy.

**Unsubstantiated:** An investigation determination that concludes there was not sufficient evidence under state law to conclude or suspect that the child was maltreated or at risk of being maltreated.

For our total cost estimate, we considered only substantiated cases, but performed a sensitivity analysis to demonstrate the total cost — considering both reported and substantiated cases.

## YEAR OF ANALYSIS

Our estimate is based in 2015, the most current year of available data for substantiated cases of child maltreatment found at the California Child Welfare Indicators Project.<sup>[2]</sup>

## DISCOUNT RATE

The choice of an appropriate social discount rate for cost-benefit analysis of public investment projects has been subject to debate in economics literature for many years and ranges from 3 to 7 percent for developed countries. We considered multiple approaches: marginal social rate of time preference, social opportunity cost of capital, weighted average or optimal growth model, and shadow price of capital. There is no one-size-fits-all approach to selecting the social discount rate, and therefore we have selected 3 percent. This is the social discount rate applied in the CDC's cost estimation report and a best practice for the SROI analysis as cited by experts and published recommended guidelines. We employ the discount rate whenever figures are adjusted to present value.

## COST IDENTIFICATION

We considered both direct and indirect costs to ensure that our estimate appropriately captured the full economic burden. After significant research, we selected the following broad cost categories for our estimates: healthcare, education, productivity losses, criminal justice, and child welfare. Studies have shown that child maltreatment may be associated with reduced life expectancy, decreased quality of life, and negative intergenerational outcomes,<sup>[3]</sup> but we were unable to find studies that quantify the costs and therefore were unable to include them in our analysis.

## AVERAGE AGE OF ONSET

This analysis requires a fixed age from which to base costs. While abuse could potentially occur as early as pre-natally, this report conducts relevant calculations based on a fixed age of 7, which is the weighted average age of abuse for first-time victims in 2014, the most recent year for which data are available.<sup>[4]</sup> Therefore, we have assumed that all costs begin at age 7 and all future economic losses are discounted to this age.

## COST ESTIMATION DETAIL

### OVERVIEW

Each cost category uses different underlying data and studies, depending on what is available, so we have used different approaches for each category. The methodologies are all rooted in the frameworks laid out by the CDC's study.

Ideally, we would be able to reference a longitudinal study tracking the incremental costs attributable to maltreatment for each cost category, but unfortunately this type of study is not available for all categories. Instead, costs attributable to maltreatment were determined on a category-by-category

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basis, using the best peer-reviewed study we could find. The costs for each category were added to create a national annual cost estimate.

We then adjusted this number to the year at which it would be incurred and then discounted back to the present value at the year of study, 2015. We then adjusted this national cost to the increased costs of the region studied, San Francisco, using a geographic inflation index appropriate for the underlying study.

## CHILD WELFARE

### Methodology

To estimate child welfare costs attributable to victims of child maltreatment, we used a study calculating the total expenditure on child welfare prevention, investigation, and intervention by local, state, and federal agencies.<sup>[5]</sup> California's total expenditure was divided by the number of children investigated<sup>[6]</sup> in relation to child maltreatment in the year of the underlying study to get an average cost per case estimate. We then adjusted it to the present value of our year of study.

### Considerations

Because child welfare costs often extend beyond the year of investigation, it would be ideal to track the government expenditures related to child maltreatment on a per-case basis and determine an average. However, since this data does not exist, we chose to use a steady-state methodology. This means that since the number of investigated cases was relatively constant surrounding the year of the base study, dividing the annual budget by the number of investigated cases serves as a proxy for the lifetime costs attributable to child maltreatment.

## EDUCATION

### Methodology

We used two studies to estimate the costs of education: one that tracks the incremental chance of a child receiving special education due to child maltreatment,<sup>[7]</sup> and a second estimating the average incremental cost per year associated with a child receiving special education in California.<sup>[8]</sup> This annual increased cost is first adjusted to present value and then multiplied by the average years a child receives special education, assuming special education begins at the median age of special education, 8,<sup>[9]</sup> and lasts till the child departs primary education at 18. A portion of these increased costs equal to the incremental chance of receiving special education is allotted to each substantiated case of child maltreatment.

### Considerations

This methodology has a number of limitations that cause it to be a conservative estimate. Ideally, a longitudinal study would track all the incremental education costs attributable to child maltreatment across the student's educational career. However, in the absence of such a study, we can only track the increased costs of children who are delayed severely enough to require a transition to special education. This excludes any potential increased costs for students who remain in general education, as well as any increased private costs incurred such as tutoring or counseling.

## HEALTHCARE

### Methodology

To estimate childhood healthcare costs, we used a study that analyzed the mean Medicaid claims of child maltreatment victims as compared to a control group,<sup>[10]</sup> matched for demographic and socioeconomic factors. This national value was first adjusted to present value and then to the increased regional cost of healthcare,<sup>[11]</sup> using a ratio comparing the mean Medicaid claim in the region to the mean national Medicaid claim. We then multiplied it by the number of years in the victim's childhood life.



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To estimate adult healthcare costs, we used a longitudinal study that tracked the incremental healthcare costs per year incurred by adult victims as a result of past child maltreatment<sup>[12]</sup> and a geographic inflation index calculating the increased cost of healthcare in San Francisco.<sup>[13]</sup> This national value was first adjusted to present value and then to the increased cost of healthcare in San Francisco.<sup>[14]</sup> We then multiplied it by the number of years in the victim's adult life.

## Considerations

The primary limitation in our estimate for childhood healthcare is that the underlying study<sup>[15]</sup> only analyzes healthcare costs covered by Medicaid. However, the researchers in that study account for this in sensitivity analysis and find that since child maltreatment is strongly associated with low socioeconomic status, and thus Medicaid enrollment, this limitation would have a very low effect on the results.

The base study used to estimate the incremental adult healthcare costs per year has a number of limitations. However, after a literature review, we decided this was the most accurate estimate of adult healthcare costs as a result of child maltreatment. The first limitation is that the study only chose to survey women. In sensitivity testing, the original study found that the potential impact of this was negligible. Second, the survey identifies which participants were victims of child maltreatment through self-reporting. This leads to a much higher incidence rate than our incidence rate of only substantiated cases. While this would have a large effect on the total healthcare burden estimate, we are only using the per-case estimate for incremental health costs and applying this to our defined group of child maltreatment victims. Lastly, the study only reports data for victims aged 18 to 64. Thus, we chose to use age 64 as an endpoint for our calculations. This indicates that our estimate for adult healthcare costs is likely conservative, as the mean life expectancy for women in the U.S. is ~79 years.<sup>[16]</sup>

## CRIMINAL JUSTICE

### Methodology

To estimate criminal justice costs, we used two studies: one estimating the incremental chance of a juvenile or adult arrest attributable to child maltreatment,<sup>[17]</sup> and another estimating the mean cost for each type of arrest.<sup>[18]</sup> The mean cost of arrest is adjusted to present value, making the assumption that the arrest will occur at the median age of arrest for each type. A portion of these costs equal to the incremental chance of arrest for each type is then allotted to each case of substantiated child maltreatment.

### Considerations

The primary limitation in estimating the cost of criminal justice attributable to child maltreatment is that, because of the data available, we are making the implicit assumption that the increase in criminality for children who are mistreated makes them equally likely to commit any crime. The costs for felony arrests are substantially higher than those for misdemeanors, and if the increase in criminality attributable to child maltreatment skews toward one or the other, it could shift this cost in either direction.

## LIFETIME PRODUCTIVITY

### Methodology

To estimate lifetime productivity losses, we used a longitudinal study that measured the average annual earnings of child maltreatment victims, as compared to a control group.<sup>[19]</sup> The incremental loss in mean salary per year attributable to child maltreatment was adjusted to present value and then to the increased average earnings in San Francisco, as measured by the county's per capita personal income.<sup>[20]</sup> We then multiplied it by the number of years in the workforce, assuming a 1 percent annual growth in productivity.

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## Considerations

The underlying study uses a human capital approach, which substitutes annual earnings for productivity. While this is not a perfect measure of an individual's productivity, it is one of the most commonly used proxies when true productivity data is unavailable. Because of this structure in the underlying study, we chose to use a ratio comparing national average earnings to average earnings in San Francisco to adjust the study's results to our geography.

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