Child Neglect in California: Risk Factors and Early Interventions

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Abstract: This study examines major risk factors for child neglect, the most common type of child maltreatment in California. Data are drawn from California's Statewide Automated Child Welfare Information System and the Structured Decision-Making Database, to track substantiation outcomes for five years for families that were first referred to child welfare. Results show that (1) the relative risk for general neglect is the highest for families with tribal ancestries, infants (less than one year), and those headed by a biological mother and a social/stepfather; (2) several hotline assessment items are predictive of substantiations for general neglect, including prenatal substance use, domestic violence, and no caregivers providing appropriate care; (3) families with substantiations for general neglect, severe neglect, and caregiver capacity/absence have empirically different characteristics.

Disclaimer: The opinions expressed in this paper are those of the author and do not represent the views of the State of California. The author is solely responsible for any errors found in this research.

1. Background

Child neglect is the most common type of child maltreatment. Based on administrative data nationwide, each year seven per thousand children experience neglect; neglect is substantiated for three quarters of children with substantiated maltreatment; physical abuse accounts for one fifth; sexual abuse constitutes less than one tenth (U.S. Department of Health and Human Services, 2019). Since not all incidents are reported to the child welfare system and only some allegations are substantiated (Sedlak & Broadhurst, 1996; U.S. Department of Health and Human Services, 1994), actual child neglect may be more common. Studies based on retrospective survey data find higher estimates for the prevalence of child neglect (Norman et al., 2012). Based on nationally representative samples, 5-11% of adolescents and 3-5% of adults report childhood neglect (Fuemmeler, Dedert, McClernon, & Beckham, 2009; Goodwin & Stein, 2004; Green et al., 2010).

Child neglect is associated with short- and long-term adverse developmental, health, and economic outcomes. Neglected children show lower cognitive, emotional, and behavioral development than non-neglected children as early as infancy (Egeland, Sroufe, & Erickson, 1983; Erickson, Egeland, & Pianta, 1989) through adolescence (Jonson-Reid, Kohl, & Drake, 2012; Mills et al., 2010; Nikulina, Widom, & Czaja, 2011). They are more likely than non-neglected groups to develop mental and physical health problems in adulthood—mental disorders, substance use, risky sexual behavior, and later perpetration of child maltreatment (Currie & Spatz Widom, 2010; Jonson-Reid et al., 2012; Nikulina et al., 2011), as well as poorer educational and economic outcomes—unemployment, not owning assets, and arrests (Currie & Spatz Widom, 2010; Jonson-Reid, Drake, Kim, Porterfield, & Han, 2004; Nikulina et al., 2011). The increased neurological deficits and sensitivity to stress explains part of the mechanism of adverse outcomes of neglect (Hanson et al., 2013; Heim, Shugart, Craighead, & Nemeroff, 2010). Child maltreatment has long-term consequences that are costly to society (Fang, Brown, Florence, & Mercy, 2012), calling for further understanding of child maltreatment and its most prevalent form, neglect.

This study follows for five years a cohort of families that first encountered California's child welfare system and explores how family and system characteristics observed at baseline are linked to

their risk of substantiations for neglectful parenting (specifically, general neglect, sever neglect, and caretaker absence/incapacity). By comparing families with and without substantiations in multivariate analysis, the study identifies major risk factors for neglect and suggests implications for prevention policy and practice. This article begins with a brief review of prior studies on neglect, summaries of data, methods, and results, discusses policy implications, and finally, draws conclusions for this research.

2. Prior Studies

Unlike physical and sexual abuse, child neglect is a construct that professionals have struggled to operationalize. Child neglect is a caregiver's omission of behavior that has caused or will cause harm to children, rather than a commission of behavior. As such, it encompasses a heterogeneous set of conditions that has no universal categorization of subtypes. Neglectful behavior deprives children of experiences necessary for their healthy development, such as food, shelter, clothing, education, health care, emotional nurturance, and protection from harm. The level of severity of neglect ranges from occasional errors of omission, poor parenting, to criminal negligence, resulting in minor, moderate, severe, or even fetal harm to children (Berkowitz & DeRidder, 2014). Most professionals have now agreed, after years of debates, that caregiver negligence that creates a risk of harm alone constitutes an act of neglect, in addition to omission of care that already caused harm (Farrell, Labella, & Egeland, 2018).

Child neglect can be further broken down into subtypes, although the clustering of neglectful behaviors is not uniform across studies. Emotional, or psychological, neglect is distinct from other forms of neglect, since it is difficult to observe and find evidence for emotional neglect. Prior studies generally conceptualize emotional neglect as a lack of caregiver warmth, affection, nurturance, and support (Coohey, 2003; Dubowitz, Pitts, & Black, 2004; Farrell et al., 2018; Hildyard & Wolfe, 2002). Some include exposure to family violence or inadequate mental health care (Child Welfare Information Gateway, 2006; Slack, Jane, Altenbernd, McDaniel, & Stevens, 2003), whereas others regard emotional neglect as one form of emotional abuse (Brassard & Donovan, 2006; Trickett, Mennen, Kim, & Sang, 2009). Other than emotional neglect, child neglect has been categorized into physical neglect, supervisory

neglect, medical neglect, and educational neglect (Child Welfare Information Gateway, 2006; Farrell et al., 2018). Physical neglect is usually operationalized as failure to meet the child's needs for food, clothing, shelter, hygiene, and in some studies, includes supervisory, medical, or educational neglect (Coohey, 2003; Kantor et al., 2004; Slack et al., 2003). Supervisory neglect is also considered a unique subtype of neglect because it can be defined as failure to protect the child from harmful people or situations, e.g., inappropriate substitute child care and exposure to hazards (Coohey, 2003). In addition, a lack of environmental safety and hygiene is conceptualized as environmental neglect (Dubowitz et al., 2004; Mennen, Kim, Sang, & Trickett, 2010).

There is a wide range of statutory definitions of child neglect across states (Child Welfare Information Gateway, 2019), since child maltreatment is only minimally defined by the federal Child Abuse Prevention Treatment Act (CAPTA). Most state legislations in child neglect list the areas in which caregivers can fail to provide adequate care (e.g., food, shelter, medical care). Some explicitly require the domains of child wellbeing (e.g., emotional, physical, mental health), risk factors (e.g., child age, disability, maltreatment history), and caregiver incapacities (e.g., mental health, substance abuse) to be considered. Mostly notably, a few states include diagnoses of substance-related syndromes and/or positive toxicology screens at birth in their definitions of neglect[1]. Statutory neglect in California describes the negligent failure of a caregiver to provide adequate food, clothing, shelter, medical care, or supervision where no physical injury to the child has occurred (Penal Code Section 11165.2). Different from some other states, the caregiver's inability to provide regular care, not substance abuse per se, is the basis for substantiations for neglect. "Severe neglect," as opposed to "general neglect," is defined in California as neglectful behavior that endangers the child's health, or that causes malnutrition and nonorganic failure to thrive. "Caretaker absence/incapacity" refers to the lack of caregivers capable of providing appropriate

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[1] Prenatal exposure to substance use and/or related syndromes at birth are treated as child neglect in Arizona, Arkansas, Colorado, District of Columbia, Illinois, Indiana, Louisiana, Minnesota, North Dakota, and Oklahoma and child abuse in South Dakota and Wisconsin. Iowa's definition of neglect includes the presence of an illegal drug in a child's body, as opposed to merely in newborns (Child Welfare Information Gateway, 2018).

care. Emotional neglect is considered emotional abuse in California. This study examines general neglect, severe neglect, and caretaker absence/incapacity as they all encompass some level of caregiver negligence.

What are the conditions that cause child neglect? Belsky's theory for child maltreatment provides a theoretical framework for understanding neglect (Belsky, 1980). This framework, developed upon Bronfenbrenner's model of the ecology of human development, postulates that individual, family, community, and cultural factors are nested within one another in determining child maltreatment. The microsystem, or the family in the context of this study, is the most immediate environment in which child neglect occurs. An analysis of the microsystem examines the influences of family members on child neglect, such as their substance abuse, psychiatric disorders, disabilities, and past trauma. The exosystem, where the family is embedded, includes formal and informal social structures that impact on the process of neglect. For example, scarce economic opportunities in the community predispose a parent to unemployment and substance use as a coping mechanism (Henkel, 2011), both of which are linked to an increase risk of neglect. The macrosystem is the cultural context that determines what parenting behavior is considered appropriate. The exosystem can change child outcomes through the caregiver's own actions. For example, societal tolerance for child neglect can change an unemployed parent's likelihood of omission of care.

Prior studies have found strong correlations of personal and family dysfunction with child neglect. The risk of neglect increases with parent mental health problems including anger, hyper-reactivity, impulsivity, stress, low self-esteem, depression, psychopathology, and experiences of abuse in own childhood (Mulder, Kuiper, Van, Stams, & Assink, 2018; Stith et al., 2009). Interaction of family members affects the risk of child neglect, particularly noted by domestic violence, family stress, and parenting stress (Mulder et al., 2018; Stith et al., 2009; Williamson, Borduin, & Howe, 1991). Several demographic and socioeconomic characteristics of the parents are linked to an elevated risk of neglect, including low education, unemployment, young parental age, perinatal problems, large family size, child not living with biological parents, single parenthood, child not being Caucasian (Mersky, Berger, Reynolds, & Gromoske, 2009; Mulder et al., 2018; Sedlak & Broadhurst, 1996; Stith et al., 2009). Child

mental, physical, behavioral, and development problems expose the child to a higher risk of neglect (Mulder et al., 2018; Stith et al., 2009; Williamson et al., 1991).

To my best knowledge, no studies to date have used data from family assessments to explore the correlates of substantiations for neglect. Prior studies do not usually consider the role of nonmarital cohabitation in the risk of neglect due to identification difficulties. This study capitalizes on rich data about family relationships in the administrative database and risk factors observed at hotline. To understand the correlates of neglect, I compare families with neglect substantiations with a relatively high-risk group—families that were referred to child welfare but have never been substantiated in five years. Due to the lack of data on higher levels of systems theorized to contextualize child neglect (e.g., county policy), this study focuses primarily on the microsystem that influences neglect (Belsky, 1980). This study aims to investigate: (1) What family characteristics, risk factors, and patterns of child welfare involvement are associated the risk of child neglect? (2) How do hotline assessment items compare to those in the safety assessment in their associations with substantiations for neglect? (3) Are the correlates examined differ in their associations with general neglect, severe neglect, and caretaker absence/incapacity?

3. Data

Populations

This study draws data from the Child Welfare Services/Case Management System (CWS/CMS), which is California's Statewide Automatic Child Welfare Information System (SACWIS), and the database of the Structured Decision-Making (SDM) System in Child Welfare Services in California. Because I aim to explore the antecedents of a substantiation for child neglect, instead of the effects of prior substantiations, I focus on parents that were first referred to child welfare as caregivers and their children. This analytic approach, in contrast to a point-in-time sample that includes families with long histories of child welfare involvement, allows us to identify preventions and early interventions for families are less known to the system. I follow those new families for five years to allow for an

observation of a substantiation and examine family dynamics recorded in the administrative databases prior to their first substantiations. Families (defined below) are the unit of analysis in this research.

To select subjects for analysis, I begin with all 391,962 referrals made to California's child welfare system in 2014. I first eliminate referrals that include persons who show up in a previous referral in 2014, leaving 243,048 referrals. Then I obtain 90,240 first referrals by dropping referrals that include caregivers referred to child welfare as caregivers before 2014 or children referred before 2014. This step keeps caregivers that were involved in child welfare in their childhood. I define the 90,249 referrals as families first referred to child welfare for analytic purposes; these families account for 37% of all "families" (N = 243,048) referred to child welfare in California. I identify parents of the youngest child in these first referrals and treat them and their children, that is, the nuclear family, as the focal family for analysis. All variables are constructed to describe this family, including substantiation outcomes. I further drop adult-only, no-parent, missing-parent, grandparent-only, and complex families (more than two parents included in the first referral), resulting in 83,123 families. I then drop families in counties that had not implemented in 2014 and families without hotline assessment data, leaving 70,359 families.[2]

Some families had multiple types of child maltreatment substantiations for the first referral that led to substantiations (thereafter, the first substantiation(s)). To examine family characteristics by maltreatment type, I construct mutually exclusive categories of maltreatment: If anyone in the family is a victim or a perpetrator of an exploitation substantiation, then the family is placed in the exploitation group; if there is any sexual abuse substantiation (but no exploitation), then the family is in the sexual abuse group, followed by physical abuse, emotional abuse, caretaker absence/incapacity, severe neglect, and general neglect. Families in the general neglect category are those with only general neglect substantiations. This hierarchy aims to capture the inclusion of a maltreatment type in another type as well as rank the level of clarity in the definition of each type. For example, many sexually abused children also suffer from emotional abuse, but those who are emotionally abused may not have experienced sexual

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[2] Contra Costa, Napa, San Bernardino, and Santa Clara are the four counties that had not adopted SDM assessment tools in 2014 and thus are excluded from this study. The step primarily drops families in those counties, as the hotline completion rate for families in other counties is 98%.

abuse. Under this categorization, families with only neglect account for 55% of all types of substantiations; severe neglect: 5%; caretaker incapacity: 8%; emotional abuse: 12%; physical abuse, 12%; sexual abuse, 7%; exploitation: 0.14%.[3]

To continue with the selection of the populations for this study, I eliminate families with emotional, physical, sexual abuse, and exploitation. I focus on 84% of the 70,359 families (N = 66,025) that had never been substantiated in five years (N = 56,452) and that were substantiated for general neglect (N = 7,670), severe neglect (N = 725), and caretaker incapacity (N = 1,178), using the categories described above. I call these families population 1. This research uses SDM's safety assessment data, in addition to hotline assessment data. The safety assessment is required for only referrals that had an in-person response: Workers are instructed to assess the items of the safety assessment during their initial contact with families. Since safety assessment data is not available for some of the families in population 1, I present statistics separately for families that had an in-person response to their first referral. After dropping 36% of the families that did not receive an in-person response to their first referral and another 4% that received an in-person response but did not have a safety assessment, I obtain 38,535 families with safety assessment data. I refer to these families as population 2, a subset of population 1. Table 1.1 summarizes child welfare involvement, family characteristics, hotline assessment for populations 1 and 2 by substantiation outcome. Table 1.2 summarizes safety assessment results for population 2.

Variable Construction

Regarding patterns of child welfare involvement, I examine the number of referrals between the first referral and the first substantiation (or the end of the five-year study period for families without substantiations), percent of families with prior child welfare involvement, and some characteristics of the worker of the first referral and the county where the first referral was made. I count the first referral and the referral that resulted in the first substantiation in the person-level number of referrals and use the

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[3] Although only general neglect accounts for 55%, families with any general neglect account for 71% of all new families. For all maltreatment groups identified in this research, general neglect is a common type of co-occurrences. It was substantiated for 35% of families in the emotional abuse group, 30% of families in the physical abuse group, and 21% of families in the sexual abuse group (the percentages are not shown in the tables but available upon request).

maximum number of referrals among members of the focal family in my analysis. Using referral and relationships data, I flag families in which any focal parent was identified as children in past referrals; for each worker of the first referral, I divide the number of unique alleged victims served in 2014 by the number of months that the worker served any alleged victims to derive the measure of alleged victims served per month. I use the 2013 Rural-Urban Continuum Codes (USDA, 2016) to identify families in counties that were in metropolitan areas of one million population or more. In a separate administrative database maintained by the Office of Child Abuse Prevention (OCAP) to oversee the spending of federal funds, counties self-reported to two questions about differential response (DR): (1) Whether or not supported with OCAP funds, does your county utilize a 3-Path Differential Response model? Only answer "Yes" if your County uses all 3 three paths; (2) Whether or not supported with OCAP funds, does your county utilize an alternative response model? A dummy variable on DR availability is coded one for families in counties answered affirmatively to any of these questions.

Then I construct demographic variables for analysis. Using data on the parents' relationships with the youngest child and their address(es), I construct a family structure variable with the following categories: Married parents, unmarried parents with data showing cohabitation (the parents' addresses are identical), unmarried parents with missing data (usually one parent's address is missing), single mother, single mother with the father included in the first referral (the parents' addresses are different), single father, single father with the mother included in the first referral, and the child did not live with the parents (the child's address is different from either parent's address). I generate indicators to denote families with two biological parents and those with a biological parent and a social/stepparent (the biological parent's significant other in the referral is treated as a social parent). If a focal parent is older than the eldest biological child in the first referral by less than 20 years, then the parent is considered to have been a teen parent. If the primary language is Spanish for anyone in the focal family, then the family is considered a Spanish-speaking family.

4. Methods

This study compares families without substantiations, those with substantiations for general neglect, severe neglect, and caretaker absence/incapacity, using primarily data on family demographics and data entered around the time of the first referral (considered baseline in this study). The first set of analyses compares families with only substantiations for general neglect and those without any substantiations in five years, by treating general neglect as a discrete outcome. I conceptualize the first substantiation in five years as a risk event and factors observed in the beginning stage of involvement as antecedents, or predicators, of the first substantiation. Thus, a survival analysis modeling the time to the first substantiation can be conducted to understand how baseline characteristics influence the risk of substantiation. In an alternative approach, the first substantiation for general neglect can be seemed as a dichotomous outcome at one point in time. Specifically, I estimate a Cox proportional hazards model on time to the substantiation (a nonlinear model), an ordinary least squares (OLS) regression (linear) and a logistic regression (nonlinear) without regard to time (Table 2.1).

The next inquiry examines how hotline and safety assessment items differ in their associations with the risk of general neglect. It considers only families with an in-person response to their first referral (population 2) because they had both hotline and safety assessments. Again, I model only the outcomes of no substantiations and substantiations for general neglect, using linear regressions[4] and demographic and systemic controls as in the first set of analyses. I vary model specifications by including (1) only hotline assessment items, (2) only safety threats in the safety assessment, (3) both hotline items and safety threats, (4) hotline items, safety threats, and other safety factors (namely, factors influencing child vulnerability and protective capacities in the safety assessment), in each of the models. This analytic approach examines (1) whether hotline assessment estimates are robust to alternative model specifications, (2) whether similar hotline and safety assessment items consistently predict the likelihood of general neglect, and (3) how child vulnerabilities and protective capacities from the safety assessment are associated with the risk for neglect.

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[4] This is done for ease of communication. Nonlinear models (i.e., logistic regressions) yield very similar results.

Because severe neglect is an intensified level of neglect and caretaker absence/incapacity includes omission in care by parents or caregivers that can be considered neglect, the final set of analyses explores whether and how these three types of neglecting behaviors are different from one another, by comparing their associations with family characteristics and risk factors in a multinomial logistic regression. In this regression that models the four outcomes (no substantiations, general neglect, several neglect, caretaker absence/incapacity, operationalized in the way previously described), it is assumed that the odds of having one outcome over another does not change with the inclusion or omission of other outcome categories. In addition, the outcome variable is categorical but cannot be ordered by preference or extent; for example, general neglect is not necessarily a better or worse outcome than caretaker absence/incapacity. Statistical tests are performed to examine, for each variable, if the coefficients for the relative risks of severe neglect and absence/incapacity are significantly different from that for the relative risk of general neglect.

This research aims to capture any administrative data on factors exiting before the first substantiation to predict the risk of a substantiation for neglect. Because both hotline and safety assessment data can be collected close to the time of the first substantiation, the results are not free from simultaneity bias and thus may not be interpreted as causal. In other words, the relationships between assessment items and substantiations should only be understood as correlational. Factors unobserved in this study may have caused both the substantiation outcome and the risk item marked in the assessment. Moreover, because few county characteristics are available to this research and are generally uncorrelated with the risk of neglect, the linear regressions do not include them as explanatory variables but instead adjust for, with county-fixed effects, county-specific idiosyncrasies that affect all families in the county.

5. Results

Descriptive Analysis

Table 1.1 summarizes child welfare involvement, demographics, and the hotline assessment for all families initially referred to child welfare in calendar year 2014 (population 1) and families from

population 1 that had an in-person response to their first referral (population 2, a subset of 1). Since safety assessment data is not available for some of the families in population 1, Table 1.2 presents safety assessment data for only population 2. Table 1.1 shows general neglect co-occurs with other types of child maltreatment. In population 1, general neglect is substantiated for close to 60% of the families with substantiations for caretaker absence/incapacity and for a quarter of the families with severe neglect substantiations. Almost all focal parents are the perpetrators of the first substantiation; in less than 5% of the families the parents are not the perpetrators of maltreatment of their children.[5] The number of referrals between the first referral (included in the count) and the first substantiation shows that general neglect is substantiated for the first referral among 63% (the row for one referral) of the families with general neglect and 74% of the families with severe neglect. The latter suggests that the child welfare system responds faster to allegations of severe neglect. In contrast, the system spends time of two or more referrals on one third of families that have not been substantiated in five years after their first referral. In one third of the new families substantiated for neglect, the parents have been referred to child welfare in childhood; among families without any substantiations, the rate of childhood involvement is only 13%. Population 2 shows similar patterns of involvement on the dimensions discussed here.

Then I examine characteristics of the referral worker and the county to which families were referred. In population 1; the number of children served by the referral worker per month is statistically different between families without substantiations and those with general neglect, and between families with general neglect and those with caretaker absence/incapacity. However, in population 2, families that received an in-person response to the first referral, the number of children served per month (a proxy measure of the worker's "caseload") is less than 20 and similar across groups. Comparing populations 1 and 2, the data suggests the division of labor at hotline: Primary contact staff for referrals without an in-person response serve more children. There is a gap between staff and client language use; only 17% of families in this study have referral staff that speak Spanish, in contrast to 26% of families whose primary

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[5] In contrast, parents were not the perpetrators of the first substantiations in close to half (48%) of the families with sexual abuse substantiations and 8% of those with physical abuse (not shown in this table).

language is Spanish. This gap reduces to 5 percentage points when I examine families with substantiations for general neglect alone.

Families with and without substantiations differ by many demographic measures. Based on the descriptive statistics, in both populations, families with general neglect substantiations are more likely to be only White, only Hispanic, only Native, and multiracial/ethnic, less likely to be only Asian, less likely to use Spanish as the primary language than families without substantiations. The representation of only-Black families is similar between families without substantiations and with substantiations for neglect; however, higher proportions of families with substantiations for caretaker absence/incapacity are comprised of African/Black families, Native families, and families with tribal ancestries/memberships. Families without substantiations are less likely to have children under one, children in preschool age and under; their youngest child is older, compared with those with substantiations for neglect. Families with severe neglect are more likely to have younger children than those with general neglect and caretaker absence/incapacity. Families with substantiations are more likely to be headed by a biological mother and a step/social father than those without, and the parents are more likely to have been teen parents in the substantiation groups than the non-substantiation group.

Across all screening criteria in the hotline assessment, inadequate/hazardous shelter, inadequate supervision, failure to protect, caregiver substance abuse concerns, prenatal substance use, and domestic violence stand out as major risk factors for general neglect. In contrast, malnutrition, failure to thrive, child endangered, or unexplained child death (separate items in the assessment but combined in one variable in this study) is identified in close to half of families with severe neglect. No parent/caregiver capable of providing appropriate care is the top risk factor for families with substantiations for caretaker absence/incapacity. The prevalence of prenatal substance use is the highest in the group with severe neglect. Nonetheless, some of the common risk factors for general neglect were also marked for families without substantiations and non-substantiated families that received an in-person response. For example, more than one fifth of the non-substantiated families that received an in-person response were considered to have the problems of inadequate supervision, failure to protect, injury/punishment/threats/dangerous

behavior (one variable), and domestic violence. Notably, caregivers in 39% of these families that have never been substantiated in five years engage in behavior that can be regarded as some form of physical abuse or threat to children. In my separate analysis (not shown here), injury/punishment/threats are identified at hotline for as high as 73% of families with substantiations for physical abuse. Finally, families with severe neglect and caretaker absence/incapacity substantiations are the most likely to receive an immediate response, in both populations.

Table 1.2 summarizes characteristics of workers that conduct the first in-person response and safety assessment results for families with an in-person response to their first referral, or population 2. First, statistics about worker characteristics are similar in their magnitudes across substantiation groups. Second, the percentages of most risk factors decrease from the hotline to the safety assessment[6]. For example, 10% of families with general neglect substantiations have prenatal substance use (hotline), whereas only 4.4% of them have drug-exposed infants (safety). Third, several risk factors, namely, hazardous living conditions, inadequate supervision, failure to protect, caregiver substance abuse, prenatal substance use, and domestic violence remain major risk factors for families that are substantiated for general neglect. For example, inadequate supervision, a separate item in the hotline assessment, combined with inadequate food, clothing, medical, or mental care in the safety assessment, is identified for 5% of the families with general neglect, 10% of the families with severe neglect, and 26% of the families with caretaker absence/incapacity. Substance abuse is the most dominant threat for the families with severe neglect and caretaker absence/incapacity. Both substance abuse and domestic violence are top threats for the families with general neglect. However, contrary to hotline assessment findings, families with substantiations are more likely to be considered to have physically harmed/threatened their children than families without substantiations.

Linear and Nonlinear Models

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[6] This statement describes general rather than exact findings. It is not possible to tell how information precisely changes from the hotline assessment to the safety assessment because the two assessments are comprised of different assessment items.

Table 2.1 summarizes results from multivariate regressions that predict the outcome of general neglect for families in population 1. This set of regressions, by eliminating other maltreatment types, aims to explore how families with only substantiations for general neglect differ from those without substantiations. In addition, it examines whether results would be different based on linear versus nonlinear models, or specifically, an ordinary least squares (OLS) regression (linear, model 1), a logistic regression (nonlinear, model 2), and a Cox proportional-hazards model (nonlinear, model 3). The results from all models examined show similar relationships between explanatory variables and general neglect. In terms of the magnitude of the association, prenatal substance use and having a tribal ancestry/membership are the most salient predictors of a substantiation for general neglect. Based on model 1, prenatal substance use is associated with an increase in the likelihood of general neglect by 33 percentage points; based on models 2 and 3, the risk of general neglect substantiations for families with prenatal substance use are 5.56 and 3.17 times, respectively, the risk for those without. The likelihood of general neglect, net of other factors, is higher by 38 percentage points for families with tribal ancestries/memberships; these families are 2.62 to 6.76 times more likely to be substantiated for general neglect than families without tribal ancestries/memberships.

[Table 2.1 here]

Several demographic characteristics are highly associated with the risk of general neglect. The odds of being substantiated for general neglect for families with infants is twice as high as the odds for families without infants. Certain family structures are linked with an increased risk of general neglect (compared with married parents, the base category), including child living apart from parents, single father with the mother included in the referral, and single mother with the father included in the referral. Families headed by single mothers, who do not live with the fathers and are not referred to child welfare with them, are less likely than married parents to be substantiated for general neglect by 6 percentage points. Families headed by a biological mother and a social/stepfather are 1.59 times more likely than other families to be substantiated for general neglect. African/Black only families, net of other factors, are

less likely than White families to be substantiated for general neglect.[7] The relative risk for families with parents involved in child welfare in childhood is 1.51 times that for other families.

In addition to prenatal substance use, I find statistically significant associations between general neglect and several hotline assessment items, led by domestic violence, having no caregivers capable of providing appropriate care, malnutrition/failure to thrive/child endangered (one variable), failure to protect, inadequate/hazardous shelter, caregiver substance abuse concerns, caregiver mental health concerns, inadequate supervision, and caregiver dangerous behavior. Caregiver actions that led to child emotional problems, caregiver bizarre or cruel behavior, non-accidental injury, excessive corporal punishment, sexual act or threat are associated with reduced risk of general neglect.[8] With respect to systemic factors, the referral worker speaking Spanish is positively associated with the likelihood of general neglect. Although alleged victims served per month and years since the start date are statistically linked with the risk, due to the small sizes of the associations, I omit the discussion here.

Hotline and Safety Assessments

The next set of models examines the associations of general neglect and risk items from the hotline and safety assessments, focusing on population 2, that is, families that had an in-person response to their first referral (and thus both hotline and safety assessment data). Table 2.2 summarizes the estimates for hotline and safety assessment items from four model specifications: Caregiver risk factors from only hotline, caregiver risk factors from only the safety assessment, caregiver risk factors from both the hotline and safety assessments, all risk and protective factors from the safety assessment and hotline. All models in Table 2.2 are linear regressions with all the rest controls shown in Table 2.1 and county-fixed effects. Table 2.2 does not show the estimates for those other controls, because they are largely equivalent to those in Table 2.1.

[Table 2.2 here]

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[7] The same conclusion holds when I use the indicator flagging all families with any Black/African American.

[8] In my separate analysis not shown, injury and punishment are associated with increased risk of physical abuse; sexual act, threat, or exploitation is positively linked to the risk of sexual abuse substantiations.

Table 2.2 shows that the models adjusting for safety assessment data yield similar estimates for hotline assessment items, except that malnutrition/failure to thrive/child endangered (one variable), caregiver dangerous behavior, and caregiver mental health concerns are no longer associated with the risk of general neglect. Prenatal substance use, domestic violence, no caregiver capable of providing appropriate care, caregiver substance abuse concerns, inadequate/hazardous shelter, failure to protect, and inadequate supervision (ordered by size of the association) are associated with increases in the risk of neglect. Sexual act/threat, non-accidental injury, excessive corporal punishment, caregiver actions causing child depression or anxiety, bizarre or cruel behavior are negatively associated with substantiations for general neglect.

Turning to safety assessment data, overall, the models yield larger coefficient estimates for safety than for hotline assessment items. Interestingly, in the model with both safety and hotline assessment variables, non-accidental injury in the safety assessment positively predicts substantiations for general neglect, while non-accidental injury on the hotline assessment is negatively associated with neglect; suspected sexual abuse (safety) is marginally associated with increased risk, while sexual act/threat (hotline) is statistically associated with reduced risk for neglect substantiations. The safety assessment has a few threat items that are not evaluated in the hotline assessment, including physical harm, caregiver impaired ability, and negative terms and acts towards child. These factors are all statistically associated with an increase likelihood of neglect substantiations. Separate items about basic needs in the hotline assessment are assessed in a single item in the safety assessment: Not meeting immediate needs for supervision, food, clothing, medical, and mental care. Like its corresponding hotline assessment items, this safety assessment variable is associated with an increased likelihood of neglect.

In Table 2.2., the model with all assessment variables show that one child vulnerability, significant medical problems, is associated with an increase in the likelihood of general neglect substantiations by 2 percentage points. Two caregiver protective capacities, commitment to child needs and effective problem solving, are associated with a reduced likelihood of substantiations. Acceptance of

temporary interventions, on the other hand, is associated with an increased risk of substantiations for general neglect.

General, Severe Neglect, and Caretaker Absence/incapacity

Finally, in Table 2.3, a multinomial logistic regression is estimated to compare general neglect, severe neglect, caretaker absence/incapacity, with no substantiations, treating these as four distinct outcomes that families could have. The odds ratios in columns A, B, and C respectively indicate the increases or decreases in the risk of being substantiated for general neglect, several neglect, and incapacity, relative to the risk of having no substantiations as the group status changes (e.g., single mothers versus married parents). Columns D and E compare severe neglect and absence/incapacity to general neglect. Specifically, column D (E) shows if the association of a covariate with severe neglect (absence/incapacity) is statistically different from its association with general neglect.

Comparing results from the multinomial logistic regression (four outcome categories) and the logistic regression (two outcome categories) in Table 2.1, I find all coefficients and odds ratios for general neglect versus no substantiations are similar in size and statistical significance. Therefore, this summary focuses on the comparisons of severe neglect and caretaker absence/incapacity with general neglect (columns D-E). First, although black-only families are less likely than white-only families to be substantiated for general and severe neglect, they are more likely to be substantiated for caretaker absence/incapacity (odds ratio: 1.29; also indicated by ** in column E). Families with tribal ancestries and memberships and families headed by a biological mother and a social/stepfather are more likely than their counterparts to be substantiated for all types of maltreatment examined here (columns A to C). Tribal families' relative risk for caretaker absence/incapacity is even higher than their relative risk for general neglect (E), although their relative risk for general neglect is already high (A). For families headed by a biological mother and a social/stepfather, the relative risk ratio is the highest for absence/incapacity (E), followed by that for severe neglect (D), and then general neglect.

In terms of hotline assessment items, for families with issues of child malnutrition, failure to thrive, and child endangered (one variable), the odds ratio for severe neglect (33.15) is high both in

absolute terms and comparison with those for general neglect and caretaker absence/incapacity (D). For families without caregivers capable of providing appropriate care, the odds ratio for caretaker absence/incapacity (26.31) is high both in absolute terms and comparison with those for general and severe neglect. Prenatal substance use is a significant risk factor for general neglect, severe neglect, and absence/incapacity (A-C); additionally, families with prenatal substance use are most likely to be substantiated for severe neglect (D). In contrast, the odds of general neglect and absence/incapacity increase relatively for families with substance use concerns, but not the odds of severe neglect (A, C, D). This pattern is also found for families with inadequate supervision and inadequate shelter. For families with domestic violence and failure to protect marked, the odds ratio for general neglect is statistically higher than those for severe neglect and absence/incapacity (D, E).

6. Discussion

The findings about neglect in this study are conditional upon its categorization of types of child maltreatment, since the co-occurrence of general neglect and other forms of child maltreatment is prevalent, especially with caretaker absence/incapacity. This study simplifies its empirical analysis by comparing families without any substantiations, those with only general neglect substantiations (referred to as "general neglect" in this paper), those with any severe neglect but no absence/incapacity, emotional, physical, or sexual abuse ("severe neglect"), and those with any caretaker absence/incapacity but no emotional, physical, or sexual abuse ("absence/incapacity"). In addition, this study only considers the first substantiations since the initial referral. Therefore, subsequent analysis may examine if the results would differ by operationalization of the outcome variable. Another focus of this study is to understand the experience of a cohort that was first in contact with child welfare for prevention purposes. This population is younger and thus exhibits challenges that are unique in early stages of family formation. This population does not represent all families in the child welfare system, or families with children in foster care, although some of them may have children placed in foster care later.

This study finds that child welfare administrative data has the potentials for answering research questions. However, because workers are required to collect only data necessary for interventions (typically data required by law), the database lacks some of the critical information on family characteristics, family dynamics, and policy parameters, for all families or for those in early stages of child welfare involvement. First, in terms of family characteristics, data on parental education, income, employment, and incarceration does not exist in the database. For other data, assumptions must be imposed to create proxy measures. For example, I use address data to identify cohabiting parents, assuming that the first addresses entered in the system were places they lived at the time of the first referral. Second, the data system's capability to measure family dynamics is quite limited. For example, marital status can vary across time, but it is a time-invariant variable in the client table of the data system. Domestic violence is not a data field of the child welfare data system (currently can only be found in the SDM database). Since domestic violence is a salient factor for child neglect, improvements can be made to better capture who is in the child's household or who is the caregiver that has violent behavior, towards the child, partner, or others. This piece of information may not be always reflected in substantiations. Information on substance use and housing conditions of the family is sporadic in the administrative data system. Although they are not the bases of substantiations, the data will inform child welfare of family challenges and appropriate interventions to increase parenting capacities.

Third, the child welfare data system does not accurately track prevention policy and practice. Based on counties' self-reports to a separate administrative system that monitors the spending of federal funds, more than two thirds of families in this study reside in counties with differential or alternative response programs. Due to quality issues, this study does not use referral-level data on differential response from the child welfare data system. In this database, workers enter text information ranging from that can be easily recognized as a differential response path, the name of a community-based organization, early interventions such as family team meetings, CalWORKs, and specialized treatment programs, and phrases such as "domestic violence" and "alcohol abuse." It is unknown if families have been referred to programs addressing the issues of domestic violence and alcohol abuse and if programs indicated are part

of the county's differential response. With the passage of the Family First Prevention Services Act, data about interventions before foster care has become important, if not indispensable. If policy and practice are effectively tracked overtime at both the county and person levels, this will improve California's ability to evaluate and identify promising policy and practice.

To scientifically demonstrate the effectiveness of a program or policy, an evaluation almost always requires a comparison group or a control group that does not receive the intervention. For example, an evaluation may identify the effect of a program on substantiations by investigating if participating families are less likely to be substantiated than non-participating families with similar conditions. Some families, regardless of participation status, may not experience any substantiations. This evaluation would then require data on family conditions prior to substantiations, but this data may not exist due to the nature of child welfare administrative data—data increases with the level of involvement. This unique feature of administrative data can be observed in the data used in this research. For example, a higher percentage of families without substantiations had missing data on race/ethnicity than families with substantiations. Almost none of them was identified to have a tribal ancestry or membership. Missing data for comparison groups may result in biases in the estimates. For example, if data on tribal ancestries are only entered for families whose allegations workers are going to substantiate, there would be an upward bias in the estimate of the relative risk of substantiations for families with tribal ancestries/memberships.

Nonetheless, this research shows some promising aspects of California's child welfare system. First, the child welfare system responds relatively quickly to conditions that would result in substantiations for severe neglect, compared to general neglect and caretaker absence/incapacity. Second, the stark difference in the number of alleged victims served by the referral worker between families with and without substantiations suggest division of labor in which some workers serve families with fewer issues and others serve families that need more attention. Third, investigation workers on average have manageable caseloads (less than 20 children per month) and several years of work experience in child welfare. Fourth, the system shows a gap between staff and client language use but prioritizes Spanish speaking workers to families that are later substantiated for child maltreatment. On the other hand,

families that have referral workers who speak Spanish are slightly more likely to be substantiated for general, even when the family's primary language is considered. The system spends two or more referrals on one third of families that have not been substantiated for child maltreatment. About half of families that have never been substantiated in five years received an in-person response to their first referral. Spending resources on those families may not be the most efficient; however, it is unknown how many of those families end up not being substantiated for child maltreatment as result of early interventions.

Racial disproportionality has been a concern for California's child welfare system. The findings of this research suggest the roots of racial disproportionality may be more complex than just bias. First, net of other family characteristics and risk factors, black-only families have slightly lower odds of being substantiated for general neglect than white-only families. It is worthwhile to consider whether over-representation of African families among families with substantiations is an outcome of their disproportionality in the populations affected by incarceration, substance use, domestic violence, and others. The odds of caretaker absence/incapacity are significantly higher for black-only than white-only families, suggesting family problems faced by black families may be different from those of whites. Moreover, the risk for neglect substantiations is higher for families with more than one race/ethnicity than white-only families. It is unclear whether multiracial/ethnic families have more parenting challenges that are unobserved in this study, receive differential treatments due to their multiracial/ethnic makeup, or whether part of this disparity is due to differential treatments in other systems (e.g., criminal justice) that trickle down to the child welfare system. The diversity of multiracial/ethnic groups may pose further challenges in identification and outreach. Second, families with tribal ancestries/memberships fare much worse than other racial and ethnic groups in their substantiation outcomes. Their odds of general neglect, severe neglect, and caretaker incapacity are significantly high, suggesting more and better preventions should be offered to Native communities.

Prenatal substance use is found in this research to be the most important risk factor for general neglect and severe neglect. On the other hand, substance abuse in general is more associated with general neglect and caretaker absence/incapacity. Domestic violence is primarily associated with general neglect,

rather than severe neglect or absence. Findings about family structure and the presence of social/step fathers show that, in general, when men are involved, particularly those that are not married to the mothers, the risk of neglect increases. Caregiver mental health problems emerge to be a significant factor in multivariate analysis, although at hotline very few families are identified by the assessment to exhibit symptoms of mental illness. In the latest version of the hotline assessment (updated in October, 2015), the independent item about caregiver's mental health concerns has been removed. Because mental health issues have been widely documented to co-occur with substance use and domestic violence, it is unclear how the State can effectively address substance use and domestic violence, without some understanding of mental health challenges faced by families. If identification of mental health problems at hotline is futile, is there any other stage of involvement that the system can universally screen families and refer them to appropriate services?

This study finds that hotline assessment data are more useful than safety assessment data in portraying the profiles of families. Safety threat items are marked at low frequencies even for families that are later substantiated for neglect or absence/incapacity. For families with in-person responses but no later substantiations, the threat items are almost unmarked, as expected, since the purposes of the two assessments are different. The hotline assessment screens in families with suspected abuse and neglect; the safety assessment identifies critical conditions of families that require interventions to protect basic safety and health of children. The latter assessment is obtained through direct contact with families and is expected to inform substantiations. Both assessments offer valuable information about families and can be used to understand family dynamics. However, because the items about parenting behaviors are not exactly aligned between the assessments, it is challenging to identify how information changes about families from hotline to in-person contact. The availability of standardized, reliable, coherent indicators, in or outside of the assessments and throughout major stages of involvement, would significantly improve the child welfare system's ability to identify key issues, evaluate policy/practice, and better serve families.

7. Conclusion

To conclude, this study explores family characteristics, systemic factors, and risk factors associated with substantiations for general neglect, severe neglect, and caretake absence/incapacity among families that were first referred to child welfare. It finds prenatal substance use and having tribal ancestries/memberships are the most prominent risk factors for all three neglect-related substantiations: general neglect, severe neglect, and caregiver absence/incapacity. Domestic violence is another important risk factor; it is primarily associated with substantiations for general neglect only. The risk of substantiations for neglect increases when a referral includes the father that does not live with the child, and/or the biological mother and her partner who is not a biological parent. Non-accidental injury and excessive punishment are prevalent among all families referred to child welfare, but they are not statistically linked to substantiations for neglect. Parental child welfare involvement in childhood is both prevalent and associated with neglect. Although neglect is often substantiated for other forms of child maltreatment, families with only neglect substantiations show distinct characteristics from families with other substantiations. Finally, this study finds increased risk for neglect for multiracial/ethnic families, but not for other minorities.

Overall, the findings support the provision of effective early interventions in the areas of substance use, domestic violence, early childhood, trauma-informed care, and in tribal and multiracial/ethnic communities. The limitations of this study highlight the necessity to collect more quality data about risk factors, family dynamics, and local policies in early stages of child welfare involvement, for both families with and without substantiations. The availability of quality data will enhance the State's capacities to evaluate policy/practice and to prevent later stages of involvement. In this study, hotline assessment data turn out to greatly inform the correlates of child neglect. Future research efforts should utilize hotline assessment data to its fullest potential, at least before the main administrative database begins to universally collect risk factor data about families.

Table 1.1. Child Welfare Involvement, Family Characteristics, and Hotline Assessment Results by Outcome of the First Substantiation(s)

in Five Years after the First Referral

	Population 1: All new families				Population 2: New families that had in-person response to first referral			
	(N = 66,025)				(N = 38,535)			
	No substantia-tions	General neglect	Severe neglect	Caretaker absence/in capacity	No substantia-tions	General neglect	Severe neglect	Caretaker absence/in capacity
	N = 56,452	N = 7,670	N = 725	N = 1,178	N = 30,473	N = 6,487	N = 623	N = 952
Child welfare involvement								
Substantiated for general neglect	NA	100%	25%	57%	NA	100%	25%	58%
Parents were not perpetrators	NA	3%	4%	2%	NA	3%	4%	2%
Number of referrals between 1st referral and 1st substantiation or end of study period								
One referral	67%	63%	74%	61%	65%	72%	82%	70%
Two referrals	18%	19%	15%	20%	19%	14%	11%	15%
Three referrals	7%	8%	6%	9%	8%	6%	4%	7%
4+ referrals	8%	9%	6%	11%	8%	7%	4%	8%
Parent child welfare involvement in childhood	13%	32%	32%	32%	14%	31%	31%	31%
Worker of the first referral								
Alleged victims served per month	169.3	49.7	41.2	66.5	19.2	18.4	17.4	15.4
Years since start date	9.6	8.0	7.5	8.5	7.6	7.4	7.1	7.9
Speaks Spanish	16%	19%	17%	17%	22%	21%	18%	20%
County in a metro area of 1 million population or more	72%	72%	71%	71%	77%	75%	73%	74%
County had DR in 2014 (based on ETO)	67%	72%	71%	71%	70%	70%	74%	67%

Demographics

Race and ethnicity of the focal family								
Only African or Black	8%	8%	8%	14%	8%	8%	8%	13%
Only Asian	5%	3%	3%	4%	6%	3%	3%	4%
Only Hispanic	43%	46%	37%	41%	47%	46%	38%	43%
Only Native or Alaska	0.3%	0.4%	0.3%	0.7%	0%	0%	0%	1%
Only White	22%	24%	28%	24%	21%	23%	27%	22%
More than one race/ethnicity	9%	16%	19%	15%	10%	16%	19%	16%
Missing race/ethnicity	12%	3%	4%	2%	8%	3%	4%	2%
Primary language is Spanish	26%	24%	18%	21%	28%	24%	19%	23%
Family has any tribal ancestry or membership	0.4%	6%	7%	12%	1%	5%	6%	10%
Children								
Age of youngest child	6.5	3.5	2.7	4.5	5.8	3.5	2.7	4.3
Any children under one	14%	34%	41%	33%	16%	35%	42%	34%
Any preschoolers and under	51%	76%	83%	70%	56%	77%	84%	71%
Number of children less than 18	1.8	1.8	1.7	1.6	1.9	1.9	1.7	1.6
Family structure								
Married parents	27%	20%	21%	14%	30%	21%	21%	14%
Unmarried parents, data shows cohabitation	23%	31%	32%	20%	27%	32%	34%	22%
Unmarried parents, no data shows separation	17%	15%	13%	20%	17%	15%	13%	20%
Single mother	19%	13%	13%	25%	13%	11%	11%	22%
Single mother, ref incl father	9%	14%	14%	12%	10%	14%	14%	13%
Single father	2%	1%	1%	1%	1%	0%	0%	1%
Single father, ref incl mother	2%	4%	3%	4%	2%	3%	3%	4%
Child lived apart from parents	1%	3%	4%	4%	1%	3%	4%	5%
Presence of persons other than the focal family	20%	19%	21%	23%	20%	19%	22%	24%
Among referrals with two parents								

Both bio parents	79%	68%	63%	45%	81%	69%	64%	45%
Bio mother and step/social father	20%	31%	36%	55%	18%	30%	36%	55%
Bio father and step/social mother	1%	0%	1%	0%	1%	0%	1%	0%
Among those with mothers								
age of mother	34.7	30.2	29.4	30.9	34.5	30.3	29.5	30.7
once a teen mother	18%	26%	22%	24%	20%	26%	20%	24%
current teen mother	1%	1%	1%	2%	1%	1%	1%	1%
Among those with fathers								
age of father	37.1	32.9	32.2	33.7	37.0	32.9	32.4	33.5
once a teen father	7%	10%	9%	9%	7%	10%	10%	9%
current teen father	0.4%	0.5%	0.3%	0.6%	0%	0%	0%	1%
Hotline assessment								
Malnutrition, failure to thrive, child endangered, or unexplained child death	2%	4%	48%	6%	3%	4%	54%	7%
Inadequate food/clothing	2%	3%	1%	5%	3%	4%	1%	5%
Inadequate medical/mental health care	4%	4%	3%	3%	6%	4%	3%	4%
Inadequate/hazardous shelter	4%	8%	3%	11%	7%	9%	4%	12%
Inadequate supervision	14%	20%	10%	22%	21%	23%	10%	24%
No parent/caregiver capable of providing appropriate care	2%	4%	2%	37%	2%	4%	2%	43%
Failure to protect	15%	27%	9%	17%	23%	30%	9%	18%
Injury, punishment, threats, or dangerous behavior	26%	18%	13%	12%	39%	20%	14%	13%
non-accidental injury, severe or other	9%	4%	4%	3%	14%	4%	4%	3%
excessive corporal punishment	14%	5%	2%	6%	21%	6%	2%	7%
threats of physical harm	2%	2%	1%	1%	3%	2%	1%	1%
dangerous behavior	5%	9%	7%	4%	8%	10%	7%	4%

Caregiver substance abuse concerns or prenatal substance use	4%	16%	18%	12%	6%	18%	20%	14%
caregiver substance abuse concerns	3%	7%	4%	8%	5%	8%	5%	9%
prenatal substance use	1%	9%	14%	5%	2%	10%	15%	6%
Domestic violence	13%	29%	10%	10%	20%	32%	11%	10%
Caregiver actions led to child anxiety, depression, etc.	3%	1%	0%	1%	5%	1%	0%	1%
Caregiver bizarre or cruel behavior	5%	3%	2%	3%	7%	4%	2%	4%
Caregiver mental health concerns	2%	4%	3%	6%	3%	4%	3%	7%
Sexual act, threat, or exploitation	7%	3%	1%	2%	7%	3%	1%	2%
Final response								
Immediate	19%	31%	54%	54%	29%	35%	60%	63%
10 days	43%	54%	34%	29%	66%	60%	37%	31%
Evaluate out or assessment not required	39%	15%	12%	17%	5%	4%	3%	6%
Override	8%	12%	18%	12%	13%	14%	21%	13%

Note: NA stands for not applicable.

Table 1.2 Child Welfare Involvement Safety Assessment Results by Outcome of the First Substantiation(s) in Five Years after the First Referral among New Families that Had an In-Person Response to the First Referral (Population 2; N = 38,535)

	No substantia-tions N = 30,473	General neglect N = 6,487	Severe neglect N = 623	Caretaker absence/in capacity N = 952
Child welfare involvement				
Worker of in-person response				
Alleged victims served per month	17.2	17.1	15.9	14.5
Years since start date	7.6	7.7	7.6	8.1
Speaks Spanish	22%	21%	18%	21%
Safety assessment				
Child vulnerability				
Age 0-5 years	48%	65%	71%	61%
Diminished mental capability	5%	5%	6%	5%
Significant medical problem	4%	4%	6%	6%
Diminished physical capacity	1%	1%	2%	2%
School age but not attending school	1%	1%	1%	3%
Safety threats				
Did not meet needs for supervision, food, clothing, medical, mental care	0.4%	5%	10%	26%
Hazardous living conditions	0.2%	3%	7%	9%
Failure to protect	0.4%	4%	8%	12%
Caregiver caused physical harm	0.9%	5.3%	14.0%	4.7%
Non-accidental injury	0.2%	0.7%	3.4%	0.3%
Caregiver fears maltreatment	0.1%	0.3%	0.3%	0.8%
Threat to cause harm	0.1%	0.2%	0.3%	0.8%
Excessive discipline	0.5%	0.4%	0.5%	0.1%
Drug-exposed infant	0.2%	4.4%	11.1%	2.9%
Unexplained injury	0.2%	0.7%	3.5%	0.8%
Substance abuse	0.3%	9.7%	22.2%	20.2%
Domestic violence poses danger	1.6%	10.1%	6.7%	5.8%
Caregiver impaired ability	0.3%	3.6%	2.7%	11.7%
Negative terms and acts	0.2%	1.0%	0.8%	1.1%
Suspected sexual abuse	0.4%	0.7%	0.0%	0.7%
Previous maltreatment	0.2%	1.2%	3.9%	1.4%
Caregiver refuses access	0.1%	0.7%	0.8%	1.4%

Protective capacities				
Child has capacity	9%	7%	7%	8%
Caregiver has capacity	20%	24%	29%	17%
Recognizes problems	17%	23%	28%	16%
Can access resources	16%	22%	24%	14%
Has supportive relationships	12%	19%	23%	15%
Willing and able to protect child	9%	13%	15%	7%
Accept temporary interventions	10%	16%	18%	11%
Healthy relationship with child	16%	19%	21%	12%
Committed to child's needs	16%	18%	19%	12%
Effective problem solving	7%	7%	9%	5%
Safety decision				
Safe	94%	69%	52%	49%
Safe with plan	5%	22%	26%	9%
Placement	0%	8%	20%	38%
Missing data on decision, but threats were identified	0%	1%	1%	3%
Safety interventions				
Intervention by worker	2%	8%	10%	5%
Persons in community	3%	13%	16%	6%
Community services	3%	11%	14%	5%
Protect child from perpetrator	1%	6%	9%	1%
Perpetrator leaves home	1%	4%	5%	1%
Move to protect child	1%	2%	3%	1%
Legal action with child in home	0%	3%	4%	2%
Voluntary placement	0%	1%	1%	2%
Protective custody	0%	8%	19%	37%

Table 2.1 Linear and Nonlinear Regressions for All New Families without Substantiations and with General Neglect Substantiations (Population 1; N = 64,122)

	OLS Regression		Logistic Regression		Cox Proportional-Hazards Model	
	Coefficient Estimate	Sig. level	Odds Ratio Estimate	Sig. level	Hazard Ratio Estimate	Sig. level
Parent child welfare involvement in childhood	0.06	**	1.51	**	1.35	**
Alleged victims served per month, referral worker	0.00	**	1.00	**	1.00	**
Years since start date, referral worker	0.00	**	0.99	**	0.99	**
Speaks Spanish, referral worker	0.02	**	1.30	**	1.24	**
Race/ethnicity (base: only White)						
Only African or Black	-0.02	**	0.79	**	0.82	**
Only Asian	-0.01		0.86	*	0.85	*
Only Hispanic	0.00		0.96		0.97	
Only Native or Alaska	-0.01		0.80		0.95	
More than one race/ethnicity	0.03	**	1.19	**	1.12	**
Missing race/ethnicity	-0.05	**	0.30	**	0.32	**
Primary language is Spanish	0.00		0.98		0.97	
Tribal ancestry or membership	0.39	**	6.76	**	2.62	**
Infants and preschoolers (base: neither)						
Any infants under one	0.07	**	2.13	**	1.99	**
Any preschoolers but no infants	0.03	**	1.54	**	1.52	**
Number of children	0.00	**	1.06	**	1.04	**
Family structure (base: married parents)						
Unmarried parents, data shows cohabitation	0.01	*	1.09	*	1.08	*
Unmarried parents, no data shows separation	-0.02	**	0.87	**	0.89	**
Single mother	-0.06	**	0.67	**	0.73	**
Single mother, ref incl father	0.04	**	1.43	**	1.34	**
Single father	0.03		1.15		1.11	
Single father, ref incl mother	0.06	**	1.70	**	1.49	**
Child lived apart from parents	0.10	**	2.22	**	1.81	**
Presence of persons other than the focal family	-0.01	*	0.99		1.00	
Biological, step/social parents (base: two biological parents and one parent)						
Bio mother and step/social father	0.07	**	1.59	**	1.44	**
Bio father and step/social mother	-0.02		0.77		0.76	

Once a teen mother	0.01		1.08	*	1.05	
Once a teen father	0.00		1.00		1.01	
Malnutrition, failure to thrive, or child endangered	0.05	**	1.58	**	1.43	**
Inadequate food/clothing	0.01		1.01		0.97	
Inadequate medical/mental health care	0.01	*	1.11		1.06	
Inadequate/hazardous shelter	0.06	**	1.48	**	1.35	**
Inadequate supervision	0.04	**	1.39	**	1.30	**
No caregiver capable of providing appropriate care	0.10	**	2.13	**	1.78	**
Failure to protect	0.05	**	1.59	**	1.44	**
Non-accidental injury, severe or other	-0.04	**	0.55	**	0.57	**
Excessive corporal punishment	-0.04	**	0.48	**	0.50	**
Threats of physical harm	-0.01		0.85		0.86	
Dangerous behavior	0.03	**	1.24	**	1.18	**
Caregiver substance abuse concerns	0.06	**	1.43	**	1.32	**
Prenatal substance use	0.33	**	5.56	**	3.17	**
Domestic violence	0.10	**	2.14	**	1.84	**
Caregiver actions led to child anxiety, depression, etc.	-0.02	**	0.57	**	0.59	**
Caregiver bizarre or cruel behavior	-0.02	**	0.81	**	0.83	**
Caregiver mental health concerns	0.05	**	1.44	**	1.32	**
Sexual act, threat, or exploitation	-0.04	**	0.48	**	0.50	**

Note: The ordinary least squares (OLS) regression model includes county-fixed effects.
Note: Each "sig. level" column shows if the coefficient for the respective variable and model is not statistically significant, or significant at the 5% (*) or 1% (**) level.

Table 2.2 The Relationships of Hotline and Safety Assessment Items with General Neglect Substantiations among New Families with an In-Person Response to the First Referral (Population 2; N = 36,960), Based on Linear Regressions

	Model 1 Only hotline items		Model 2 Only safety threats		Model 3 Both hotline items and safety threats		Model 4 Hotline items, safety threats, and other safety factors	
	Estimate	Sig. level	Estimate	Sig. level	Estimate	Sig. level	Estimate	Sig. level
Hotline assessment								
Malnutrition, failure to thrive, or child endangered	0.03	**			0.02		0.02	
Inadequate food/clothing	-0.01				0.00		0.00	
Inadequate medical/mental health care	-0.02	*			-0.02	*	-0.02	**
Inadequate/hazardous shelter	0.04	**			0.03	**	0.03	**
Inadequate supervision	0.02	**			0.02	**	0.02	**
No caregiver capable of providing appropriate care	0.10	**			0.06	**	0.06	**
Failure to protect	0.03	**			0.02	**	0.02	**
Non-accidental injury, severe or other	-0.08	**			-0.07	**	-0.07	**
Excessive corporal punishment	-0.06	**			-0.05	**	-0.05	**
Threats of physical harm	-0.02				-0.01		-0.01	
Dangerous behavior	0.02	**			0.01		0.01	
Caregiver substance abuse concerns	0.06	**			0.05	**	0.05	**
Prenatal substance use	0.30	**			0.19	**	0.19	**
Domestic violence	0.08	**			0.07	**	0.07	**
Caregiver actions led to child anxiety, depression, etc.	-0.04	**			-0.03	**	-0.03	**
Caregiver bizarre or cruel behavior	-0.02	**			-0.02	**	-0.02	**
Caregiver mental health concerns	0.03	**			0.01		0.01	
Sexual act, threat, or exploitation	-0.08	**			-0.07	**	-0.07	**
Safety assessment – safety threats								

Did not meet needs for supervision, food, clothing, medical, mental care	0.29	**	0.29	**	0.29	**
Hazardous living conditions	0.26	**	0.25	**	0.24	**
Failure to protect	0.16	**	0.16	**	0.16	**
Physical harm	0.11	**	0.11	**	0.10	**
Non-accidental injury	0.12	**	0.12	**	0.12	**
Fear to maltreat child	0.08		0.05		0.03	
Threat to cause harm	0.02		0.03		0.03	
Excessive discipline	-0.13	**	-0.08	*	-0.07	*
Unexplained injury	0.05		0.09	**	0.09	*
Substance abuse	0.39	**	0.35	**	0.34	**
Drug-exposed infant	0.15	**	0.05		0.05	
Domestic violence	0.29	**	0.25	**	0.25	**
Negative terms and acts	0.30	**	0.27	**	0.25	**
Suspected sexual abuse	0.03		0.07	*	0.06	*
Caregiver impaired ability	0.17	**	0.17	**	0.16	**
Refuses access	0.01		0.03		0.03	
Previous maltreatment	-0.01		-0.02		-0.02	
Safety assessment – other safety factors						
Child has diminished mental capability					0.01	
Child has significant medical problem					0.02	*
Child has diminished physical capacity					0.00	
Child is school age but not attending school					0.03	
Child has capacity					0.00	
Caregiver has capacity					-0.01	
Recognizes problems					0.01	
Can access resources					-0.01	
Has supportive relationships					0.01	
Willing and able to protect child					0.02	*
Accept temporary interventions					0.05	**
Healthy relationship					0.00	

Committed to child's needs	-0.02	*
Effective problem solving	-0.02	**

Note: All demographic and system-related variables from Table 2.1 are included in these models but not shown in this table. The results for those demographic and systemic controls are similar to those found in Table 2.1. All linear models are ordinary least squares regressions with county-fixed effects. * $p < 0.05$, ** $p < 0.01$.

Table 2.3 Multinomial Logistic Regression Comparing General Neglect, Severe Neglect, and Caretaker Absence/incapacity to No

Substantiations, All New Families (Population 1; N = 66,025)

	A. General neglect vs. no sub.		B. Severe neglect vs. no sub.		C. Incapacity/ absence vs. no sub.		D. Coef. B. different from coef. A?	E. Coef. C. different from coef. A?
	Odds ratio estimate	Sig. level of coef.	Odds ratio estimate	Sig. level of coef.	Odds ratio estimate	Sig. level of coef.		
Parent child welfare involvement in childhood	1.53	**	1.47	**	1.38	**		
Alleged victims served per month, referral worker	1.00	**	1.00	**	1.00	**		**
Years since start date, referral worker	0.99	**	0.98	**	1.00		*	
Speaks Spanish, referral worker	1.31	**	1.28	*	1.39	**		
Only African or Black	0.79	**	0.66	**	1.29	*		**
Only Asian	0.85	*	0.56	*	1.10			
Only Hispanic	0.96		0.80		1.00			
Only Native or Alaska	0.80		0.55		0.93			
More than one race/ethnicity	1.20	**	1.44	**	1.32	**		
Missing race/ethnicity	0.30	**	0.42	**	0.15	**		**
Primary language is Spanish	0.97		0.94		1.05			
Tribal ancestry or membership	6.91	**	7.81	**	12.47	**		**
Any infants (children under one)	2.13	**	2.29	**	2.15	**		
Any preschoolers but no infants	1.53	**	1.80	**	1.32	**		
Number of children	1.05	**	0.97		0.88	**		**
Unmarried parents, data shows cohabitation	1.10	*	1.10		0.99			
Unmarried parents, missing data on cohabitation	0.87	**	0.73	*	1.19			*
Single mother	0.68	**	0.50	**	0.67	**		
Single mother, ref incl father	1.43	**	1.44	*	1.71	**		
Single father	1.16		0.61		3.05	*		
Single father, ref incl mother	1.67	**	1.27		2.18	**		

Child lived apart from parents	2.17	**	2.76	**	2.96	**		
Presence of persons other than the focal family	0.98		1.13		1.03			
Bio mother and step/social father	1.56	**	2.12	**	3.92	**	**	**
Bio father and step/social mother	0.78		1.68		0.55			
Once a teen mother	1.09	*	1.01		1.04			
Once a teen father	1.00		1.15		0.86			
Malnutrition, failure to thrive, or child endangered	1.63	**	33.15	**	2.60	**	**	**
Inadequate food/clothing	1.03		0.62		1.22			
Inadequate medical/mental health care	1.11		1.01		0.77			
Inadequate/hazardous shelter	1.47	**	0.76		1.77	**	**	
Inadequate supervision	1.40	**	0.82		1.31	**	**	
No caregiver capable of providing appropriate care	2.22	**	1.23		26.31	**	*	**
Failure to protect	1.58	**	0.63	**	1.04		**	**
Non-accidental injury, severe or other	0.55	**	0.67		0.47	**		
Excessive corporal punishment	0.49	**	0.28	**	0.80			**
Threats of physical harm	0.85		0.96		0.77			
Dangerous behavior	1.23	**	1.92	**	1.09		**	
Caregiver substance abuse concerns	1.42	**	0.80		1.54	**	**	
Prenatal substance use	5.53	**	8.54	**	2.26	**	**	**
Domestic violence	2.16	**	0.98		0.91		**	**
Caregiver actions led to child anxiety, depression, etc.	0.57	**	0.33		0.71			
Caregiver bizarre or cruel behavior	0.81	**	0.55	*	0.95			
Caregiver mental health concerns	1.45	**	1.35		1.94	**		
Sexual act, threat, or exploitation	0.49	**	0.33	**	0.49	**		

Note: This table summarizes estimates of odds ratios from a single multinomial logistic regression. The last two columns respectively examine if the odds ratios for severe neglect and absence/incapacity are statistically different from the odds ratios for general neglect.

References

Belsky, J. (1980). Child maltreatment: An ecological integration. *American Psychologist*, *35*(4), 320–335. https://doi.org/10.1037/0003-066X.35.4.320

Berkowitz, C. D., & DeRidder, C. A. (2014). Neglect and abandonment. In D. L. Chadwick, R. Alexander, A. P. Giardino, D. Esernio-Jenssen, & J. Thackeray (Eds.), *Chadwick's Child Maltreatment, Vol 1: Physical Abuse and Neglect* (pp. 159–205). Saint Louis, MO: STM Learning, Inc.

Brassard, M. R., & Donovan, K. L. (2006). Defining psychological maltreatment. In M. M. Feerick, J. F. Knutson, P. K. Trickett, & S. M. Flanzer (Eds.), *Child Abuse and Neglect: Definitions, Classifications, and a Framework for Research* (pp. 151–197). Baltimore, MD: Paul H Brookes Publishing Co.

Child Welfare Information Gateway. (2006). *Child neglect: A guide for prevention, assessment, and intervention*. Washington, DC: U.S. Department of Health and Human Services, Children's Bureau.

Child Welfare Information Gateway. (2019). State Statutes Search. Retrieved from https://www.childwelfare.gov/topics/systemwide/laws-policies/state/?CWIGFunctionsaction=statestatutes:main.getResults

Coohey, C. (2003). Defining and classifying supervisory neglect. *Child Maltreatment*, *8*(2), 145–156.

Currie, J., & Spatz Widom, C. (2010). Long-term consequences of child abuse and neglect on adult economic well-being. *Child Maltreatment*, *15*(2), 111–120. https://doi.org/10.1177/1077559509355316

Dubowitz, H., Pitts, S. C., & Black, M. M. (2004). Measurement of three major subtypes of child neglect. *Child Maltreatment*, *9*(4), 344–356.

Egeland, B., Sroufe, L. A., & Erickson, M. (1983). The developmental consequence of different patterns of maltreatment. *Child Abuse and Neglect*, *7*(4), 459–469.

Erickson, M. F., Egeland, B., & Pianta, R. (1989). The effects of maltreatment on the development of young children. In D. Cicchetti & V. Carlson (Eds.), *Child Maltreatment: Theory and Research*

on the Causes and Consequences of Child Abuse and Neglect (pp. 647–684). New York, NY: Cambridge University Press.

Fang, X., Brown, D. S., Florence, C. S., & Mercy, J. A. (2012). The economic burden of child maltreatment in the United States and implications for prevention. *Child Abuse & Neglect*, *36*(2), 156–165. https://doi.org/10.1016/j.chiabu.2011.10.006

Farrell, E. M., Labella, M. H., & Egeland, B. (2018). Child Neglect. In J. B. Klika & J. R. Conte (Eds.), *The APSAC Handbook on Child Maltreatment* (pp. 127–144). Thousand Oaks, CA: SAGE Publications, Inc.

Fuemmeler, B. F., Dedert, E., McClernon, F. J., & Beckham, J. C. (2009). Adverse childhood events are associated with obesity and disordered eating: Results from a US population-based survey of young adults. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, *22*(4), 329–333.

Goodwin, R. D., & Stein, M. B. (2004). Association between childhood trauma and physical disorders among adults in the United States. *Psychological Medicine*, *34*(3), 509–520.

Green, J. G., McLaughlin, K. A., Berglund, P. A., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., & Kessler, R. C. (2010). Childhood adversities and adult psychiatric disorders in the national comorbidity survey replication I: associations with first onset of DSM-IV disorders. *Archives of General Psychiatry*, *67*(2), 113–123.

Hanson, J. L., Adluru, N., Chung, M. K., Alexander, A. L., Davidson, R. J., & Pollak, S. D. (2013). Early neglect is associated with alterations in white matter integrity and cognitive functioning. *Child Development*, *84*(5), 1566–1578. https://doi.org/10.1111/cdev.12069

Heim, C., Shugart, M., Craighead, W. E., & Nemeroff, C. B. (2010). Neurobiological and psychiatric consequences of child abuse and neglect. *Developmental Psychobiology*, *52*(7), 671–690. https://doi.org/10.1002/dev.20494

Henkel, D. (2011). Unemployment and substance use: a review of the literature (1990-2010). *Current Drug Abuse Reviews*, *4*(1), 4–27.

Hildyard, K. L., & Wolfe, D. A. (2002). Child neglect: developmental issues and outcomes☆. *Child Abuse & Neglect*, *26*(6), 679–695. https://doi.org/10.1016/S0145-2134(02)00341-1

Jonson-Reid, M., Drake, B., Kim, J., Porterfield, S., & Han, L. (2004). A prospective analysis of the relationship between reported child maltreatment and special education eligibility among poor children. *Child Maltreatment*, *9*(4), 382–394. https://doi.org/10.1177/1077559504269192

Jonson-Reid, M., Kohl, P. L., & Drake, B. (2012). Child and adult outcomes of chronic child maltreatment. *Pediatrics*, *129*(5), 2011–2529. https://doi.org/10.1542/peds.2011-2529

Kantor, G. K., Holt, M. K., Mebert, C. J., Straus, M. A., Drach, K. M., Ricci, L. R., … Brown, W. (2004). Development and preliminary psychometric properties of the multidimensional neglectful behavior scale-child report. *Child Maltreatment*, *9*(4), 409–428.

Mennen, F. E., Kim, K., Sang, J., & Trickett, P. K. (2010). Child neglect: Definition and identification of youth's experiences in official reports of maltreatment. *Child Abuse and Neglect*, *34*(9), 647–658. https://doi.org/10.1016/j.chiabu.2010.02.007

Mersky, J. P., Berger, L. M., Reynolds, A. J., & Gromoske, A. N. (2009). Risk factors for child and adolescent maltreatment: A longitudinal investigation of a cohort of inner-city youth. *Child Maltreatment*, *14*(1), 73–88. https://doi.org/10.1177/1077559508318399

Mills, R., Alati, R., O'Callaghan, M., Najman, J. M., Williams, G. M., Bor, W., & Strathearn, L. (2010). Child abuse and neglect and cognitive function at 14 years of age: Findings from a birth cohort. *Pediatrics*, 2009–3479. https://doi.org/10.1542/peds.2009-3479

Mulder, T. M., Kuiper, K. C., Van, C. der P., Stams, G. J. M., & Assink, M. (2018). Risk factors for child neglect: A meta-analytic review. *Child Abuse & Neglect*, *77*, 198–210. https://doi.org/10.1016/j.chiabu.2018.01.006

Nikulina, V., Widom, C. S., & Czaja, S. (2011). The role of childhood neglect and childhood poverty in predicting mental health, academic achievement and crime in adulthood. *American Journal of Community Psychology*, *48*(3–4), 309–321. https://doi.org/10.1007/s10464-010-9385-y

Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: A systematic review and meta-analysis. *PLOS Medicine*, *9*(11), e1001349. https://doi.org/10.1371/journal.pmed.1001349

Slack, K. S., Jane, H., Altenbernd, L., McDaniel, M., & Stevens, A. B. (2003). Improving the measurement of child neglect for survey research: Issues and recommendations. *Child Maltreatment*, *8*(2), 98–111.

Stith, S. M., Liu, T., Davies, L. C., Boykin, E. L., Alder, M. C., Harris, J. M., … Dees, J. E. M. E. G. (2009). Risk factors in child maltreatment: A meta-analytic review of the literature. *Aggression and Violent Behavior*, *14*(1), 13–29. https://doi.org/10.1016/j.avb.2006.03.006

Trickett, P. K., Mennen, F. E., Kim, K., & Sang, J. (2009). Emotional abuse in a sample of multiply maltreated, urban young adolescents: Issues of definition and identification. *Child Abuse and Neglect*, *33*(1), 27–35.

U.S. Department of Health and Human Services. (2019). *Child maltreatment 2017*. Retrieved from US Government Printing Office website: https://www.acf.hhs.gov/cb/research-data-technology/statistics-research/child-maltreatment

U.S. Department of Health and Human Services. (1994). *National study of protective, preventive, and reunification services delivered to children and their families*. Washington, DC: US Government Printing Office.

Sedlak, A. J., & Broadhurst, D. D. (1996). *The third national incidence study of child abuse and neglect*. Washington, DC: U.S. Department of Health and Human Services.

Williamson, J. M., Borduin, C. M., & Howe, B. A. (1991). The ecology of adolescent maltreatment: A multilevel examination of adolescent physical abuse, sexual abuse, and neglect. *Journal of Consulting and Clinical Psychology*, *59*(3), 449–457.