Maltreatment Re-Reports among Child Welfare-Involved Families with Intellectually

Disabled Caregivers

by

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A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy

Approved April 2014 by the Graduate Supervisory Committee:

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May 2014

ABSTRACT

Families with intellectually disabled caregivers are more likely than families without intellectually disabled caregivers to experience poor child welfare outcomes, including high rates of substantiation. However, little research has examined child maltreatment re-reports among this population. The objectives of this study were to begin to address this gap by examining maltreatment re-report rates, and factors associated with maltreatment re-reports, among child welfare-involved families with intellectually disabled caregivers.

Survival analysis was conducted using restricted release data from the National Survey of Child and Adolescent Well-Being (NSCAW) to examine the hazard rate and survival rate of maltreatment re-reports for cases with, and without, intellectually disabled caregivers. Multivariate discrete-time hazard models were run using logistic regression to examine the relationship between various predictors and the hazard of maltreatment re-reports.

Results revealed that child protection cases involving caregivers with intellectual disabilities were no more likely than cases without intellectually disabled caregivers to experience maltreatment re-reports. Predictors of maltreatment re-reports varied based on whether or not a case involved a caregiver with an intellectual disability. Child gender, child disability, and child race/ethnicity were significant predictors for cases involving caregivers with intellectual disabilities, whereas prior involvement with CPS, caretaker drug problems, and initial allegation substantiation were significant predictors for cases for cases not involving caregivers with intellectual disabilities. These preliminary

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findings suggest that prevention, screening, and intervention strategies should consider variability of predictive factors based on caregiver intellectual disability status.

DEDICATION

To my family, Jami, and Wally.

ACKNOWLEDGMENTS

I would first like to thank my parents for their unconditional love, unending support, and unwavering encouragement: I would not be where I am today without them. I would also like to express my gratitude to my dissertation chair, Dr. Michael Shafer, for his constant guidance, generosity, and patience. In addition, I am very thankful to Dr. Judy Krysik and Dr. Cecilia Ayón for their invaluable feedback and assistance. I am also grateful to Mary Lutes, Laura Orr, Lisa Moen, and Richard 'Rico' Rivera for being indispensable resources. Finally, I would like to thank Jami and Wally for being by my side at all times and for brightening my days.

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Chapter 1: Introduction

Intellectual disability, previously termed mental retardation, is a condition with onset prior to age 18 years that is marked by below average intellectual functioning and limitations in adaptive behavior, including social skills, practical skills, and conceptual skills (American Association on Intellectual and Developmental Disabilities, 2013). Standardized intelligence tests are used frequently to measure intellectual functioning: individuals with an IQ score less than 70 are typically deemed to have an intellectual disability (American Psychiatric Association [*DSM-IV-TR*], 2000). Traditionally, the severity of intellectual disability has been regarded as ranging from mild (IQ of 50-55 to 70) to profound (IQ below 20-25) (APA, 2000). However, the use of IQ as an indicator for intellectual disability is being replaced by more qualitative measures, as evidenced by changes to the diagnostic criteria for 'intellectual developmental disorder' that have been incorporated into the most recent (5th) edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (APA, 2013). The three criteria that must be met for a diagnosis of 'intellectual developmental disorder' are as follows:

- A. Deficits in general mental abilities such as reasoning, problem-solving, planning, abstract thinking, judgment, academic learning and learning from experience;
- B. Impairment in adaptive functioning for the individual's age and sociocultural background. Adaptive functioning refers to how well a person meets the standards of personal independence and social responsibility in one or more aspects of daily life activities, such as communication, social participation, functioning at school or at work, or personal independence at home or in community settings. The

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limitations result in the need for ongoing support at school, work, or independent life; and

C. All symptoms must have an onset during the developmental period.

Prevalence

Inconsistent and changing nomenclature, nosology, and definitions make it difficult to estimate accurately (and compare across studies) the prevalence of intellectual disabilities (Connolly, 2009). Although there is a paucity of population-based epidemiological studies that have assessed the prevalence of individuals with intellectual disabilities, estimates suggest that 1-3% of the U.S. population have an intellectual disability (Administration for Children and Families, 2012; APA, 2000).

Larson et al. (2001) used the National Health Interview Survey – Disability Survey (NHIS-D) to estimate the prevalence of mental retardation in the United States. The National Health Interview Survey (NHIS) is conducted annually by the U.S. Census Bureau to assess the health of the U.S. population (Centers for Disease Control and Prevention (CDC), 2012). Approximately 35,000 households representing 87,500 individuals are randomly sampled from the U.S. non-institutionalized population and surveyed each year. A disability supplement (NHIS-D) was added to the 1994 and 1995 NHIS to better understand disability through prevalence estimates, descriptive information, and service use (CDC, 2012). The NHIS-D was delivered in two stages. In the first stage, all randomly sampled households were provided both the standard NHIS and the NHIS-D. Households were included in the second stage of the NHIS-D if they indicated in the first stage that at least one family member of the household had a disability. The Phase II questionnaires solicited information related to employment, service utilization, environmental barriers, and the impact of having a family member with a disability (CDC, 2012). For example, a family was asked if their child's health had resulted in anyone in the family ever: not taken a job in order to care for the child; quit working other than for normal maternity leave; changed jobs; changed work hours to a different time of day; turned down a better job or promotion; worked fewer hours.

Larson et al. (2001), in analyzing the NHIS-D data, identified individuals with intellectual disabilities if a household member was documented as having mental retardation, or if mental retardation was documented as the cause of limitations in play or school activities (for children), work limitations (for adults), or overall limitations, including difficulties in communication and daily living activities (for all individuals). Applying these criteria to the 1994/1995 NHIS-D data, Larson et al. (2001) estimated that there were approximately 2 million people in the non-institutionalized U.S. population who had mental retardation, which equates to 7.8 people per 1,000 (0.78% prevalence rate). Larson et al. also estimated that there were approximately 4 million people in the non-institutionalized U.S. population who had mental retardation and/or developmental disabilities (MR/DD), which equates to 14.9 people per 1,000 (1.49% prevalence rate). When broken down by age groups, Larson et al. found a 3.84% prevalence rate of MR/DD among children ages birth through 5 years, a 3.17% prevalence rate of MR/DD among children ages 6 to 17 years, and a 0.79% prevalence rate of MR/DD among adults ages 18 years and older. The Administration for Children and Families (2012) estimated that the prevalence rate of intellectual disabilities might be as high as 3% if unknown cases (e.g. unidentified individuals who live in rural/isolated areas) and individuals living in institutions are factored into the previous estimate.

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There are limited nationally representative epidemiological studies that have assessed the prevalence of parents with intellectual disabilities. Moreover, the more common small, non-representative prevalence studies that have been conducted have predominantly used data from clinical sites, which has likely resulted in underestimates (given that parents with intellectual disabilities who do not have a formal diagnosis or who do not receive services are excluded from analyses) (Elvish, Hames, English, & Willis, 2006; McConnell & Llewellyn, 2002; Morch, Skar, & Andersgard, 1999).

Anderson, Byun, Larson, and Lakin (2005) analyzed the 1994/1995 National Health Interview Survey – Disability Survey (NHIS-D), using the same identification processes used by Larson et al. (2001), to estimate the prevalence of mothers with intellectual disabilities. Mothers with intellectual disabilities were included in Anderson et al.'s (2005) analysis if they were between the ages of 18 and 55, and if they lived with one or more children 0-17 years of age. Using these criteria, Anderson et al. estimated that there were 124,591 mothers in the non-institutionalized U.S. population who had intellectual disabilities. Anderson et al. did not, however, provide estimates of the percent of all parents in the U.S. who have intellectual disabilities. Crude calculations using estimates from Anderson et al. (2005) and from the Census Bureau, which indicate that there were 85.4 million mothers in the United States in 2009 (U.S. Census Bureau, 2014), suggests that approximately 0.15% of mothers in the United States may have an intellectual disability. However, caution should be taken when interpreting this estimate, given that Anderson et al.'s data are over 15 years old.

In the United Kingdom, Emerson, Malam, Davies, and Spencer (2005) conducted a national survey of adults with intellectual disabilities. A total of 2,898 individuals (aged 16 years or older) with intellectual disabilities were interviewed between July 2003 and October 2004. Individuals who lived in private households or supported accommodation were identified through contact with Social Services Departments, the Office of the Deputy Prime Minister, the National Care Standards Commission, and the Department of Health. With regard to prevalence estimates, Emerson et al. (2005) found that only 7% of the individuals who were interviewed indicated that they had children.

In Germany, Pixa-Kettner (2008) conducted a nationwide study in 2005 to assess the prevalence of parents with intellectual disabilities. Pixa-Kettner invited all service providers that served individuals with intellectual disabilities to participate (701 out of 2,106 facilities responded; 33% response rate). A total of 2,126 cases of parenthood were identified. This represented 1.1% of people with intellectual disabilities when Pixa-Kettner used national estimates of the total population of individuals with intellectual disabilities (254,000 people, as reported by the Federal Statistical Office Germany). However, these are likely underestimates, given that only one-third of the contacted facilities responded. These estimates, when compared to a similar study conducted by the author between 1993 and 1995 (Pixa-Kettner, 1998), which also had a relatively low response rate (40%), indicate a 41-45% increase in the number of parents with intellectual disabilities over the 12-year period (1993-2005). Pixa-Kettner (2008) speculated that this increase was due to more people with intellectual disabilities having children, potentially as a result of revisions to the German legal system in 1992 regarding sterilization. Indeed, despite the uncertainty regarding the exact prevalence of parents with intellectual disabilities, general consensus has emerged that more individuals with intellectual disabilities are becoming parents as a result of the Civil Rights Movement

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(including the overturning of sterilization laws) and the normalization principle (Booth, 2003; Crain & Millor, 1978; Olsen, 1996; Ray, Rubenstein, & Russo, 1994; Tarleton, Ward, & Howarth, 2006).

Reproductive Rights

Guided by the eugenics movement, sterilization policies have until recently prevented individuals with intellectual disabilities from procreating (McGaha, 2002). The eugenics movement arose in the late 19th century amid fears that 'unfit' qualities associated with the 'feebleminded', who were purported to have high fertility rates, would be passed on to future generations and result in the adulteration and weakening of humanity (Ricks & Dziegielewski, 2000). Involuntary sterilization was proposed, and later adopted, as a means of curtailing the offspring of 'weaker' individuals (including the progeny of persons with intellectual disabilities) in an effort to promote the betterment/fitness of humanity (Diekema, 2003). Proponents of the eugenics movement also proclaimed that involuntary sterilization would reduce economic costs and society's burden of caring for and assisting future generations of 'feebleminded' people, who were regarded as unproductive citizens (Ricks & Dziegielewski, 2000).

The first sterilization law was passed in Indiana in 1907, and within a decade 17 states had passed sterilization laws (Reilly, 1987). By 1921, over 3,200 involuntary sterilizations were conducted per state laws (Reilly, 1987). Support for involuntary sterilization reached its apogee in 1927 with the notorious U.S. Supreme Court decision in the Buck vs. Bell case to uphold Virginia's involuntary sterilization law targeting individuals deemed 'mentally defective' (Diekema, 2003).

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The Buck vs. Bell case involved Carrie Buck, a 17-year old girl with an intellectual disability who became pregnant after being raped (Ricks & Dziegielewski, 2000). Justice Holmes, who made the decision that led to the eventual involuntary sterilization of Carrie Buck, determined that Buck, her daughter, and her mother were all 'feebleminded', and that "three generations of imbeciles are enough" (Diekema, 2003). In the wake of Buck vs. Bell, a total of 30 states had sterilization laws; pursuant to these state laws, more than 60,000 involuntary sterilizations occurred between 1907 and 1963 (Reilly, 1987).

In the 1960s, when the Civil Rights Movement was underway, states began to declare that sterilization laws were unconstitutional, which eventually lead to their repeal (Diekema, 2003; Ricks & Dziegielewski, 2000). The stimulus to repeal sterilization laws was due in large part to the National Association for Retarded Children (a lobbying group that challenged eugenic sterilization), whose views were reaffirmed in 1962 by the President's Commission on Mental Retardation (Reilly, 1987). At the same time, the uptake of the normalization principle in the 1960s and 1970s was fundamental to the deinstitutionalization movement, which ultimately resulted in increased community participation, affording individuals with intellectual disabilities the right to become more integrated into society and to live a 'normal' life, including having intimate relationships (Wolfensberger, 1980a).

Normalization

The premise behind normalization is that social roles can be enhanced by, "making available to all mentally retarded people patterns of life and conditions of everyday living which are as close as possible to the regular circumstances and ways of life of society" (Nirje, 1980, p.33). The principle of normalization was proposed in an effort to promote community integration and participation, which in turn would lead to improvements in quality of life. Bengt Nirje and Wolf Wolfensberger were pioneers of the normalization principle, which was first promulgated in Scandinavia (primarily Denmark and Sweden) in the 1960's (Nirje, 1980; Wolfensberger, 1980b).

Nirje's (1980) rendition of normalization, which embraces concepts of selfdetermination and social and community integration, proposed that individuals with 'mental retardation' should be afforded the opportunity to work, be educated, and live life in a valued manner that is similar and consistent to the way individuals without disabilities experience these patterns and conditions of life. He further suggested that individuals with 'mental retardation' are 'handicapped' not only by their impairments, but also by environmental barriers, negative perceptions held by society, unsatisfactory education and social contacts, and other conditions resulting from social neglect. Nirje (1980) proposed that although cognitive impairment cannot be cured, social neglect can be, through the normalization principle.

Nirje (1985) later added an ethical undertone to normalization: "the normalization principle means that you act right when you let the handicapped person obtain the same or as close as possible to the same conditions of life as you would prefer if you were in his situation" (p. 67). A caveat to note is that normalization does not focus on making the individual 'normal', but rather it attempts to make the living conditions and patterns of life experienced by individuals with disabilities comparable to those experienced by individuals with disabilities.

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Wolfensberger (1980a) expanded Nirje's definition by addressing both processes/means and outcomes and including the, "use of culturally normative means to offer persons life conditions at least as good as that of average citizens, and to as much as possible enhance or support their behavior, appearances, experiences, status and reputation" (p.8). Thus, for normalization to be successful, restructuring of both the environment and of society's attitudes towards individuals with disabilities was required (Nirje, 1980; Wolfensberger, 1980a, 1999).

Wolfensberger (1983), in an effort to rectify and clarify misrepresentations/misunderstandings, later advocated for changing the name of the normalization principle to social role valorization. Social role valorization, which updated and expanded the theory of normalization, was based on the notion that normalization requires individuals with disabilities to achieve and maintain valued social roles and life conditions, because these individuals are often considered devalued (which is thought to result in unfair treatment). Wolfensberger (1983) suggested that for individuals with disabilities to achieve a socially valued role, and to overcome oppression and discrimination, they must first have their social image enhanced. Additionally, services for individuals with disabilities needed to be improved and restructured to promote quality of life, self-determination, and integration.

The normalization principle was a major driving force behind the deinstitutionalization movement and the shift from institutional care to community participation and community-based services (Landesman & Butterfield, 1987). The transition from segregated institutionalization to living in least restrictive community environments promoted social integration efforts and created independence/freedom for

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individuals with intellectual disabilities to develop, among other things, romantic relationships and to have children (Wade, 2002). Indeed, as a result of the deinstitutionalization movement, individuals with intellectual disabilities, who were separated by gender while institutionalized (in an effort to discourage and prohibit sexual behavior), were now living and participating in the community with individuals of the opposite sex (Radford, 1991). In addition to increased opportunities for interaction with members of the opposite sex, the Civil Rights Movement and the sexual revolution of the 1960s and 1970s that occurred alongside the deinstitutionalization movement promoted the sexual rights of individuals with intellectual disabilities (Wade, 2002).

In summary, the rights of individuals with intellectual disabilities to form romantic relationships, to marry, and to procreate were limited by sterilization laws and through institutionalization. The rescinding of sterilization laws and the advent of normalization, which helped instigate the deinstitutionalization movement, were vital in helping individuals with intellectual disabilities gain the right to become parents (Kerr, 1999; Watkins, 1995). However, increases in parents with intellectual disabilities resulting from the Civil Rights Movement and social integration policies have been accompanied by high rates of child removal and an over-representation of these parents in child welfare proceedings, as discussed next (Booth, Booth, & McConnell, 2005a).

Chapter 2: Literature Review

In the United States, prevalence studies on child welfare-involved parents with intellectual disabilities are scant (see Appendix A). Taylor et al. (1991), in reviewing 206 consecutive court records of abused/neglected children in Boston, found that 13% of the cases involved parents with intellectual limitations (IQ < 79). Bogacki and Weiss (2007) reviewed a random sample of psychological evaluations for 300 defendants who were involved in parental rights proceedings in New Jersey between 2000 and 2006, and found that 6% of the sample had mental retardation (IQ \leq 70). Only defendants with psychological evaluations were included in Bogacki and Weiss's (2007) study, and as such the estimated prevalence rates of intellectual disability are unlikely to be representative of the total population of individuals involved in parental rights proceedings (including individuals with and without psychological evaluations). Furthermore, given that both of these studies used relatively small samples from select locations, caution should be taken when generalizing the findings; large representative studies are needed to assess if these estimates are found throughout the U.S.

The Public Health Agency of Canada (2010), in analyzing the 2008 Canadian Incidence Study of Reported Child Abuse and Neglect (CIS-2008)¹, found that among a random sample of investigations involving substantiated child maltreatment allegations (n = 6,163), 6% involved caregiver cognitive impairment (as documented by the child

¹ The Canadian Incidence Study of Reported Child Abuse and Neglect is a national surveillance program designed to examine the incidence and characteristics of child maltreatment cases investigated by Canadian child welfare agencies in all 13 provinces and territories (Public Health Agency of Canada, 2010).

protection worker)². In another Canadian study, McConnell et al. (2011b) conducted a secondary analysis of the older CIS-2003, finding among a random sample of 11,562 child maltreatment investigations that parents with cognitive impairments were involved in 10% of cases, and 13% of substantiated cases. McConnell et al. (2011b) also found parental cognitive impairments to be documented in 17% of cases involving children younger than one year of age, 20% of cases that remained open (for ongoing services), 27% of cases resulting in court application, and 40% of cases resulting in court application that involved children aged 0-5 years. McConnell et al.'s (2011b) analysis of the CIS-300 is, to date, the most comprehensive study assessing prevalence rates of child welfare-involved parents with intellectual disabilities.

In the United Kingdom, Booth, Booth, and McConnell (2005b) reviewed 437 cases brought before the Family Proceedings Courts in Leeds and Sheffield as a result of child protection concerns. Parental intellectual disabilities were documented in 15% of the cases. The prevalence estimate of parental intellectual disability increased to 20% of cases when borderline intellectual disability was also included (Booth, Booth, & McConnell, 2005a). In Australia, Llewellyn, McConnell, and Ferronato (2003) reviewed 285 cases brought before two Children's Courts in New South Wales as a result of child protection concerns. Parental intellectual disabilities were found in 9% of the cases.

² Caregiver functioning and family stressors were assessed using a 10 item checklist that included: alcohol abuse, drug/solvent abuse, criminal activity, mental health issues, physical health issues, few social supports, maltreated as a child, victim of domestic violence, perpetrator of domestic violence, and cognitive impairments ("The cognitive ability of at least one caregiver is known or suspected to have an impact on the quality of care giving provided in the household") (Trocme et al., 2005, p.81).

In summary, families with intellectually disabled caregivers appear to be overrepresented in both child maltreatment investigations and child welfare related court cases. Although less than 3% of the U.S. population have an intellectual disability, previous research indicates that caregivers with intellectual disabilities represent up to 10% of child maltreatment investigations and 20% of court cases initiated as a result of child protection concerns (Booth et al., 2005a; McConnell et al., 2011b). Compounding this, research indicates that these families experience poorer child welfare outcomes than families without intellectually disabled caregivers.

Child Welfare Outcomes

In Michigan, Seagull and Scheurer (1986) reviewed the cases of 64 children of 20 child welfare-involved families where either a mother or father had an intellectual disability (IQ \leq 74). Participating families were initially referred to a multidisciplinary outpatient clinic for child maltreatment issues and were followed up after one to seven years (depending on when the family last had contact with the clinic) to determine placement outcomes. All of the children had reportedly been neglected, and slightly less than half (45%) of the families had at least one child who was diagnosed with failure to thrive. Seagul and Scheurer (1986) noted that, "there were also instances of physical, emotional and sexual abuse" (p. 494), but no details were provided with regard to how many children experienced each form of abuse. With regard to placement outcomes, only 11 of the 64 children (17%) remained in the care of the parents. More children were associated with terminated parental rights than any other placement outcome: courts had terminated the parental rights for more than half of the children (53%; 34 children). Children were less likely to be placed in temporary foster care (n = 9), relinquished

voluntarily (n = 6), or awarded to the nondisabled divorce (n = 2). Two children had died.

Taylor et al. (1991) reviewed 206 consecutive referrals to the Boston Juvenile Court for cases involving child maltreatment. Cases involving sexual abuse and/or children older than 12 years of age were excluded from Taylor et al.'s case review, and over half (51%) of the records involved a parent who was diagnosed with an emotional disorder and/or intellectual impairment (IQ \leq 79). Overall, the majority of cases (60%) were associated with neglect only, 20% involved both abuse (abuse type not specified) and neglect, and 18% involved physical abuse only. With regard to outcomes, parents with intellectual impairment had significantly less prior court involvement and higher acceptance rates of court-ordered services than parents without intellectual impairment, yet they had higher rates of children removed permanently (75%) compared to parents with no diagnosis (69%). Finally, Accardo and Whitman (1990), in surveying 79 families with an intellectually disabled parent in St. Louis, Missouri, found a 46% removal rate among the families' 226 children, although approximately two-thirds (66.4%) of the children who remained at home had experienced child maltreatment.

McConnell et al. (2011b), in conducting a secondary analysis of the CIS-2003, examined Canadian child maltreatment investigations involving parental cognitive impairment with regard to three maltreatment investigation outcomes: case disposition, substantiation, and court application. McConnell et al.'s analysis included 11,562 child maltreatment investigations opened between October 1, 2003 and December 31, 2003 in Canada (excluding Quebec; children older than 15 were also excluded). McConnell et al. found, among other things, that cases involving caretaker cognitive impairment, compared to cases without caretaker cognitive impairment, were more likely to be associated with the following: children with functioning issues (64% vs. 42%), prior substantiated reports (38% vs. 22%), neglect allegations (56% vs. 39%), signs of mental or emotional harm (22% vs. 12%), perceived non-cooperation of parent with investigation (23% vs. 11%), parent mental health issues (66% vs. 22%), parent maltreated as child (60% vs. 20%), parent has few social supports (68% vs. 33%), parent did not finish high school (69% vs. 34%), and no household employment (50% vs. 23%).

When no variables were controlled for, McConnell et al. (2011b) found that cases involving caretaker cognitive impairment, compared to cases without caretaker cognitive impairment, were more likely to be associated with substantiated allegations (61% vs. 46%), cases remaining open (55% vs. 25%), and court applications being made (10% vs. 3%). When controlling for child and case characteristics (e.g. age of child and maltreatment type), investigations involving caregiver cognitive impairment were significantly more likely than investigations not involving caregiver cognitive impairment to remain open for ongoing protective services (OR = 2.2), to be substantiated (OR = 1.5) and to result in application to child welfare court (OR = 1.7). However, when controlling for caregiver psychosocial risk (maltreated as a child, mental health issues, few social supports, drug/alcohol abuse, and being a sole parent), in addition to controlling for child and case characteristics, McConnell et al. (2011b) found caregiver cognitive impairment status significantly predicted only whether a case remained open for ongoing services (OR = 1.3). This in turn suggests that caregiver cognitive impairment *per se* (i.e. in isolation of other factors) may not be a risk factor for

substantiation or court application. Replication studies are needed to ascertain if these findings also hold true in other countries, such as in the United States.

In England, Booth et al. (2005b) reviewed 437 cases, involving 828 children, brought before the Family Proceedings Courts in Leeds and Sheffield as a result of child protection applications. Booth et al. found that cases involving parental learning difficulties³ were more likely than cases without parental learning difficulties to involve newborns (22% vs. 9%) and children with impairments/disabilities (32% vs. 10%). With regard to court orders and placement outcomes, children in cases with parental intellectual disabilities were less likely than children in cases without parental intellectual disabilities to be returned home (10% vs. 30%), and more likely to be placed outside the home with non-family (75% vs. 52%) and freed for adoption (42% vs. 29%). Booth et al. (2005b) also conducted subgroup analyses to compare outcomes among cases involving parental intellectual disabilities, parental mental illness, parental drug/alcohol problems, and parental mental illness plus drug/alcohol problems. Results from the subgroup analyses found children in cases with parental intellectual disabilities were less likely to be returned home than children in each of the other subgroups. Furthermore, children in cases with parental intellectual disabilities were more likely to be placed outside the family with non-family and more likely to be freed for adoption than children in each of the other subgroups.

In Australia, Llewellyn et al. (2003) reviewed 285 cases (involving 469 children) that were initiated by the child protection authority and finalized by two Children's

³ Clinical assessments and other documentation/evidence (e.g. attendance at "special schools") were used to identify parents with learning difficulties (Booth et al., 2005b).

Courts in New South Wales. Compared to the total sample, cases with parental intellectual disabilities⁴ had vounger children (M = 48.4 months vs. M = 64.9 months) and a higher percentage of single mothers (53% vs. 39%). Regarding placement outcomes, Llewellyn et al. (2003) examined five subgroups of cases: parents with no disabilities, parents with no disabilities but suspected drug/alcohol use, parents with psychiatric disabilities, parents with psychiatric disabilities plus suspected drug/alcohol use, and parents with intellectual disabilities. Higher rates of court wardship orders (i.e. termination of parental rights) were found for children of parents with intellectual disabilities (56%) than for children in cases involving no parental disabilities (37%), no parental disabilities but suspected drug/alcohol use (47%), parental psychiatric disabilities (35%), and parental psychiatric disabilities plus suspected drug/alcohol use (43%). Conversely, lower rates of court custody orders⁵ were found for children of parents with intellectual disabilities (11%) than for children in cases involving no parental disabilities (27%), no parental disabilities but suspected drug/alcohol use (30%), parental psychiatric disabilities (16%), and parental psychiatric disabilities plus suspected drug/alcohol use (34%). Among all children who were placed out of the home, children in cases involving intellectual disabilities were more likely than children in each of the aforementioned groups to be placed with non-family, and less likely to be placed with extended family.

⁴ Diagnoses of parental intellectual disabilities were made by psychiatrists/psychologists and documented in the court file (Llewellyn et al., 2003).

⁵ Court custody orders in New South Wales involve placing a child in the custody of a suitable person (typically a family member), as deemed by the court. Court custody orders are considered less intrusive than court wardship orders (Llewellyn et al., 2003).

When taken together, the extant literature (see Appendix A) suggests that families with intellectually disabled caregivers represent up to 10% of child maltreatment investigations and 20% of court cases initiated as a result of child protection concerns (Booth et al., 2005a; McConnell et al., 2011b). These families, once involved in the child welfare system, experience poorer child welfare outcomes, including more children being removed from their home, than families without intellectually disabled caregivers. Examinations of court cases initiated by child protection authorities have revealed that up to 75% of children in families with intellectually disabled parents have been removed permanently (Taylor, 1991). This estimate appears to be slightly exaggerated when compared to estimates from other studies, which suggest that the parental rights of approximately 40-50% of children in families with intellectually disabled caregivers are terminated in maltreatment court cases (Booth et al., 2005b; Llewellyn et al., 2003; Seagull & Scheurer, 1986). Unsurprisingly, repeated acts of child maltreatment likely increase the probability that these children will be removed. Indeed, Elvish et al. (2006) found that the risk of child removal among children in families with an intellectually disabled caregiver increased substantially with more involvement in the child welfare system: from a removal rate of 38% for families with no prior child maltreatment investigations to a removal rate of 86% for families with more than one child maltreatment investigation. Moreover, child welfare-involved caregivers with intellectual disabilities are more likely than child welfare-involved caregivers without intellectual disabilities to have prior substantiated maltreatment reports (McConnell et al., 2011b), which may partially explain high rates of child removal found among families with intellectually disabled caregivers. Despite this, no research has examined factors

associated with child maltreatment recurrence among families with intellectually disabled caregivers.

Maltreatment Recurrence

The main goal of CPS is to promote the wellbeing of children and to prevent future acts of maltreatment (DePanfilis & Salus, 2003). The Child Abuse Prevention and Treatment Act of 1974 (CAPTA), which outlines the philosophical underpinnings of child protection and is perhaps the most important federal legislation that addresses child maltreatment (see next section), was passed to promote prevention efforts through, among other things, improved identification and investigation efforts. Despite these efforts, a substantial proportion of children are maltreated repeatedly.

The operationalization of recurrence can take many forms. Some researchers may define recurrence as subsequent reports of maltreatment involving substantiated allegations. Other researchers may include subsequent reports involving either substantiated or unsubstantiated allegations. Furthermore, researchers need to decide if subsequent reports should include only the same child, any child in the family, the same perpetrator, or any perpetrator (Fluke, Yuan, & Edwards, 1999). Finally, researchers need to determine how long they intend to follow a child/family when determining maltreatment recurrence. (Appendix B highlights the different methodological approaches used in studies on child maltreatment recurrence.) Clearly, the manner in which recurrence is operationalized, and the duration of the observation period, can impact estimates of recurrence: studies that adopt restricted definitions of recurrence (e.g. initial substantiated allegation followed by a subsequent substantiated allegation involving the same child and same perpetrator), and that have an observation period of only 2 months, will likely yield much lower estimates than studies adopting more broad definitions (e.g. any initial allegation followed by any subsequent allegation involving any child in a family and any perpetrator), and that have an observation period of 5 years (DePanfilis & Zuravin, 1998).

Appendix C outlines recurrence rates of child maltreatment found across studies that have used different units of analysis and varying follow-up times. The disparate nature of the methodologies and samples employed in maltreatment recurrence studies restricts direct comparisons and the synthesis of findings. Recurrence rates will be discussed in terms of re-report rates and substantiated re-report rates.

Rates for re-reports, which include subsequent allegations regardless of their substantiation status, range from a low of 22% (Fluke et al., 2008) to a high of 47% (Johnson-Reid et al., 2010). Higher rates of maltreatment re-reports have been documented in studies that have analyzed data at the perpetrator level (Johnson-Reid et al., 2010; Way et al., 2001), whereas lower rates have typically been found in studies that have analyzed data at the child-level (Fluke et al., 2008; Rittner, 2002). Recurrence rates are slightly lower when only re-reports with substantiated allegations are included, ranging from 7% (Fluke et al., 2008) to 43% (DePanfilis & Zuravin, 1999a); higher rates have generally been found among studies where the unit of analysis is the family (DePanfilis & Zuravin, 1999a; DePanfilis & Zuravin, 1999b) rather than the child (Fluke et al., 2008; Fryer & Miyoshi, 1994). Despite these variations in maltreatment recurrence estimates, findings from studies have found consistently the risk of recurrence to be highest immediately following the initial index event, as discussed next.

Risk Factors

Appendix D provides a list of risk and protective factors for maltreatment recurrence using an ecological-transactional perspective. Studies that have assessed the time to maltreatment recurrence have found that the likelihood of recurrence is greatest during the first six months following the initial report; the risk of recurrence decreases slowly thereafter (i.e. the longer the time with no recurrence, the less likely it is to occur) (Connell et al., 2007; DePanfilis & Zuravin, 1999a; Fluke et al., 1999; Fryer & Miyoshi, 1994; Lipien & Forthofer, 2004; Marshal & English, 1999). DePanfilis and Zuravin (1999a) found that 44% of substantiated recurrent incidents occurred within 6 months of the index event. Similarly, Connell et al. (2007) found that approximately 33% of all rereferrals occurred within 6 months of the index event. A clustering effect of subsequent allegations has thus been found around the initial index report (DePanfilis & Zuravin, 1998; Fluke et al., 2008; Fryer & Miyoshi, 1994).

A clustering effect may be due to CPS finding additional maltreatment during an investigation (Helie & Bouchard, 2010). Declinations of recurrence rates subsequent to the 6-month period may also reflect that CPS intervention was successful (thus leading to reductions after the provision of services), or that families were agents of change due to factors beyond CPS intervention (DePanfilis & Zuravin, 1999a). However, some researchers have found a positive association between the provision of services and risk of recurrence. Specifically, Lipien and Forthofer (2004) found that children whose families received in-home services or short-term services (compared to no services) were 1.7 times and 1.22 times, respectively, more likely to be involved in subsequent substantiated maltreatment allegations. Fluke et al. (1999) also found that children whose

families received ongoing protective services were more likely than children whose families did not receive services to experience subsequent maltreatment allegations. Potential reasons for this include: (a) a surveillance effect, where families who receive services have more contact with mandated reporters and/or are monitored more closely; (b) families receiving services are indeed at an increased risk of experiencing recurrent maltreatment, and thus they require services; and/or (c) services are ineffective (DePanfilis & Zuravin, 1998; Fluke et al., 2008; Helie & Bouchard, 2010). Some services, however, have been associated with a reduced risk of maltreatment recurrence. In particular, the provision of family-centered services and foster care services has been associated with a decreased risk of recurrent maltreatment (Drake et al., 2003; Johnson-Reid et al., 2010). Lipien and Forthofer (2004) found children who were transferred to foster care with relatives were 0.8 times as likely as children who received no services to be involved in subsequent substantiated maltreatment allegations.

Research has consistently found that families with vulnerable children are at most risk of being re-involved in the child welfare system. For example, younger children are reported to be at an increased risk of being reported for maltreatment recurrence (English et al., 1999; Fluke et al., 2008; Fryer & Miyoshi, 1994; Fuller et al., 2001; Marshal & English, 1999). Specifically, Fuller et al. (2001) found that families with children aged 0-2 years at the time of investigation initiation were 3 times more likely than families with children aged 6-18 years to experience a substantiated recurrent incident. The risk of maltreatment decreases with child age, where older children are least likely to experience maltreatment recurrence (Bae et al., 2007; Connell et al., 2007; Drake et al., 2003; Fluke et al., 1999; Lipien & Forthofer, 2004). Younger children are potentially at a greater risk

because of their inability to protect/defend themselves (DePanfilis & Zuravin, 1998). Furthermore, older children may appear to be at a decreased risk if they are observed for shorter observation periods and if they are not included in follow-up periods (e.g. as a result of becoming adults and aging out of the child welfare system) (Helie & Bouchard, 2010). Increased risk of maltreatment recurrence has also been associated with children who have behavioral problems and/or special needs (Fuller et al., 2001; Wood, 1997), including disabilities (Connell et al., 2007; Fluke et al., 2008) and developmental and mental health problems (DePanfilis & Zuravin, 1999b; Marshal & English, 1999). Fluke et al. (2008), for example, found children with an indication of a disability⁶ were at a higher risk than children without an indication of a disability for both re-reporting (1.47 times the risk) and substantiated re-reporting (1.53 times the risk).

Studies have produced equivocal findings with regard to the association between maltreatment recurrence and child gender. Some studies have found male children to be at a decreased risk of recurrence (Bae et al., 2007; Fluke et al., 2008). In particular, males may be at a decreased risk of having subsequent allegations involving sexual abuse (Bae et al., 2007), while also being less likely than females to have re-reports when index events are for sexual or physical abuse (Way et al., 2001). However, other studies have found no significant association between gender and maltreatment recurrence (Connell et al., 2007; Fryer & Miyoshi, 1994; Lipien & Forthofer, 2004). As for child race, American Indian and Alaskan Native children appear to be at greater risk of maltreatment

⁶ Fluke et al. (2008) did not analyze specific disabilities separately; children were considered to have a disability if one or more of the following conditions were identified with a child: intellectual disability, emotional disturbance, visual impairment, learning disability, physical disability, behavioral problem, or medical problem.

recurrence than Caucasian children (Fluke et al., 2008). Compared to Caucasian children, decreased risk of recurrence has been found for African American children and Hispanic children (Connell et al., 2007; Fluke et al., 2008) and Asian/Pacific Islander children (Fluke et al., 1999; Fluke et al., 2008). However, among index events involving physical abuse allegations, Caucasian children appear to be at a decreased risk of recurrence compared to non-Caucasian children (Way et al., 2001).

Families with caregivers who experience impairments, difficulties, and problems are at an increased risk of re-involvement in the child welfare system (English et al., 1999; Fuller et al., 2001). With regard to impairments and disabilities, the risk of recurrence has been found to increase significantly when a caregiver has health conditions (Inkelas & Halfon, 1997), mental health problems (Rittner, 2002), intellectual limits (Wood, 1997), and emotional instability (Wood, 1997). Families with caregivers who abuse substances (Connell et al., 2007; English et al., 1999; Fluke et al., 2008; Inkelas & Halfon, 1997; Rittner, 2002) and caregivers who were maltreated as children (English et al., 1999; Marshal & English, 1999; Rittner, 2002; Wood, 1997) have been identified consistently as being at risk of recurrent maltreatment. Connell et al. (2007), for example, found families with substance abuse histories were 50% more likely than families without substance abuse histories to be re-referred to Child Protective Services (CPS).

Family and household factors have also been regarded as influencing the likelihood of maltreatment recurrence. When compared to families with two-caregivers, families that have only one-caregiver, or non-biological parents, have been found to be at an increased risk of recurrent maltreatment (Bae et al., 2007; Wood, 1997). The

likelihood of maltreatment recurrence has also been found to increase when families have more dependent children (Bae et al., 2007; Johnson & L'Esperance, 1984), and when families experience stress and functioning problems (DePanfilis & Zuravin, 1999b; Inkelas & Halfon, 1997), including domestic violence (DePanfilis & Zuravin, 1999b; English et al., 1999).

Families that experience poverty and financial difficulties have been associated with a greater likelihood of re-involvement in the child welfare system (Connell et al., 2007; Rittner, 2002). Connell et al. (2007) found families that experienced poverty or financial difficulties were 3.26 times more likely than families not experiencing such difficulties to be re-referred to CPS. Similarly, research indicates that families living in census tracts that have higher family median incomes are at a decreased risk of experiencing maltreatment recurrence (Drake et al., 2003; Way et al., 2001). Perpetrators are also at a decreased risk of maltreatment recidivism if they live in neighborhoods with higher median incomes (Johnson-Reid et al., 2010). Low social support has also been associated with an increased risk of recurrent maltreatment (DePanfilis & Zuravin, 1999b; English et al., 1999). For example, DePanfilis and Zuravin (1999b), in using a 3-item index to represent social support deficits (in neighbors, friends, and extended family), found the hazard rate of subsequent substantiated re-reports increased 1.4 times for each increase on the index.

With regard to CPS case and system characteristics, studies have found that families with an initial substantiated allegation, rather than an initial unsubstantiated allegation, are at an increased risk for both re-reporting and substantiated re-reporting (Bae et al., 2007; Drake et al., 2003; Fluke et al., 2008; Thompson & Wiley, 2009; Way et al., 2001). Drake et al. (2003) found the risk of recurrence increased by 95% when initial allegations of neglect were substantiated, 25% when initial allegations of sexual abuse were substantiated, and 14% when initial allegations of physical abuse were substantiated. Way et al. (2001), however, found that perpetrators were at a decreased risk of recidivating if they were involved in an index report that had a substantiated sexual abuse allegation, compared to an unsubstantiated sexual abuse allegation, but more likely to be involved in a subsequent substantiated allegation if they were involved in an index report that had a substantiated physical abuse or neglect allegation.

Families with an initial allegation of neglect appear to be at a higher risk of subsequently being re-referred to CPS than families with an initial allegation of physical abuse or sexual abuse (DePanfilis & Zuravin, 1999a; Fluke et al., 1999; Fryer & Miyoshi, 1994; Lipien & Forthofer, 2004; Marshal & English, 1999; Wood, 1997). Correspondingly, a decreased risk of recurrent maltreatment has been associated with initial allegations of sexual abuse (Bae et al., 2007; Connell et al., 2007; Fryer & Miyoshi, 1994; Johnson-Reid et al., 2010) and physical abuse (Bae et al., 2007; Johnson-Reid et al., 2010) rather than neglect, whereas an increased risk has been found if the initial allegation is for physical abuse rather than sexual abuse (Fuller et al., 2001; Marshal & English, 1999). Based on these findings, families with initial allegations of sexual abuse appear to be the least likely to experience recurrent maltreatment, and families with initial allegations of neglect appear to be the most likely to experience additional maltreatment allegations.

Lastly, prior CPS involvement has consistently been reported as a predictor of recurrent maltreatment (Connell et al., 2007; English et al., 1999; Fluke et al., 1999;
Fuller et al., 2001; Lipien & Forthofer, 2004; Marshal & English, 1999; Rittner, 2002; Wood, 1997). Fuller et al. (2001), for example, found that the risk of families having a subsequent indicated report increased 33% for each prior indicated report identified for a perpetrator at the initiation of CPS investigation.

Parents with Intellectual Disabilities

Currently, no studies have focused exclusively on families with intellectually disabled caregivers when assessing maltreatment recurrence rates and risk/protective factors for recurrent maltreatment.⁷ Studies on child welfare-involved families with intellectually disabled caregivers do, however, suggest that these families may be more likely than families without intellectually disabled caregivers to experience many of the aforementioned risk factors for maltreatment recurrence, which in turn may put them at an increased risk of being re-involved in the child welfare system.

Children of parents with intellectual disabilities are more likely than children whose parents do not have intellectual disabilities to have special needs and to experience functioning issues and disabilities, which are associated with maltreatment recurrence (Connell et al., 2007; DePanfilis & Zuravin, 1999b; Marshal & English, 1999; Fluke et al., 2008; Fuller et al., 2001; Wood, 1997). Feldman and Walton-Allen (1997) examined the health and functioning of 27 children of low-income mothers with intellectual disabilities and 25 children of low-income mothers without intellectual disabilities. Referrals for the families with intellectually disabled mothers came from 10 community agencies that provided support and advocacy services to individuals with intellectual

⁷ Wood (1997) included caretaker intellectual limits as a predictor of re-reports among a predominantly Hispanic child welfare population in El Paso, Texas.

disabilities in Ontario, Canada. Families were included if the mother had an IQ of less than 70, and if the family income was below the Canadian urban poverty level. Families without intellectually disabled mothers were recruited from resource centers in lowincome neighborhoods of Ontario. Feldman and Walton-Allen found that the children of mothers with intellectual disabilities, compared to the children of mothers without intellectual disabilities, had significantly lower WISC-R (Wechsler Intelligence Scale for Children – Revised) IQ scores (M = 80.5 vs. M = 102.9), and significantly higher CBCL (Child Behavior Checklist) scores for three behavior disorders (conduct, hyperactivity, and emotional: the somatization scale was not used). Increased risk of developmental delay has also been found for children of parents with intellectual disabilities. For example, Keltner, Wise, and Taylor (1999) conducted a study in the Southern United States that assessed developmental delay among a group of children of 38 low-income mothers with intellectual disabilities, as compared to a group of 32 low-income mothers without intellectual disabilities. Participants, all of whom received public assistance and were predominantly African American, were recruited from prenatal clinics/units and schools between 1990 and 1991. Analysis of the groups, which were matched for race, age, and number of pregnancies, found that the children whose mothers had intellectual disabilities were more likely than children whose mothers did not have intellectual disabilities to have developmental delay. Specifically, assessments of the children at the age of two using the Bayley Scales for Infant Development found developmental delay in 42% of the children in the intellectual disability group compared to 12% of the children in the non-intellectual disability group.

With regard to samples from the child welfare system, McConnell et al. (2011b), in analyzing Canadian data from the CIS-2003, found that 64% of child maltreatment investigations involving caretaker cognitive impairment had children with functioning issues (physical, emotional, cognitive, and behavioral), compared to 42% for investigations not involving caretaker cognitive impairment. In England, Booth, Booth, and McConnell (2005b) found that among 437 cases brought before two family courts for child protection concerns, child disability was significantly more prevalent in cases where a parent had an intellectual disability (32%) than for cases where no parent had an intellectual disability (10%). A small study by Glaun and Brown (1999), which examined 12 families with intellectually disabled mothers who were referred to a Children's Court Clinic in Australia for child protection concerns, found most of the children in the sample (59%) had a medical and/or psychiatric condition. More specifically, 47% of the children had a documented developmental delay, either alone (29%) or in combination with a medical condition (18%). However, given that Glaun and Brown (1999) did not include a comparison group, it is uncertain if these cases involving mothers with intellectual disability had more children with difficulties and health issues than cases not involving mothers with intellectual disability. Finally, Tymchuk and Andron (1990) conducted a comparative study to assess characteristics that distinguished mothers with mental retardation who maltreated their children to those who did not. Among the sample of 33 mothers who were referred consecutively to a parenting program at UCLA, 17 (52%) had a history of maltreating their children. Children with disabilities or problems (mental retardation, learning disability, emotional disturbance, or medical problems) were more prevalent among the mothers who had a history of

maltreating their children (67%) than among mothers without a history of maltreating their children (33%).

Families with caregivers who experience impairments or disabilities are at an increased risk of recurrent maltreatment (English et al., 1999; Rittner, 2002; Wood, 1997). Given this, families with intellectually disabled caregivers may be at an increased risk of being re-involved in the child welfare system. Indeed, Wood (1997), in conducting a case analysis of 409 substantiated cases of maltreatment in El Paso, Texas, found that intellectual limits of primary caregivers significantly predicted re-reports and substantiated re-reports involving allegations of neglect; no significant associations were reported for caregiver intellectual limits and subsequent allegations of abuse (physical, sexual, or emotional). Furthermore, caregivers with intellectual disabilities are more likely than caregivers without intellectual disabilities to experience health issues, problems, and difficulties, which have been found to increase the likelihood of maltreatment recurrence (English et al., 1999; Fuller et al., 2001; Inkelas & Halfon, 1997; Marshal & English, 1999; Rittner, 2002; Wood, 1997).

Llewellyn, McConnell, and Mayes (2003) assessed the health of a convenience sample of 50 mothers with intellectual limitations who were referred (by social welfare agencies in Sydney, Australia) to a parenting skills/education program. Using the MOS 36-item Short Form Survey (SF-36), Llewellyn et al. found that the sample of mothers with intellectual limitations had significantly lower scores across all 8 subscales (i.e. poorer health) than norms for Australian women. (The eight subscales of the SF-36 include: Physical Functioning, Role Limit Physical, Bodily Pain, General Health, Vitality, Social Functioning, Role Limit Emotional, and Mental Health.). Glaun and Brown's (1999) study of 12 court cases involving Australian mothers with intellectual disabilities found 69% of the mothers had a comorbid psychiatric or medical condition, and 75% had been maltreated as children. Seagull and Scheurer (1986), in interviewing 20 families with an intellectually disabled parent who were referred to an outpatient clinic in Michigan for child maltreatment issues, found that 15 parents (75%) were previously abused (40% sexually abused), mirroring Glaun and Brown's (1999) findings. As stated before, caution should be exercised when interpreting findings from these two studies (Glaun & Brown, 1999; Seagull & Scheurer, 1986), given that both had small sample sizes and no comparison group. However, findings from McConnell et al.'s (2011b) secondary analysis of the CIS-2003 – a large dataset representative of child maltreatment investigations throughout Canada – are aligned with the findings of Glaun and Brown (1999) and Seagull and Scheurer (1986). Specifically, McConnell et al. (2011b) found a higher proportion of child welfare-involved caregivers with, versus without, intellectual disabilities who had mental health issues (66% vs. 22%) and who were maltreated as children (60% vs. 20%).

Families with intellectually disabled caregivers are at an increased risk of experiencing family and household factors that have been associated with maltreatment recurrence. Feldman, Varghese, Ramsay, and Rajska (2002) assessed the parenting stress of 30 mothers with intellectual disabilities who were recruited from social service agencies in Ontario, Canada. Parental stress was measured using the Parenting Stress Index (PSI). Based on the total PSI stress score, the sample of mothers with intellectual disabilities had significantly higher parenting stress than the PSI normative group. The mothers with intellectual disabilities also had significantly higher levels of stress than the PSI normative group for both the child domain and parent domain of the PSI. Furthermore, a high proportion of parents with intellectual disabilities live in onecaregiver households rather than two-caregiver households (Emerson et al., 2005; Glaun & Brown, 1999). Emerson et al. (2005), in conducting an English national survey of 2,898 adults with intellectual disabilities, found that 66% of parents who were looking after their children did not live with a partner. Similarly, Glaun and Brown (1999) found that 66% of mothers who were referred to an Australian court for maltreatment concerns were single parents. Child welfare involved caregivers with intellectual disabilities are also more likely than child welfare-involved caregivers without intellectual disabilities to be single parents (Llewellyn et al., 2003; McConnell et al., 2011b). For example, Llewellyn et al. (2003), in examining 285 court cases initiated by the child protection authority in New South Wales, Australia, found a higher percent of single mothers among cases involving parental intellectual disability (53%) than among cases not involving parental intellectual disability (39%).

In general, individuals with intellectual disabilities are at risk of living in poverty, being underemployed and unemployed, and having low social support and limited support networks (Emerson, 2007; Emerson et al., 2006; Fujiura, 2003). For example, Emerson et al. (2005) found that only 17% of the 2,898 adults with intellectual disabilities who were interviewed reported being employed, compared to 67% of men and 53% of women in the general UK population. Additionally, 28% of the employed men, and 47% of the employed women, worked only part time (less than 16 hours per week); a large portion of respondents indicated that they received benefits, including Disability Living Allowance (70%) and Income Support (52%). Many respondents also

reported that they had limited contact with friends and family; 19% reported no contact with family (compared to 1% in the general UK population), and 31% reported no contact with friends (compared to 3% in the general UK population). Moreover, child welfare-involved caretakers with intellectual disabilities have also been reported to be more likely than child welfare-involved caretakers without intellectual disabilities to report having low incomes and few social supports (McConnell et al., 2011b). McConnell et al. (2011b) identified a higher proportion of caretakers with intellectual disabilities than those without intellectual disabilities who had few social supports (68%) vs. 33%), no household employment (50% vs. 23%), and an income of less than CAN\$25,000 (52% vs. 32%). Glaun and Brown (1999) found that 75% of their small court sample involving mothers with intellectual disabilities reported having no support from their extended family, and 85% relied on welfare as their sole source of income. Finally, Aunos, Goupil, and Feldman (2003) conducted a study in Quebec, Canada to compare characteristics of 30 mothers with intellectual disability who had custody of their children to 17 mothers with intellectual disabilities who did not have custody of their children. Although all of the mothers lived under the poverty line, more of the mothers without custody of their children (53%) than those with custody of their children (20%) had an annual income of less than CAN\$10,000. Mothers who had custody of their children also reported having more community involvement than those who did not have custody of their children. Similarly, Tymchuk and Andron (1990), in assessing characteristics that distinguished mothers in Los Angeles with mental retardation who did, versus did not, maltreat their children, found a higher percentage of maltreating

mothers (60%) than non-maltreating mothers (17%) who had incomes less than US\$10,000.

Studies suggest that child welfare-involved caretakers with intellectual disabilities may be more likely than child welfare-involved caretakers without intellectual disabilities to be associated with CPS case and system characteristics that predict maltreatment recurrence, including involvement in allegations of neglect (Lipien & Forthofer, 2004), substantiation of allegations (Fluke et al., 2008), and prior CPS involvement (Connell et al., 2007). Most child maltreatment allegations against parents with intellectual disabilities are for neglect (Booth et al., 2005b; Elvish et al., 2006; Glaun & Brown, 1999; McConnell et al., 2011b; Seagull & Scheurer, 1986; McConnell & Sigurjonsdottir, 2010; Tymchuk & Andron, 1990), and these allegations of neglect typically involve claims of inadequate provision of a sanitary and stimulating environment, rather than intentional neglect (Cleaver & Nicholson, 2007). McConnell et al. (2011b) found that among Canadian child maltreatment investigations opened in 2003, more caregivers with intellectual disabilities than those without intellectual disabilities were associated with allegations of neglect (56% vs. 39%). Conversely, fewer caregivers with intellectual disabilities than those without intellectual disabilities had allegations of physical abuse (23% vs. 33%) or sexual abuse (4% vs. 7%). Court samples also suggest that caregivers with intellectual disabilities are more likely to be referred for allegations of neglect than other forms of maltreatment. In Australia, Booth, Booth, and McConnell (2005b) found 61% of their sample of family court cases involving parental intellectual disabilities were referred for allegations of neglect, which is similar to Glaun and Brown's (1999) finding

that 67% of their Australian sample of family court cases involving mothers with intellectual disability had allegations of neglect.

Only one study has examined the extent to which child welfare-involved caretakers with intellectual disabilities have substantiated maltreatment allegations and prior involvement with child protection agencies: McConnell et al. (2011b) found a higher proportion of child welfare-involved caregivers with intellectual disabilities than those without intellectual disabilities to have their allegations substantiated after being investigated (61% vs. 46%), and to have a prior substantiated report (38% vs. 22%). Given that only one study has examined prior maltreatment allegations concerning caretakers with intellectual disabilities, more research is needed to assess if McConnell et al.'s (2011b) findings also hold true in other countries, including the United States.

Theory

Child welfare policies and disability policies emanate from the same philosophical and theoretical basis of social policy and social welfare policy. Specifically, there is an overarching interest of the state's roles and responsibilities for the general welfare of all of its citizens, and those who are disadvantaged may require special protections. However, the state's interest in the protection of individual rights and communal rights that lay the foundation from which the more refined focus of disability rights and child welfare policy emerge can result in conflict. Child welfare policies attend to the nurturance, wellbeing, and protection of children, whereas disability policies safeguard the rights of, and prohibit discrimination against, individuals with disabilities. Given these differences, a clash of interests can arise when individuals with disabilities are involved in the child welfare system, especially with regard to the provision of services and the termination of parental rights, as discussed in the next section (Kirshbaum, Taube, & Baer, 2003). Three pieces of federal legislation are key to addressing the intersection of child welfare and intellectual disability: the Child Abuse Prevention and Treatment Act (CAPTA; P.L. 111-320), the Adoption and Safe Families Act (ASFA; P.L. 105-89), and the Americans with Disabilities Act (P.L. 101-336).

Child Abuse Prevention and Treatment Act

The Child Abuse Prevention and Treatment Act (CAPTA), which was passed in 1974 (P.L. 93-247) and reauthorized in 2010 (P.L. 111-320), provides federal funding that supports research activities and services to enhance prevention efforts, assessment and investigation procedures, and treatment activities related to child maltreatment (CAPTA, 2010). CAPTA was the first federal legislative act that presented states with a paragon to guide child protection efforts by providing a standardized definition of maltreatment and by creating uniform reporting and investigation methods (Costin, Karger, & Stoesz, 1997). Moreover, CAPTA allocates grants to public and private nonprofit organizations for demonstration projects and to expand child maltreatment prevention efforts and community-based programs and activities (CAPTA, 2010).

Although CAPTA makes no references specifically for parents with intellectual disabilities, general clauses relating to disabilities are outlined. Under Title I of CAPTA, states may be provided funds to carry out research that focuses on effective programs/practices for improving services, including collaborative activities between CPS agencies and providers of mental health services and developmental disabilities services (CAPTA, 2010). Similarly, Title I of CAPTA states that grants may be awarded to organizations (public or private) for training to promote collaboration between child

protective service agencies and developmental disability agencies to improve screening and evaluation efforts. Grants are also available under Title II of CAPTA for creating and enhancing child maltreatment prevention efforts and community-based programs and activities, including disability services and supports.

Title I of CAPTA states that technical assistance may be provided to state agencies and public/private organizations, including providers of disability services, to assist in the improvement, development, and implementation of activities related to preventing, identifying, and treating child maltreatment (CAPTA, 2010). States and public/private entities that receive assistance must, "ensure that individuals with disabilities who participate in programs under this title [Title I – General Program] are provided with materials and services through such programs that are appropriate to their disabilities" (CAPTA, 2010, p. 17).

Adoption and Safe Families Act

The Adoption and Safe Families Act (ASFA) (P.L. 105-89) was passed in 1997 to promote the wellbeing and permanency of children who have been maltreated. The ASFA was enacted as a result of concerns over the number of children who remained in out of home care for extended periods waiting for reunification efforts to be made by the state (Collentine, 2005).

The ASFA, although placing more emphasis on permanency rather than preservation, stipulates that child welfare agencies must make reasonable efforts to reunify and preserve families, and to prevent unnecessary out of home placements, unless the child is at harm by remaining with his/her family (ASFA, 1997). To promote permanency, the ASFA created more stringent and expeditious time deadlines regarding the termination of parental rights (TPR). In particular, the ASFA requires states to hold permanency hearings within 12 months after a child is in out of home care, and states must commence TPR proceedings for children who have been in out of home care for 15 of the last 22 months (ASFA, 1997). A state may avoid a petition to terminate parental rights if a relative is taking care of the child, if filing such a petition is not in the best interests of the child, or if the child's family has not been provided adequate services to allow the child to return to a safe home.

Although the ASFA makes no specific reference to disabilities, the inclusion of reasonable efforts may be regarded as a similitude of the provision of reasonable accommodations outlined in the Americans with Disabilities Act (see below). However, there is no mention in the ASFA of what constitutes reasonable efforts, leaving the definition open to interpretation. This in turn has lead to controversy, especially when applied to parents with disabilities who are involved in termination of parental rights proceedings (see next section).

Americans with Disabilities Act

The Americans with Disabilities Act (ADA) was passed in 1990 (P.L. 101-336), and amended in 2008 (P.L. 110-325), in an effort to help integrate individuals with disabilities into society (Kerr, 1999). Congress, in finding that discrimination against people with disabilities prohibited such individuals from participating fully in society noted that, "the Nation's proper goals regarding individuals with disabilities are to assure equality of opportunity, full participation, independent living, and economic selfsufficiency for such individuals" (ADA, 2008, p. 5).

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The ADA prohibits discrimination against individuals with disabilities in four areas: employment, public services/entities (and public transportation), public accommodations (and commercial facilities), and telecommunications. Subchapter II of the ADA states that, "no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of services, programs, or activities of a public entity, or be subjected to discrimination by any such entities" (ADA, 2008, p. 16). Public entities include governmental agencies such as Child Protective Services and Child Welfare Services, among others.

The ADA further states that reasonable accommodations must be made in "policies, practices, or procedures, when such modifications are necessary to afford such goods, services, facilities, privileges, advantages or accommodations to individuals with disabilities, unless the entity can demonstrate that making such modifications would fundamentally alter the nature of such goods, services, facilities, privileges, advantages, or accommodations" (ADA, 2008, p. 33). Per ADA mandates, reasonable accommodations should be made for caregivers with intellectual disabilities who are involved in child protection proceedings and termination of parental rights proceedings. However, as discussed in the next section, two claims are often used as a defense against the use of reasonable accommodations in child welfare cases. If a public entity can demonstrate that modifications fundamentally change the services, or if undue burdens are required to make such modifications, then the mandate of reasonable accommodations may be dismissed.

Child welfare-involved caregivers with intellectual disabilities, who typically learn at slower rates than individuals without intellectual disabilities, are unlikely to benefit from traditional services. If, for example, parents with intellectual disabilities are ordered to attend general parenting classes, negative and unintended consequences may result if the classes are inappropriate for and insensitive to the needs of intellectually disabled persons, which may in turn lead to stigmatization, non-adherence/attrition, and eventually failure (Booth, McConnell, & Booth, 2006; McConnell, Llewellyn, & Ferronato, 2006). Indeed, substantial alterations to traditional services may be required to meet the needs of some caregivers with intellectual disabilities; by default, however, these services may not be afforded to individuals with intellectual disabilities given that they require fundamental changes. This is especially damaging for caregivers with intellectual disabilities who are involved in termination of parental rights proceedings, which have the additional pressure of time restraints outlined by ASFA.

Termination of Parental Rights

Individuals have the fundamental right to conceive and rear children. However, parental rights are not absolute, as they are weighed against the welfare and best interests of the child, which are protected by the state (Kerr, 1999). Indeed, the state, acting under the *parens patriae* doctrine, can terminate a parent's rights if there is "clear and convincing evidence" that a parent is unfit, and if it is in the child's best interest to sever the parent-child relationship (Shade, 1998; Watkins, 1995). As such, it is not uncommon for parental rights to conflict and compete with the state's authority in protecting children.

Parents with intellectual disabilities are at an increased risk of having their parental rights terminated, and having their children placed out of home permanently (Booth & Booth, 2004; Taylor et al., 1991). This may be due, at least partially, to

implicit discrimination, such as disregarding disability policies and terminating a parent's rights based on disability related grounds. Lightfoot, Hill, and LaLiberte (2010) identified 37 states (including Washington, D.C.) that included in their statutes disability related grounds for termination of parental rights (TPR); many of these statutes contained archaic and vague disability terminology and definitions (e.g. from the 1940s and 1950s). For example, statutes in 21 states (including Arizona) were found to use the outdated term 'mental deficiency' to describe intellectual disabilities. Disability related grounds for TPR are unique, in that they are based on a contributing factor to maltreatment, rather than specific parenting behavior (Lightfoot et al., 2010). This is analogous to state statutes including chronic unemployment as grounds for terminating parental rights. Although in the U.S. a parent's rights cannot be terminated based solely on the indication of having a disability, incorporating disability as grounds for termination of parental rights nonetheless attaches to disability notions of deviant parenting practices; this potentially opens the door for stereotypes and discriminatory practices, shifting the focus away from parenting behavior to an emphasis on disability status (Lightfoot et al., 2010; McConnell & Llewellyn, 2000).

More ardent advocates have suggested that parents with disabilities who are involved in child welfare proceedings and TPR proceedings are held against higher standards of competence than non-disabled parents (Hertz, 1979; Swain & Cameron, 2003; Tarleton, 2008; Watkins, 1995). Levesque (1996) reported that, "the rights of mentally disabled parents are, in practice, being terminated when states present evidence which, if used against nondisabled parents, would not be enough to sever the parental relationship" (p.15). Moreover, cases have been documented where parents with disabilities have had their parental rights terminated in the absence of evidence, and based on the notion of "prospective neglect", where it appears that a parent is unfit and neglect appears to be imminent (Collentine, 2005; Watkins, 1995).

Time restrictions, such as those outlined in the Adoption and Safe Families Act (ASFA) of 1997 (P.L. 105-89), are thought to further disadvantage parents with intellectual disabilities. Given that agencies may lack adequate services, supports, and knowledge in dealing with parents with intellectual disabilities, coupled with the fact that interventions may require many months before results are seen (e.g. due to slower rates of learning), parents with intellectual disabilities are unlikely to meet the deadline to demonstrate appropriate parenting, and are therefore at an increased risk of having their children placed permanently out of home (Booth et al., 2006; Lightfoot & LaLiberte, 2006; McConnell & Llewellyn, 1998). Application of the Americans with Disabilities Act (ADA) has been suggested as a way to overcome these purported disadvantages (Kerr, 1999; Kundra & Alexander, 2009).

Use of the ADA as a defense in TPR proceedings has currently had minimal success (Collentine, 2005; Kundra & Alexander, 2009). Courts have traditionally maintained a stance that the ADA is inapplicable in TPR proceedings (Kundra & Alexander, 2009; Nicholson et al., 2004). Some courts have indicated that the ADA can be used for affirmative action, but not as a defense; as such, the ADA, if at all applicable, could hypothetically be used only during the provision of services (i.e. reasonable accommodations), and not when parental rights are being terminated (Kundra & Alexander, 2009; Nicholson et al., 2004). Shade (1998) suggested that if an ADA claim were initiated, objections made by public entities would most likely be based on the

premise of "reasonable modifications", such that providing services or increasing the duration of services would be unreasonably costly, representing an "undue burden" claim, and/or would put the child at risk, representing a "direct threat" claim. Furthermore, even if reasonable accommodations were made per the ADA requirements, they typically would not include the provision of unique services that are not offered to individuals without disabilities; rather, they would involve modifications to already existing reunification services (which may or may not meet the needs of individuals with disabilities) (Benjet et al., 2003; Kundra & Alexander, 2009).

In summary, the interests of parents with intellectual disabilities in maintaining custody of their children may at times conflict with the interests of society and the child welfare and court systems in protecting the wellbeing of children. Child welfare policies, which are aimed at protecting children and promoting permanency in a timely manner (e.g. through the ASFA), may conflict with disability policies including the ADA (with regard to the provision of reasonable accommodations and the prohibition of discrimination). Attempts to comingle disability policies and child welfare policies have at present been largely unsuccessful. Improved collaboration between the disability service system and child welfare system, as outlined in CAPTA, may be one way to initiate better integration of disability policies and child welfare policies.

Collaboration

Despite efforts highlighted in CAPTA, child welfare workers often lack adequate knowledge of disabilities and have limited access to guidelines and protocols outlining how to work with child welfare-involved families with disabilities (Darlington, Feeney, & Rixon, 2005a; Lightfoot & LaLiberte, 2006). Lightfoot and LaLiberte (2006), in

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conducting telephone surveys with directors or designees of all county CPS agencies in Minnesota, found that although 40% of the respondents indicated that they were aware of policies related to disability accommodations, only 6.7% reported that their agencies had written policies in place. Respondents also reported that the following were barriers to working with individuals with disabilities: lack of resources, lack of disability knowledge by CPS and other professionals, and system conflicts that affect interagency collaboration.

Communication and collaboration between disability and child protection professionals may also be impacted by frequently held perceptions that disability and child welfare are unrelated issues that need to be addressed by separate, distinct systems (Ackerson, 2003; Lewin & Abdrbo, 2009; McConnell et al., 2006; Stanley & Penhale, 1999). Ray, Rubenstein, and Russo (1994), in evaluating eight family preservation programs for parents with intellectual disabilities in the state of New York, characterized the relationship between relevant service agencies and child protection agencies as "strained and precarious", due in part to program protocols neglecting to address effective interagency communication and collaboration.

Given that child welfare workers may have an insufficient knowledge of disabilities and related, effective interventions, a collaborative, multi-agency approach has been recommended for coordinating and delivering appropriate services that are unique to the individual (Booth, McConnell, & Booth, 2006; James, 2010). Collaboration among entities that are relevant to the intersection of disability and child welfare should include child protection agencies, disability service agencies, and the judiciary (Tymchuk, Llewellyn, & Feldman, 1999; Willems, de Vries, Isarin, & Reinders, 2007).

Creating collaborative relationships between the disability service system and the child welfare system is challenging (Tye & Precey, 1999). Azar and Read (2009) suggested that effective interagency collaboration could be achieved through system change that is focused on human resource development and organizational development. Human resource development involves the provision of training and enhanced supervision, among other things, so that workers can better assist and meet the needs of individuals with disabilities. Organizational development, on the other hand, involves strategies to manage relationships both within and between agencies. More specifically, effective interagency collaboration can be promoted through clear, open, and frequent communication, knowledge of the processes and responsibilities of each agency (e.g. through joint trainings and meetings), and agreement by both agencies on different boundaries and roles (Darlington, Feeney, & Rixon, 2005b; Tye & Precey, 1999). Fundamentally, agencies can work together effectively only if structures and guidelines are in place to facilitate collaboration, and if appropriate resources and services are available (Booth, McConnell, & Booth, 2006; Darlington & Feeney, 2008).

In summary, despite the passage of CAPTA, there remains a lack of documented disability policies and a lack of uniformity and standardization of CPS approaches to working with people with disabilities, which in turn can work against child welfareinvolved families with intellectual disabled caregivers (Lightfoot & LaLiberte, 2006). Further compounding this is a lack of collaboration between disability services and child welfare services, which have traditionally been isolated. Poor interagency collaboration can impede accessibility to services both in child protection proceedings and termination of parental rights proceedings. These factors, when taken together, can increase the likelihood that families with intellectually disabled caretakers will be re-involved in the child welfare system. However, before changes are made to child welfare policies and collaborative initiatives, it is vital that we first understand risk and protective factors associated with child welfare-involved families with disabilities. Certainly, a comprehensive understanding of risk and protective factors from an ecological perspective can lay the foundation for the establishment of partnerships and interagency collaborations, and can aide in the development of evidence-based interventions specific to families with intellectually disabled caregivers.

Ecological-Transactional Model of Child Maltreatment

The etiology of child maltreatment has traditionally been approached from one of three models: (1) the psychiatric model; (2) the sociological model; and (3) the "effect-of-child-on-caregiver" model (Belsky, 1978; Garbarino, 1977; Sidebotham, 2001). The psychiatric model, despite its name, has not focused exclusively on severe psychiatric impairments; rather, it has also focused on more general individual characteristics, including typical psychological and developmental processes (Belsky, 1978). The sociological model, in emphasizing the primacy of social and contextual forces, has addressed variables associated with socioeconomic status, social support, and family conflict (Scannapieco & Connell-Carrick, 2005); stress has been implicated as mediating the relationship between some of these factors (e.g. poor housing) and maltreatment occurrence (Garbarino, 1977; Sidebotham, 2001). Finally, the "effect-of-child-on-caregiver" model approaches maltreatment from the perspective that children may

influence their parents' behavior and play an inadvertent role in instigating their own maltreatment (Belsky, 1978). Principally, the "effect-of-child-on-caregiver" view holds that children who present with difficulties (e.g. in behavior), or who have special needs, may increase parental stress and frustration, thus leading to a higher likelihood that maltreatment will occur.

Belsky (1978) suggested that although each model contains estimable aspects, none (when applied in isolation) addresses adequately the full spectrum of issues that need to be considered when approaching the etiology of child maltreatment. To overcome this limitation, Belsky (1980) proposed a more comprehensive theoretical approach that incorporated features from each of the three aforementioned models. This integrative model, which uses as a basis a modified version of Bronfenbrenner's (1977, 1979) ecological systems theory, proposes that risk factors for child maltreatment occur across four nested ecological levels: ontogenic development; the microsystem; the exosystem; and the macrosystem. It is important to note that Belsky's (1980) model deviates from Bronfenbrenner's (1979) theory in three ways: Belsky's model is specific to child maltreatment, rather than development; Bronfenbrenner's mesosystem was subsumed under Belsky's exosystem (i.e. Belsky's model does not have a separate mesosystem); and Belsky added ontogenic development to account for the developmental history of child maltreatment perpetrators.

Ontogenic development refers to characteristics and childhood experiences of maltreatment perpetrators that may have influenced their abusive/neglectful behaviors (Belsky, 1980). Factors that are highlighted at this level include: disability, childhood exposure to abuse or violence, and education level attained (Sidebotham, 2001).

Ontogenic development alone may not influence the risk of child maltreatment; however, factors at this level can have an impact on factors at other levels, including the microsystem (Scannapieco & Connell-Carrick, 2005).

The microsystem, which includes family interactions and family characteristics, is the direct context in which maltreatment occurs (Belsky, 1980). Characteristics of family interactions that may contribute to child maltreatment can occur at the family level (e.g. family size), parent level (e.g. parenting/disciplinary practices), or child level (e.g. child disability or temperament issues) (Belsky, 1980). Furthermore, parent-child interactions may be affected by mother-father interactions and/or other intra-family interactions (Belsky, 1993). For example, a hostile mother-father relationship characterized by domestic violence may have repercussions for parent-child interactions.

The exosystem provides a broader contextual basis than the microsystem, and contains social structures (both formal and informal) that may influence the occurrence of maltreatment (Belsky, 1980). As stated previously, Bronfenbrenner's (1977) mesosystem is incorporated into this level (Scannapieco & Connell-Carrick, 2005). The exosystem, which is outside of (yet proximal to) the family system, comprises community factors (e.g. neighborhood impoverishment and housing stress), parental work, and social support (Freisthler, Merritt, & LaScala, 2006). Although factors in the exosystem do not involve direct participation by the child, they nonetheless have the potential to impact indirectly the likelihood of maltreatment (Sidebotham, 2001). For example, stress resulting from lack of work or social isolation may be directed towards family members (in the microsystem) in such a manner that increases the likelihood of maltreatment (Garbarino, 1977). Additionally, pressures associated with social structures can be

triggered by ontogenic factors and/or factors that exist in the macrosystem (Belsky, 1980). Such complex interactions demonstrate the extent to which factors are embedded and interrelated in an ecological framework.

The macrosystem incorporates cultural beliefs and societal attitudes that influence an environment's conduciveness to maltreatment (Belsky, 1980). Violence, racism, discrimination, and child rearing/disciplining mores are factors that have been examined in the macrosystem (Belsky, 1980; Garbarino, 1977; Scannapieco & Connell-Carrick, 2005). This larger social and cultural context has ripple effects on the other ecological levels, and as such it creates the foundational conditions for child maltreatment to occur:

Cultural attitudes, values, and practices, as well as the economic circumstances of a society and its cultural history, play an important role in the etiology of child maltreatment. Even though they are not in any sense an immediate or proximate cause of child abuse and neglect, they create a fertile soil in which these disturbing practices can grow and even flourish. (Belsky, 1993, p. 423)

Cicchetti and Lynch (1993) built upon Belsky's (1980) ecological model of child maltreatment by adding a transactional dimension. This model, labeled the ecologicaltransactional model, retains the four nested ecological levels outlined in Belsky's (1980) model and incorporates an interactional element that emphasizes the transactions among two categories of factors: potentiating factors, which are associated with an increased risk of maltreatment (i.e. risk factors), and compensatory factors, which are associated with a decreased risk of maltreatment (i.e. resilience factors) (Cicchetti & Rizley, 1981). Potentiating and compensatory factors can be either transient or enduring. Transient factors are attributes and conditions that are labile and ephemeral, whereas enduring factors are more durable and permanent (Cicchetti & Rizley, 1981). Four types of factors result from Cicchetti and Rizley's (1981) taxonomy: enduring vulnerability factors, enduring protective factors, transient challengers, and transient buffers (see Table 1).

 Table 1. Transactional Factors Associated with Child Maltreatment

Temporal Association	Potentiating Factors	Compensatory Factors
Enduring	Vulnerability factors: long- lasting conditions that increase risk.	Protective factors: long-lasting conditions that decrease risk.
Transient	Challengers: short-term conditions that increase stress.	Buffers: short-term conditions that protect temporary stress.
Note: Adapted from Cicchetti and Rizley (1981).		

Enduring vulnerability factors consist of long-lasting attributes or conditions that increase the likelihood of maltreatment. These factors, which can exist at the parent-, child-, or environment-level, may stem from biological, psychological, sociological, or historical events (Cicchetti & Lynch, 1993). For example, caretaker intellectual disability is a permanent condition that is considered an enduring vulnerability factor. Enduring protective factors include long-lasting conditions or characteristics that decrease the likelihood of maltreatment. A caregiver's history of appropriate parenting, and large, reliable, and strong social support networks, are examples of enduring protective factors (Cicchetti, 1989).

Transient challengers are short-term conditions and attributes that increase stress and the potential for maltreatment. Temporary unemployment and periodic marital problems are examples of transient challengers (Cicchetti & Lynch, 1993). Transient buffers are short-term compensatory factors that protect families from stress and help decrease the risk of maltreatment. Temporary improvement in economic circumstances and brief periods of marital concord are regarded as transient buffers because they act to shield (temporarily) stress associated with financial difficulties and marital discord (Cicchetti, 1989).

The ecological-transactional model proposed by Cicchetti and Lynch (1993) suggests that potentiating factors and compensatory factors exist at and interact across each ecological level, and that the risk of maltreatment increases when the total influence of potentiating factors exceeds that of compensatory factors. As such, the ecological-transactional model de-emphasizes specific risk factors in isolation, instead placing more emphasis on interactions of both potentiating and compensatory factors at various levels. For example, although a mother may be at an increased risk of perpetrating maltreatment because of her intellectual disability (an enduring vulnerability factor at the ontogenic level), this risk may be abated if the mother has a strong social support network (an enduring protective factor at the exosystem level). Alternatively, the stress experienced by a mother who has experienced a (relatively minor) lone transient challenger, such as temporary loss of job, may be sufficient to increase the likelihood of maltreatment if the mother is associated with minimal potentiating factors.

Critique. Despite the comprehensiveness of the ecological-transactional model of child maltreatment, it is not without limitations. One such criticism voiced against the model involves its lack of specificity. Though the model provides a broad framework that outlines the general systems levels where potentiating and compensatory factors exist and interact, it does not delineate specific predictors of child maltreatment. A similar criticism is that the ecological-transactional model of child maltreatment is more of a probabilistic model than an explanatory, deterministic model (Sidebotham, 2001).

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The ecological-transactional model of child maltreatment has also been criticized as being too difficult to test and use in research given its complexity (Scannapieco & Connell-Carrick, 2005). Certainly, it may be argued that testing the model in its entirety is infeasible, given the difficulties and impracticalities involved in collecting data for both potentiating and compensatory factors at each system level (e.g. due to resources limitations). Belsky (1980), in recognizing this, encouraged researchers to, "attempt to reliably assess several constructs at two or possibly three of the proposed levels of analysis so that, at least for the present, a manageable number of ecological relationships can be systematically studied" (p. 331).

Despite these raised limitations, the comprehensiveness and multi-factorial structure of the ecological-transactional model of child maltreatment is believed to be superior to other maltreatment models, and it continues to influence and guide research and practice in the child welfare arena (Scannapieco & Connell-Carrick, 2005). Risk and protective factors associated with child maltreatment, and the interactions between these factors, are diverse and complex; therefore, attempts to target a sole factor, or even a specific prediction model, are exceedingly difficult. Similarly, many of the factors associated with child maltreatment are interconnected, and thus examination of factors one at a time will inevitably result in specious claims. As such, the multi-dimensional ecological-transactional framework is now considered the most appropriate model for the study of child maltreatment.

Theoretical Foundation

The ecological-transactional model provides an excellent theoretical foundation for the study of child maltreatment recurrence among families with intellectually disabled caregivers. Indeed, the extant literature has found numerous risk and protective factors at different ecological levels that are associated with maltreatment recurrence in general. Examining factors in isolation, without taking into account other factors at different ecological levels or recognizing the transactions between variables, would lead to misleading findings. No research, however, has examined factors associated with maltreatment recurrence among families with intellectually disabled caregivers. It is therefore important to assess if risk and protective factors of maltreatment recurrence found among the general population are also applicable to families with intellectually disabled caregivers.

The ecological-transactional model is apposite to the study of maltreatment recurrence among families with intellectually disabled caregivers, given that these families are likely to experience multiple conditions and attributes that extend beyond their disability and that are associated with maltreatment recurrence (McConnell & Llewellyn, 2005). For example, potentiating factors that have been associated with caregivers with intellectual disability include experiencing maltreatment as a child (ontogenic level) (Elvish et al., 2006), being single parents (microsystem level) (Emerson et al., 2005), and having a lack of social support (exosystem) (Kroese et al., 2002). Given this, it seems logical to examine the intersection of intellectual disability and recurrent maltreatment from an ecological-transactional perspective that recognizes the influence of multiple factors at each ecological level. Examining maltreatment recurrence from a purely psychiatric/medical model or a one-dimensional model would most likely fail to account for these environmental and contextual factors.

Research Questions

Currently, no studies have focused exclusively on families with intellectually disabled caregivers when assessing maltreatment recurrence rates. However, previous research suggests that child welfare-involved families with intellectually disabled caregivers to be associated with poor child welfare outcomes, including high rates of substantiation and child removal (Booth et al., 2005a). Furthermore, McConnell et al. (2011b) found that families with intellectually disabled caregiver to have prior allegations of maltreatment, and Wood (1997) found caregivers with intellectual limitations to be more likely than those without intellectual limitations to have future allegations of neglect. In turn, more involvement in child protection investigations has been associated with higher rates of child removal (Elvish et al, 2006).

Although more prior involvement with CPS has been associated with a higher rate of child removal among this population (Elvish et al, 2006), no efforts have been made to improve our understanding of why some families with intellectually disabled caregivers are repeatedly involved in the child welfare system in the first place. This study attempts to address this gap, and improve our understanding of the scope and circumstances of the problem, by addressing the following questions:

Question 1. What is the prevalence rate of CPS-involved families with intellectually disabled caregivers?

Hypothesis. Ten percent (10%) of all child welfare cases in the United States will involve caregivers with intellectual disabilities.

Description. Although prevalence rates of child welfare-involved caregivers with intellectual disabilities have been studied previously, the majority of the research has been conducted outside of the United States; studies conducted in the U.S. have involved small, non-representative court samples. The hypothesis of this descriptive question was based on results from a secondary analysis of the 2003 Canadian Incidence Study of Reported Child Abuse and Neglect, which found caregivers with intellectual disabilities represented 10% of child welfare cases (McConnell et al., 2011b).

Question 2. Do prevalence rates of CPS-involved families with intellectually disabled caregivers vary by state?

Hypothesis. Given that no research has assessed the prevalence rate of CPSinvolved families with intellectually disabled caregivers in the United States, and because this is an exploratory question, no formal hypothesis was affixed to this question.

Question 3. Among CPS-involved families with intellectually disabled caregivers, do rates of custody loss vary by state?

Hypothesis. Rates of custody loss will be higher in states that have statutes containing disability related grounds for severing parental rights.

Description. It has been suggested that the existence of disability related grounds for severing parental rights potentially attaches to disability notions of deviant parenting practices, thereby opening the door for stereotypes and discriminatory practices (Lightfoot, Hill, & LaLiberte, 2010; McConnell & Llewellyn, 2000). Recent research by Lightfoot et al. (2010) found that only 14 states⁸ have statutes that do not include disability related grounds for severing parental rights. Based on this research, it was

⁸ These States include: CT, FL, ID, IN, LA, ME, MI, MN, NJ, PA, RI, SD, VT, WY.

hypothesized that higher rates of custody loss would be found in the remaining 37 states (including Washington, D.C.) than in the 14 states that do not have disability related grounds for severing parental rights.

Question 4. Among CPS-involved families with intellectually disabled caregivers who lose custody of a child, does time to loss of custody vary by state?

Hypothesis. Loss of custody will occur more rapidly in states that have statutes containing disability related grounds for severing parental rights.

Description. Similar to Question 2 above, and based on Lightfoot et al.'s (2010) research, it was hypothesized that loss of custody would occur more rapidly in the 37 states that have disability related grounds for severing parental rights than in the 14 states that do not.

Question 5. Do CPS-involved families with intellectually disabled caregivers have a different maltreatment re-report rate than CPS-involved families without intellectually disabled caregivers?

Hypothesis. CPS-involved families with intellectually disabled caregivers will have a higher maltreatment re-report rate than CPS-involved families without intellectually disabled caregivers.

Description. Findings from prior research have indicated that families with intellectually disabled caregivers may be more at risk than families without an intellectually disabled caregiver for re-involvement in the child welfare system (Wood, 1997). Specifically, research has suggested that these families are more likely to have risk factors, and less likely to have protective factors, that have been found in the general maltreatment recurrence literature. For example, families with intellectually disabled

caregivers are more likely than families without intellectually disabled caregivers to have children with functioning issues or disabilities (Feldman et al., 1997; Keltner et al., 1999), to have mothers with poor health, including mental health issues (Llewellyn et al., 2003), and to be unemployed and underemployed (Fujiura, 2003), all of which have been associated with maltreatment recurrence (Connell et al., 2007; English et al., 1999; Fluke et al., 2008; Hindley et al., 2006).

Question 6. Are maltreatment re-reports distributed differently for CPS-involved families with intellectually disabled caregivers than for CPS-involved families without intellectually disabled caregivers?

Hypothesis. The risk of maltreatment re-reports for both groups will be highest within 6 months of the initial report, but the hazard function for families with intellectual disabilities will be higher (at each time period) in comparison to its location for families without intellectually disabled caregivers (thereby resulting in different sample hazard profiles).

Description. Previous studies that have examined the general child welfare population, and that have assessed patterns of maltreatment re-reports, have consistently found the risk of recurrence to be greatest during the first six months following the initial report, with risk decreasing slowly thereafter (Connell et al., 2007; DePanfilis & Zuravin, 1999a; Fluke et al., 1999; Fryer & Miyoshi, 1994; Lipien & Forthofer, 2004; Marshal & English, 1999). Based on this, it was hypothesized that the likelihood of maltreatment rereports for CPS-involved families with intellectually disabled caregivers would also be highest within 6 months of the initial report. However, given that prior research (Wood, 1997) has also found caregivers with intellectual limitations to be more likely than those without intellectual limitations to have future allegations of maltreatment, it was hypothesized that the hazard function would be higher for families with intellectually disabled caregivers relative to families without intellectually disabled caregivers.

Question 7. Among CPS-involved families with intellectually disabled caregivers, what risk and protective factors are associated with re-reports of child maltreatment?

Hypothesis 1. Maltreatment of a caregiver as a child will increase the likelihood of maltreatment re-reporting.

Description. This hypothesis was rooted in the ontogenic level of the ecologicaltransactional model. This hypothesis assumed that childhood experiences of caretakers could act as potentiating or compensatory factors that influence repeated maltreatment. Specifically, this hypothesis was based on the notion that maltreatment of a caregiver as a child potentiates re-reports of child maltreatment.

This hypothesis was also based on previous research on maltreatment recurrence, which has found families to be at an increased risk of being re-involved in CPS if a caregiver was maltreated as a child (English et al., 1999; Marshal & English, 1999; Rittner, 2002). Specific to caregivers with intellectual disabilities, McConnell et al. (2011a), in examining Canadian families with an intellectually disabled caregiver who were involved in child maltreatment investigations, found that substantiated cases were 4.7 times more likely to be kept open for ongoing protective services if a caregiver was maltreated a child. Although the provision of ongoing protective services does not translate directly and definitively into maltreatment recurrence, the decision to provide these services is based in part on the risk level of future maltreatment (DePanfilis &

Salus, 2003; Goldman et al., 2003). If there is little risk of future maltreatment, and if a child is determined to be safe, ongoing protective services may not be provided; however, if there is moderate to high risk of continued or future maltreatment, and if a child's immediate safety is threatened, ongoing protective services may be provided (Child Welfare Information Gateway, 2012).

Hypothesis 2. The presence of a child with a disability will increase the likelihood of maltreatment re-reporting.

Description. This hypothesis was based on the microsystem level of the ecological-transactional model, where child characteristics such as disability can influence the likelihood of recurrent maltreatment. This hypothesis was also guided by prior research that has found child disability to be a potentiating factor that increases the risk of recurrent maltreatment (Connell et al., 2007; Fluke et al., 2008).

Tymchuk and Andron (1990) found that maltreating mothers with intellectual disabilities were more likely than non-maltreating mothers with intellectual disabilities to have a child with problems such as mental retardation, learning disability or emotional disturbance. Similarly, McConnell et al. (2011a) found that unsubstantiated cases involving families with intellectually disabled caregivers were 3.4 times more likely to be kept open for ongoing protective services if a child had a physical, emotional, cognitive, or behavior disorder.

Hypothesis 3. Caregiver mental health issues will increase the likelihood of recurrent maltreatment.

Description. This hypothesis was also based on the microsystem level of the ecological-transactional model, which suggests caregiver characteristics such as mental

health issues can influence the likelihood of recurrent maltreatment. This hypothesis was further based on previous research that has found caregiver mental health issues to be a potentiating factor that increases the risk of repeated maltreatment (English et al., 1999; Rittner, 2002).

Prior research has also found intellectually disabled caregivers with comorbid mental health issues to be more likely than caregivers with only intellectual disabilities to receive ongoing protective services. Specifically, McConnell et al. (2011a) found that substantiated cases involving families with intellectually disabled caregivers were 2.1 times more likely to be kept open for ongoing protective services if the caregiver also had mental health issues.

Hypothesis 4. The presence of social supports will decrease the likelihood of maltreatment re-reporting.

Description. This hypothesis was guided by the exosystem level of the ecologicaltransactional model (which suggests social structures such as social support can influence the likelihood of recurrent maltreatment) and prior research that has found high social support to be associated with a decreased risk of recurrent maltreatment (i.e. a compensatory factor) (DePanfilis & Zuravin, 1999b; English et al., 1999). Moreover, McConnell et al. (2011a) found that substantiated cases involving families with intellectually disabled caregivers were 1.6 times more likely to be kept open for ongoing protective services if a parent had few social supports, and unsubstantiated cases were 2.6 times more likely to be kept open for services if a parent had few social supports. Furthermore, Aunos et al. (2003) found that families with intellectually disabled mothers who maintained custody of their children were more likely than those who lost custody to have greater community involvement.

Hypothesis 5. An initial maltreatment allegation of neglect will increase the likelihood of maltreatment re-reporting.

Description. This hypothesis was grounded in prior research that has found families with an initial allegation of neglect to be at a higher risk than families with an initial allegation of abuse (physical or sexual) for being subsequently re-referred to CPS (DePanfilis & Zuravin, 1999a; Fluke et al., 1999; Fryer & Miyoshi, 1994; Lipien & Forthofer, 2004; Marshal & English, 1999; Wood, 1997). With regard to intellectual disabilities, McConnell et al. (2011a) found that among child welfare-involved families with an intellectually disabled caregiver, the odds of substantiation increased 2.1 times if a family had a neglect allegation. Moreover, substantiated allegations were 3.4 times more likely to remain open for ongoing protective services if they were for neglect (McConnell et al., 2011a).

Importance of the Problem and Implications for Social Work

Child welfare-involved families with intellectually disabled caretakers constitute a vulnerable population that has been under-researched. Children in these families are at an increased risk of experiencing maltreatment, especially neglect, and caregivers with intellectual disabilities are at an increased risk of having their children removed permanently (McConnell et al., 2011b; Taylor, 1991). McConnell et al. (2011b) found that families with intellectually disabled caregivers who were involved in the child welfare system were more likely than families without an intellectually disabled caregivers of maltreatment, while Wood (1997) found caregivers

with intellectual limitations to be more likely than those without intellectual limitations to have future allegations of neglect. In turn, more involvement in child protection investigations has been associated with higher rates of child removal (Elvish et al, 2006). Such findings suggest that CPS may be underperforming with regard to these families, given that their goals are to promote the wellbeing of children, to prevent future acts of maltreatment, and to preserve families (DePanfilis & Salus, 2003; DePanfilis & Zuravin, 1998; Goldman et al., 2003).

Currently, no research has assessed risk and protective factors for maltreatment recurrence among families with intellectually disabled caregivers. Child protection professionals, who often lack adequate knowledge of disabilities and related, effective interventions (Darlington, Feeney, & Rixon, 2005a; Lightfoot and LaLiberte, 2006), would benefit greatly from this knowledge. Research on risk factors associated with recurrent maltreatment allegations among these families could be used in efforts to develop risk assessments to assist CPS workers in identifying high-risk families. Research in this area could further guide CPS workers in providing services that build on the strengths of these families and concomitantly target factors that may contribute to future maltreatment. More generally, an understanding of risk and protective factors for recurrent maltreatment among these families could lead to a reduction of resources used in the already overburdened child welfare system by prioritizing and placing more intensive efforts on high-risk families.

The effectiveness of CPS workers in assisting families with intellectually disabled caregivers is dictated, in part, by child welfare policies. Elucidating risk and protective factors for recurrent maltreatment among families with intellectually disabled caregivers
could help policy makers to better understand, and to predict, recurrent maltreatment patterns for this high-risk population. Indeed, intellectual disability is already regarded as a risk factor for child maltreatment in many child welfare policies, procedures, and protocols. Subsequently, this information could assist policy makers in adopting and adapting policies to improve outcomes for these families. For example, characteristics associated with families who experience recurrent maltreatment could inform the development of more targeted, actuarial risk assessments. Policy makers could further utilize the information to develop services that address the unique needs of families with intellectually disabled caretakers. Both of these, in turn, could lead to the formulation of an evidence-based practice framework for CPS case managers (Shlonsky & Wagner, 2005).

Looking beyond CPS, social workers in general are ethically responsible for advocating for vulnerable individuals, including children at risk of being maltreated and individuals with disabilities (National Association of Social Workers, 2008). Research on factors associated with re-involvement in the child welfare system among families with intellectually disabled caregivers is needed if social workers are to advocate effectively for these vulnerable families. In particular, advocates will be better prepared to assist families with intellectually disabled caregivers in finding and receiving appropriate services if they have a more thorough understanding of risk and protective factors that are specific to these families. Advocacy is crucial for families with intellectually disabled caregivers, given that these families are more likely than those without intellectually disabled caregivers to be disadvantaged and to be exposed to certain social conditions that have been associated with recurrent maltreatment (Emerson et al., 2005; Fujiura, 2003).

Chapter 3: Methods

Secondary data analysis of a large, nationally representative dataset of child welfare investigations and outcomes was used to address the research questions for this study. Secondary data analysis is a method used to address research questions through the analysis of previously collected data that were obtained for other purposes (i.e. to answer other research questions) (Glaser, 1963). Re-analysis of the original research questions using different statistical approaches has also been proposed as a form of secondary data analysis (Smith, 2008).

Secondary data analysis has multiple benefits. For example, it may be infeasible to collect such a large amount of data (e.g. due to a lack of resources such as money and time) that approaches population representation (Vartanian, 2011). It is especially useful for hard to reach populations and/or vulnerable populations, including child welfareinvolved caregivers with intellectual disabilities (McCall & Appelbaum, 1991). Also, it allows for one dataset to be used for multiple research questions, which can be addressed from different perspectives. As Glass (1976) stated, "some of our best methodologists have pursued secondary analyses in such grand style that its importance has eclipsed that of the primary analysis" (p. 3).

Secondary data analysis was deemed appropriate for this study, given the infeasibility of collecting primary, nationally representative, data on the hard to reach population of child welfare-involved caregivers with intellectual disabilities. Conducting primary research for this study would have indeed required a considerable amount of resources, including both time and money. Additionally, data collection efforts and/or proposing that child welfare investigations include additional disability questions would

have been difficult to achieve at one agency, let alone among a random and representative sample of agencies. Finally, it would have been a waste of resources to collect from child welfare agencies basic primary data on intellectual disability status, descriptive information, and maltreatment allegations, given that these data are already available in datasets such as the National Survey of Child and Adolescent Well-Being (NSCAW).

NSCAW

The National Survey of Child and Adolescent Well-Being (NSCAW) is a large nationally representative dataset that was used for this study. The NSCAW is a federally sponsored national longitudinal study that was established by the Personal Responsibility and Work Opportunities Reconciliation Act of 1996 to examine the experiences and wellbeing outcomes of child welfare-involved children and families (Dowd et al., 2008). The NSCAW is unique, and differs from other national child maltreatment datasets, in that data are collected from interviews/assessments with children and caregivers, in addition to reports from teachers and child welfare workers, rather than agency files alone (Dowd et al., 2008). Multiple perspectives were sought to increase knowledge of how child, family, community, and service factors impact a child's wellbeing. As a result of this, the NSCAW is particularly complex.

Two cohorts of children and families have been included in the NSCAW, forming two studies (NSCAW I and NSCAW II). Participants in the first cohort (NSCAW I) were sampled from 92 Primary Sampling Units (PSUs) in 97 counties across the United States to create two groups that are representative of (1) all children (ages 0-14 years) and families who had a maltreatment investigation from October 1999 through December 2000, and (2) children who were, at the time of sampling, in out of home care for 12 months after being involved in a maltreatment investigation. The first group of participants (the CPS sample) is made up of 5,501 children, and the second group (the Longer-Term Foster Care (LFTC) sample) is made up of 727 additional children. Five waves of data collection took place for the NSCAW I: at baseline (Wave 1), 12-month follow-up (Wave 2), 18-month follow-up (Wave 3), 36-month follow-up (Wave 4), and 59-96-month follow-up (Wave 5). Participants in the second cohort (NSCAW II) were sampled from 81 PSUs in 83 counties across the United States, representing all children (ages 0-17.5 years) and families who had a maltreatment investigation from February 2008 through April 2009; no additional sample (i.e. the LFTC sample) was included in the NSCAW II. A total of 5,873 children are included in the NSCAW II. Currently data have been collected for the NSCAW II at baseline (Wave 1) and at 18-month follow-up (Wave 2) (NDACAN, 2012).

Given that data collection for the NSCAW I has already been completed, this dataset allowed for a much more extensive analysis of maltreatment re-reporting than the NSCAW II. Furthermore, the NSCAW II sample was designed to enable only nationallevel estimates, and not state-level estimates (Dolan, Smith, Casanueva, & Ringeisen, 2011). As such, research questions 2, 3, and 4 for this study could not be addressed using NSCAW II data but could be addressed using NSCAW I restricted release data.⁹ Finally, the CPS sample was better suited than the LFTC sample for studying maltreatment re-

⁹ Two versions of NSCAW I data are available: general release data and restricted release data. The restricted release data are more complete than the general release data and contain geographic detail.

reporting, given that the latter sample was specifically tailored for studying children who were placed out of home for extended periods of time.

For the NSCAW I CPS sample, baseline information was collected at Wave 1 from children, current caregivers, child welfare workers, and teachers. Interviews were conducted 12-months after the maltreatment investigation or assessment (Wave 2) to assess services that were received since baseline; these interviews were conducted with the current caregiver (by telephone) and with service caseworkers (in person). For Waves 3-5, face-to-face interviews/assessments were conducted with children, current caregivers, and child welfare workers, whereas teachers were sent paper and pencil questionnaires (see Table 2).

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5
Months after Investigation Closed	2-6	12	18	36	59-97 ¹⁰
Respondent					
Child	Х		Х	Х	Х
Current Caregiver	Х	Х	Х	Х	Х
Investigator/Services Caseworker	Х	Х	Х	Х	Х
Teacher	Х		Х	Х	Х

Table 2. Study Design and Timeline of NSCAW I Data Collection for the CPS Sample

Note: Adapted from Dowd et al. (2008).

¹⁰ Wave 5 interviews/assessments were fielded by cohort age rather than months after close of investigation. Children aged 0-11 months at the time of sampling were fielded first (from September 2005 to February 2006), followed by children aged 12-48 months at the time of sampling (who were fielded from February to November 2006). Adolescents who turned 18 by the end of April 2006 were fielded next (in July 2006); the remaining children were fielded last (from March to December 2007) (Dowd et al., 2008).

Sample Design

The target population for the NSCAW I CPS sample originally consisted of all children in the United States who had child maltreatment investigations/assessments made by CPS agencies. However, laws in four states required CPS agency staff rather than a NSCAW Field Representative to initiate first contact with the caregiver; as such, these states were excluded from the NSCAW I. Given this, the target population was changed to "all children in the U.S. who are subjects of child abuse or neglect investigations (or assessments) conducted by CPS and who live in states not requiring agency first contact" (Dowd et al., 2008, p. 2-1).

A two-stage stratified sample design was used to select the NSCAW I sample. The first stage involved dividing the U.S. into nine sampling strata; eight of these corresponded to the eight states with the greatest volume of child welfare caseloads, and the ninth stratum corresponded to the remaining 38 states along with the District of Columbia (Dowd et al., 2008). Primary Sampling Units (PSUs), which represent geographical areas surrounding each CPS agency (such as counties), were then created and selected randomly from each of the nine strata using a probability-proportionate-tosize procedure (to increase the likelihood of selecting PSUs with larger caseloads) (Dowd et al., 2008). Small counties, that had fewer than 60 cases per year, were not included in the PSU frame; the excluded counties were estimated to represent only 3% of the total target population (Dowd et al., 2008). An equal number of children within each included PSU were then selected randomly from eight within-PSU sampling domains (secondstage strata) listed in Table 3 on the next page.

Domain	Age group	Service type	Allegation type
1	Infants ^a	No CPS-funded services	Any
2	Children ^b	No CPS-funded services	Any
3	Infants	CPS-funded services; not in out of home care	Any
4	Children	CPS-funded services; not in out of home care	Sexual abuse
5	Children	CPS-funded services, not in out of home care	No sexual abuse
6	Infants	CPS-funded services; in out of home care	Any
7	Children	CPS-funded services; in out of home care	Sexual abuse
8	Children	CPS-funded services; in out of home care	No sexual abuse

 Table 3. Second-Stage Strata for NSCAW I CPS Sample

Note: Adapted from Dowd et al. (2008).

^aInfants include individuals younger than 1 year of age.

^bChildren include individuals aged 1 to 14 years of age.

An initial sample of 100 PSUs was identified. Of these, 6 refused to participate (and were therefore replaced), and 8 were excluded because of state laws requiring CPS agency staff to initiate first contact with the caregiver. As such, the final sample consisted of 92 PSUs in 97 counties from which the 5,501 participating children were eventually selected.

As a result of the two-stage stratified sample design, selection probabilities for cases differed based on the first- and second-stage domains. For example, children with certain characteristics (such as infants) were oversampled to ensure sufficient power for conducting in-depth subgroup analyses. Therefore, these children are overrepresented in the NSCAW data. To achieve unbiased estimates from analyses of the NSCAW data, weights need to be used (Dowd et al., 2008). Furthermore, weighting should also be used to adjust for non-response, monthly variation in sampling frame size, and coverage issues arising from the exclusion of unsubstantiated cases when required by state laws (for confidentiality reasons) (Dowd et al., 2008).

Instrumentation

Instruments used in the NSCAW were developed and chosen based on the ecological-transactional model and based on their ability to measure and assess child factors, family factors, and environment factors that have been associated with child maltreatment (Dowd et al., 2008). There are over 40,000 variables associated with each case (child) (Dowd et al., 2008).

Children were interviewed at Waves 1, 3, 4, and 5 using the Child Instrument, which measured multiple constructs and characteristics including demographic information, developmental/cognitive status, physical and mental health, communication skills, academic achievement, peer relationships, and relationship with caregivers (Dowd et al., 2008). Given that many questions were age-dependent, interviews were typically longer (and included more questions) for older children (i.e. for younger children, some questions were irrelevant/inappropriate and thus not addressed).

Current caregivers were interviewed across all 5 Waves using the Current Caregiver Instrument, which measured various characteristics about both their child and themselves (Dowd et al., 2008). The child section of the instrument measured caregiver perceptions of child functioning and characteristics, including health, temperament, social competence, disabilities, and service needs. The instrument also measured caregiver characteristics and constructs, such as substance abuse, domestic violence, physical health, mental health, disciplinary practices, service needs, and formal/informal services received. Finally, the caregiver survey also captured information about family and neighborhood characteristics, including social support and features of the home environment. At Wave 2, an abbreviated instrument was administered through telephone interviews to update information collected during Wave 1.

Investigator/service caseworkers were also interviewed across all 5 Waves. For the first Wave, the Investigative Caseworker Instrument included questions pertaining to the level of child risk at the time of investigation, characteristics associated with the maltreatment report (e.g. alleged maltreatment type, presence of caregiver substance abuse, and caregiver intellectual/cognitive impairment), and decisions made regarding the case (e.g. substantiation status and services referral). For Waves 2-5, the Services Caseworker Instrument was used to detail the family's service history, to document progress and adherence to case plans, and to capture the child's involvement with CPS both before and after the investigated report (Dowd et al., 2008). Wave 2 caseworker interviews were conducted only for cases that received services following the maltreatment investigation/assessment (at Wave 1). Likewise, Wave 3, 4, and 5 caseworker interviews were conducted only for cases that received services since Wave 2, 3, and 4, respectively. Given that data on maltreatment re-reports and custody loss were reported by caseworkers, calculating estimates for these variables using data from all individuals (including those who did not receive services) would result in inaccurate, and artificially low, estimates. In light of this, all analyses involving either maltreatment re-reports data or custody loss data were limited to cases that received services following the initial maltreatment investigation/assessment (i.e. cases with Wave 2 data). Additionally, given that some cases with Wave 2 data do not have Wave 3-5 data (e.g. if no services were provided subsequent to Wave 2 data collection efforts), analyses on

maltreatment re-reports and custody loss were further limited to the timeframe between investigation end date and data collection at Wave 2.

For Waves 1, 3, 4, and 5, self-administered (paper and pencil) questionnaires were sent to teachers of children who were in grades K-12 (Dowd et al., 2008). The teacher survey measured school-related attributes and constructs such as child behavior, achievement, social competence, teacher-child relations, and peer relationships.

Analysis Weights

As a result of the sample design (as mentioned above), weights were used to achieve unbiased estimates from analyses of the NSCAW data (Dowd et al., 2008). Analysis weights that are included in the data file were used to account for selection probability of both PSUs and children within PSUs, and for frame deficiencies including under-coverage, differential non-response, and monthly variation in sampling frame size (Dowd et al., 2008).

The NANALWT analysis weight variable was used for Wave 1 CPS data to achieve accurate national-level estimates. Specifically, the NANALWT weight variable was used to make inferences at the national level for the total prevalence of caregivers with intellectual disabilities. The SANALWT, which was created to make inferences at the stratum level, was used to estimate state-level prevalence rates of caregivers with intellectual disabilities. The NANALWT2 and SANALT2 weights, which were constructed by applying adjustments to the Wave 1 weights, were used for analyses using data collected at Wave 2. Specifically, these weights were used when calculating estimates of custody loss and maltreatment re-reports.

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To obtain unbiased standard errors when analyzing the NSCAW data, it is important to use a statistical software package that is capable of incorporating features of the sample design into variance equations (Dowd et al., 2008). To achieve this, and to incorporate sample weights correctly, all analyses in this study were conducted using the SPSS Complex Survey module, as recommended by Dowd et al. (2008). Furthermore, all domain (subpopulation) analyses were conducted using the subpopulation command in SPSS, to obtain correct estimates of standard errors (Biemer et al., 2008; Dowd et al., 2008)

Data Sources

Most of the variables that were included in this study came directly from the NSCAW data set without transformation. Some variables, however, were manipulated slightly. For example, the NSCAW contains two types of neglect responses for alleged maltreatment type: "physical neglect didn't provide" and "neglect – no supervision." These two responses were collapsed to form one response for neglect. A detailed description of the variables that were used in this study, and any manipulations that were made, is presented below (also see Appendix E for a list of the NSCAW variables that were used to address each research question and associated hypothesis).

Caregiver intellectual disability: NSCAW interviewers asked caseworkers if the caregiver had (at the time of the investigation) intellectual/cognitive impairments, such as mental retardation and/or severe learning disabilities. This binary variable was used to estimate the prevalence of families with intellectually disabled caregivers.

Custody loss: NSCAW interviewers asked caseworkers at each Wave if the index child was currently in child welfare custody, meaning that the "agency or court has

assumed legal guardianship." Using data from cases that received services after the initial index event, a binary variable was created to indicate if families with, and without, intellectually disabled caregivers had experienced custody loss at any time from the investigation end date until the date of the Wave 2 caseworker interview. If a child was found to be in child welfare custody, caseworkers reported the date that custody was assumed. To calculate the time/days to loss of custody, the date of initial investigation closure was subtracted from the date associated with the first incident of custody loss. To compare custody loss in states with and without disability related grounds for severing parental rights, two dummy variables were created (one to indicate if a case was in a state with disability related grounds for severing parental rights, and another to indicate if a case was in a states with disability related grounds for severing parental rights, and another to indicate if a case without disability related grounds for severing parental rights, the reference category represented cases living in states without disability related grounds for severing parental rights.

Maltreatment re-reports: Maltreatment re-reports were measured in the caseworker instrument at each Wave when a child received services. For this study, maltreatment re-reports were operationalized as any new reports of abuse or neglect involving the same child and occurring any time between the date of initial investigation closure and the time of the Wave 2 caseworker interview. Timing to re-report was calculated by subtracting the date of initial investigation closure from either the date of the first known re-report (for cases that failed) or from the date of the Wave 2 caseworker interview (for cases that were censored).

Child age: The NSCAW provides child age as a continuous variable (in years) and as a categorical variable comprising four categories of age ranges: 0-2 years; 3-5

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years; 6-10 years; and older than 10 years. The continuous variable was used for analyses in this study.

Child race and ethnicity: The NSCAW measures both the child's race and ethnicity. Additionally, the NSCAW dataset contains a variable that blends the child's race and ethnicity, creating the following four categories that were used in the analysis: Black, non-Hispanic; White, non-Hispanic; Hispanic; and other (which includes non-Hispanic children who are American Indian, Alaskan Native, Asian, Hawaiian, or Pacific Islander). When child race and ethnicity was used as a predictor variable, White non-Hispanic children were regarded as the reference group.

Child gender: Children are categorized in the NSCAW dataset as either males or females. When child gender was used as a predictor variable, females were regarded as the reference group.

Child disability: Five variables pertaining to child disability are included in the NSCAW dataset. First, caseworkers reported if the child had, at the time of investigation, major special needs and/or behavior issues. Second, a NSCAW created variable indicates, using caregiver data and teacher data, if a child has a physical disability. Third, a NSCAW created variable indicates, using child data from the Kaufman Brief Intelligence Test (K-BIT)¹¹ and preschool Language Skills-3 (PLS-3)¹², if a child has a cognitive disability (scores < 70). Fourth, a NSCAW created variable indicates, using

¹¹ The K-BIT has good internal consistency (r = .74-.98 for various domains), test-retest reliability (r = .80-.97 for various domains), and concurrent validity (Dowd et al., 2008).

¹² The PLS-3 has good internal consistency (*Mdn r* = .79-.88 for various domains), testretest reliability (r = .82-.94 for various domains), and concurrent validity (Dowd et al., 2008).

caregiver data, if a child has a chronic health condition. Finally, a NSCAW created variable indicates if a child has emotional or behavioral problems. A child was coded as having a disability if at least one of the aforementioned variables was answered in the affirmative; a child was coded as not having a disability only when all of the variables were answered in the negative. When child disability was used as a predictor variable, children who were coded as not having a disability were regarded as the reference group.

Caregiver age: The NSCAW provides caregiver age as a continuous variable (in years) and as a categorical variable comprising five categories of age ranges: 25 years or younger; 26-35 years; 36-45 years; 46-55 years; and older than 55 years. The continuous variable was used for analyses in this study.

Caregiver gender: Caregivers are categorized in the NSCAW dataset as either males or females. When caregiver gender was used as a predictor variable, females were regarded as the reference group.

Caregiver alcohol abuse: Two binary variables were used to determine caregiver alcohol abuse. The first variable is based on a caseworker's report of whether or not a caretaker was actively abusing alcohol at the time of the investigation. The second variable, which was created by NSCAW, measures whether or not a caretaker is dependent on alcohol. This variable is based on caregivers' responses to 10 questions that assessed alcohol use patterns. These questions addressed items such as how much and how often a caregiver drank alcohol, whether or not alcohol use had interfered with work or school, and if alcohol use had resulted in psychological or emotional problems. A caregiver was coded as having alcohol abuse problems if the individual was found to be either (a) actively abusing alcohol at the time of the investigation, or (b) dependent on

alcohol; when neither was found, the caregiver was coded as not having alcohol abuse problems. When caregiver alcohol abuse was used as a predictor variable, caregivers who were coded as not having alcohol abuse problems were regarded as the reference group.

Caregiver drug abuse: Two binary variables were used to determine caregiver drug abuse. These variables are similar to those used for measuring caregiver alcohol abuse, in that one is based on the caseworker's report of whether or not a caretaker was actively abusing drugs at the time of the investigation, and the other is a NSCAW created variable that measures drug dependence based on caregivers' responses to a set of questions that assessed drug use patterns. A caregiver was coded as having drug abuse problems if the individual was found to be either (a) actively abusing drugs at the time of the investigation, or (b) dependent on drugs; when neither was found, the caregiver was coded as not having drug abuse problems. When caregiver drug abuse was used as a predictor variable, caregivers who were coded as not having drug abuse problems were regarded as the reference group.

Caregiver maltreated as a child: Caseworkers reported if a caregiver had a history of being maltreated (dichotomous variable). When caregiver maltreated as a child was used as a predictor variable, caregivers who did not have a history of being maltreated were regarded as the reference group.

Caregiver mental health: Caseworkers reported if a caregiver had any serious mental health problems or emotional problems at the time of the investigation (dichotomous variable). When caregiver mental health was used as a predictor variable,

caregivers who did not have any serious mental health problems or emotional problems at the time of the investigation were regarded as the reference group.

Domestic violence: Two binary variables were used to measure domestic violence. The first variable is based on a caseworker's report of whether or not a caretaker had a history of domestic violence. The second variable is based on a caseworker's report of whether or not there was active domestic violence at the time of the investigation. A caregiver was coded as having experienced domestic violence if a caseworker reported that either the caregiver had a history of domestic violence or that there was active domestic violence at the time of the investigation; when neither was found, the caregiver was coded as not having experienced domestic violence. When domestic violence was used as a predictor variable, caregivers who were coded as not having experienced domestic violence.

Caregiver employment status: Caregiver employment status was measured using 10 categories that ranged from working full time (35 or more hours per week) to not working (e.g. because of being retired, a student, illness, etc.). These categories were collapsed into working or not working. When caregiver employment status was used as a predictor variable, caregivers who were coded as not working were considered the reference group.

Social support: Caseworkers reported if a caregiver had low social support (including a lack of support from family and community members) at the time of investigation (dichotomous variable). When social support was used as a predictor variable, caregivers who reported having low social support were regarded as the reference group.

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Substantiation status of initial report: The NSCAW contains a revised variable that dichotomizes the status of a case report into substantiated or other than substantiated. When substantiation of initial report was used as a predictor variable, cases involving other than substantiated statuses were considered the reference group.

Prior CPS reports: Caseworkers reported if a case was associated with prior reports of maltreatment (dichotomous variable). When prior CPS reports was used as a predictor variable, cases with no prior reports of maltreatment were regarded as the reference group.

Alleged maltreatment type: The NSCAW categorizes 10 types of maltreatment: physical maltreatment, sexual maltreatment, emotional maltreatment, "physical neglect didn't provide", "neglect – no supervision", abandonment, moral/legal maltreatment, educational maltreatment, exploitation, and other. These categories were collapsed into: physical maltreatment, sexual maltreatment, emotional maltreatment, neglect (which includes "physical neglect didn't provide" and "neglect – no supervision"), and other (which includes all remaining categories). When maltreatment type was used as a predictor variable, cases with neglect allegations were considered the reference group.

Data Analysis Approach

Preliminary data analyses were conducted to examine univariate descriptive statistics for the dependent and independent variables, and to examine the distribution of the data through the use of measures of central tendency and graphs. Preliminary data analyses were also conducted to assess prevalence rates and custody loss rates, as discussed below.

Prevalence

Frequencies and percentages were calculated to estimate prevalence rates of cases involving intellectually disabled caregivers. The total prevalence rate and prevalence rates for each of the nine sampling strata were estimated using frequencies and percentages. A chi-square test was conducted to assess if the prevalence rate of caregiver intellectual disability was related to whether or not a state has disability related grounds for termination of parental rights.

Custody Loss

Frequencies and percentages were calculated to estimate rates of custody loss for families with, and without, intellectually disabled caregivers. A chi-square test was conducted to determine if custody loss was related to caregiver intellectual disability status. With the exception of the eight states with the greatest volume of child welfare caseloads (which correspond to eight of the nine sampling strata), states participating in the NSCAW are not identifiable. As a result of this, it was not possible to compare rates of custody loss on a state-by-state basis using Lightfoot et al.'s (2010) research that delineates the states that do, versus do not, have disability related grounds for severing parental rights. However, given that five of the eight identifiable states (CA, IL, NY, OH, TX) contain disability related grounds for severing parental rights, it was possible to compare differences in custody rates between these five states and the three identifiable states (FL, MI, PA) that do not have disability related grounds. The rate of custody loss was calculated for the five states that have disability related grounds for severing parental rights, the three states that do not have disability related grounds for severing parental rights, and the remaining states. A chi-square test was then run to assess the association

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between state classification and rates of custody loss. Adjusted residuals were examined for all significant chi-square tests involving 2 X 3 contingency tables.

The univariate general linear model procedure was used to assess if the mean time to custody loss differed for cases with, versus without, intellectually disabled caregivers. Lightfoot et al.'s (2010) study was used as a guide to compare the three identifiable states that do not have disability related grounds for severing parental rights to the five identifiable states that do have disability related grounds for severing parental rights and to the remaining unidentifiable states. The univariate general linear model procedure was also used to examine if time to custody loss was influenced by whether or not a case was in a state with disability related grounds for severing parental rights.

Maltreatment Re-Reports

The frequency and percentage of maltreatment re-reports was estimated for cases with, and without, intellectually disabled caretakers, and for each of the nine sampling strata. The life table method was used to estimate the proportion of children who had maltreatment re-reports at each month. Calculations in life tables were based on estimates of the hazard/likelihood of re-reports at the beginning of each month from the initial investigation through the risk period (Fluke, Yuan, & Edwards, 1999). A survival curve was also created and graphed for each group of children (i.e. those in families with an intellectually disabled caregiver and those in families without an intellectually disabled caregiver).

To examine patterns of maltreatment re-reports, hazard profiles were estimated separately for children in families with and without intellectually disabled caregivers. Specifically, the risk of a maltreatment re-report for each time period was graphed for

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both groups of children to examine visually the temporal shape of the hazard function. A discrete-time survival analysis model was run using logistic regression (see next section) to examine the influence of predictor variables on the likelihood of re-reports among families with intellectually disabled caregivers.

Survival Analysis

Survival analysis is a data analytic approach that can estimate if and when an event occurs, such as a re-report of maltreatment (Kleinbaum & Klein, 2012). Event occurrence is a dichotomous variable that represents either failure (if the event occurs) or censorship (if the event does not occur). Censoring occurs when the exact survival time is unknown. Survival analysis, in incorporating censored cases, estimates the survivor and hazard function by adjusting for biases associated with observation periods of differing lengths (Fluke et al., 2008).

The survivor function S(t) provides the probability of survival beyond a specified time. More precisely, S(t) provides the probability that T (the time that a person survives) is greater than t (the specific time) (Kleinbaum & Klein, 2012). Theoretically, t can range from zero to infinity. The probability of surviving past the start of a study, at time zero (t = 0), is one, because no one has experienced the event yet (S(t) = S(0) = 1). Conversely, the probability of survival reduces to zero as time approaches infinity ($t = \infty$) ($S(t) = S(\infty) = 0$) (Kleinbaum & Klein, 2012). Given that studies are finite in length, it is possible that not all participants in a study will experience the event during the study period, and thus there is a need for censoring.

The hazard function h(t) provides the instantaneous potential (rather than a cumulative measure) of event occurrence at time t, given that survival has been

maintained up to that time (i.e. $T \ge t$) (Kleinbaum & Klein, 2012). As such, the hazard function focuses on failure (event occurrence), whereas the survivor function focuses on survival. The formula for the hazard function is as follows:

$$h(t) = \lim_{\Delta t \to 0} \frac{P(t \le T < t + \Delta t \mid T \ge t)}{\Delta t}$$

The numerator of the formula calculates a conditional probability: the probability of an individual's survival time lying between *t* (the specific time) and $t + \Delta t$ (where Δt is a time interval), given that $T \ge t$. The resulting ratio (probability per unit time) is a rate that is dependent on the unit of time; therefore, hazard is a conditional failure rate and not a probability (Kleinbaum & Klein, 2012).

The hazard function, which provides more information than the survivor function, forms the foundation of survival analysis, given that it can: (a) be used to assess if and when an event occurs, (b) estimate the risk of event occurrence at each time interval, (c) incorporate both uncensored and censored data, and (d) incorporate variation in timing of events (Singer & Willett, 1993).

Following previous research (e.g. Fluke, Yuan, & Edwards, 1999; Lipien & Forthofer, 2004), time to re-report was captured in units of time measured by months. As a result of this, discrete-time survival analysis (which treats time as discrete units) was more appropriate than the continuous-time proportional hazards model (which treats time as being continuous). Although a continuous-time proportional hazards model could potentially have been used (where time to re-report is captured in days), features and assumptions of discrete-time survival analysis made discrete-time models more appropriate than continuous-time models. One benefit of using a discrete-time model is its ability to incorporate both time-invariant and time-varying predictors (whereas continuous-time models can include only time-invariant predictors) (Singer & Willett, 1993). Furthermore, discrete-time models can be fit to data using logistic regression, which is the most appropriate approach for examining the categorical outcome of this study (i.e. whether or not a maltreatment re-report occurred) (Singer & Willett, 2003). Indeed, given the dichotomous nature of the outcome, the relationship between the dependent variable and independent variables would not be linear, and therefore linear regression (which is used in continuous-time models) would not have been appropriate.

The first step in preparing the NSCAW data for survival analysis involved creating a person-period data set using the statistical software package R. At a minimum, a person-period data set should contain at least two pieces of information: (a) duration (documenting how long the individual survived, typically presented as the last time interval in which the individual was observed), and (b) censoring (indicating if the individual was censored or uncensored at the last time interval in which the individual was observed). Person-period data sets are unique, and differ from traditional person-oriented data sets, in that they contain multiple records for each individual: one record for each time interval in which the individual survives.

Table 4 (on the next page) provides an example of a traditional person-oriented data set and a person-period data set. The person-oriented data set (top panel) contains one record for each participant. Each record is made up of an identification code (ID), a censoring indicator (Censor) to identify if a case was censored (0=not censored, 1=censored), event time (T), which indicates when the event or censoring occurred, and

five dummy variables $(D_1, D_2, D_3, D_4, D_5)$ for intervals that correspond to the five months of the contrived study duration; these variables indicate where the first event or censoring is experienced (coded as '1' if occurring in the interval, and '0' if not).

Person-	Oriented Data	ı					
ID	Censor	Т	D_1	D_2	D_3	D_4	D_5
1	0	1	1	0	0	0	0
2	0	3	0	0	1	0	0
3	0	4	0	0	0	1	0
4	1	5	0	0	0	0	1
5	1	2	0	1	0	0	0
Person-	Period Data						
ID	Event	Period	D_1	D_2	D_3	D_4	D_5
1	1	1	1	0	0	0	0
2	0	1	1	0	0	0	0
2	0	2	0	1	0	0	0
2	1	3	0	0	1	0	0
3	0	1	1	0	0	0	0
3	0	2	0	1	0	0	0
3	0	3	0	0	1	0	0
3	1	4	0	0	0	1	0
4	0	1	1	0	0	0	0
4	0	2	0	1	0	0	0
4	0	3	0	0	1	0	0
4	0	4	0	0	0	1	0
4	0	5	0	0	0	0	1
5	0	1	1	0	0	0	0
5	0	2	0	1	0	0	0

Table 4. Person-Oriented and Person-Period Data

As an example, if an individual has a re-report in month 3 (e.g. see the second case in the top panel), then the dummy variables for month 1 (D_1) and month 2 (D_2) would be coded '0' to indicate no re-report, and the dummy variable for month 3 would be coded '1' to indicate a re-report. Given the conditional probability of the hazard function, which includes in the calculation of the hazard rate only those individuals who

have survived beyond each specific time period (i.e. $T \ge t$), individuals are dropped from the risk set after an event has occurred or if they have been censored. As such, for the second case in the top panel of Table 4, the dummy variables would be coded '0' if they are associated with any months subsequent to the time interval in which the event occurred (i.e. D₄ for month 4 and D₅ for month 5 would be coded '0', given that the event occurred at month 3), and this individual would not be included in risk calculations beyond the third month. Similarly, the fifth case, in being censored at month 2, would be removed from the risk set and excluded from risk calculations beyond the second month.

The lower panel of Table 4 provides an example of a person-period data set. In the person-period data set, each case contains one record for each month up to and including the month when either a re-report or censoring is indicated. For example, the third case had an event occurrence at the 4-month time period (as indicated in the Period column), and as such this case is associated with four records. Similarly, the fourth case was censored at the end of the study (i.e. at 5 months), and therefore this case is associated with 5 records. The event indicator (Event) identifies if a case experienced event occurrence at each discrete time interval (up to the month in which event occurrence or censoring is experienced). The period indicator (Period) and the set of time indicators (D_1 through D_5) identify the time-period described in the specific record.

After a person-period data set has been created, multivariate models can be incorporated into discrete-time survival analysis to assess the relationship between predictor variables and event occurrence (Kleinbaum & Klein, 2012). For this study, predictors were entered in three blocks: block 1 (child characteristics) – child age, gender, disability, and race and ethnicity; block 2 (caregiver and family characteristics) – caregiver age, gender, alcohol abuse, drug abuse, maltreated as a child, mental health, employment status, domestic violence, and social support; and, block 3 (case characteristics) – substantiation status of initial report, prior CPS reports, and maltreatment type. Goodness-of-fit statistics for each model were compared to assess the impact of each block of predictors. Model parameters, significance values, and odds ratios were examined to assess the effect of each predictor on the hazard profile.

Chapter 4: Results

Appendix F presents demographic characteristics for all cases with intellectually disabled caregivers (IDCs) and all cases without IDCs. At baseline, the average index child age among cases with IDCs was approximately 7 years (SE = 0.4), which matches the average index child age among cases without IDCs (M = 7 years; SE = 0.1). An equivalent percent (48%) of children in both groups were White, non-Hispanic; however, the percent of Hispanic children was approximately two times higher in cases without IDCs (19%) than in cases with IDCs (10%), X^2 (83) = 12.85, p < .05. A lower percent of male children was found in cases with IDCs (39%) than in cases without IDCs (51%), X^2 (83) = 12.40, p < .05.

At baseline, caregivers in cases with IDCs were, on average, 38 years old (*SE* = 1.7), which is higher than the average age of caregivers in cases without IDCs (*M* = 33 years; *SE* = 0.4), *t* (83) = -2.17, *p* < .05. Approximately 81% of the caregivers in cases with IDCs were female, which is lower than the 91% noted for caregivers in cases without IDCs, X^2 (83) = 26.19, *p* < .05. Caregivers in cases with IDCs more frequently reported being maltreated as children (48% vs. 19%; X^2 (83) = 108.21, *p* < .01), having mental health issues (68% vs. 11%; X^2 (83) = 567.95, *p* < .01), and having low social support (55% vs. 26%; X^2 (83) = 86.05, *p* < .01) in comparison to caregivers in cases without IDCs. Conversely, a lower percent of caregivers in cases with IDCs than caregivers in cases without IDCs reported being employed (27% vs. 60%; X^2 (83) = 89.65, *p* < .01).

Neglect, as compared to abuse, was the most frequently reported type of maltreatment allegation for both groups (IDCs = 69%, non-IDCs = 58%), X^2 (83) = 3.80,

p > .05. Allegations of physical abuse were less prevalent in cases with IDCs (19%) than in cases without IDCs (37%), X^2 (83) = 29.81, p < .01. Finally, cases with IDCs displayed significantly higher rates of allegation substantiation (46% vs. 32%; X^2 (83) = 18.52, p < .05) and prior CPS reports (69% vs. 46%; X^2 (83) = 43.49, p < .01).

Prevalence of CPS-Involved Families with Intellectually Disabled Caregivers

In addressing the first research question¹³, approximately 7% of all cases involved a caregiver with an intellectual disability (see Table 5 on the next page). This estimate is lower than the 10% that was hypothesized. As such, the *a priori* hypothesis for the first research question was not supported.

State Variation of Prevalence

With regard to the second research question¹⁴, higher prevalence rates of caregiver intellectual disabilities were reported in New York (13.0%) and Michigan (11.3%); lower prevalence rates were found in Texas (1.7%) and Florida (3.1%) (see Table 5 on the next page). The prevalence rate of caregivers with intellectual disabilities was almost half the size in states with disability related grounds for TPR (3.7%) than in states without disability related grounds for TPR (7.1%). There was a significant association between the prevalence rate of caregiver intellectual disability and whether or not a state has disability related grounds for termination of parental rights (TPR), X^2 (145) = 39.97, p < .01. The adjusted residual for states with disability related grounds for

¹³ Research Question 1: What is the prevalence rate of CPS-involved families with intellectually disabled caregivers?

¹⁴ Research Question 2: Do prevalence rates of CPS-involved families with intellectually disabled caregivers vary by state?

TPR (-3.81) indicates that the observed prevalence rate for this cell was significantly

smaller than the expected prevalence rate, p < .01.

	% (SE)
States with Disability Related Grounds for TPR ¹	3.7 (0.9)
California	3.4 (1.6)
Illinois	5.7 (1.4)
New York	13.0 (2.8)
Ohio	4.1 (1.3)
Texas	1.7 (0.5)
States without Disability Related Grounds for TPR ¹	7.1 (0.8)
Florida	3.1 (0.9)
Michigan	11.3 (0.7)
Pennsylvania	10.7 (1.9)
Remaining States	9.0 (1.0)
Total	6.8 (0.7)

Table 5. Prevalence Rates of Caregivers with Intellectual Disabilities

¹Abbreviation for termination of parental rights.

State Variation of Custody Loss Rates

With regard to the third research question¹⁵, and contrary to what was hypothesized, among cases involving caregivers with intellectual disabilities, no significant association was found between custody loss and whether or not a state has disability related grounds for TPR, X^2 (122) = 0.68, p > .05. Specifically, custody loss was experienced by less than one-third (29.9%) of caregivers with intellectual disabilities in states with disability related grounds for TPR and by approximately one-quarter (24%) of caregivers with intellectual disabilities in states without disability related grounds for TPR (see Table 6 on the next page).

Among cases involving caregivers with intellectual disabilities, higher rates of custody loss were found in New York (60.3%) and Florida (52.1%), and lower rates were

¹⁵ Research Question 3: Among CPS-involved families with intellectually disabled caregivers, do rates of custody loss vary by state?

found in Pennsylvania (4.9%) and Ohio (14.2%). Among cases not involving caregivers with intellectual disabilities, the highest rate of custody loss was found in Illinois (23.9%), and the lowest rate was found in Florida (6.7%).

No significant association was found between custody loss and caregiver intellectual disability, X^2 (83) = 2.45, p > .05. Specifically, custody loss was experienced by one-quarter (25.2%) of cases that involved intellectually disabled caregivers and approximately 17% of cases that did not involve intellectually disabled caregivers.

Table 6. Custody Loss Rates

	IDC^1	No IDC ¹ ($N =$
	(N = 74, 955)	905, 298)
	% (SE)	% (SE)
States with Disability Related Grounds for TPR ²	29.9 (6.1)	16.4 (4.7)
California	17.8 (3.7)	20.1 (7.8)
Illinois	40.1 (9.9)	23.9 (2.1)
New York	60.3 (16.5)	12.7 (3.3)
Ohio	14.2 (5.0)	18.3 (4.7)
Texas	41.3 (11.1)	16.2 (8.1)
States without Disability Related Grounds for TPR ²	24.0 (9.0)	11.8 (2.7)
Florida	52.1 (20.0)	6.7 (1.8)
Michigan	16.1 (7.5)	21.5 (6.1)
Pennsylvania	4.9 (3.1)	20.7 (6.9)
Remaining States	24.5 (7.6)	20.2 (4.5)
Total	25.2 (5.4)	16.9 (2.6)

¹Abbreviation for intellectually disabled caregiver.

²Abbreviation for termination of parental rights.

State Variation of Time to Custody Loss

With regard to the fourth research question¹⁶, among cases involving caregivers

with intellectual disabilities the mean time to custody loss was approximately three times

longer in states with disability related grounds for TPR (M = 196 days; SE = 47.2) than in

¹⁶ Research Question 4: Among CPS-involved families with intellectually disabled caregivers who lose custody of a child, does time to loss of custody vary by state?

states without disability related grounds for TPR (M = 64 days; SE = 22.6) (see Table 7). This difference was statistically significant, F(74) = 6.32, p < .05. The *a priori* hypothesis that custody loss would occur more rapidly in states that have statutes containing disability related grounds for severing parental rights was therefore not supported.

Among cases involving caregivers with intellectual disabilities, longer mean times to custody loss were found in Illinois (M = 312 days; SE = 70.8) and Texas (M = 152 days; SE = 66.6), and shorter mean times were found in New York (M = 33 days; SE = 4.2) and Florida (M = 51 days; SE = 0). Among cases not involving caregivers with intellectual disabilities, the highest mean times to custody loss was found in Pennsylvania (M = 261 days; SE = 41.1), and the lowest mean time was found in New York (M = 94 days; SE = 28.6).

	IDC^1	No IDC ¹
	(N = 74, 955)	(N = 905, 298)
	M(SE)	M(SE)
States with Disability Related Grounds for TPR ²	195.69 (47.23)	208.69 (26.74)
California	143.38 (17.74)	207.85 (23.48)
Illinois	312.28 (70.82)	129.96 (26.90)
New York	32.69 (4.18)	94.37 (28.58)
Ohio	76.00 (0)	154.15 (33.20)
Texas	152.21 (66.56)	209.20 (75.31)
States without Disability Related Grounds for TPR ²	64.04 (22.57)	193.02 (29.88)
Florida	51.00 (0)	211.93 (44.69)
Michigan	112.52 (78.13)	166.02 (23.42)
Pennsylvania	89.18 (70.19)	261.43 (41.12)
Remaining States	112.90 (23.75)	149 (29.56)
Total	117.10 (19.62)	177.70 (19.15)

Table 7. Mean Days from Investigation End to First Custody Loss

¹Abbreviation for intellectually disabled caregiver.

²Abbreviation for termination of parental rights.

Overall, an average of 117 days (approximately 4 months) elapsed before the first custody loss occurred for cases with intellectually disabled caregivers. Among cases not involving caregivers with intellectual disabilities, first custody loss occurred, on average, 178 days (approximately 6 months) after the initial investigation end date. This difference was significant, t(71) = 2.14, p < .05.

Maltreatment Re-Report Rates

With regard to the fifth research question¹⁷, and contrary to what was hypothesized, no significant association was found between child maltreatment re-report and caregiver intellectual disability, X^2 (83) = 7.53, p > .05. Approximately 22% of cases that involved intellectually disabled caregivers experienced a child maltreatment rereport, whereas 31% of cases that did not involve intellectually disabled caregivers experienced a child maltreatment re-report (see Table 8 on the next page).

Among cases involving caregivers with intellectual disabilities, higher rates of maltreatment re-reports were found in California (60.1%) and Florida (49.9%), and lower rates were found in New York (4.1%) and Michigan (10.6%). Among cases not involving caregivers with intellectual disabilities, the highest rate of maltreatment re-reports was found in Florida (46.7%), and the lowest rate was found in Illinois (17.3%).

Maltreatment re-reports were experienced by approximately one-third (35.8%) of caregivers with intellectual disabilities in states with disability related grounds for TPR. Slightly less than one-quarter (23.4%) of caregivers with intellectual disabilities in states without disability related grounds for TPR experienced maltreatment re-reports. There

¹⁷ Research Question 5: Do CPS-involved families with intellectually disabled caregivers have a different re-report rate than CPS-involved families without intellectually disabled caregivers?

was no significant association between maltreatment re-reports and whether or not a state has disability related grounds for TPR, X^2 (149) = 7.24, p > .05.

	$IDC^1 (N =$	No IDC ¹ ($N =$
	75,656)	921,424)
	% (SE)	% (SE)
States with Disability Related Grounds for TPR ²	35.8 (12.4)	29.9 (5.7)
California	60.1 (19.4)	23.6 (6.4)
Illinois	28.6 (10.1)	17.3 (3.4)
New York	4.1 (2.5)	23.5 (6.2)
Ohio	12.8 (4.8)	33.2 (10.2)
Texas	29.0 (9.2)	37.3 (9.5)
States without Disability Related Grounds for TPR ²	23.4 (9.6)	41.9 (6.0)
Florida	49.9 (22.0)	46.7 (5.9)
Michigan	10.6 (3.4)	36.7 (13.3)
Pennsylvania	17.2 (13.8)	26.9 (11.7)
Remaining States	18.3 (5.6)	25.5 (4.3)
Total	21.9 (4.7)	30.8 (3.1)

Table 8. Maltreatment Re-Report Rates

¹Abbreviation for intellectually disabled caregiver.

²Abbreviation for termination of parental rights.

Distribution of Maltreatment Re-Reports

Survival analysis was conducted to assess the timing and distribution of maltreatment re-reports and to estimate the hazard and survivor functions. The hazard function is used to assess the unique risk of event occurrence (a maltreatment re-report for this study) for each time period. With regard to the sixth research question¹⁸, examination of the hazard function (see Appendix I) reveals that the distribution of re-reports for families with and without intellectually disabled caregivers is relatively constant across time, and for most time periods the hazard function for families without

¹⁸ Research Question 6: Are maltreatment re-reports distributed differently for CPSinvolved families with intellectually disabled caregivers than for CPS-involved families without intellectually disabled caregivers?

intellectually disabled caregivers is higher than the hazard function for families with intellectually disabled caregivers; therefore, the hypothesis for the sixth research question (that families with intellectually disabled caregivers would have a higher hazard function at each time period) was not supported.

Examining the hazard function for cases with intellectually disabled caregivers (as displayed in Appendix G and Appendix I) reveals that hazard peaks during the fifth month. Specifically, of the 75,656 cases with intellectually disabled caregivers who survived more than four months without a re-report, .047 (n = 3,343) had a re-report by the end of their fifth month. After this hazardous month, the risk of a re-report remains fairly constant until the fourteenth month, where hazard elevates to 4.5%. In contrast, the hazard function for cases without intellectually disabled caregivers remains fairly constant for the first fourteen months before elevating in the fifteenth month and peaking in the sixteenth month (see Appendix H and Appendix I). Specifically, of the 921,424 cases without intellectually disabled caregivers who survived more than fifteen months without a re-report, .099 (n = 4,070) had a re-report by the end of their sixteenth month.

The survivor function complements the hazard function by cumulating monthly nonoccurrence. Using estimates from the life table, an estimated 75% of cases with intellectually disabled caregivers survived for more than seventeen months without experiencing a re-report (see Appendix G and Appendix J). An estimated 59% of cases without intellectually disabled caregivers survived for more than eighteen months without experiencing a re-report (see Appendix H and Appendix J). Up until the sixth month, the survivor function for cases with intellectually disabled caregivers is similar to the survivor function for cases without intellectually disabled caregivers. Subsequent to the

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sixth month, the survivor function for cases without intellectually disabled caregivers begins to decline at a greater rate than that observed for cases with intellectually disabled caregivers. Approximately 10% of cases with intellectually disabled caregivers, and 12% of cases without intellectually disabled caregivers, experienced a re-report within 6 months. Approximately 19% of cases with intellectually disabled caregivers, and 24% of cases without intellectually disabled caregivers, experienced a re-report within 12 months.

Predictors of Maltreatment Re-Reports

With regard to the seventh research question¹⁹, multivariate discrete-time hazard models were run using logistic regression to examine the relationship between the hazard of maltreatment re-reports and predictors for cases involving intellectually disabled caregivers. Appendix K displays the parameter estimates for three models: Model A, which incorporated the first block of substantive predictors (child characteristics); Model B, which incorporated the second block of predictors (caregiver and family characteristics); and Model C, which incorporated the third block of predictors (case characteristics). Examining the deviance statistics reveals that the addition of each block of predictors significantly improved the goodness-of-fit for every model (all p < .001; see Appendix K).

In examining the final model (Model C; see Table 9 on the next page), only three variables were found to be significant predictors of maltreatment re-reports: child disability, child gender, and child race/ethnicity. Of these three variables, only child

¹⁹ Research Question 7: Among CPS-involved families with intellectually disabled caregivers, what risk and protective factors are associated with re-reports of child maltreatment?

disability was hypothesized *a priori* to significantly predict re-reports among cases with intellectually disabled caregivers. The hypotheses that maltreatment of a caregiver as a child, caregiver mental health issues, social support, and initial allegations of neglect would predict re-reports were not supported.

Specifically, the odds of a re-report were more than 4 times as high for cases involving children with disabilities in comparison to cases not involving children with disabilities (p < .01; see Appendix L and Table 9). The regression model also indicated that cases involving male children had a lower hazard of re-reports than cases involving female children (OR = 0.31, p < .05). Regarding child race/ethnicity, cases involving children with a race/ethnicity classification of 'other'²⁰ had a higher hazard of re-reports than cases involving children with a race/ethnicity classification of 'White, non-Hispanic' (OR = 4.78, p < .01). Although caregiver gender was not significant in the final model, it approached significance in the second model (OR = 0.27, p < .10).

Table 9. Significant Predictors of Re-Reports for Families with Intellectually Disabled Caregivers

Predictor	β	SE	OR	95% CI
Child Factors				
Sex = male	-1.16*	0.58	0.31	[0.10, 0.98]
Disability	1.44**	0.52	4.23	[1.50, 11.94]
Other race	1.56**	0.56	4.78	[1.58, 14.43]

Note. OR = Odds ratio; CI = Confidence interval. *p < .05; **p < .01.

A post-hoc analysis was conducted to examine the relationship between the hazard of maltreatment re-reports and predictors for cases not involving intellectually

²⁰ The NSCAW race/ethnicity classification of 'other' comprises non-Hispanic children who are American Indian, Alaskan Native, Asian, Hawaiian, or Pacific Islander.
disabled caregivers. The multivariate discrete-time hazard models that were used in the post-hoc analysis incorporated the same blocks of predictors that were used for the previous analyses that focused on cases with intellectually disabled caregivers. The post-hoc analysis was conducted to assess if predictors found among cases involving caregivers with intellectual disabilities differed to those found among cases not involving caregivers with intellectual disabilities.

Appendix M displays the parameter estimates for the three models used in the post-hoc analysis: Model A (which included predictors associated with child characteristics); Model B (which incorporated predictors associated with caregiver and family characteristics); and Model C (which incorporated predictors associated with case characteristics). Examination of the deviance statistics suggests that the addition of each block of predictors significantly improved the goodness-of fit for every model (all p < .001; see Appendix M).

In examining the final model (Model C; see Table 10 on the next page), prior involvement with CPS was found to be the strongest predictor of a subsequent maltreatment report for cases without intellectually disabled caregivers. Specifically, the logistic regression model indicated that the odds of a re-report were more than 3 times as high for cases with a prior CPS report in comparison to cases without a prior CPS report (p < .001; see Appendix N and Table 10 on the next page). Caretaker drug problems also emerged as a statistically significant predictor of maltreatment re-reports: cases involving caregivers with drug problems were found to have a lower hazard of re-reports than cases involving caregivers with drug problems (OR = 0.49, p < .05). Regarding allegation disposition, cases with an initial substantiated allegation had a lower hazard of re-reports

than cases without an initial substantiated allegation (OR = 0.54, p < .01).

Duadiatan	ß	<u>CE</u>	OD	050/ CI
Predictor	ρ	SE	UR	95% CI
Caregiver Factors				
Drug abuse	-0.71*	0.31	0.49	[0.27, 0.92]
Case Factors				
Substantiation	-0.61**	0.18	0.54	[0.38, 0.77]
Prior CPS report	1.16***	0.30	3.19	[1.77, 5.73]

Table 10. Significant Predictors of Re-Reports for Families without Intellectually Disabled Caregivers

Note. OR = Odds ratio; CI = Confidence interval. *p < .05; **p < .01; ***p < .001.

In the first model, child disability was found to be a significant predictor of maltreatment re-reports for cases without intellectually disabled caregivers (OR = 1.46, p < .05); this variable approached significance in the final model (OR = 1.42, p < .10). Similarly, child race/ethnicity approached significance in the final model; specifically, cases involving children with a race/ethnicity classification of 'other' (OR = 0.44, p < 0.44.10) or 'Black, non-Hispanic' (OR = 0.63, p < .10) had a lower hazard of re-reports than cases involving children with a race/ethnicity classification of 'White, non-Hispanic'.

Chapter 5: Summary and Conclusions

The purpose of this study was to examine prevalence, custody loss, and maltreatment re-reports among child welfare-involved families with intellectually disabled caregivers. This study also compared custody loss rates, maltreatment re-report rates, and predictors of re-reports between child welfare-involved families with intellectually disabled caregivers and child welfare-involved families without intellectually disabled caregivers. A summary of the findings for each research question follows.

In addressing the first research question, the prevalence of CPS-involved families with intellectually disabled caregivers was estimated at approximately 7%, which is lower than the 10% that was hypothesized. With regard to the second research question, a significant association was found between the prevalence rate of caregiver intellectual disability and whether or not a state has disability related grounds for termination of parental rights. Specifically, the prevalence rate of caregivers with intellectual disabilities was almost half the size in states with disability related grounds for termination of parental rights (TPR) (3.7%) than in states without disability related grounds for TPR (7.1%).

With regard to the third research question, and contrary to what was hypothesized, among cases involving caregivers with intellectual disabilities, no difference in rates of custody loss was found in states with disability related grounds for TPR and states without disability related grounds for TPR. However, in addressing the fourth research question, the mean time to custody loss was significantly greater in states with disability related grounds for TPR (M = 196 days) than in states without disability related grounds for TPR (M = 64 days). The *a priori* hypothesis that custody loss would occur more rapidly in states that have statutes containing disability related grounds for severing parental rights was therefore not supported.

With regard to the fifth research question, and contrary to what was hypothesized, no significant association was found between child maltreatment re-reports and caregiver intellectual disability. Similarly, and in addressing the sixth research question, the overall distribution of maltreatment re-reports was comparable for families with intellectually disabled caregivers and for families without intellectually disabled caregivers was the hazard function would be higher for families with intellectually disabled caregivers was thus not supported. However, in addressing the seventh research question, child gender, child disability, and child race/ethnicity were significant predictors of maltreatment re-reports for cases with intellectually disabled caregivers. The hypotheses that maltreatment of a caregiver as a child, caregiver mental health issues, social support, and initial allegation of neglect would predict maltreatment re-reports for cases involving intellectually disabled caregivers were not supported. A discussion of the findings for each research question is discussed below.

Prevalence of CPS-Involved Families with Intellectually Disabled Caregivers

In addressing the first research question, this study found that caregiver intellectual disability was documented in approximately 7% of child maltreatment cases in the United States, which is lower than the 10% that was hypothesized. The 7% estimated in this study is similar to the 6% prevalence rate found by the Public Health Agency of Canada (2010) and slightly lower than the 10% reported by McConnell et al. (2011b), who also used data from the Canadian child welfare system. Nonetheless, given that an estimated 1-3% of the U.S. population has an intellectual disability (Administration for Children and Families, 2012; APA, 2000), findings from this study suggest that caregivers with intellectual disabilities are overrepresented in child protection cases in the United States.

State Variation of Prevalence

Interestingly, in addressing the second research question, prevalence rates were found to vary substantially between the eight identifiable states, ranging from a high of 13% in New York to a low of 1.7% in Texas. It is unlikely that such differences are reflective of true variation in prevalence rates. Rather, state-level differences in both disability identification procedures and levels of disability knowledge among child welfare workers appear to be more plausible explanations for the observed differences. For example, higher estimates would likely result if child welfare workers have more training and a more in-depth understanding of how intellectual disability is manifested and/or if more rigorous screening processes are conducted.

Prevalence rates also differed significantly based on whether or not the eight identifiable states had disability related grounds for termination of parental rights (TPR). Although there is no evidence to suggest a direct causal relationship between state TPR laws and prevalence rates, perhaps overarching state policies and procedures influence prevalence rates through, for example, the amount of funding allocated to providing preventative measures/services to these families. Given that lower prevalence rates, overall, were found in states with disability related grounds for TPR, it may be the case that caregivers with intellectual disabilities who live in these states are at an increased risk of losing their parental rights, which in turn would reduce the likelihood that they would come into contact with the child welfare system. However, we cannot be certain of this, and future studies should confirm/disconfirm this through analyses of state-level rates of TPR among caregivers with intellectual disabilities. It is also important to keep in mind that state-level findings in this study were based on only eight states in the NSCAW data set: perhaps inclusion of the remaining states would have revealed different results.

State Variation of Custody Loss Rates

Contrary to what was hypothesized for the third research question, rates of custody loss among cases involving caregivers with intellectual disabilities did not differ significantly between states that have disability related grounds for TPR and states that do not have such TRP laws. Although it would be easy to conclude that there is no difference in the population, we would be remiss if we did not consider the possibility that different results may have been found had all 50 states been included in the analysis. More fundamentally, it is likely that the criterion used to collapse states (i.e. whether or not a state has disability related grounds for TPR) is invalid when examining custody outcomes. Certainly, differences exist between grounds used to justify TPR decisions and reasons used to support custody decisions. It is possible that different results would have emerged had a different criterion been used to collapse states (i.e. one that reflected more accurately custody loss rather than TPR).

State-level estimates of custody loss varied markedly for cases with intellectually disabled caregivers. Most noticeable were the rates of custody loss found in New York (60%: the highest) and Pennsylvania (5%: the lowest). Interestingly, New York is one of

the states with disability related grounds for TPR, while Pennsylvania is one of the states without disability related grounds for TPR. Although disability related grounds for TPR are unlikely to be the sole reason for this large difference, it is possible that other related policies in New York are disadvantageous to families with intellectually disabled caregivers, as discussed below. In contrast, New York was found to have one of the lower rates of custody loss found for cases without intellectually disabled caregivers.

This study also found no significant difference in rates of custody loss between child welfare cases involving caregivers with intellectual disabilities and cases not involving caregivers with intellectual disabilities: custody loss was noted in approximately one-quarter (25%) of child welfare cases involving caregivers with intellectual disabilities and 17% of cases not involving caregivers with intellectual disabilities. The finding in this study that there is no significant difference in rates of custody loss differs from findings reported by Llewellyn et al. (2003), who used an Australian sample of court cases. Specifically, Llewellyn et al. (2003) found children in families without intellectually disabled caregivers were more likely than children in families with intellectually disabled caregivers to be placed in custody. However, Llewellyn et al. (2003) also found that approximately half of the cases involving intellectually disabled caregivers resulted in termination of parental rights, in comparison to approximately one-third of the cases not involving intellectually disabled caregivers. A similar finding was reported by Booth, Booth, and McConnell (2005b), who found in their English sample of court cases that children whose parents had learning difficulties were significantly more likely than children whose parents did not have learning difficulties to be freed for adoption. It would be interesting to assess if such high rates of TPR and adoption are found among child welfare-involved families with intellectually disabled caregivers in the United States. Indeed, the finding in this study that there is no significant difference between cases with, versus without, intellectually disabled caregivers with regard to custody loss may be masking the fact that cases with intellectually disabled caregivers are more likely to have their parental rights terminated than to have their children placed in custody.

Furthermore, the 25% rate of custody loss found among cases involving intellectually disabled caregivers in this study is substantially higher than the 11% estimated by Llewellyn et al. (2003). Admittedly, analyses in the present study were restricted to cases that were provided post-investigation services, which may explain (at least partially) this discrepancy. Indeed, post-investigation services are more likely to be provided to cases that are deemed more serious and more likely to result in poor child welfare outcomes (including custody loss). Methodological differences may also explain these differences, given that the present study utilized a sample of child protection cases in the United States, whereas Llewellyn et al. (2003) examined a sample of court cases in Australia.

State Variation of Time to Custody Loss

With regard to the fourth research question, time to custody loss was found to differ significantly between cases with intellectually disabled caregivers in states with, versus without, disability related grounds for TPR. Specifically, and contrary to what was hypothesized, custody loss was experienced, on average, four months faster for cases in states without disability related grounds for TPR. If living in a state with disability related grounds for TPR does in fact increase the likelihood that a caregiver with an intellectual disability will lose parental rights, then we may expect to find a higher proportion of caregivers with more severe intellectual disabilities maintaining their parental rights in states without disability related grounds for TPR. As a consequence of this, higher concentrations of child welfare-involved caregivers with more severe intellectual disabilities would likely be found in states without disability related grounds for TPR, and these individuals would undoubtedly experience any custody loss more quickly than those caregivers with less severe forms of intellectual disabilities. However, and as stated previously, the finding in this study with regard to time to custody loss was based on only eight states, and it therefore may not be representative of all states; thus, examining individual states may be more informative.

As with rates of custody loss, state-level estimates of time until custody loss varied considerably for cases with intellectually disabled caregivers. Most striking was the finding that New York, which was found to have the highest prevalence of caregivers with intellectual disabilities and to have the highest rate of custody loss among cases with intellectually disabled caregivers, also had the shortest mean time to custody loss. It would thus appear as though some aspect of New York, be it stricter policies or child welfare procedures, disadvantage families with intellectually disabled caregivers. As a result of having a high rate of custody loss, and a short time until custody loss, it would appear reasonable to assume that New York would also have a low maltreatment rereport rate for families with intellectually disabled caregivers; i.e. if a child is removed from a family, the likelihood of that child being involved in an impending maltreatment re-report would be diminished. This is precisely what was found for New York, as discussed in the next section.

This study also found that cases involving intellectually disabled caregivers experienced custody loss significantly quicker than cases not involving intellectually disabled caregivers. On the one hand, we may conclude that cases involving caregivers with intellectually disabled caregivers require more expeditious custody interventions due to, for example, increased risk of harm to the child. On the other hand, researchers have hypothesized that inadvertent discrimination and stereotyping may impact negatively child welfare outcomes for cases involving caregivers with intellectual disabilities (Booth et al., 2006). Although purely speculative, it may be the case that caregivers with intellectual disabilities are thought to be non-compliant as a result of fragmented or ineffective services, and/or due to their slowed learning ability (Booth et al., 2006). Both of these may lead to the perception that removal of the child is inevitable and in turn result in more expeditious custody loss. More research in this area is needed to better understand why custody loss is experienced more rapidly among cases with intellectually disabled caregivers in the United States.

Maltreatment Re-Report Rates

With regard to the fifth research question, and contrary to what was hypothesized, maltreatment re-reports did not differ significantly for cases with, versus without, intellectually disabled caregivers. One possible explanation for this unexpected finding could be that cases with intellectually disabled caregivers are at a decreased risk of having re-reports as a consequence of being at an increased risk of losing their parental rights. Interestingly, a significantly higher percentage of cases with, versus without, intellectually disabled caregivers had prior involvement with CPS, which may be considered a retrospective measure of recurrence. However, it is important to recognize that prior involvement with CPS could involve any child, whereas re-reports in this study involved the same child: it would be interesting to assess if re-report rates differ for cases with intellectually disabled caregivers when the definition of a re-report is expanded to include CPS involvement of any child. Broadening the definition would likely increase the rate of re-reports and may result in higher estimates for cases involving caregivers with, versus without, intellectual disabilities: more research is needed to confirm/disconfirm this.

Overall, maltreatment re-reports were experienced by approximately 22% of cases with intellectually disabled caregivers and by approximately 31% of cases without intellectually disabled caregivers. Previous research has found similar re-report rates when focusing on the general child welfare population (i.e. when cases were not dichotomized by caregiver intellectual disability status), and when approximately the same observation period was used. For example, Rittner (2002) found an overall re-report rate of 29% when examining re-reports involving the same child over 1.5 years, and Fluke et al. (2008) found an overall re-report rate of 22% when examining re-reports involving the same child over 2 years.

Maltreatment re-report rates did not differ significantly between cases with intellectually disabled caregivers in states with, versus without, disability related grounds for TPR. It would thus appear as though disability related grounds for TPR do not influence maltreatment re-report rates. However, caution should be taken when interpreting this finding, as only 8 identifiable states were included in the analysis: it is possible that alternative findings may have emerged had all 50 states been included in the analysis. Interestingly, California, which is one of the identifiable states that does have

disability related grounds for TPR, was found to have the highest maltreatment re-report rate (60%) for cases with intellectually disabled caregivers.

State-level estimates of maltreatment re-report rates varied greatly for cases with intellectually disabled caregivers. Higher rates of re-reports were found in California (60%), Florida (50%), and Texas (29%), and lower rates were found in New York (4%), Michigan (11%), and Ohio (13%). New York's exceedingly low maltreatment re-report rate is potentially a by-product of the state's response to families with intellectually disabled caregivers. New York may, for example, provide effective services that result in a decreased likelihood that families with intellectually disabled caregivers will be reinvolved in the child welfare system. In light of the previous findings from this study, however, a more plausible explanation may be that New York's low re-report rate is due to poor outcomes that occur early on in the child welfare process. When viewed together, we find that families with intellectually disabled caregivers in New York are not only more likely than those in other states to find themselves in the child welfare system, but once involved they are more likely to experience custody loss and to experience it in a shortened period of time. Low maltreatment re-report rates in New York may thus be a consequence of having high rates of custody loss rather than the provision of effective services. Although this appears to be a plausible explanation, empirical evidence is required before definitive conclusions can be made.

Distribution of Maltreatment Re-Reports

In addressing the sixth research question, the distribution of maltreatment rereports was relatively constant overtime for both families with and without intellectually disabled caregivers, and overall the hazard function for families with intellectually disabled caregivers was not higher than the hazard function for families without intellectually disabled caregivers. The hypothesis that the hazard function would be higher for families with intellectually disabled caregivers was thus not supported.

For cases with intellectual disabilities, the fifth month appears to be the most hazardous month. Previous research has also found the risk of re-reports for the general child welfare population to be highest within the first 6 months following the initial allegation (Connell et al., 2007; DePanfilis & Zuravin, 1999a). For cases without intellectual disabilities, the sixteenth month appears to be the most hazardous month, although this is likely due to sampling variation and the high number of cases that were censored in the latter months. When interpreting the hazard function, it is important to remember the conditional nature of hazard. Specifically, even though risk is highest in the sixteenth month, this hazardous period affected only a small number of cases. Due to the large number of censored cases in the fourteenth and fifteenth periods, we find that despite the high risk associated with the sixteenth period, approximately seven times as many cases had a re-report in the seventh month (n = 28,430), when hazard is .035, than cases with re-reports in the sixteenth month (n = 4,070), when hazard is .099.

Predictors of Maltreatment Re-Reports

With regard to the seventh research question, multivariate survival analyses found child gender, child disability, and child race/ethnicity to be significant predictors of maltreatment re-reports for cases with intellectually disabled caregivers. Of these three variables, only child disability was hypothesized *a priori* to significantly predict re-reports among cases with intellectually disabled caregivers. The hypotheses that

maltreatment of a caregiver as a child, caregiver mental health issues, social support, and initial allegation of neglect would predict re-reports were not supported.

The odds of a re-report were 3.23 times higher for cases with intellectually disabled caregivers that had female, rather than male, children. Mixed results have been found in the general maltreatment literature regarding the significance of child gender for predicting maltreatment re-reports. Some studies (Bae et al., 2007; Fluke et al., 2008; Way et al., 2001) have found that male children are less likely than female children to be involved in re-reports. For example, Fluke et al. (2008) found that male children had a significantly lower risk for experiencing both re-reports (RR = 0.95) and substantiated re-reports (RR = 0.93). For the present study, child gender was not a significant predictor of re-reports for cases without intellectually disabled caregivers, which mirrors findings by Connell et al. (2007), Fryer and Miyoshi (1994), and Lipien and Forthofer (2004).

In light of this finding, it would appear as though child gender may be a significant predictor of re-reports for certain subgroups, such as for families with intellectually disabled caregivers. Furthermore, previous research has suggested that the effects of gender may depend on abuse type. For example, Bae et al. (2007) found that female children were significantly more likely than male children to be involved in a re-report involving sexual abuse: gender was not a significant predictor of re-reports involving other types of abuse. Given this, future research should examine if the same effect emerges for cases involving intellectually disabled caregivers.

The present study also found among families with intellectually disabled caregivers that the odds of a re-report were 4.23 times as high for cases involving children with disabilities in comparison to cases not involving children with disabilities. Comparable results have been found in the general maltreatment recurrence literature by, for example, Connell et al. (2007), Fluke et al. (2008), and Marshal and English (1999). Previous research has also found an association between child maltreatment and child disability among caregivers with intellectual disabilities (McConnell et al., 2011a; Tymchuk & Andron, 1990). Tymchuk and Andron (1990), for example, found intellectually disabled mothers who maltreated their children were twice as likely as those who did not maltreat their children to have children with disabilities. McConnell et al. (2011a), in examining child welfare outcomes among Canadian families with intellectually disabled caregivers, found families with disabled children were 3.4 times more likely than families without disabled children to have their cases kept open for ongoing protective services. The presence of children with disabilities thus appears to increase the risk of certain poor child welfare outcomes for families with intellectually disabled caregivers.

Among cases without intellectually disabled caregivers, child disability was not a significant predictor of maltreatment re-reports in the final model (although it was in the initial model). Given this, the presence of children with disabilities may increase the stress more for families with intellectually disabled caregivers than for families without intellectually disabled caregivers, thereby indirectly influencing the likelihood of repeated maltreatment. Indeed, the increased demands in taking care of children with disabilities may exacerbate social isolation, frustration, and poor physical and mental health problems (Benedict et al., 1990; Hibbard et al., 2007) that caregivers with intellectual disabilities already experience. The emotional strain of having a child with a disability is often compounded by financial obligations associated with health care

(Newachek, Inkelas, & Kim, 2004), which can further burden families with intellectually disabled caregivers (who are more likely than families without intellectually disabled caregivers to be underemployed).

An alternative explanation for this discrepant finding is that perhaps child protection workers are more likely to perceive families with intellectually disabled caregivers as being incapable of taking care of disabled children. This, in turn, may create a surveillance effect, where families with both disabled caregivers and disabled children have more contact with mandated reporters and/or are monitored more closely (which would increase the likelihood of future maltreatment being observed or perceived). More research in needed to better understand why (and how) child disability influences maltreatment re-reports for families with, but not without, intellectually disabled caregivers.

Finally, multivariate survival analyses found child race/ethnicity to be a significant predictor of maltreatment re-reports for cases with intellectually disabled caregivers, but not for cases without intellectually disabled caregivers. Specifically, among cases with intellectually disabled caregivers, the odds of a re-report were 4.78 times higher for those involving children whose race/ethnicity was 'other'²¹ than for those involving White, non-Hispanic children.

Little research has examined the risk of maltreatment re-reports among non-Hispanic children who are American Indian, Alaskan Native, Asian, Hawaiian, or Pacific Islander. Fluke et al. (2008) found that American Indian and Alaskan Native children

²¹ The NSCAW race/ethnicity classification of 'other' comprises non-Hispanic children who are American Indian, Alaskan Native, Asian, Hawaiian, or Pacific Islander.

were significantly more likely than White children to experience a re-report, and Fluke et al. (1999, 2008) found Asian Pacific Islander children were significantly less likely than White children to experience a re-report. McConnell et al. (2011a), in examining child welfare-involved Canadian families with intellectually disabled caregivers, found that families with aboriginal children were significantly more likely than families without aboriginal children to have their cases kept open for ongoing protective services. Interestingly, child 'other' race approached significance (p < .10) for cases involving caregivers without intellectually disabled caregivers, but the direction of the effect was reversed: the odds of a re-report were 2.27 times higher for cases involving White, non-Hispanic children than children whose race/ethnicity was 'other'. Given that there is a paucity of research on these minority children, future research should examine reasons why these children are at an increased risk of being involved in a re-report when in a family with an intellectually disabled caregiver, but potentially at a decreased risk when in a family without an intellectually disabled caregiver.

Post-hoc multivariate analysis found prior involvement with CPS to be a significant predictor of maltreatment re-reports for cases without intellectually disabled caregivers. Specifically, the odds of a re-report were 3.19 times higher for cases that had prior CPS involvement than for cases that did not have prior CPS involvement. Prior CPS involvement has consistently been found in the general maltreatment literature to be a significant predictor of re-reports (Connell et al., 2007; English et al., 1999; Fuller et al., 2001; Marshal & English, 1999; Rittner, 2002; Wood, 1997).

In the current study, prior CPS involvement did not significantly predict re-reports for cases involving caregivers with intellectual disabilities. However, previous research has found an association between prior CPS involvement and child removal for families with intellectually disabled caregivers. Elvish et al. (2006), for example, found among families with intellectually disabled caregivers that more involvement in child protection investigations was associated with higher rates of child removal: no involvement in child protection proceedings was associated with a child removal rate of 37.5%, compared to 76.6% for involvement in one investigation, and 86.1% for involvement in more than one investigation. In light of this, perhaps the effect of prior CPS involvement on child custody loss artificially nullifies the effects of prior CPS involvement on re-reports. Additional research is required to assess if indeed this is the case.

Post-hoc analysis also found that caretaker drug problems significantly predicted re-reports for cases without intellectually disabled caregivers: the odds of a re-report were approximately 2 times as high for cases involving caregivers without drug problems in comparison to cases involving caregivers with drug problems. These findings contradict what previous research has found, namely that caretaker substance use increases the risk of re-reports (Connell et al., 2007; English et al., 1999; Fluke et al., 2008; Inkelas & Halfon, 1997; Rittner, 2002). One possible explanation for this is that caregivers who divulge using substances are likely to receive intensive drug treatment or services and/or to lose custody of their children. Both of these, in turn, would limit the contact between the caregiver and the child and therefore decrease the likelihood of a re-report. Alternatively, the provision of more intensive services to caregivers who disclose substance use may reflect that the services are effective at reducing the risk of re-reports. Although insignificant, caretaker drug use was also found to decrease the risk of maltreatment re-reports for cases with intellectually disabled caregivers.

Finally, post-hoc multivariate analyses found that initial allegation substantiation was a significant predictor of maltreatment re-reports for cases without intellectually disable caregivers. Specifically, the odds of a re-report were 1.85 times as high for cases that did not have an initial allegation substantiated in comparison to cases that did have an initial allegation substantiated. Most of the literature on maltreatment recurrence has found initial allegation substantiation to increase the risk of re-reports (Bae et al., 2007; Drake et al., 2003; Fluke et al., 2008; Thompson & Wiley, 2009), although other studies have found initial allegation substantiation to decrease the risk of re-reports (Connell et al., 2007; Marshal & English, 1999). Previous research has also found the effects of initial allegation substantiation to vary as a function of abuse type. For example, Way et al. (2001) found substantiation to increase the risk of re-reports for neglect index events and physical abuse index events, but not for sexual abuse index events. Given that initial allegation substantiation was significant only for cases without intellectually disabled caregivers, it would be interesting to asses if the effect of substantiation varies by abuse type for families with intellectually disabled caregivers.

When taken together, and in relating the findings from the present study to the ecological-transactional model (Belsky, 1980; Cicchetti & Lynch, 1993), factors at the micorsystem level appear to be most influential in predicting re-reports among families with intellectually disabled caregivers. Specifically, child disability and child race/ethnicity classification of 'other'²² were found to be potentiating factors, whereas male child was found to be a compensatory factor. For families without intellectually

²² The NSCAW race/ethnicity classification of 'other' comprises non-Hispanic children who are American Indian, Alaskan Native, Asian, Hawaiian, or Pacific Islander.

disabled caregivers, case characteristics appear to be the most influential factors in predicting re-reports: both prior involvement with CPS and initial allegation substantiation were found to be significant case-level predictors.

Given that the ecological-transactional model suggests that the risk of maltreatment increases when the total influence of potentiating factors exceeds that of compensatory factors, the finding in this study that there was no significant difference in risk of re-reports for families with and without intellectually disabled caregivers may be due to the fact that both groups of families were found to have an equal number of potentiating and compensatory factors. Although 21 variables were included in the present study, it is likely that other factors that were not included in this study contribute significantly to the likelihood of re-reports. As such, inclusion of these contributing factors would certainly change, and perhaps broaden, the dynamic interaction of potentiating and compensatory factors. Future research may wish to examine if and how the inclusion of additional variables influences interactions in the ecological-transactional model for families with intellectually disabled caregivers.

Social Policy and Social Justice Issues

This study's findings that families with intellectually disabled caregivers are over-represented in the child welfare-system, and that these families experience custody loss significantly quicker than families without intellectually disabled caregivers, have policy implications at both the national level and local level. At the national level, more federal resources need to be utilized for service development and service improvement for child welfare-involved families with intellectually disabled caregivers. The Child Abuse Prevention and Treatment Act (CAPTA) is one avenue through which this may be achieved. Indeed, CAPTA provides federal funding that supports research activities and services to enhance prevention efforts, assessment and investigation procedures, and treatment activities related to child maltreatment. Specifically, clauses under Title I of CAPTA indicate that states may be provided funds to carry out research that focuses on effective programs/practices for improving services, including collaborative activities between CPS agencies and providers of developmental disabilities services. Available funding outlined in CAPTA could, for example, be used for research to establish evidence based-practice guidelines and best practices when working with families with intellectually disabled caregivers. Moreover, funding could be used to investigate how reasonable accommodations (per ADA mandates) and reasonable modifications (per ASFA mandates) can be incorporated into child welfare policies and practices. As it currently stands, the ADA mandate of reasonable accommodations can be dismissed if the child welfare system can demonstrate that modifications fundamentally change the services, or if undue burdens are required to make such modifications. However, substantial modifications to traditional services may be required to meet the unique needs of some families with intellectually disabled caregivers. Furthermore, alterations to services, including the extension of timelines outlined in the ASFA (e.g. for parents to demonstrate adequate parenting behavior) to accommodate slower learning abilities, may be objected on the grounds that making such changes would put the child at risk (a "direct threat" claim). The creation of a national forum may be one way to instigate dialogue and to find middle ground that would allow ADA and ASFA accommodations/modifications to be made while ensuring the safety of the child.

Funding available through CAPTA could also be used to address the high prevalence rate of child welfare-involved families with intellectually disabled caregivers. Given the finding in this study that approximately 7% of child welfare cases involved families with intellectually disabled caregivers (compared to a 1-3% rate found in the general United States population), better preventative efforts are needed to reduce child welfare involvement for these families. Grants available under Title II of CAPTA could be used to improve child maltreatment prevention efforts through the development of community-based programs and activities. Similarly, grants available under Title I of CAPTA could be used to improve screening and evaluation efforts through improved training and collaboration between child welfare agencies and disability agencies. Certainly, improved collaboration between different service agencies is necessary if we wish to uphold the normalization principle. A fundamental component of the normalization principle is promoting community integration and participation. The continued isolation of service agencies impedes the integration of intellectually disabled caregivers into the child welfare system and potentially hampers community participation. Moreover, efforts to improve participation without making fundamental changes to services may cause more harm than good. For example, service nonparticipation/non-adherence would likely result if child welfare-involved caregivers with intellectual disabilities, who typically learn at slower rates than individuals without intellectual disabilities, are ordered to attend general and traditional parenting classes that do not take into account their unique needs. To promote self-determination and social roles as outlined in the normalization principle, child welfare-involved caregivers with intellectual disabilities should at a minimum be afforded the opportunity to receive

services in a valued manner that is similar and consistent to the way child welfareinvolved caregivers without intellectual disabilities are offered services. Perpetuation of the current fragmented system, coupled with disability incompetence of child welfare workers, will inevitably maintain the status quo; namely the continued social neglect of child welfare-involved families with intellectually disabled caregivers. For normalization to be successful, the child welfare environment needs to be restructured and enhanced. To begin, training efforts can be initiated at the federal level to improve child protection workers' knowledge of disabilities and appropriate interventions. Training efforts could be facilitated by mandating that child welfare agencies and disability agencies collaborate in a multi-agency fashion to better understand the roles and responsibilities of professionals in each agency. Improved communication and coordination should in turn promote access and delivery of appropriate services at the local level.

To further enhance disability competency at the local level, child welfare agencies may wish to recruit social workers or professionals who have experience in working with families with intellectually disabled caregivers. Experienced professionals could also be used to improve screening processes and to develop a list of appropriate and available resources to meet the unique needs of child welfare-involved families with intellectually disabled caregivers. Moreover, child welfare agencies may wish to use caregivers with intellectual disabilities who have been through the child welfare system to assist in the development of trainings for child welfare workers. It may also be beneficial if former child welfare-involved caregivers with intellectual disabilities are used as mentors and as a form of peer support service. In this capacity, caregivers with intellectual disabilities could share their experiences of being involved in the child welfare system, including how child welfare processes work and how to navigate the system. Given that the child welfare system and disability service system often work in isolation (Lightfoot & LaLiberte, 2006), peer support services may be one way to bridge the gap between these two entities.

Policy implications also emerge from the present study's state-level findings. Interestingly, and contrary to what was hypothesized, lower prevalence rates of caregiver intellectual disability, and longer times to custody loss among families with intellectually disabled caregivers, were found for cases residing in states that have disability related grounds for termination of parental rights (TPR). One possible explanation for this is that states with disability related grounds for TPR may, as a result of having such state statutes, have in place more strict guidelines and concrete policies regarding procedures that must be taken when professionals work with disabled caregivers. This in turn may result in more attention being paid to appropriate and effective services for families with intellectually disabled caregivers before they even enter the child welfare system. Having such preventative services in place would potentially lead to a reduction in child welfare prevalence rates, as was observed in this study. Moreover, if states with disability related grounds for TPR have more detailed policies in place, then additional procedures (and potentially more targeted services) would likely need to be undertaken after families with intellectually disabled caregivers enter the child welfare system and before custody loss can be assumed. As a result of this, it would be expected that custody loss would be assumed after a longer period of time for families with intellectually disabled caregivers in states with disability related grounds for TPR. This is precisely what was found in the present study. However, more research is needed to determine if

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improvements in prevalence rates and timing to custody loss are directly related to statelevel policies. If research does indeed demonstrate this, then national-level prevalence rates of CPS-involved families with intellectually disabled caregivers, and time until custody loss is assumed for these families, may be improved if states without disability related grounds for TPR adopt similar policies, procedural requirements, and guidelines that are in place in states with disability related grounds for TPR. Further research would also be needed to examine how policies differ in states with, versus without, disability related grounds for TPR, and whether or not it would be feasible to standardize and implement across all states specific policies regarding best-practices for working with families that have intellectually disabled caregivers.

Non-significant findings from this study also have policy implications. Families with intellectually disabled caregivers were found to be at no greater risk of experiencing either custody loss or maltreatment re-reports, when compared to families without intellectually disabled caregivers. This may suggest that child welfare policies, and the provision of services, are effective at minimizing any risk of custody loss or maltreatment re-reports that families with intellectually disabled caregivers have. If this is the case, then recurrence prevention policies should be maintained, but more targeted efforts should be made to improve child welfare policies that address time until custody loss is assumed, seeing that families with intellectually disabled caregivers experience custody loss significantly quicker than families without intellectually disabled caregivers. Alternatively, non-significant findings in rates of custody loss and maltreatment re-reports may indicate that families with intellectually disabled caregivers are not inherently at any greater risk of experiencing either of these child welfare outcomes.

Moreover, non-significant findings may be a by-product of families with intellectually disabled caregivers having higher rates of TPR, which would in turn artificially minimize rates of custody loss and maltreatment re-reports (and lead to non-significant findings). If indeed this is the case, then child welfare policies should be revised to ensure that efforts are made to concomitantly preserve families and prevent maltreatment recurrence.

Limitations

As with all research, this study is not without limitations. Although NSCAW data are representative of the vast majority of maltreatment allegations reported to child protective services in the United States, they do not include families whose allegations were reported to child protective services in states that have laws requiring CPS agency staff to initiate first contact with the caregiver. Given this, estimates from this study cannot be generalized to agency-first-contact states. Furthermore, caution should be exercised in generalizing the findings beyond the child welfare system, as not all acts of maltreatment (including re-reports) are reported to child protective services.

The validity and reliability of the NSCAW caregiver intellectual disability measure is another potential limitation to this study, given that responses to this variable were determined by caseworkers without formal diagnoses. The subjective determination of caregiver intellectual disability by caseworkers in turn likely impacts the validity of the results found in this study. If, for example, caseworkers are incapable (e.g. due to a lack of sufficient training/knowledge) of identifying accurately caregivers with intellectual disabilities, then prevalence rates found in this study will be underestimates. Conversely, if caseworkers misdiagnose and incorrectly determine that a caregiver has an intellectual disability, when in fact the caregiver has some other condition/problem (such as substance use issues, depression, or speech impairments), then prevalence rates estimated in this study will be overestimates. To overcome this limitation, caseworkers should be required to support their determination of caregiver intellectual disability status with validated and/or qualitative measures, such as with either a formal diagnosis (made by a psychologist or psychiatrist) or with appropriate accompanying documentation (such as school records indicating attendance in special education or disability service reports). Given that caregiver intellectual disability was determined by caseworkers without validated measures, it would be more accurate to describe this variable as 'perceived' caregiver cognitive intellectual disability. Although we cannot ascertain the extent of bias resulting from using a potentially invalid and unreliable measure of caregiver intellectual disability, it is encouraging to find that the overall prevalence rate estimated in this study mirrors the prevalence rate found by the Public Health Agency of Canada (2010).

Issues regarding severity of intellectual disabilities may also exist, given that the NSCAW did not collect such information. It is likely that caregivers with severe forms of intellectual disabilities would be more noticeable and thus easier to detect. As a result of this, the group of caregivers who were identified as having intellectual disabilities may contain an unrepresentatively large number of low functioning individuals. Having information on severity of intellectual disabilities would have increased our confidence in the prevalence estimates, and would have facilitated more analyses, including subgroup analyses (e.g. to compare outcomes for higher functioning individuals compared to lower functioning individuals).

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Another limitation of the NSCAW dataset is that data on custody loss and maltreatment re-reports were collected only for those cases that received services. Given this, findings from this study will unlikely generalize to all child welfare-involved cases (i.e. those cases that do, and do not, receive services). Furthermore, because cases that receive services are potentially more serious than cases not receiving services, custody loss and maltreatment re-report estimates in this study are likely higher than would be expected had all individuals been included, and not just those who received services.

Finally, the vast majority of states participating in the NSCAW are unidentifiable: only eight states with the greatest volume of child welfare caseloads are identifiable. This in turn acted as a limitation and restricted the ability to conduct state-by-state analyses. Nonetheless, having eight identifiable states permitted circumscribed exploratory analyses. Despite these limitations, findings from this study have implications for both research and practice.

Implications for Research

Numerous implications for research emerge from the present study. At the most basic level, future research may wish to examine the prevalence rate of CPS-involved families with intellectually disabled caregivers in each of the 50 states, to see how prevalence rates vary in the 42 states that were not examined in this study. More importantly, additional research should be conducted to assess why such a large variability of prevalence rates (ranging from 13% in New York to 1.7% in Texas) was found in the 8 identifiable NSCAW states, and to assess if such variability is found in the remaining 42 states. An examination of state-level differences in both disability identification procedures and levels of disability knowledge among child welfare workers may be one fruitful endeavor to help explain the observed state-level variability. In a similar vein, researchers should utilize data from all 50 states to see if the finding in this study that prevalence rates are lower in states that have disability related grounds for termination of parental rights (TPR) is applicable throughout the country. If confirmed, it would be interesting to examine if the relationship between CPS prevalence and state disability related grounds for TPR is moderated by termination of parental rights; it may be the case that caregivers with intellectual disabilities who live in states with disability related grounds for TPR are at an increased risk of losing their parental rights, which in turn would reduce the likelihood that they would come into contact with the child welfare system. Future studies may wish to approach this speculative inquiry through an initial analysis of state-level rates of TPR areas to state-level CPS prevalence rates.

Similarly, in light of findings from this study that CPS-involved families with intellectually disabled caregivers do not have significantly different rates of custody loss than CPS-involved families without intellectually disabled caregivers, future research may wish to examine if termination of parental rights moderates the relationship between custody loss and caregiver intellectual disability status. As a preliminary step, it may prove worthwhile to assess if CPS-involved families with intellectually disabled caregivers are: (a) more likely to be associated with TPR than custody loss and (b) more likely than CPS-involved families without intellectually disabled caregivers to experience TPR. Moreover, more research should be conducted to examine why cases involving intellectually disabled caregivers: is this due to inherent risk, or could some other extraneous factors, such as inadvertent discrimination and stereotyping (or fragmented/ineffective services) be responsible for the observed difference?

Given that this study found maltreatment re-reports involving the same child did not differ significantly for cases with, versus without, intellectually disabled caregivers, but a significant difference was found with regard to prior CPS involvement (involving any child), future research may wish to examine recurrence using a broader definition of a re-report (to include CPS re-involvement of any child). Additionally, more research should assess if the present finding of no significant difference in re-reports is maintained when TPR is controlled for. After all, if CPS-involved families with intellectually disabled caregivers are found to be at an increased risk of losing parental rights, then by this very fact alone CPS re-involvement should be minimized.

Implications for Practice

The intersection of caregiver intellectual disability and child maltreatment can present a unique challenge to social workers and CPS professionals, given that two vulnerable populations are intertwined: caregivers with disabilities and children at risk of maltreatment. It is vital that children of caregivers with intellectual disabilities are protected from harm, and it is also crucial that families with intellectually disabled caregivers are afforded reasonable accommodations and services to promote optimum family wellbeing, and to enable these caregivers to be successful. Given that families with intellectually disabled caregivers are at an increased risk of experiencing poor child welfare outcomes, emphasis needs to be placed on preventative measures that reduce the risk of involvement in the child welfare system in the first place.

Prevalence estimates from this study found that families with intellectually disabled caregivers are overrepresented in child protection cases. This would suggest that children in these families are at an increased risk of being maltreated, or that these families are more likely to be flagged as being at risk of experiencing maltreatment (e.g. due to having more contact with service providers and mandated reporters). If children of intellectually disabled caregivers are at an increased risk of being maltreated, then prevalence rates may be reduced if better and/or more services are provided to these families early on. Contrary to common beliefs that individuals with intellectual disabilities are uneducable, many caregivers with intellectual disabilities can learn and apply parenting skills and knowledge when appropriate supports and training are provided (Feldman, 1994, 2010; Keltner, Finn, & Shearer, 1995; Llewellyn, McConnell, Honey, Mayes, & Russo, 2003; Wade, Llewellyn, & Matthews, 2008). For example, Llewellyn et al. (2003) conducted a randomized controlled trial to assess the effectiveness of a home-based intervention on child health and home safety for parents with intellectual disabilities. Llewellyn et al. found that parents who received the intervention made significant improvements in their ability to identify home dangers and in their knowledge and skills regarding child health (including illness and symptom recognition, and responding to emergencies).

Given the existence of effective interventions for improving parenting skills among caregivers with intellectual disabilities, social workers need to be informed about available resources, and they need to assist families with intellectually disabled caregivers in finding and receiving appropriate and effective services. After all, social workers are ethically responsible for enhancing human wellbeing and advocating for vulnerable individuals. Advocacy is especially important for families with intellectually disabled caregivers, given that these families are at an increased risk of being exposed to social stressors (Emerson et al., 2005; Fujiura, 2003), and given that these families likely do not know that parenting programs exist specifically for intellectually disabled caregivers.

Results from this study found that once involved in the child welfare system, cases with intellectually disabled caregivers are more likely than cases without intellectually disabled caregivers to have their allegations substantiated and to have more prior CPS involvement. High rates of prior CPS involvement for cases with intellectually disabled caregivers suggests that the child welfare system is underperforming when working with these families, given that the main goal of CPS is to prevent future acts of maltreatment. This is potentially due to CPS professionals lacking sufficient training and having limited access to protocols that outline how to work with families with intellectually disabled caregivers. To overcome this, more education and training needs to be provided to all child welfare workers, and policies should be updated to include guidelines on working with families with intellectually disabled caregivers. System conflicts, including a lack of collaboration between the child welfare system and the disability service system, may further impact child welfare outcomes for these families. It is vital that interagency collaboration is optimized through transparent and constant communication, and through an explicit delineation of each agency's roles, responsibilities, and boundaries. After all, poor collaboration impedes accessibility to knowledge and services, which in turn increases the risk that children of intellectually

disabled caregivers will be re-involved in the child welfare system and potentially removed from their families.

Findings from this study indicate that child welfare cases with intellectually disabled caregivers experience custody loss significantly quicker than cases without intellectually disabled caregivers. If children in families with intellectually disabled caregivers are at a greater risk of experiencing harm, and thus shortened times to custody loss are warranted, then early intervention needs to be provided to these families, ideally prior to involvement in the child welfare system. If these findings are a result of child welfare-involved caregivers with intellectual disabilities being held against higher standards of competence, as proclaimed by fervent advocates (e.g. Swain & Cameron, 2003; Tarleton, 2008), then changes to policies need to be implemented.

Child welfare workers may regard custody loss for these families as inevitable, thus leading to the withholding of services and the immediate removal of the child. Indeed, previous research suggests that some families with intellectually disabled caregivers lose custody based solely on the assumption that these caregivers are unfit to parent and that future harm is a certain eventuality (Collentine, 2005; Watkins, 1995). Moreover, it may be considered easier to remove a child than to provide services and supports, which may be lacking and/or difficult to procure. To overcome these fallacious beliefs, more education needs to be provided to child welfare workers so that they better understand families with intellectually disabled caregivers. Furthermore, reasonable accommodations should be made per the ADA requirements so that these families can receive unique services that are tailored to the needs of each family. Regardless of whether shortened times to custody loss found in this study are indicative of actual risk or implicit discrimination, improvements would certainly result if appropriate and tailored services are provided to these families at an early stage, and if child welfare workers are more knowledgeable about intellectual disabilities.

Practice implications also emerge from this study's finding that there is no significant difference in maltreatment re-report rates for families with intellectually disabled caregivers, compared to families without intellectually disabled caregivers. If indeed families with intellectually disabled caregivers are not inherently at risk of being re-involved in the child welfare system, then child protection professionals should prioritize their efforts to preserve these families (given that these families experience custody loss significantly quicker than families without intellectually disabled caregivers). This is especially true if the non-significant difference in maltreatment rereport rates is an aftereffect of families with intellectually disabled caregivers having higher rates of TPR. Certainly, child protection professionals should continue to provide services to prevent maltreatment recurrence among families with intellectually disabled caregivers. However, before (and while) these services are provided, intensive efforts should be made to try and preserve these families.

Results from this study found that predictors of maltreatment re-reports varied based on whether or not a case involved a caregiver with an intellectual disability. Child gender, child disability, and child race/ethnicity were significant predictors for cases involving caregivers with intellectual disabilities; these predictors were not significant for cases without intellectually disabled caregivers. This suggests that child welfare professionals should focus attention on child factors when working with families involving intellectually disabled caregivers. Specifically, screening efforts, and the

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development of more targeted, actuarial risk assessments may be enhanced if efforts are concentrated on child characteristics.

Moreover, although each of the significant predictors is immutable, resources and services may nonetheless help impede the recrudescence of child welfare involvement for families with intellectually disabled caregivers. For example, policy makers may wish to utilize findings from this study to incorporate into child welfare policy and practice special services and agency collaborations to address issues experienced by families with both intellectually disabled caregivers and disabled children. In turn, improved screening efforts, and more targeted services may eventually lead to the formulation of an evidence-based practice framework for CPS professionals, which would help the child welfare system save resources (e.g. time and money) and concomitantly help improve outcomes and promote optimum wellbeing for families with intellectually disabled caregivers.

Finally, to ensure that accurate estimates are obtained, and more importantly to ensure that appropriate services are provided to the right populations, the child welfare system should consider adopting more valid and reliable measures of caregiver intellectual disability. One way to improve this measurement issue would be to incorporate formal diagnoses made by psychologists of psychiatrists. If, given resource limitations, individual psychometric testing is infeasible, alternative proxies could be used to better determine if a caregiver has an intellectual disability. For example, the child welfare system could achieve a more thorough approach to diagnosis by including school disability reports (including special education attendance) and/or by incorporating disability service reports. A more comprehensive approach to diagnosis would help tease out individuals who have other disabilities or problems that may be mistaken for

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intellectual disabilities (such as substance use issues, speech impairments, etc.). This in turn would ensure that appropriate services are correctly tailored and provided to caregivers with intellectual disabilities. Although the implementation of a more comprehensive approach to diagnosis may prove to be a costly expenditure up-front, long-term benefits and savings to service provision would certainly result if appropriate services are provided at the outset, and if these services are targeted towards the right populations.
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APPENDIX A

RESEARCH ON THE INTERSECTION OF CHILD WELFARE AND CAREGIVER INTELLECTUAL DISABILITY

Aunos, Goupil, & Feldman (2003)

Sample and Study Design Comparative study in Quebec of mothers with intellectual disability who had custody of their children (n = 30) and those who did not (n = 17). Mothers, who all "lived under the poverty line" were recruited from agencies where they were receiving services.

Prevalence

Not reported; only focused on a sample of mothers with intellectual disability.

Findings and Risk Factors

Mothers without custody of their children were more likely than mothers who had

custody of their children to have an income of less than CAD\$10K (53% v. 20%; p <

.01). Mothers with custody had more community involvement (p < .05), and were more

satisfied with services (p < .001). No differences found for mother's age, presence of a

partner, employment status, physical or mental health, or size of support network.

Children remaining at home were, on average, younger (M = 7.4 years) than those placed

out of home (M = 10.2 years) (p < .05). More children who remained at home (76%) than

those placed (55%) received special services (p < .05). No differences found for CBCL

(Child Behavior Checklist) scores, child gender, or number of children in family.

Bogacki & Weiss (2007)

Sample and Study Design

Random selection of psychological evaluations for 300 individuals involved in

termination of parental rights (TPR) cases in New Jersey between 2000 and 2006.

Chart review: only univariate statistics provided.

Prevalence

6% of defendants with reports of psychological evaluations had mental retardation (IQ \leq

70).

Findings and Risk Factors

For total sample: majority of defendants were female (78%); age ranged from 18-37 years; African American most prevalent (42%), followed by Hispanic (37%); 88% unemployed within past year; 37% history of spousal abuse; 75% unmarried; 89% no previous TPR; 84% substance abuse; 56% learning disorder, NOS; 81% visual perception impairments; 64% personality disorder; 60% clinical syndromes. No statistics provided specifically for the defendants who had mental retardation.

Booth, Booth, & McConnell (2005a)

Sample an	nd Studv Des	ian
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Comparative study of two court samples: (a) 285 cases (involving applications by the

child protection authority; 469 children) finalized by 2 New South Wales' Children's

Courts (Australia) from May 1, 1998 to February 1, 1999; and (b) 437 cases (applications

by authorities per the Children Act of 1989; 828 children) from the Family Proceedings

Court in Leeds and Sheffield (England) during 2000 year.

Parental learning disability: included those with diagnostic evidence, and those with

borderline learning difficulties, as documented in evidential material.

Prevalence

Higher prevalence of parental learning difficulties (including borderline) in the English sample of cases (20%) than in the Australian sample (9%).

Findings and Risk Factors

For English sample, children in cases with parental learning difficulties (including borderline) were more likely than children in cases without learning difficulties to be placed with non-family (71% v. 52%), and less likely to be returned home (13% v. 31%) or placed in kinship care (16% v. 17%).

For Australian sample, children in cases with parental learning difficulties (including borderline) were more likely than children in cases without learning difficulties to be placed with non-family (36% v. 24%), and less likely to be returned home (37.7% v.

38%) or placed in kinship care (26% v. 37%).

Comparing the two samples of cases with parental learning difficulties, children in the

Australian sample was more likely to be returned home (37.7% v. 13%) or placed in

kinship care (26% v. 16%), and less likely to be placed with non-family (36% v. 71%).

(NB: tests of statistical significance not reported.)

Booth, Booth, & McConnell (2005b)

Sample and Study Design

English sample described by Booth, Booth, & McConnell (2005a; see above): n = 437

cases.

Prevalence

Prevalence of parental learning difficulties (excluding borderline): 15% (66 cases

involving 127 children).

Findings and Risk Factors

More than twice as many newborns were documented in cases with parental learning difficulties compared to cases without parental learning difficulties (22% v. 9%). Child impairment/disability more prevalent in cases with parental learning difficulties (32% v. 10%: Phi = 0.224, p < .001). Children in cases with parental learning difficulties were more likely than children in cases without learning difficulties to be placed with non-family (75% v. 52%; Phi = 0.178, p < .001), and less likely to be returned home (10% v. 30%) or placed in kinship care (15% v. 17%). More children in cases with, versus without, parental learning difficulties were freed for adoption (42% v. 29%; Phi = 0.11, p

< .05). Children of parents with learning difficulties were also at a significantly increased risk of being freed for adoption (42%; Phi = 0.188, p < .05) when compared to children in cases involving parental mental illness only (30%), DOA problems only (30%), and mental illness + DOA problems (32%). Children of parents with learning difficulties were also at a significantly increased risk of being placed with non-family (75%; Phi = 0.220, p < .001) when compared to children in cases involving parental mental illness only (50%), DOA problems only (53%), and mental illness + DOA problems (59%). Most cases involving parental learning difficulties were for allegations of neglect (61%), followed by emotional abuse (20%); sexual abuse was least common (7.9%).

Elvish, Hames, English, & Wills (2006)

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Audit of 165 parenting referrals (for 140 parents of 311 children) to a learning disability team in England between 1994 and May 2003.

Prevalence

No specific prevalence rates reported, although increases in referrals were noted (e.g.

from 4 in 1996 to 15 in 1997 to 23 in 1998).

Findings and Risk Factors

General findings (not risk factors associated with maltreatment per se): 37.5% of parents indicated they were sexually abused as a child; 21.9% of children had developmental problems or required special education; and 16.4% of children had language difficulties. More than half (58.6%) of all children were added to the Child Protection Register (either prior to or after referral date), mostly for neglect (68.5%); 30.2% of children were not in care of parents (at time of referral); 37.3% of children in shared care (at time of audit, through assessment of social services files); 22% of children were adopted (at time of

audit, through assessment of social services files); no involvement in child protection proceedings before referral associated with child removal rate of 37.5%, compared to 76.6% if involvement in 1 case conference prior to referral, and 86.1% if involvement in more than 1 case conference prior to referral.

Glaun & Brown (1999)

Sample and Study Design

12 families with intellectually disabled mothers who were referred (from July 1996 through December 1997) to a Children's Court Clinic (in Australia) in response to child protection concerns.

Prevalence

No prevalence rates reported – retrospective review of case records involving mothers with intellectual disabilities.

Findings and Risk Factors

Most cases (67%) were referred for allegations of neglect only. Some mothers had a history of being deprived/neglected alone (17%) or in addition to being sexually abused (58%). Two-thirds were reported to have no support from their extended family, and only one third were married or in a relationship (the remainder were single/separated/divorced). Most (85%) relied on welfare as their sole source of income. Two thirds (67%) had a comorbid psychiatric or medical condition (including substance abuse). Of the 17 children (59% of whom were under age 2 years) associated with the 12 mothers, most (59%) were in temporary foster care during the court assessment. Most children (59%) had a medical and/or psychiatric condition, and 47% had development delay either only (29%) or in combination with a medical condition (18%).

Llewellyn, McConnell, & Ferronato (2003)

Sample and Study Design

Australian sample described by Booth, Booth, & McConnell (2005a; see above): 285 child protection authority initiated court cases (involving 469 children) finalized between May 1, 1998 and February 1, 1999 at 2 Australian Children's Courts.

Prevalence

Prevalence of parental intellectual disability: 9%

Findings and Risk Factors

Cases involving parental intellectual disability, compared to the total sample, had more children associated per case (M = 2.1 v. M = 1.6), younger children (M = 48.4 months v. M = 64.9 months), and a higher percent of single mothers (53% v. 39%): no differences were found for level of socio-economic disadvantage.

Children in cases involving parental intellectual disability, compared to the sample, were more likely to be subject to wardship orders (i.e. termination of parental rights) (56% v. 43%), but less likely to be subject to custody orders (11% v. 26%).

Higher rates of wardship orders were found for children of parents with intellectual difficulties (56%) than for children in cases involving no parental disability but suspected DOA use (47%), parental psychiatric disability (35%), and parental psychiatric disability and suspected DOA use (43%).

Lower rates of custody orders were found for children of parents with intellectual difficulties (11%) than for children in cases involving no parental disability but suspected DOA use (30%), parental psychiatric disability (16%), and parental psychiatric disability and suspected DOA use (34%).

Children in cases involving parental intellectual disability were more likely than the total

sample to be placed out of home with non-family (44% vs. 26%), and less likely to be placed out of home with extended family (17% vs. 35%).

Children of parents with intellectual difficulties had higher rates of being placed out of home with non-family (44%) when compared to children in cases involving no parental disability but suspected DOA use (27%), parental psychiatric disability (20%), and parental psychiatric disability and suspected DOA use (9%).

Children of parents with intellectual difficulties had lower rates of being placed out of home with extended family (17%%) when compared to children in cases involving no parental disability but suspected DOA use (44%), parental psychiatric disability (25%), and parental psychiatric disability and suspected DOA use (56%).

Children were returned home less frequently among the no parental disability but suspected DOA use group (30%) and parental psychiatric disability and suspected DOA use (36%) than for the parental intellectual disability group (39%). The highest rate was reported for the parental psychiatric disability group (55%).

McConnell, Feldman, Aunos, & Prasad (2011b)

Sample and Study Design
11,562 child maltreatment investigations opened between October 1, 2003 and December
31, 2003 in Canada (excluding Quebec; children older than 15 excluded).
Secondary analysis of the 2003 Canadian Incidence Study of Reported Child Abuse and
Neglect (CIS-2003).

Prevalence

Parental cognitive impairment documented in: 10% of all cases; 17% of cases involving children < one year of age; 13% of substantiated cases; 19% of cases that remained open

(for ongoing services); 27% of cases resulting in court application;

and 40% of cases involving children ages 0-5 years that resulted in court application.

Findings and Risk Factors

Characteristics of cases involving caretaker cognitive impairment (compared to cases without cognitive impairment):

Aboriginal child: 27% (v. 12%); English as second language: 4% (v. 10%); child functioning issues (physical, emotional, cognitive, behavioral): 64% (v. 42%); prior substantiated report: 38% (v. 22%); alleged neglect: 56% (v. 39%); alleged physical abuse: 23% (v. 33%); signs of mental or emotional harm to child: 22% (v. 12%); perceived non-cooperation of parent with investigation: 23% (v. 11%); parent mental health issues: 66% (v. 22%); parent maltreated as child: 60% (v. 20%); parent has few social supports: 68% (v. 33%); parent DOA abuse: 52% (v. 32%); parent did not finish high school: 69% (v. 34%); no household employment: 50% (v. 23%); income < CAN\$25K: 79% (v. 48%); public housing: 27% (v. 16%); non-cohabiting (sole) parent: 47% (v. 42%).

Child welfare outcomes: substantiated maltreatment: 61% (v. 46%); case remained open: 55% (v. 25%); court application: 10% (v. 3%). Controlling for child and case characteristics (e.g. age, maltreatment type), cases involving caregivers with cognitive impairment at a significantly greater risk of substantiation (OR = 1.5, p < .001), case remaining open (OR = 2.2, p < .001), and court application (OR = 1.7, p < .001). Controlling for child and case characteristics and psychosocial risk (parent mental health, maltreated as a child, few social supports, DOA abuse, sole parent), cognitive impairment status significant only at predicting case remaining open (OR = 1.3, p < .001).

McConnell, Feldman, Aunos, & Prasad (2011a)

Sample and Study Design

Same as McConnell et al. (2011b; above), but only focused on the 1,170 cases involving

caretaker cognitive impairment.

Prevalence

Only within-group analysis reported -- see McConnell et al. (2011b; above) for betweengroup analysis.

Findings and Risk Factors

Factors associated with increased risk of substantiation: child age (OR = 1.05, p < .05) signs of mental or emotional harm to child (OR = 3.5, p < .05); signs of physical harm (OR = 2.2, p < .05); alleged neglect (OR = 2.1, p < .05); alleged domestic violence (OR = 3.7, p < .05). Decreased risk associated with size of worker's caseload (OR = 0.98, p < .05).

Factors associated with increased risk of substantiated cases being kept open: aboriginal child (OR = 2.4, p < .05); signs of mental or emotional harm to child (OR = 4.2, p < .05); signs of physical harm (OR = 5.4, p < .05); alleged neglect (OR = 3.4, p < .05) or emotional maltreatment (OR = 2.1, p < .05); parent non-cooperation (OR = 2.9, p < .05); parent mental health issues (OR = 2.1, p < .05); parent maltreated as child (OR = 4.7, p < .05); parent has few social supports (OR = 1.6, p < .05). Decreased risk associated with: alleged physical abuse (OR = 0.4, p < .05) or sexual abuse (OR = 0.1, p < .05), and worker years in CPS (OR = 0.9, p < .05)

Factors associated with increased risk of court application being made among open cases: signs of mental or emotional harm to child (OR = 3.8, p < .05); signs of physical harm (OR = 3.3, p < .05); parent non-cooperation (OR = 5, p < .05); non-cohabiting (sole) parent (OR = 2.3, p < .05); substantiated report (OR = 5.3, p < .05). Decreased risk associated with child age (OR = 0.9, p < .05).

A separate analysis found the following services to be associated with increased risk of court application being made among open cases: domestic violence services (OR = 2.2, p < .001); psychiatric/psychological services (OR = 1.9, p < .01); DOA counseling (OR = 3.4, p < .001), and medical/dental services (OR = 2.2, p < .05). Decreased risk associated with: in-home parenting support (OR = 0.5, p < .01) and food bank (OR = 0.09, p < .001).

Seagull & Scheurer (1986)

Sample and Study Design

20 families (64 children) with an intellectually disabled parent (IQ \leq 74) who were

referred to an outpatient clinic in Michigan for child maltreatment issues (all for neglect).

Families were contacted one to seven years after their last contact with the clinic.

Prevalence

Not reported; only focused on a sample of families with intellectually disabled parents.

Findings and Risk Factors

At the time of follow-up, 83% of the children did not remain in the care of their parents

(parental rights were terminated for 53% of all children). Three-quarters (75%) of the

intellectually disabled parents had an abusive background; 40% were sexually assaulted.

Taylor et al. (1991)

Sample and Study Design

206 consecutive referrals to the Boston Juvenile Court (from 1985 through 1986) for

cases involving child maltreatment (excluded sexual abuse cases and children older than

12).

Prevalence

13% of the sample had intellectual limitations (IQ < 79).

Findings and Risk Factors

The majority of cases involving parental intellectual limitations involved mothers (84%) rather than fathers (16%). Parents with intellectual limitations had significantly less prior court involvement and higher acceptance rates of court-ordered services than parents without intellectual limitations, yet they had higher rates of children being permanently removed (75%) compared to other parents, with the exception of substance abusing parents (81%); however, difference should be interpreted with caution because of missing data.

Tymchuk & Andron (1990)

Sample and Study Design

33 mothers with diagnosed mental retardation referred consecutively to a parenting

program at UCLA between September 1982 and July 1987. Comparative study

(univariate analysis) of those who maltreated their children to those who did not.

Prevalence

52% of the sample of mothers had a history of maltreating their children: of these, 88%

involved neglect and 12% involved abuse.

Findings and Risk Factors

Mothers who maltreated their children, compared to those who did not, were more likely to be White (60% vs. 28%) and married (67% vs. 39%), to have an income less than

\$10K (60% vs. 17%), to have more than one child (67% vs. 39%), to have a child

removed for maltreatment (67% vs. 0%), to have a child with problems (mental

retardation, learning disability, emotional disturbance, medical problem) (67% vs. 33%),

and to be living independently (67% vs. 39%). However, these maltreating mothers were

less likely to have been abused (27% vs. 33%) or neglected (14% vs. 28%) as a child, to have problems beyond mental retardation (unspecified) (33% vs. 100%), and to use agency services (87% vs. 100%).

APPENDIX B

RESEARCH ON CHILD MALTREATMENT RECURRENCE

Bae, Solomon, & Gelles (2007)

Sample and Study Design

25,504 families who had reports (substantiated or unsubstantiated) made throughout 1997

in 10 Florida counties. Cases were excluded if a family had a prior report at some point

in 1996.

Unit of analysis: recurrence reports.

Analytic approach: chi-squared analysis and Cox regression.

Type of Maltreatment

Intake: neglect, physical abuse, sexual abuse, other abuse, multiple abuse.

Recurrence: same as above if reported 1 day or more following initial report.

Follow-Up Length

Up to 5.4 years, depending on when the initial report was made.

Recurrence Rate

18,116 recurrence reports were analyzed: overall recurrence rate for families was not

reported (only number of total recurrence reports are reported; some families potentially

had multiple reports).

41.5% of subsequent reports were substantiated (58.5% unsubstantiated), regardless of

initial substantiation status.

Shortest time to recurrence for substantiated-to-substantiated recurrence (M = 443 days).

Longest time to recurrence for substantiated-to-unsubstantiated recurrence (M = 509

days).

Significant Associated Factors

Most subsequent reports were for neglect (47%), regardless of initial form of

maltreatment.

Increased risk of subsequent substantiated report associated with: substantiation at initial

report (Hazard ratio (HR) = 1.3, p < .001), one-parent households (vs. both parents; HR = 1.2, p < .001), non-biological parent (vs. both parents; HR = 1.1, p < .05), more dependent children (HR = 1.2, p < .001), more CPS contacts (HR = 1.03, p < .001), low investigation level (HR = 1.4, p < .001), increased length of intervention (HR = 1.01, p < .001) and investigation (HR = 1.03, p < .01). Decreased risk of subsequent substantiated report associated with: initial allegation of sexual abuse (HR = 0.8, p < .01) or physical abuse (HR = 0.92, p < .05) (vs. neglect), older children (HR = 0.97, p < .001), and boys (HR = 0.9, p < .05).

Increased risk of subsequent unsubstantiated report associated with: multiple forms of abuse/neglect (HR) = 1.1, p < .01) (vs. neglect), one-parent households (vs. both parents; HR = 1.2, p < .001), non-biological parent (vs. both parents; HR = 1.1, p < .05), more dependent children (HR = 1.2, p < .001), more CPS contacts (HR = 1.02, p < .05), low investigation level (HR = 1.2, p < .001), and increased length of intervention (HR = 1.01, p < .001). Decreased risk of subsequent unsubstantiated report associated with: substantiation at initial report (HR = 0.86, p < .001), initial allegation of sexual abuse (HR = 0.8, p < .01) (vs. neglect), older children (HR = 0.98, p < .001), and initial allegation reported by mandatory vs. non-mandatory reporter (HR = 0.9, p < .01). Increased risk of subsequent neglect allegation associated with: one-parent households (vs. both parents; HR = 1.2, p < .001), more dependent children (HR = 1.2, p < .001), more CPS contacts (HR = 1.02, p < .001), more dependent children (HR = 1.2, p < .001), and increased length of intervention (HR = 1.02, p < .001).

allegation of sexual abuse (HR = 0.5, p < .001), physical abuse (HR = 0.5, p < .001), other abuse (HR = 0.8, p < .05), or multiple abuse (HR = 0.7, p < .001) (vs. neglect), older children (HR = 0.95, p < .001), and initial allegation reported by mandatory vs. non-mandatory reporter (HR = 0.9, p < .01).

Increased risk of subsequent sexual abuse allegation associated with: initial allegation of sexual abuse (HR = 2.7, p < .001) or multiple abuse (HR = 1.4, p < .01) (vs. neglect), non-biological parent (vs. both parents; HR = 1.4, p < .01), more dependent children (HR = 1.1, p < .05), low investigation level (HR = 1.2, p < .05), provision of court-ordered services (HR = 1.5, p < .05), and increased length of investigation (HR = 1.05, p < .05). Decreased risk of subsequent sexual abuse allegation associated with: boys (HR = 0.6, p < .001).

Increased risk of subsequent physical abuse allegation associated with: initial allegation of physical abuse (HR = 2.2, p< . 001) or multiple abuse (HR = 1.7, p < .01) (vs. neglect), one-parent (HR = 1.2, p < .001) or non-biological parent (vs. both parents; HR = 1.3, p < .001), more dependent children (HR = 1.2, p < .001), low investigation level (HR = 1.2, p < .001), and increased length of intervention (HR = 1.01, p < .001). Decreased risk of subsequent physical abuse allegation associated with: older children (HR = 0.99, p < .05).

Connell, Bergeron, Katz, Saunders, & Tebes (2007)

Sample and Study Design

22,584 child reports (substantiated or unsubstantiated) made between 1/1/2001 through 9/30/2004 in Rhode Island.

Unit of analysis: child.

Secondary data analysis of NCANDS.

Analytic approach: Cox regression.

Type of Maltreatment

Intake: neglect, physical abuse, sexual abuse, other abuse, multiple abuse.

Recurrence: same as above if reported 1 day or more following initial report.

Follow-Up Length

Up to 3.75 years, depending on when initial report was made.

Recurrence Rate Within 3.75 years of initial event: 40%.

Within 6 months: 13%

Within 18 months: 27%

Within 30 months: 34%

(substantiated or unsubstantiated).

Significant Associated Factors

Risk of re-referral greatest at initial period, decreasing over time.

Compared to infants (under age 1 years), decreased risk associated with children ages 11-

15 (RR = 0.73, *p* < .01) and 16-18 (RR = 0.37, *p* < .01).

Compared to Caucasian children, decreased risk for African Americans (RR = 0.8, p < 0.8)

.01) and Hispanics (RR = 0.83, *p* < .01).

Increased risk for children with histories of prior substantiated maltreatment (RR = 1.09,

$$p < .05$$
).

Increased risk associated with children with disabilities (RR = 1.33, p < .01), families

with substance abuse histories (RR = 1.5, p < .01), and poverty/financial difficulty (RR =

3.26, *p* < .01).

Decreased risk if index event was for sexual abuse (v. neglect) (RR = 0.82, p < .05), and

if index event was substantiated (RR = 0.61, p < .01).

No difference for gender, presence of domestic violence, and provision of post-

investigation services (NB: significant interaction between case disposition and services -

substantiated cases receiving post-investigation services at increased risk).

DePanfilis & Zuravin (1999a)

Sample and Study Design

1,167 reports of families residing in Baltimore, MD selected randomly from substantiated

reports (2,902) in 1988.

Unit of analysis: family.

Analytic approach: survival analysis.

Type of Maltreatment

Intake: neglect, physical abuse.

Recurrence: neglect, physical abuse, and sexual abuse if reported 1 day or more

following initial report.

Follow-Up Length

5 years following first report.

Recurrence Rate Within 2 years of initial case closure: 15.5%

Within 5 years: 43%

(substantiated)

Significant Associated Factors

Greatest risk within first 30 days of initial report. Rate declined during first year,

leveling off at the end of first year.

Recurrence rate lowest for cases closed at intake (8%), followed by cases opened at

intake (34%), and cases already open for previous incident (40%).

Increased risk during the 5-year follow-up if initial report was for neglect-only (49%

recurrence), compared to physical abuse-only cases (34%).

Initial reports for neglect-only, versus physical abuse-only, were also more likely to be

associated with recurrence while CPS was active (32% vs. 18% recurrence) and after

CPS closure (19% vs. 12% recurrence).

DePanfilis & Zuravin (1999b)

Sample and Study Design

446 reports of families residing in Baltimore, MD (who were receiving CPS

interventions) selected from substantiated reports (2,902) made in 1988.

Unit of analysis: family.

Analytic approach: Cox regression.

Type of Maltreatment

Intake: neglect, physical abuse (multiple types excluded).

Recurrence: neglect, physical abuse, and sexual abuse if reported 1 day or more

following initial report, and while the family received CPS intervention.

Follow-Up Length

5 years following first report.

Recurrence Rate Within 5 years: 35%

(substantiated)

Significant Associated Factors

While CPS was active, increased risk associated with placement status (having a child

placed out of home) (RR = 1.9, p < .001); child vulnerability composite (mental health

problems, developmental problems, presence of children under 6 in household) (RR =

1.4, p < .05); partner abuse (RR = 1.5, p < .05); family stress composite (number of children, age of mother, span of child bearing years) (RR = 1.2, p < .05); social support deficits (RR = 1.4, p < .001).

Not significant: number of prior incidents; index type and severity; mother problems (AOD use and deficits in problem solving); survival stress (poor housing, lack of resources).

After interaction between family stress and social support was added to the model (RR = 0.84, p < .05), partner abuse (RR = 1.5, p = .051) no longer significant.

DePanfilis & Zuravin (2002)

Sample and Study Design

Same as DePanfilis and Zuravin (1999b), minus 12 families (total: n = 434) due to

missing information regarding services.

Unit of analysis: family.

Analytic approach: Cox regression.

Type of Maltreatment

Intake: neglect, physical abuse (multiple types excluded).

Recurrence: neglect, physical abuse, and sexual abuse if reported 1 day or more

following initial report.

Follow-Up Length

5 years following first report.

Recurrence Rate Within 5 years: 35%

(substantiated)

Significant Associated Factors

With the exception of partner abuse (RR = 1.4, p = .08), all variables reported in

DePanfilis and Zuravin (1999b) remained significant after adding 6 service-related

variables: perpetrator admitting to initial maltreatment, service attendance, service status

(previously active vs. opened after initial report), number of casework contacts, number

of caseworkers, and % of problems that improved.

None of the added service variables were significant, although service attendance

approached significance (RR = 0.7, p = .05).

Drake, Johnson-Reid, Way, & Chung (2003)

Sample and Study Design

First reports (substantiated or unsubstantiated; total number of cases and children not

provided) made in Missouri in 1993 or 1994.

Unit of analysis: child and case.

Analytic approach: Cox regression.

Type of Maltreatment

Intake: neglect, physical abuse, sexual abuse (emotional abuse, other abuse, mixed abuse

included but not reported).

Recurrence: same as above if reported 15 days or more following initial report.

Follow-Up Length

Up to 54 months, depending on initial report date.

Recurrence Rate

18% of victims with a re-report had a substantiated index event.

23% of victims with a substantiated re-report had a substantiated index event.

Significant Associated Factors

Cases involving initial allegations of sexual abuse were at an increased risk of recurrence (substantiated or unsubstantiated) if initial report was substantiated (RR = 1.25, p = .002), and if parent/guardian was initial perpetrator (versus non-parent/non-caregiver) (RR = 1.52, p = .001). Decreased risk of recurrence for cases involving initial allegations of sexual abuse were associated with increase in age of youngest child (RR = 0.92, p = .001per year), increase in family income of \$1K by census tract (RR = 0.98, p = .001), and the provision of family-centered services (versus no services) (RR = 0.58, p = .001). Cases involving initial allegations of physical abuse were at an increased risk of recurrence (substantiated or unsubstantiated) if initial report was substantiated (RR = 1.14, p = .031), and if parent/guardian was initial perpetrator (vs. non-parent/noncaregiver) (RR = 1.45, p = .001). Decreased risk of recurrence for cases involving initial allegations of physical abuse were associated with increase in age of youngest child (RR = 0.95, p = .001 per year), for non-White children (vs. White children) (RR=0.88, p=.001), increase in family income of \$1K by census tract (RR = 0.98, p = .001), the provision of family-centered services (RR = 0.79, p = .001) and the provision of foster placement services (RR = 0.6, p = .001) (both versus no services).

Cases involving initial allegations of neglect were at an increased risk of recurrence (substantiated or unsubstantiated) if initial report was substantiated (RR = 1.95, p = .001), and if parent/guardian was initial perpetrator (vs. non-parent/non-caregiver) (RR = 1.7, p = .001). Decreased risk of recurrence for cases involving initial allegations of neglect were associated with increase in age of youngest child (RR = 0.94, p = .001 per year), for non-White children (vs. White children) (RR = 0.64, p = .001), increase in family income
of \$1K by census tract (RR = 0.99, p = .001), the provision of family-centered services (RR = 0.79, p = .001), family preservation services (RR = 0.53, p = .002), and the provision of foster placement services (RR = 0.6, p = .001) (all versus no services).

English, Marshall, Brummel, & Orme (1999)

Sample and Study Design

12,329 families with reports (founded, inconclusive, unfounded) investigated by CPS in

WA between July 1, 1994 and June 30, 1995.

Unit of analysis: family.

Analytic approach: bivariate analysis and log-linear max-likelihood.

Type of Maltreatment

Intake: any type of maltreatment; multiple report types excluded.

Recurrence: any type of maltreatment.

Follow-Up Length

18 months following completion date of initial referral.

Recurrence Rate

Re-referral rate (founded, inconclusive, or unfounded initial and subsequent referrals):

Within 6 months: 16%.

Within 12 months: 24%.

Within 18 months: 29%.

Recurrence rate (founded subsequent referrals):

Within 6 months: 6%.

Within 12 months: 9%.

Within 18 months: 11%.

Significant Associated Factors

Increased risk of both *re-referral* and *recurrence* associated with:

Domestic violence history, chronicity of maltreatment (prior CPS involvement), younger

child age, caregiver history of maltreatment as a child, low social support, caregiver

impairments (mental, physical, emotional), and substance abuse (all $p \le .05$).

Increased risk of *re-referral:* caregiver stress, employment status, parenting skills,

caregiver victimization of others (all $p \le .05$).

Fluke, Shusterman, Hollinshead, & Yuan (2008)

Sample and Study Design

505,621 first child reports (any disposition) made between 2001 through 2002 in 8 US

States.

Unit of analysis: child.

Secondary data analysis of NCANDS.

Analytic approach: Cox regression.

Type of Maltreatment

Intake: any type of maltreatment.

Recurrence: same as above if reported 1 day or more following initial report.

Follow-Up Length

24 months following first report.

Recurrence Rate

Within 24 months: 22% re-reported (any disposition)

7% substantiated re-reported.

Significant Associated Factors

Greatest risk of re-report and substantiated re-report during first 5 months (within 5 months recurrence rate: 9.8% for re-reports and 2.8% for substantiated re-reports). Increased risk of re-report associated with: initial report being made by a nonprofessional and other (RR = 1.14, p < .001) (vs. social and mental health provider), child disability (RR = 1.47, p < .001), caretaker abuse of alcohol (RR = 1.12, p < .001), initial substantiation status (RR = 1.07, p < .001), the provision of post-investigation services (RR = 1.35, p < .001), and child placed in foster care (RR = 2.19, p < .001). Decreased risk of re-report associated with: initial report made by medical personnel (RR = 0.87, $p < 10^{-10}$.001) or law enforcement/legal personnel (RR = 0.88, p < .001) (vs. social and mental health provider), child age older than one year (decreased risk as age increases: age 2-4: RR = 0.91, p < .001; age 12-18: RR = 0.51, p < .001), male child (RR = 0.95, p < .001), and child race of Asian/Pacific Islander only (RR = 0.6, p < .001), African American only (0.84, p < .001), or Hispanic only (0.87, p < .001) (all vs. White only). (NB: significant interaction between substantiation and post-investigation services (i.e. child victim and services provided: RR = 0.94, p < .05) and substantiation and placement in foster care (i.e. child victim and placed: RR = 0.36, p < .001)).

Increased risk of substantiated re-report associated with: initial report being made by a non-professional and other (RR = 1.05, p < .05) (vs. social and mental health provider), child race of American Indian and Alaskan Native only (RR = 1.18, p < .001) (vs. White only), child disability (RR = 1.52, p < .001), caretaker abuse of alcohol (RR = 1.22, p < .001), initial substantiation status (RR = 1.64, p < .001), the provision of post-investigation services (RR = 1.74, p < .001), child placed in foster care (RR = 4.24, p < .001), caretaker abuse of alcohol (RR = 4.24, p < .001), child placed in foster care (RR = 4.24, p < .001), child placed in foster care (RR = 4.24, p < .001), child placed in foster care (RR = 4.24, p < .001), child placed in foster care (RR = 4.24, p < .001), child placed in foster care (RR = 4.24, p < .001), child placed in foster care (RR = 4.24, p < .001), child placed in foster care (RR = 4.24, p < .001), child placed in foster care (RR = 4.24, p < .001), child placed in foster care (RR = 4.24, p < .001), child placed in foster care (RR = 4.24, p < .001).

.001), and if a child had a non-victim report in between initial and subsequent victimization (RR = 1.24, p < .001). Decreased risk of re-report associated with: initial report made by medical personnel (RR = 0.81, p < .001), law enforcement/legal personnel (RR = 0.89, p < .001), or day care and foster care providers (RR = 0.87, p < .05) (vs. social and mental health provider), child age older than one year (decreased risk as age increases: age 2-4: RR = 0.79, p < .001; age 12-18: RR = 0.41, p < .001), male child (RR = 0.93, p < .001), and child race of Asian/Pacific Islander only (RR = 0.69, p < .001), African American only (0.9, p < .001), or Hispanic only (0.88, p < .001) (all vs. White only). (NB: significant interaction between substantiation and post-investigation services (i.e. child victim and services provided: RR = 0.84, p < .05) and substantiation and placement in foster care (i.e. child victim and placed: RR = 0.20, p < .001)).

Fluke, Yuan, & Edwards (1999)

Sample and Study Design
556,224 child-reports (substantiated or indicated) made between 1994 through 1995 in 10

US States.

Unit of analysis: child.

Secondary data analysis of NCANDS.

Analytic approach: survival analysis.

Type of Maltreatment

Intake: neglect, physical abuse, sexual abuse, emotional abuse.

Recurrence: same as at intake.

Follow-Up Length

Ranged from less than 1 month to 24 months, depending on when the initial report was

made.

Recurrence Rate

At 6 months: 15%

At 12 months: 20% (substantiated or indicated).

Significant Associated Factors

Increased risk if initial report was for neglect (Log Rank p < .001, for 9 of 10 states).

Increased risk with each successive report (i.e. more reports associated with increased

risk).

Increased risk for children who received ongoing protective services at initial report (NB:

analysis limited to seven states, and children who were placed out of home were

excluded) (Wilcoxon p < .004, for 6 of 7 states).

Decreased risk for older children: (ages 12-17 had lowest rate compared to other ages:

Log Rank p < .001, for 9 of 10 states).

Decreased risk for Asian/Pacific Islander children (Log Rank p < .001, for 7 of 9 states).

Fryer & Miyoshi (1994)

Sample and Study Design

24,507 children with reports (substantiated) made between 1986 through 1989 in

Colorado.

Unit of analysis: child.

Analytic approach: survival analysis.

Type of Maltreatment

Intake: cut/bruises/welts; sexual abuse; physical neglect; emotional neglect; lack of

supervision.

Recurrence: same as at intake.

Follow-Up Length

Up to 4 years, depending on when initial repot was made.

Recurrence Rate

Within 4 years: 9.34%.

Of the cases with recurrences, 24% occurred within 30 days, and 67% within 330 days.

Hazard rate for first 30-day period was 3.16 times greater than the rate for the 60-day

period, and 11.6 times greater than the rate for the 2-year period.

(substantiated)

Significant Associated Factors

Risk of recurrence greatest immediately (within 30 days) proceeding initial report.

Increased risk associated with younger children (under age 6 at most risk) (p < .001).

Recurrence rates highest for children experiencing initial neglect (physical neglect=13%;

emotional neglect = 12%; lack of supervision = 11%), followed by physical abuse

(8.8%), and lowest for sexual abuse (8.3%).

Least risk associated with children aged 13-17 (6% recurrence rate) compared to younger

children (p < .0001).

No differences found for gender (p = .10).

Fuller, Wells, & Cotton (2001)

samp	ie ana	Siuay	Design
Two s	studies	s cond	ucted:

(a) analysis of predictors at time of investigation initiation:180 random cases (indicated) that were made in Illinois in 1998 and that had a subsequent (indicated) report within 60 days, compared to a random sample of 200 cases (indicated) that were also made in Illinois in 1998 but that had no subsequent report within 60 days.

(b) analysis of predictors when cases opened for services for intact families (i.e. no children placed outside of home at time of investigation or within 7 days of case

opening): 171 random cases (indicated) that were opened for services in Illinois between August 1, 1996 and July 31, 1997 and that had a subsequent (indicated) report within 60 days of case opening, compared to a random sample of 179 cases (indicated) that were also opened in Illinois at the same time but that had no subsequent report within 60 days of case opening.

Unit of analysis: family.

Analytic approach: logistic regression.

Type of Maltreatment

Intake: neglect, physical abuse, sexual abuse, emotional abuse.

Recurrence: same as at intake.

Follow-Up Length Within 60 days.

Recurrence Rate

No recurrence rates reported: case-control study.

Significant Associated Factors

For predictors at investigation initiation: increased risk of recurrence associated with: child aged 0-2 years (OR = 3.03, p = .001) (vs. child aged 6-18 years), initial allegation of physical abuse (OR = 5.39, p = .005) or neglect (OR = 5.04, p = .005) (both vs. sexual abuse), referral to community agency services (OR = 4.63, p = .001) (vs. no services), single parent living alone with children (OR = 2, p = .02) (vs. all other arrangements), number of child problems (disabilities, truancy, behavior, health) (OR = 1.84, p = .002per additional problem), number of caretaker problems (e.g. AOD use, mental illness, domestic violence) (OR = 1.31, p = .03 per additional problem), and number of prior indicated reports for perpetrator (OR = 1.33, p = .01 per additional report). For predictors when cases opened for services: increased risk of recurrence associated with no completion of Child Endangerment Risk Assessment Protocol (safety assessment protocol) (OR = 4.09, p = .001), previous indicated reports for perpetrator (OR = 2.56, p = .001), number of caretaker problems (e.g. AOD use, mental illness, domestic violence) (OR = 1.33, p = .001 per additional problem), and no service provision during initial 60 days (OR = 1.99, p = .006).

Inkelas & Halfon (1997)

Sample and Study Design

Child reports from the Emergency Response Cases of the California child protective services that were discharged in 1/1993 (n = 646), 1/1989 (n = 676), and 1/1985 (n =

650).

Cases selected systematically using random start numbers.

Unit of analysis: child.

Analytic approach: chi-squared analysis.

Type of Maltreatment

Intake: general neglect, severe neglect, caretaker incapacity or absence, physical abuse,

sexual abuse, emotional abuse, and exploitation.

Recurrence: same as at intake.

Follow-Up Length

No follow up: case-control study.

Recurrence Rate

Percent of cases with prior case openings (substantiated or unsubstantiated):

1993 cohort: 49%

1989 cohort: 43%

1985 cohort: 31%

Significant Associated Factors

Predictors only reported for 1993 cohort. Among 1993 cohort: parental health conditions were identified more frequently among cases with prior CPS contact (46%) than among cases with no prior contact (29%) (p < .001). More families with prior involvement (vs. no prior involvement) also had parental problems with drugs (30% vs. 15%; p < .001) or alcohol (18.5% vs. 10.7%; p < .001), family functioning problems (76.6% vs. 64.8%; p < .01), and receipt of AFDC income support (61.1% vs. 36.5%; p < .001), Children with prior cases were less likely to have an allegation of sexual abuse (p < .05). No differences found regarding provision of services or child health conditions.

Johnson-Reid, Chung, Way, & Jolley (2010)

25,727 reports (substantiated or unsubstantiated) made between 1993 through 1995 in 1

Midwestern US State (not identified) involving parental alleged perpetrators with no

prior history of report.

Unit of analysis: perpetrator.

Secondary data analysis of statewide administrative data from child protection agencies,

which was linked to AFDC/TANF and Medicaid systems.

Analytic approach: Cox regression and logistic regression.

Type of Maltreatment

Intake: neglect only, physical abuse only, sexual abuse only; multiple report types were

excluded.

Recurrence: neglect, physical abuse, sexual abuse, emotional abuse, other abuse, or

mixed maltreatment reported 16 days or more following initial report.

Follow-Up Length

Up to 10 years (1993 through 2003), depending on when initial report was made.

Recurrence Rate

Overall re-report rate (substantiated or unsubstantiated) of same alleged perpetrator on

new report: 47%.

Significant Associated Factors

Increased risk of recidivism associated with perpetrators who were: Caucasian (HR =

1.06, p = .003) (vs. African American or other ethnicity), female (HR = 1.55, p < .001),

living in census tract with higher % of single parent households (HR = 1.41, p < .001),

number of victims (HR = 1.11, p < .001), age of youngest victim (HR = 1.02, p < .001),

recommendation of services, but not served (HR = 1.18, p < .001) (vs. services not

recommended).

Decreased risk for older perpetrators (HR = 0.98, p < .001 per year increase), living in census tracts with higher median income (HR = 0.99, p < .001 per \$1K increase), allegation of physical abuse (HR = 0.93, p = .003) or sexual abuse (HR = 0.67, p < .001) (both vs. neglect), provision of family-centered services (HR = 0.69, p < .001) provision of both family-centered services and in-home services (HR = 0.68, p < .001), provision of foster care services (HR = 0.33, p < .001) (all vs. services not recommended), receipt of AFDC after study date (HR = 0.12, p < .001). Not significant: perpetrator substantiation and living in urban area.

(NB: significant interactions between time and: provision of foster care (HR = 1.04, p <

.001), mixture of abuse (HR = 1.03, p < .001), provision of family-centered services (HR

= 1.01, p < .001), and child age (HR = 1.00, p = .002).)

Johnson & L'Esperance (1984)

Sample and Study Design

120 cases (unknown if includes only substantiated cases and/or also unsubstantiated)

selected randomly from an urban California county (unspecified).

Unit of analysis: family.

Analytic approach: linear discriminant analysis.

Type of Maltreatment

Intake: physical abuse.

Recurrence: not reported.

Follow-Up Length

Up to 2 years following initial case referral.

Recurrence Rate

Recurrence rate: 46% (unknown if includes only substantiated cases and/or

unsubstantiated).

Significant Associated Factors

Increased risk associated with: victims spending more time with abuser (p = .005);

mothers having poorer parenting skills (p < .001); mothers having more unreasonable

expectations of abused child (p = .01); families having lower abilities to use agency

resources (p < .001); and more than one child in home (p = .04).

Lipien & Forthofer (2004)

Sample and Study Design

189,375 children (aged birth-15 years) with an initial allegation ('no indication', 'some

indication', 'verification') made in 1998 or 1999 in Florida.

Unit of analysis: child

Analytic approach: survival analysis, logistic regression.

Type of Maltreatment

Intake: neglect, physical abuse, sexual abuse, threatened harm, other.

Recurrence: same as above if reported 1 day or more following initial report.

Follow-Up Length

2 years.

Recurrence Rate

Overall rate of recurrence: 26%

(substantiated: consists of both 'verification' and 'some indication' categories).

Within 6 months: 7%

Within 12 months: 16%

Within 24 months: 26%

Significant Associated Factors

Greatest risk of recurrence within first 4 months after initial incident.

Increased risk associated with: initial report being verified (OR = 1.33, p < .001) or

having some indication (OR = 1.59, p < .001) (both vs. no indication), and the provision

of short-term services (OR = 1.22, p < .001) or in-home services (OR = 1.7, p < .001)

(both vs. no services).

Decreased risk of recurrence with: nonwhite child (OR = 0.88, p < .001) (vs. White

child), children aged 4-7 (OR = 0.85, p < .001), aged 8-11 (OR = 0.79, p < .001), aged

12-15 (OR = 0.77, p < .001) (all vs. age 0-3), initial allegation of physical abuse (OR = 0.74, p < .001), sexual abuse (OR = 0.69, p < .001), or threatened harm (OR = 0.91, p < .001) (all vs. neglect), and child transferred to relative foster care (OR = 0.81, p < .001) (vs. no services).

No risk associated with child gender or the provision of traditional foster care (vs. no services).

Marshal & English (1999)

Sample and Study Design	
Expanded on English et al. (1999) article by conducting multivariate analysis.

11,970 referrals (founded, inconclusive, unfounded) investigated by CPS in WA between

July 1, 1994 through December 31, 1997.

Unit of analysis: family.

Analytic approach: survival analysis and neural network analysis.

Type of Maltreatment

Intake: any type of maltreatment.

Recurrence: any type of maltreatment.

Follow-Up Length Up to 3.5 years, depending on initial referral.

Recurrence Rate Same as English et al. (1999).

Significant Associated Factors

Increased risk of re-referral associated with: primary allegation of physical neglect (OR =

1.32, p < .001) or physical abuse (OR = 1.52, p < .001) (both vs. compared to sexual

abuse); inconclusive allegations (OR = 1.37, p < .001) or unfounded allegations (OR =

1.27, p < .001) (both vs. conclusive allegations); child developmental disability (OR = 1.08, p < .001); chronicity of maltreatment (prior CPS history) (OR = 1.16, p < .001); caregiver victimization of others (OR = 1.05, p = .002); caregiver history of maltreatment as a child (OR = 1.04, p < .001); and younger children (OR = 1.06, p < .001). (Region 2 associated with increased risk (OR = 1.37, p < .001): demonstrates that regional policies/practices can have different effect.)

Rittner (2002)

Sample and Study Design
Random selection of 447 children (cases open $(n = 200)$, closed $(n = 205)$, or transferred
to foster family care $(n = 42)$) supervised by CPS who lived "in a large, southeastern
metropolitan area" with parents/relatives for at least 6 months following initial
investigation.

Unit of analysis: child.

Analytic approach: chi-squared analysis and discriminant analysis.

At initial report: 60% African Americans; mean age of child 4.4 years; neglect most

common (n = 170); 147 exposed to substances.

Type of Maltreatment

Intake: neglect, physical abuse, sexual abuse.

Recurrence: same as at intake.

Follow-Up Length

18 months following intake.

Recurrence Rate

129 subsequent reports (29%).

101 subsequent founded reports (23%).

Significant Associated Factors

Combining founded and unfounded subsequent reports, neglect was most frequently reported (36%).

Chi-squared analysis: Increased risk of recurrence associated with caretaker history of

substance use ($p \le .02$), and caretaker history of being victim of abuse ($p \le .001$).

Discriminant analysis: increased risk of recurrence associated with caretaker mental

health problems (p = .009); prior maltreatment reports (p = .02); caretaker history of

being victim of abuse (p = .003); no (known) source of income at intake (p = .003).

Thompson & Wiley (2009)

Sample and Study Design

149 infants (younger than 18 months of age) with a maltreatment allegation

(substantiated or unsubstantiated) made between 1990 and 1995.

Data from one site (Capella Project; Chicago) of the Consortium of Longitudinal Studies

on Child Abuse and Neglect; LONGSCAN.

At initial report: 35% of allegations for substance exposed infants; 56% African

American children; 44% caregivers completed high school, and 26% income >US\$10K.

Unit of analysis: child.

Analytic approach: Cox regression.

Type of Maltreatment

Intake: neglect, physical abuse, sexual abuse. Categorized into 2 groups: physical or

sexual abuse (in addition to neglect) and neglect only.

Recurrence: same as at intake.

Follow-Up Length

Ranged from 11 to 15 years, depending on when the initial report was made.

Recurrence Rate

Within 1 year of initial report: 20%

Within 4 years of initial report: 30%

Within 10 years of initial report: 42% (substantiated or unsubstantiated).

Significant Associated Factors

Increased risk if initial report was for physical or sexual abuse (versus neglect only) (OR

= 5, p < .05), and if allegation was substantiated (OR = 2, p < .05).

Psychosocial factors (caregiver depression, substance use, harsh parenting, child behavior

problems, and caregiver use of mental health services) not significant when controlling

for demographic and case characteristics.

Way, Chung, Johnson-Reid, & Drake (2001)

Sample and Study Design	
31,531 reports-(substantiated or unsubstantiated) made between 1993 through 1994 in	

Missouri-involving intrafamilial-alleged perpetrators with no prior history of report.

Unit of analysis: perpetrator.

Secondary data analysis of statewide administrative data from Missouri child protection

agencies.

Analytic approach: Cox regression.

Type of Maltreatment

Intake: neglect only, physical abuse only, sexual abuse only; multiple report types were

excluded.

Recurrence: neglect, physical abuse, sexual abuse, emotional abuse/other maltreatment

reported 8 days or more following initial report.

Follow-Up Length

Up to 4.5 years, depending on when the initial report was made.

Recurrence Rate

Overall rate of recurrence: 42.4% (substantiated or unsubstantiated).

Medium time to first report of recurrence: 10 months.

Significant Associated Factors

For any subsequent report (substantiated or unsubstantiated): among cases with index sexual abuse, increased risk of recurrence if female (RR = 1.32, p = .01). Decreased risk if index report substantiated (RR = 0.67, p < .001), and as neighborhood mean income increases by \$1K increment (RR = 0.97, p < .001). Among cases with index physical abuse, increased risk if female (RR = 1.28, p < .001). Decreased risk as neighborhood mean income increases by \$1K increment (RR = 0.99, p < .001) and if Caucasian (RR = 0.91, p = .02). Among cases with index neglect, increased risk if index report substantiated (RR = 1.27, p < .001), and if female (RR = 1.35, p < .001). Decreased risk as neighborhood mean income increases by \$1K increment (RR = 0.99, p < .001) and if Caucasian (RR = 0.91, p = .02). Among cases with index neglect, increased risk if index report substantiated (RR = 1.27, p < .001), and if female (RR = 1.35, p < .001). Decreased risk as neighborhood mean income increases by \$1K increment (RR = 0.99, p < .001). Decreased risk if caucasian (RR = 0.91, p = .02). Among cases with index neglect, increased risk if index report substantiated (RR = 1.27, p < .001), and if female (RR = 1.35, p < .001). Decreased risk as neighborhood mean income increases by \$1K increment (RR = 0.99, p < .001), and if Caucasian (RR = 0.99, p < .001), and if Caucasian (RR = 0.94, p = .01).

For subsequent substantiated reports only: among cases with index sexual abuse, decreased risk as neighborhood mean income increases by \$1K increment (RR = 0.97, p<. 001). Among cases with index physical abuse, increased risk if index report substantiated (RR = 1.61, p < .001), and decreased risk as neighborhood mean income increases by \$1K increment (RR = 0.98, p < .001). Among cases with index neglect, increased risk if index report substantiated (RR = 1.9, p < .001), and if female (RR = 1.4, p < .001). Decreased risk as neighborhood mean income increases by \$1K increment (RR = 0.98, p < .001).

Wood (1997)

Sample and Study Design

Case analysis of 409 substantiated cases of abuse/neglect (67% Hispanic) in El Paso, TX.

Selection of cases by chronological order beginning in January 1990.

Predictors included 27 indicators of child maltreatment recurrence identified by the

National Council on Crime and Delinquency (NCDD): 19 were assessed (8 were not used

because of missing data).

Analytic approach: chi-squared analysis.

Type of Maltreatment

Intake: neglect, physical abuse, sexual abuse, emotional abuse.

Recurrence: same as at intake.

Follow-Up Length

2 years proceeding initial report in 1990.

Recurrence Rate Abuse (combined; sub-types not provided): 9%

Neglect: 5%

(substantiated).

Significant Associated Factors

Increased risk of subsequent abuse allegation associated with: previous family history of

child maltreatment (p < .01), presence of a special needs or delinquent child (p = .01),

more children involved in the maltreatment incident (p = .04), and primary caretaker was abused as a child (p = .03).

Increased risk of subsequent substantiated abuse associated with: previous family history of child maltreatment (p < .01), more children involved in the maltreatment incident (p = .01), and primary caretaker was abused as a child (p = .01).

Increased risk of subsequent neglect allegation associated with: initial allegation of neglect (p < .01), previous family history of child maltreatment (p < .01), one caretaker (vs. 2 or more; p < .01), inadequate supervision of child by caregiver (p < .01), emotional instability of caretaker (p = .02), intellectual limits of primary caretaker (p < .02), and primary caretaker abused as a child (p = .02).

Increased risk of subsequent substantiated neglect associated with: initial allegation of neglect (p < .01), previous family history of child maltreatment (p < .01), inadequate supervision of child by caregiver (p = .03), intellectual limits of primary caretaker (p < .01).

APPENDIX C

CHILD MALTREATMENT RECURRENCE RATES

Study	Location	Follow-up	Re-report ^a rate (unit of analysis)	Substantiated re- report ^b rate (unit of analysis)
Connell et al. (2007)	RI	3.75 years	40% (child)	N/A
DePanfilis & Zuravin (1999a)	MD	5 years	N/A	43% (family)
DePanfilis & Zuravin (1999b)	MD	5 years	N/A	35% (family)
English et al. (1999)	WA	1.5 years	29% (family)	11% (family)
Fluke et al. (2008)	CT, DE, KY, MT, OK, TX, UT, VT	2 years	22% (child)	7% (child)
Fluke et al. (1999)	IL, LA, MA, MO, NC, NJ, PA, TX, VT, WA	1 year	N/A	20% (child)
Fryer & Miyoshi (1994)	СО	4 years	N/A	9% (child)
Johnson-Reid et al. (2010)	Midwestern state (unspecified)	10 years	47% (perpetrator)	N/A
Johnson & L'Esperance (1984)	СА	2 years	46% (family)	N/A
Lipien & Forthofer (2004)	FL	2 years	N/A	26% (child)
Rittner (2002)	Southeastern state (unspecified)	1.5 years	29% (child)	23% (child)
Thompson & Wiley (2009)	IL	10 years	42% (child)	N/A
Way et al. (2001)	МО	4.5 years	42% (perpetrator)	N/A

a. Re-report: subsequent reports, regardless of allegation substantiation status.b. Substantiated re-report: subsequent reports involving substantiated/indicated allegations.

APPENDIX D

RISK AND PROTECTIVE FACTORS ASSOCIATED WITH CHILD MALTREATMENT RECURRENCE

Risk and Protective Factors (IR=Increased Risk; DR=Decreased Risk)	Re-report	Substantiated re- report	Unsubstantiated re-report
Child Factors			
IR: younger children (English et al., 1999; Fryer & Miyoshi, 1994;	v	x	
Fuller et al., 2001; Marshal & English, 1999)	Λ	Л	
IR: children with disabilities (Connell et al., 2007; Fluke et al., 2008)	Х	Х	
IR: children with developmental disabilities (Marshal & English, 1999)	Х		
IR: (among indicated index events) children with more problems (disabilities, trueney, health, and hehavior problems) (Fuller et al.		v	
2001)		Λ	
IR: (among substantiated neglect or physical abuse index events) children with mental health or developmental problems (DePanfilis		x	
& Zuravin, 1999b)		<u> </u>	
IR (of subsequent abuse): special needs or delinquent children (Wood, 1997)		Х	
IR: American Indian and Alaskan Native children (vs. Caucasian)		Х	
(Fluke et al., 2008)			
(vs. males) (Way et al., 2001)	Х		
DR: African American and Hispanic children (vs. Caucasian)	Х	Х	
DP: Asian Pasifia Islander shildren (vs. Causasian) (Eluka et al			
1999; Fluke et al., 2008)	Х	Х	
DR: non-White children (vs. White) (Drake et al., 2003; Lipien &	Х	Х	
DR: (among physical abuse index events) Caucasian children (vs.	••••		
other) (Way et al., 2001)	X		
DR: older children (Bae et al., 2007; Connell et al., 2007; Drake et al. 2003. Eluke et al. 1999; Eluke et al. 2008; Erver & Miyoshi	v	v	v
1994; Lipien & Forthofer, 2004)	Λ	Λ	Λ
DR: male children (vs. females) (Bae et al., 2007, Fluke et al., 2008)	Х	Х	
2000			
Caregiver Factors			
IR: caregiver maltreated as a child (English et al., 1999; Marshal & English, 1999; Rittner, 2002; Wood, 1997)	Х	Х	

	Re-report	Substantiated re- report	Unsubstantiated re-report
Caregiver Factors Continued			
IR: caretaker mental health problems (Rittner, 2002)	X		
IR: caregiver impairment (mental, physical, emotional) (English et al., 1999)	Х	Х	
IR: parental health conditions (Inkelas & Halfon, 1997)	Х		
IR (of subsequent neglect): caregiver intellectual limits (Wood, 1997)	Х	Х	
IR (of subsequent neglect): caregiver emotional instability (Wood, 1997)	Х		
IR: caregiver substance abuse (Connell et al., 2007; English et al., 1999; Fluke et al. 2008; Inkelas & Halfon 1997; Rittner 2002)	Х	Х	
IR: mothers with poorer parenting skills (Johnson & L'Esperance, 1984)	Х		
IR: (among indicated index events) more caretaker problems (mental illness, AOD use, domestic violence) (Fuller et al., 2001)		Х	
Perpetrator Factors			
IR (perpetrator recidivism): Caucasian (vs. other) perpetrator (Johnson-Reid et al. 2010)	Х		
IR (perpetrator recidivism): female perpetrator (Johnson-Reid et al., 2010)	Х		
DR (perpetrator recidivism): older age perpetrator (Johnson-Reid et al 2010)	Х		
Family/Household Factors			
IR: one-parent (vs. two-parents) (Bae et al., 2007)		X	X
IR: non-biological parent (vs. both parents) (Bae et al., 2007)		X	X
IR (of subsequent neglect): one-caretaker (vs. 2 or more) (Wood,	Х		
IR: more dependent children (Bae et al. 2007: Johnson &			
L'Esperance. 1984)	Х	Х	Х
IR: family functioning problems (Inkelas & Halfon, 1997)	Х		
IR: (among substantiated neglect or physical abuse index events)		Х	
Idinity Sucss (Derallins & Zulavill, 19990) IB: caregiver history of domestic violence (English et al. 1000)	v	v	
IR: (among substantiated neglect or physical abuse index events)	Λ	<u>л</u> Х	
caregiver partner abuse (DePanfilis & Zuravin, 1999b)			

	Re-report	Substantiated re- report	Unsubstantiated re-report
Poverty/Income Factors			
IR: poverty/financial difficulty (Connell et al., 2007)	X		
IR: family has no (known) source of income at intake (Rittner,	Х		
2002)			
IR: receipt of AFDC family income support prior to report (Inkelas	Х		
& Halfon, 1997)			
DR (perpetrator recidivism): receipt of AFDC after report	X		
(Johnson-Reid et al., 2010)			
Neighborhood Factors			
IR: low social support (DePanfilis & Zuravin, 1999b; English et al.,	X	X	
1999)			
IR (perpetrator recidivism): living in census tract with higher % of	X		
single parent households (Johnson-Reid et al., 2010)			
DR: higher family income by census tract (Drake et al., 2003; Way	Х	Х	
et al., 2001)			
DR (perpetrator recidivism): living in census tract with higher	Х		
medium income (Johnson-Reid et al., 2010)			
CPS Case/System Factors			
IR: substantiation at initial report (Bae et al., 2007; Drake et al.,			
2003; Fluke et al., 2008; Thompson & Wiley, 2009; Way et al.,	Х	Х	
2001)			
IR: if initial allegation was verified or had some indication (vs. no		Х	
indication of maltreatment) (Lipien & Forthofer, 2004)			
IR: if initial allegation was inconclusive or unfounded (vs.	X		
conclusive) (Marshal & English, 1999)			
IR: initial allegation reported by non-professional (vs. social and	X	X	
mental health provider) (Fluke et al., 2008)			
IR: more contacts by CPS workers (Bae et al., 2007)		<u> </u>	<u>X</u>
IR: increased length of CPS involvement (Bae et al., 2007)		<u>X</u>	X
IR: low investigation level (Bae et al., 2007)		<u>X</u>	X
IR: children who have an unsubstantiated report in between an		X	
initial and subsequent substantiated report (Fluke et al., 2008)			
IR (of subsequent abuse): more children involved in the	X	x	
maltreatment incident (Wood, 1997)			
DR: substantiation at initial report (Connell et al., 2007)	Х		

	Re-report	Substantiated re- report	Unsubstantiated re-report
CPS Case/System Factors Continued			
DR: substantiation at initial report (only for subsequent			v
unsubstantiated allegations) (Bae et al., 2007)			Λ
DR: (among sexual abuse index events) substantiation at initial	v		
report (Way et al., 2001)	Λ		
DR: (among substantiated neglect or physical abuse index events)		X	
case closed at intake (DePanfilis & Zuravin, 1999a)		<u> </u>	
DR: initial allegation reported by mandatory (vs. non-mandatory)			x
reporter (Bae et al., 2007)			
DR (of subsequent neglect): initial allegation reported by	x		
mandatory (vs. non-mandatory) reporter (Bae et al., 2007)	Λ		
DR: initial allegation reported by medical or law personnel (vs.	X	X	
social and mental health providers) (Fluke et al., 2008)	Λ	<u>л</u>	
DR: initial allegation reported by day care and foster care personnel		x	
(vs. social and mental health providers) (Fluke et al., 2008)		Λ	
Maltreatment Type			
IR: initial allegation of neglect (DePanfilis & Zuravin, 1999a;			
Fluke et al., 1999; Fryer & Miyoshi, 1994; Lipien & Forthofer,	Х	Х	
2004; Marshal & English, 1999; Wood, 1997)			
IR: initial allegation of physical abuse (vs. sexual abuse) (Fuller et	v	X	
al., 2001; Marshal & English, 1999)	Λ	Λ	
IR: initial allegation for multiple forms of maltreatment (vs.			v
neglect) (Bae et al., 2007)			Λ
IR: initial allegation of physical or sexual abuse (vs. neglect)	v		
(Thompson & Wiley, 2009)	Λ		
IR (of subsequent sexual abuse): initial allegation of sexual abuse	v		
or multiple abuse (vs. neglect) (Bae et al., 2007)	Λ		
IR (of subsequent physical abuse): initial allegation of physical	v		
abuse or multiple abuse (vs. neglect) (Bae et al., 2007)	Λ		
DR: initial allegation of sexual abuse (vs. neglect) (Bae et al., 2007;	\mathbf{v}	\mathbf{V}	\mathbf{v}
Connell et al., 2007; Fryer & Miyoshi, 1994)	Λ	Л	Л
DR: initial allegation of physical abuse (vs. neglect) (Bae et al.,		v	
2007)		Λ	
DR (perpetrator recidivism): initial allegation of physical or sexual	v		
abuse (vs. neglect) (Johnson-Reid et al., 2010)	Δ		

	e-report	ubstantiated re- port	nsubstantiated -report
	R	S e	U re
Maltreatment Type Continued			
DR (of subsequent neglect): initial allegation other than neglect	X		
(Bae et al., 2007)	11		
Victimization History			
IR: prior family CPS involvement (English et al., 1999; Marshal & English, 1999; Rittner, 2002; Wood, 1997)	Х	Х	
IR: children with prior substantiated maltreatment (Connell et al., 2007)	Х		
IR: (among indicated index events) more prior indicated reports for		Х	
De consciuent victuri et al., 2001)	v		
IR. caregiver vicumization of others (Marshal & English, 1999)	Λ		
Service Factors			
Fluke et al., 2008)	Х	Х	
IR: provision of short-term or in-home services (Lipien &		v	
Forthofer, 2004)		Λ	
IR: (among indicated index events) provision of community services (Fuller et al., 2001)		Х	
IR (of subsequent sexual abuse): provision of court-ordered services (Bae et al., 2007)	Х		
DR: provision of family-centered services (Drake et al., 2003)	Х		
DR (perpetrator recidivism): provision of family-centered services with and without in-home services (Johnson-Reid et al. 2010)	Х		
DR: (among neglect or physical abuse index events) provision of faster placement corplicas (Drake et al. 2002)	Х		
DD (normating and initial and initiana and initial and initial and initial and initial and			
(Johnson-Reid et al., 2010)	Х		
Placement of child			
IR: child placed in foster care (Fluke et al., 2008)	Х	Х	
IR: (among substantiated neglect or physical abuse index events) child placed out of home (DePanfilis & Zuravin 1999b)		Х	
DR: child transferred to relative foster care (Lipien & Forthofer, 2004)		Х	

APPENDIX E

RESEARCH QUESTIONS, HYPOTHESES, AND NSCAW VARIABLES

Research Questions	Hypotheses	NSCAW Variables
1. What is the prevalence	H1: Ten percent (10%) of	- CRA19A: Caregiver
rate of CPS-involved	all child welfare cases in the	cognitive disability status
families with intellectually	United States will involve	
disabled caregivers?	caregivers with intellectual	
	disabilities.	
2. Do prevalence rates of	<i>H1</i> : Given that no research	- CRA19A: Caregiver
CPS-involved families with	has assessed the prevalence	cognitive disability status
intellectually disabled	rate of CPS-involved	
caregivers vary by state?	families with intellectually	- STRATUM: Sample
	disabled caregivers in the	stratum (to identify states)
	United States, and because	
	this is an exploratory	
	question, no formal	
	hypothesis was affixed to	
2 America CDC increations 1	Ul Datas of susta halasa	CD 410 4: Como incom
5. Among CPS-involved	will be higher in states that	- CRATYA: Caregiver
disabled encouvers do rates	have statutes containing	cognitive disability status
of custody loss vary by	disability related grounds	- HR2104: Child in welfare
state?	for severing parental rights	custody at Waye 2
state :	for severing parental rights.	custody at wave 2
		- STRATUM: Sample
		stratum (to identify states)
4. Among CPS-involved	H1: Loss of custody will	- CRA19A: Caregiver
families with intellectually	occur more rapidly in states	cognitive disability status
disabled caregivers who	that have statutes containing	
lose custody of a child, does	disability related grounds	- HR210A: Child in welfare
time to loss of custody vary	for severing parental rights.	custody at Wave 2
by state?		
		- INVEDATE: Investigation
		end date
		- <i>HR211D1</i> : Date custody
		assumed at wave 2
		STD ATUM: Sample
		- STRATOM. Sample stratum (to identify states)
5 Do CPS-involved	H1: CPS_involved families	- CR 4104: Caregiver
families with intellectually	with intellectually disabled	cognitive disability status
disabled caregivers have a	caregivers will have a	cognitive disability status
different maltreatment re-	higher maltreatment re-	- HR22A Maltreatment re-
report rate than CPS-	report rate than CPS-	report at Wave 2
involved families without	involved families without	· · · · · · · · · · · · · · · · · · ·

intellectually disabled	intellectually disabled	
caregivers?	caregivers.	
6. Are maltreatment re-	<i>H1</i> : The risk of	- CRA19A: Caregiver
reports distributed	maltreatment re-reports for	cognitive disability status
differently for CPS-	both groups will be highest	
involved families with	within 6 months of the	- <i>HR22A</i> : Maltreatment re-
intellectually disabled	initial report, but the hazard	report at Wave 2
caregivers than for CPS-	intellectual dischilition will	NWED ATE: Investigation
intollectually disabled	ha higher (at each time	- <i>INVEDATE</i> . Investigation
caregivers?	period) in comparison to its	end date
	location for families	- HR231DT [.] Date custody
	without intellectually	assumed at Wave 2
	disabled caregivers (thereby	
	resulting in different sample	- CCOMPDA2: Wave 2
	hazard profiles).	caseworker interview date
7. Among CPS-involved	H1: Maltreatment of a	- CRA19A: Caregiver
families with intellectually	caregiver as a child will	cognitive disability status
disabled caregivers, what	increase the likelihood of	
risk and protective factors	maltreatment re-reporting.	- CRA35A: History of
are associated with re-		maltreatment of caregiver
reports of child		
mattreatment?	U2: The presence of a shild	CP 110 1: Corregiver
	with a disability will	- CRAI9A. Calegiver
	increase the likelihood of maltreatment re-reporting.	cognitive disability status
		- CRA11A: Child major
		special needs or behavioral
		problems
		CCDDDIG Child shares
		- CGDPDIS: Child physical
		uisaoiiity
		- CHDCDIS: Child
		cognitive disability
		- CGDCCON: Child
		chronic health condition
		- CGDFPRR. Child
		emotional or behavioral
		problem
	H3: Caregiver mental health	- CRA17A: Caregiver
	issues will increase the	serious mental health or
	likelihood of recurrent	emotional problems

 maltreatment.	
<i>H4</i> : The presence of social supports will decrease the likelihood of maltreatment re-reporting.	 <i>CRA19A</i>: Caregiver cognitive disability status <i>CRA45A</i>: Low social support
<i>H5</i> : An initial maltreatment allegation of neglect will increase the likelihood of maltreatment re-reporting.	 <i>CRA19A</i>: Caregiver cognitive disability status <i>CAA1T_4</i>: physical neglect (failure to provide) allegation
	- <i>CAAIT_5</i> : Neglect (lack of supervision) allegation

APPENDIX F

DESCRIPTIVE STATISTICS

	$IDC^{1}(N = 101, 725)$	No IDC ^{1 ($N = 1,534,657$)}	
	M(SE) or % (SE) $M(SE)$ or % (SE)		
Child Factors			
Age (years)	6.87 (0.44)	6.94 (0.13)	
Male	38.8 (5.9)	51.0 (2.2)	
White, non-Hispanic	47.6 (7.3)	48.0 (3.8)	
Black, non-Hispanic	35.2 (7.2)	25.6 (2.7)	
Hispanic [*]	9.6 (3.2)	19.3 (2.7)	
Other Race/Ethnicity	7.5 (2.9)	7.1 (0.9)	
Disabilities ²	69.9 (5.8)	57.2 (2.1)	
Caregiver/Family Factors			
Age (years) [*]	37.59 (1.70)	33.47 (0.38)	
Female [*]	80.9 (6.1)	91.2 (1.2)	
Alcohol Problems	10.9 (2.6)	8.7 (1.0)	
Drug Problems [*]	17.0 (3.7)	9.4 (1.1)	
Maltreated as Child**	48.2 (6.2)	19.0 (1.4)	
Mental Health Issues ^{**}	67.9 (6.7)	10.5 (1.3)	
Employed ^{**}	27.2 (5.3)	59.6 (1.7)	
Domestic Violence	33.0 (5.2)	29.7 (2.1)	
Low Social Support**	55.0 (6.1)	26.2 (1.6)	
Case Factors			
Initial Substantiation [*]	46.2 (6.9)	32.2 (2.4)	
Prior CPS Report ^{**}	68.8 (6.2)	46.0 (1.8)	
Neglect	69.3 (5.9)	57.6 (1.9)	
Sexual Abuse	12.8 (5.4)	11.8 (1.4)	
Physical Abuse ^{**}	18.9 (4.0)	37.0 (1.4)	
Emotional Abuse	10.1 (3.2)	12.0 (1.5)	
Other Abuse	14.5 (3.4)	9.6 (0.8)	

 Abbreviation for intellectually disabled caregiver.
 Includes emotional or behavior problems, chronic health conditions, physical disabilities, or cognitive disabilities. *p < .05; **p < .01 (for bivariate analyses).

APPENDIX G

LIFE TABLE ON MALTREATMENT RE-REPORTS FOR CASES WITH INTELLECTUALLY DISABLED CAREGIVERS

	Number		Propo	Proportion of	
-	Cases at	Cases with	Cases	Cases left	Cases surviving
Month	beginning	re-reports	censored	during month	month
WIOIIIII	of month	during	during	(Hazard	(Survivor
	(Risk set)	month	month	function)	function)
0	75656	_	_	_	1.000
1	75656	2755	1	0.036	0.964
2	72900	655	0	0.009	0.955
3	72245	530	0	0.007	0.948
4	71715	469	0	0.007	0.942
5	71246	3343	0	0.047	0.898
6	67903	67	0	0.001	0.897
7	67836	1022	341	0.015	0.884
8	66473	294	7161	0.004	0.880
9	59018	1561	147	0.026	0.856
10	57310	481	281	0.008	0.849
11	56548	630	360	0.011	0.840
12	55558	1891	3940	0.034	0.811
13	49727	783	14832	0.016	0.798
14	34112	1541	14128	0.045	0.762
15	18443	377	14682	0.020	0.747
16	3384	0	2871	0.000	0.747
17	513	0	513	0.000	0.747

APPENDIX H

LIFE TABLE ON MALTREATMENT RE-REPORTS FOR CASES WITHOUT INTELLECTUALLY DISABLED CAREGIVERS
		Number		Propo	Proportion of		
-	Cases at	Cases with	Cases	Cases left	Cases surviving		
Month	beginning	re-reports	censored	during month	month		
Monui	of month	during	duding	(Hazard	(Survivor		
	(Risk set)	month	month	function)	function)		
0	921424	—	—	_	1.000		
1	921424	19141	0	0.021	0.979		
2	902283	11154	0	0.012	0.967		
3	891129	21971	0	0.025	0.943		
4	869158	24587	0	0.028	0.916		
5	844571	12393	1	0.015	0.903		
6	832177	16957	0	0.020	0.885		
7	815220	28430	10950	0.035	0.854		
8	775840	12644	5031	0.016	0.840		
9	758165	22127	4352	0.029	0.815		
10	731686	14444	1987	0.020	0.799		
11	715255	12991	2118	0.018	0.785		
12	700146	25737	72866	0.037	0.756		
13	601543	20330	175134	0.034	0.730		
14	406079	13388	228518	0.033	0.706		
15	164173	12444	110704	0.076	0.653		
16	41025	4070	34710	0.099	0.588		
17	2245	0	2023	0.000	0.588		
18	222	0	222	0.000	0.588		

APPENDIX I

ESTIMATED HAZARD FUNCTION FOR MALTREATMENT RE-REPORTS



APPENDIX J

ESTIMATED SURVIVOR FUNCTION FOR MALTREATMENT RE-REPORTS



APPENDIX K

SURVIVAL ANALYSIS: PARAMETER ESTIMATES FOR PREDICTORS OF RE-REPORTS AMONG CASES INVOLVING INTELLECTUALLY DISABLED CAREGIVERS

Predictor β SE β SE β SE Child Factors Age -0.03 0.04 -0.03 0.05 -0.05 0.05 Sex = male -0.93** 0.28 -1.18* 0.45 -1.16* 0.58 Disability 1.48** 0.46 1.36** 0.50 1.44** 0.52 Black 0.17 0.34 0.20 0.38 0.14 0.44 Hispanic -0.58 0.60 -0.26 0.75 -0.18 0.73 Other race 1.44** 0.51 1.76** 0.61 1.56** 0.56 Caregiver Factors Age -0.02 0.02 -0.02 0.02 Sex = male -1.30 [†] 0.76 -0.93 0.79 Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.77 Domestic violence 0.11 0.42		Mode	el A	Model	В	Model	С
Child Factors Age -0.03 0.04 -0.03 0.05 -0.05 0.05 Sex = male -0.93^{**} 0.28 -1.18^* 0.45 -1.16^* 0.58 Disability 1.48^{**} 0.46 1.36^{**} 0.50 1.44^{**} 0.52 Black 0.17 0.34 0.20 0.38 0.14 0.44 Hispanic -0.58 0.60 -0.26 0.75 -0.18 0.73 Other race 1.44^{**} 0.51 1.76^{**} 0.61 1.56^{**} 0.56 Caregiver Factors -1.30^{\dagger} 0.76 -0.93 0.79 Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 <td< td=""><td>Predictor</td><td>β</td><td>SE</td><td>β</td><td>SE</td><td>β</td><td>SE</td></td<>	Predictor	β	SE	β	SE	β	SE
Age -0.03 0.04 -0.03 0.05 -0.05 0.05 Sex = male -0.93^{**} 0.28 -1.18^* 0.45 -1.16^* 0.58 Disability 1.48^{**} 0.46 1.36^{**} 0.50 1.44^{**} 0.52 Black 0.17 0.34 0.20 0.38 0.14 0.44 Hispanic -0.58 0.60 -0.26 0.75 -0.18 0.73 Other race 1.44^{**} 0.51 1.76^{**} 0.61 1.56^{**} 0.56 Caregiver Factors -1.30^{\dagger} 0.76 -0.93 0.79 Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 0.55 0.49 0.50 Other abuse 0.92^{+} 0.52 -0.49 0.50 Other abuse 0.92^{+} 0.52 -0.49 0.50 Other abuse 0.92^{+} 0.52 $-2LL$ (df)	Child Factors						
Sex = male -0.93^{**} 0.28 -1.18^* 0.45 -1.16^* 0.58 Disability 1.48^{**} 0.46 1.36^{**} 0.50 1.44^{**} 0.52 Black 0.17 0.34 0.20 0.38 0.14 0.44 Hispanic -0.58 0.60 -0.26 0.75 -0.18 0.73 Other race 1.44^{**} 0.51 1.76^{**} 0.61 1.56^{**} 0.56 Caregiver Factors -0.02 0.02 -0.02 0.02 0.02 Sex = male -1.30^{\dagger} 0.76 -0.93 0.79 Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.47 Prior CPS report -0.30 0.55 0.49 0.50 Other abuse 0.64 0.55 0.49 0.50 Other abuse 0.29^{+} 0.52 0.24 0.52 -ZLL 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6) $-2LL$ (df)	Age	-0.03	0.04	-0.03	0.05	-0.05	0.05
Disability 1.48^{**} 0.46 1.36^{**} 0.50 1.44^{**} 0.52 Black 0.17 0.34 0.20 0.38 0.14 0.44 Hispanic -0.58 0.60 -0.26 0.75 -0.18 0.73 Other race 1.44^{**} 0.51 1.76^{**} 0.61 1.56^{**} 0.56 Caregiver Factors -0.02 0.02 -0.02 0.02 0.02 Sex = male -1.30^{\dagger} 0.76 -0.93 0.79 Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.44 Case Factors 0.01 0.47 0.55 Substantiation 0.01 0.47 0.55 Physical abuse 0.64 0.55 0.64 0.55 Emotional abuse 0.64 0.55 0.92^{\dagger} 0.52 -2LL 153694.22 93424.68 92012.45 $1412.23 (6)$ -2LL (df) df df df df	Sex = male	-0.93**	0.28	-1.18	0.45	-1.16	0.58
Black 0.17 0.34 0.20 0.38 0.14 0.44 Hispanic -0.58 0.60 -0.26 0.75 -0.18 0.73 Other race 1.44^{**} 0.51 1.76^{**} 0.61 1.56^{**} 0.56 Caregiver Factors -0.02 0.02 -0.02 0.02 0.02 Sex = male -1.30^{\dagger} 0.76 -0.93 0.79 Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 0.55 Physical abuse 0.64 0.55 0.64 0.55 Emotional abuse 0.64 0.55 0.64 0.55 Emotional abuse 0.64 0.55 0.92^{\dagger} 0.52 -2LL 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6) $-2LL$ (df)	Disability	1.48**	0.46	1.36**	0.50	1.44**	0.52
Hispanic -0.58 0.60 -0.26 0.75 -0.18 0.73 Other race 1.44^{**} 0.51 1.76^{**} 0.61 1.56^{**} 0.56 Caregiver Factors Age -0.02 0.02 -0.02 0.02 Sex = male -1.30^{\dagger} 0.76 -0.93 0.79 Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 0.55 Physical abuse 0.64 0.55 0.64 0.55 Emotional abuse 0.64 0.55 0.49 0.50 Other abuse $0.29^{2^{\dagger}}$ 0.52 $-2LL$ 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6) $-2LL$ (df) $-2LL$ (df) -0.49 0.50	Black	0.17	0.34	0.20	0.38	0.14	0.44
Other race 1.44^{**} 0.51 1.76^{**} 0.61 1.56^{**} 0.56 Caregiver FactorsAge -0.02 0.02 -0.02 0.02 Sex = male -1.30^{\dagger} 0.76 -0.93 0.79 Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 0.64 0.55 Physical abuse 0.64 0.55 0.11 0.48 Sexual abuse 0.64 0.55 0.92^{\dagger} 0.52 -2LL 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6)-2LL (df) (df) (df) (df)	Hispanic	-0.58	0.60	-0.26	0.75	-0.18	0.73
Caregiver FactorsAge -0.02 0.02 -0.02 0.02 Sex = male -1.30^{\dagger} 0.76 -0.93 0.79 Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 0.64 0.55 Substantiation 0.01 0.47 0.55 Physical abuse 0.64 0.55 0.92^{\dagger} 0.50 Other abuse 0.92^{\dagger} 0.52 0.245 0.92^{\dagger} -2LL 153694.22 93424.68 92012.45 $1412.23(6)$ -2LL (df) (df) (df) (df) (df) (df)	Other race	1.44^{**}	0.51	1.76**	0.61	1.56**	0.56
Age -0.02 0.02 -0.02 0.02 Sex = male -1.30^{\dagger} 0.76 -0.93 0.79 Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 -0.30 0.55 Substantiation 0.01 0.47 -0.30 0.55 Physical abuse 0.64 0.55 -0.49 0.50 Other abuse 0.92^{\dagger} 0.52 0.92^{\dagger} 0.52 -2LL 153694.22 93424.68 92012.45 1412.23 Change in 60269.54 9 1412.23 (6)	Caregiver Facto	ors					
Sex = male -1.30^{\dagger} 0.76 -0.93 0.79 Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 0.64 0.55 Substantiation 0.01 0.47 0.64 0.55 Physical abuse 0.64 0.55 0.49 0.50 Other abuse 0.92^{\dagger} 0.52 0.92^{\dagger} 0.52 -2LL 153694.22 93424.68 92012.45 1412.23 (6)-2LL (df) df df df df	Age			-0.02	0.02	-0.02	0.02
Alcohol abuse 0.58 0.64 0.46 0.73 Drug abuse -0.83 0.60 -1.11 0.76 Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors -0.22 0.38 -0.01 0.47 Substantiation 0.01 0.47 -0.30 0.55 Physical abuse 0.64 0.55 0.11 0.48 Sexual abuse 0.64 0.55 -0.49 0.50 Other abuse 0.92^{\dagger} 0.52 $-2LL$ 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6) $-2LL$ (df) 412.23 (6)	Sex = male			- 1.30 [†]	0.76	-0.93	0.79
Drug abuse-0.830.60-1.110.76Maltreated as child0.830.760.480.75Mental health issues-0.820.68-0.470.68Employed0.160.680.330.77Domestic violence0.110.420.200.48Low social support-0.220.38-0.010.44Case Factors 0.01 0.47-0.300.55Substantiation0.010.47-0.300.55Physical abuse0.110.480.640.55Emotional abuse0.640.55-0.490.50Other abuse0.92 ⁺ 0.52-2LL153694.2293424.6892012.45Change in60269.54 (9)1412.23 (6)-2LL (df)-2LL (df)-2LL (df)	Alcohol abuse	2		0.58	0.64	0.46	0.73
Maltreated as child 0.83 0.76 0.48 0.75 Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 0.01 0.47 Substantiation 0.01 0.47 0.30 0.55 Physical abuse 0.11 0.48 0.55 Emotional abuse 0.64 0.55 0.92^{\dagger} 0.50 Other abuse 0.92^{\dagger} 0.52 0.92^{\dagger} 0.52 -2LL 153694.22 93424.68 92012.45 $1412.23 (6)$ -2LL (df) df df df df	Drug abuse			-0.83	0.60	-1.11	0.76
Mental health issues -0.82 0.68 -0.47 0.68 Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 0.68 Substantiation 0.01 0.47 Prior CPS report -0.30 0.55 Physical abuse 0.11 0.48 Sexual abuse 0.64 0.55 Emotional abuse 0.64 0.55 Change in 60269.54 (9) 1412.23 (6)-2LL (df) df df	Maltreated as child			0.83	0.76	0.48	0.75
Employed 0.16 0.68 0.33 0.77 Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 Substantiation 0.01 0.47 Prior CPS report -0.30 0.55 Physical abuse 0.11 0.48 Sexual abuse 0.64 0.55 Emotional abuse 0.64 0.55 Change in 60269.54 (9) 1412.23 (6)-2LL (df) df df	Mental health	issues		-0.82	0.68	-0.47	0.68
Domestic violence 0.11 0.42 0.20 0.48 Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 Substantiation 0.01 0.47 Prior CPS report -0.30 0.55 Physical abuse 0.11 0.48 Sexual abuse 0.64 0.55 Emotional abuse -0.49 0.50 Other abuse 0.92^{\dagger} 0.52 -2LL 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6)	Employed			0.16	0.68	0.33	0.77
Low social support -0.22 0.38 -0.01 0.44 Case Factors 0.01 0.47 Substantiation 0.01 0.47 Prior CPS report -0.30 0.55 Physical abuse 0.11 0.48 Sexual abuse 0.64 0.55 Emotional abuse -0.49 0.50 Other abuse 0.92^{\dagger} 0.52 -2LL153694.2293424.6892012.45Change in 60269.54 (9)1412.23 (6)	Domestic violence			0.11	0.42	0.20	0.48
Case Factors 0.01 0.47 Substantiation -0.30 0.55 Prior CPS report -0.30 0.55 Physical abuse 0.11 0.48 Sexual abuse 0.64 0.55 Emotional abuse -0.49 0.50 Other abuse 0.92^{\dagger} 0.52 -2LL 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6) -2LL (df) df df	Low social support			-0.22	0.38	-0.01	0.44
Substantiation 0.01 0.47 Prior CPS report -0.30 0.55 Physical abuse 0.11 0.48 Sexual abuse 0.64 0.55 Emotional abuse -0.49 0.50 Other abuse 0.92^{\dagger} 0.52 -2LL153694.2293424.6892012.45Change in 60269.54 (9)1412.23 (6)	Case Factors						
Prior CPS report -0.30 0.55 Physical abuse 0.11 0.48 Sexual abuse 0.64 0.55 Emotional abuse -0.49 0.50 Other abuse 0.92 [†] 0.52 -2LL 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6)	Substantiation	ı				0.01	0.47
Physical abuse 0.11 0.48 Sexual abuse 0.64 0.55 Emotional abuse -0.49 0.50 Other abuse 0.92^{\dagger} 0.52 -2LL 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6) -2LL (df) df df	Prior CPS rep	ort				-0.30	0.55
Sexual abuse 0.64 0.55 Emotional abuse -0.49 0.50 Other abuse 0.92^{\dagger} 0.52 -2LL 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6) -2LL (df) -2LL (df) -2LL (df)	Physical abuse					0.11	0.48
Emotional abuse Other abuse -0.49 0.50 -2LL 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6) -2LL (df) -2LL (df) -2LL (df)	Sexual abuse					0.64	0.55
Other abuse 0.92^{\dagger} 0.52 -2LL 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6) -2LL (df) -2LL (df) -2LL (df)	Emotional abuse					-0.49	0.50
-2LL 153694.22 93424.68 92012.45 Change in 60269.54 (9) 1412.23 (6) -2LL (df) -2LL (df) -2LL (df)	Other abuse					0.92^{\dagger}	0.52
Change in 60269.54 (9) 1412.23 (6) -2LL (df) 1412.23 (6)	-2LL	153694.22		93424.68		92012.45	
-2LL (<i>df</i>)	Change in			60269.54 (9)		1412.23 (6)	
	-2LL (<i>df</i>)						
<i>p</i> <.001 <.001	<i>p</i>			<.001		<.001	

p < .10; p < .05; p < .01.

APPENDIX L

SURVIVAL ANALYSIS: ODDS RATIOS FOR PREDICTORS OF RE-REPORTS AMONG CASES INVOLVING INTELLECTUALLY DISABLED CAREGIVERS

	Block 1]	Block 2		Block 3	
Predictor	OR	95% CI	OR	95% CI	OR	95% CI	
Child Factors							
Age	0.97	[0.90, 1.05]	0.97	[0.87, 1.08]	0.96	[0.87, 1.06]	
Sex = male	0.39	[0.22, 0.69]	0.31	[0.13, 0.75]	0.31	[0.10, 0.98]	
Disability	4.40	[1.77, 10.99]	3.90	[1.44, 10.53]	4.23	[1.50, 11.94]	
Black	1.18	[0.60, 2.32]	1.22	[0.57, 2.62]	1.14	[0.47, 2.76]	
Hispanic	0.56	[0.17, 1.84]	0.77	[0.17, 3.46]	0.84	[0.19, 3.60]	
Other race	4.21	[1.54, 11.49]	5.80	[1.72, 19.53]	4.78	[1.58, 14.43]	
Caregiver Factor	ors						
Age			0.98	[0.95, 1.02]	0.99	[0.95, 1.02]	
Sex = male			0.27	[0.06, 1.24]	0.40	[0.08, 1.92]	
Alcohol abus	e		1.79	[0.50, 6.38]	1.58	[0.37, 6.76]	
Drug abuse			0.44	[0.13, 1.43]	0.33	[0.07, 1.51]	
Maltreated as	s child		2.29	[0.50, 10.45]	1.62	[0.36, 7.22]	
Mental health issues			0.44	[0.11, 1.71]	0.63	[0.16, 2.43]	
Employed			1.17	[0.31, 4.52]	1.40	[0.30, 6.43]	
Domestic vio	lence		1.12	[0.48, 2.59]	1.22	[0.47, 3.19]	
Low social support			0.80	[0.37, 1.72]	1.00	[0.42, 2.38]	
Case Factors							
Substantiation					1.00	[0.40, 2.55]	
Prior CPS report					0.74	[0.25, 2.21]	
Physical abuse					1.11	[0.43, 2.89]	
Sexual abuse					1.89	[0.63, 5.63]	
Emotional abuse					0.61	[0.23, 1.67]	
Other abuse					2.50	[0.89, 7.03]	

Note. OR = Odds ratio; CI = Confidence interval.

APPENDIX M

SURVIVAL ANALYSIS: PARAMETER ESTIMATES FOR PREDICTORS OF RE-REPORTS AMONG CASES NOT INVOLVING INTELLECTUALLY DISABLED CAREGIVERS

	Mod	el A	Mod	el B	Mode	el C
Predictor	β	SE	β	SE	β	SE
Child Factors						
Age	-0.03	0.02	-0.01	0.03	-0.03	0.02
Sex = male	0.10	0.23	0.04	0.27	0.08	0.27
Disability	0.38^{*}	0.19	0.31	0.23	0.35 [†]	0.20
Black	-0.10	0.26	-0.17	0.22	-0.46 [†]	0.26
Hispanic	-0.05	0.29	0.15	0.27	0.17	0.27
Other race	-0.33	0.30	-0.78^{\dagger}	0.47	-0.82^{\dagger}	0.46
Caregiver Facto	ors					
Age			-0.01	0.01	-0.01	0.01
Sex = male			0.32	0.30	0.19	0.25
Alcohol abuse	e		0.04	0.26	0.27	0.25
Drug abuse			-0.55 [†]	0.28	- 0.71*	0.31
Maltreated as child			0.40^{\dagger}	0.22	0.05	0.23
Mental health issues			-0.17	0.27	-0.03	0.27
Employed			-0.24	0.20	-0.07	0.19
Domestic violence			0.27	0.25	0.20	0.21
Low social support			0.25	0.24	0.30	0.25
Case Factors						
Substantiation	ı				-0.61**	0.18
Prior CPS rep	ort				1.16***	0.30
Physical abuse					0.03	0.28
Sexual abuse					-0.31	0.26
Emotional abuse					0.13	0.28
Other abuse					0.37	0.24
-2LL	2528706.07		1896352.52		1777003.90	
Change in			632353.55 (9)	119348.62 (6)
-2LL(df)						
<u>p</u>	** **		<.001		<.001	

p < .10; p < .05; p < .01; p < .001.

APPENDIX N

SURVIVAL ANALYSIS: ODDS RATIOS FOR PREDICTORS OF RE-REPORTS AMONG CASES NOT INVOLVING INTELLECTUALLY DISABLED CAREGIVERS

	Block 1		F	Block 2	Block 3	
Predictor	OR	95% CI	OR	95% CI	OR	95% CI
Child Factors						
Age	0.97	[0.93, 1.02]	0.99	[0.94, 1.04]	0.98	[0.93, 1.02]
Sex = male	1.10	[0.70, 1.73]	1.04	[0.60, 1.79]	1.08	[0.63, 1.85]
Disability	1.46	[1.01, 2.13]	1.37	[0.88, 2.14]	1.42	[0.95, 2.13]
Black	0.90	[0.54, 1.51]	0.85	[0.55, 1.31]	0.63	[0.37, 1.07]
Hispanic	0.95	[0.53, 1.69]	1.17	[0.68, 2.01]	1.19	[0.69, 2.03]
Other race	0.72	[0.40, 1.31]	0.46	[0.18, 1.16]	0.44	[0.18, 1.10]
Caregiver Facto	ors					
Age			0.99	[0.97, 1.01]	0.99	[0.97, 1.01]
Sex = male			1.38	[0.75, 2.52]	1.21	[0.74, 1.96]
Alcohol abus	e		1.04	[0.62, 1.73]	1.31	[0.79, 2.16]
Drug abuse			0.58	[0.33, 1.01]	0.49	[0.27, 0.92]
Maltreated as child			1.50	[0.96, 2.32]	1.06	[0.67, 1.66]
Mental health issues			0.85	[0.49, 1.46]	0.97	[0.57, 1.65]
Employed			0.79	[0.53, 1.18]	0.93	[0.64, 1.36]
Domestic vio	lence		1.31	[0.79, 2.15]	1.23	[0.81, 1.85]
Low social su	upport		1.28	[0.79, 2.07]	1.34	[0.82, 2.19]
Case Factors						
Substantiation					0.54	[0.38, 0.77]
Prior CPS report					3.19	[1.77, 5.73]
Physical abuse					1.03	[0.59, 1.80]
Sexual abuse					0.74	[0.44, 1.23]
Emotional abuse					1.14	[0.66, 1.98]
Other abuse					1.45	[0.90, 2.35]

Note. OR = Odds ratio; CI = Confidence interval.

APPENDIX O

ASU IRB APPROVAL



No. of Concession, name	

Office of Research Integrity and Assurance

То:	Michael Shafer NHI 1, Sui
From:	Mark Roosa, Chair Soc Beh IRB
Date:	04/09/2013
Committee Action:	Expedited Approval
Approval Date:	04/09/2013
Review Type:	Expedited F7
IRB Protocol #:	1304009050
Study Title:	Secondary Data Analysis Using the National Survey of Child and Adolescent Well-Being (NSCAW) $% \left(1,2,2,3,2,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,$
Expiration Date:	04/08/2014

The above-referenced protocol was approved following expedited review by the Institutional Review Board.

It is the Principal Investigator's responsibility to obtain review and continued approval before the expiration date. You may not continue any research activity beyond the expiration date without approval by the Institutional Review Board.

Adverse Reactions: If any untoward incidents or severe reactions should develop as a result of this study, you are required to notify the Soc Beh IRB immediately. If necessary a member of the IRB will be assigned to look into the matter. If the problem is serious, approval may be withdrawn pending IRB review.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, or the investigators, please communicate your requested changes to the Soc Beh IRB. The new procedure is not to be initiated until the IRB approval has been given.

Please retain a copy of this letter with your approved protocol.