

Child Outcomes in Out-of-Home Placement: The Role of Placement Type

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## **Abstract**

Despite widespread preferences for kinship care as an alternative to non-relative foster care, limited evidence is available to determine whether kinship care produces superior outcomes for children. Specifically, this dissertation focuses on safety, stability, and well-being.

Paper 1 uses statewide administrative data to estimate the association between placement type and experiencing a maltreatment investigation or substantiation in out-of-home care. Results suggest that informal kinship placements have the highest overall risk of maltreatment, whereas risk of maltreatment in formal kinship care or non-relative foster care is roughly equivalent. However, the monthly risk of maltreatment is lowest in informal kinship care because these placements tend to endure longer before maltreatment occurs.

Paper 2 also uses statewide administrative data, this time to compare stability outcomes for children in either non-relative foster care or formal kinship care. Results suggest that children in non-relative foster care have a higher risk of changing placements than children in formal kinship care. However, the majority of this difference is due to children in non-relative foster care moving to more desirable arrangements, such as kinship care.

Paper 3 uses the National Survey of Child and Adolescent Well-Being to estimate the effect of placement type on children's academic, behavioral, and health outcomes. Results suggest that children who spend more time in kinship care experience fewer improvements in reading and cognitive ability scores than children who spend most of their out-of-home care time in non-relative foster care. They also experience somewhat larger behavioral improvements. Effects are concentrated among children who entered care with more behavioral, cognitive, and health deficits.

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## INTRODUCTION

### **Dissertation Overview**

An abundance of research documents associations between out-of-home placement (OOHP) for maltreated children and adverse mental, behavioral, and physical health outcomes. Yet, the need for OOHP for a subset of maltreated children cannot be wholly eliminated. Consequently, there is a need for research that increases understanding of how policies and preferences related to OOHP arrangements affect children's outcomes. This dissertation consists of three original, empirical research studies, all focused on understanding the extent to which kinship care improves the outcomes of foster children.

Child welfare policies at the state and federal levels have evolved to incentivize kinship care placements as a less expensive, more family-like alternative to non-relative foster care. However, the evidence suggesting that children in kinship care fare better than children in non-relative care is beset by theoretical and methodological limitations. Thus, the following papers provide evidence on the extent to which placement type affects three outcomes: safety, stability, and well-being. Along with permanency, these 3 outcomes constitute the federally-evaluated mandates of the child protection system.

In paper 1, I seek to assess the risk of maltreatment in three types of out-of-home placement: non-relative foster care, formal kinship care, and informal kinship care. This study uses an administrative database containing all out-of-home placements between the years 2005 and 2012 for the state of Wisconsin. The analytic sample includes approximately 95,000 placements, with approximately 10,000 maltreatment investigations, and 2,000 substantiations. To estimate the risk of maltreatment during a placement, two approaches were used. First, logistic regression models were used to estimate the risk of ever having a maltreatment

investigation or substantiation during the length of a placement. Second, piecewise exponential survival models were estimated, including time-dependent effects for placement type. Results suggest that informal kinship placements have the highest lifetime risk of a maltreatment report, compared with formal kinship placements and non-relative foster placements. Yet, because informal kinship placements tend to last longer, the risk of a child in these placements at any given time point is significantly lower than that of other placement types. Formal kinship placements have a lower monthly risk of a maltreatment investigation than non-relative foster placements, but no lower risk of substantiated maltreatment. In sum, the results of this study suggest that the potential safety benefits of formal or informal kinship care as alternatives to non-relative foster care are small, and diminish over time.

In the second paper, I again use the state administrative database, this time to estimate the risk of placement disruption by placement type. The goal of this paper is to assess the types of placement moves children experience in out-of-home care, both where children go when they move and what precipitated the move. Then, I assess the extent to which the stability advantage attributed to kinship care in prior literature can be explained by selection and structural factors. Results suggest that, although the majority of children who began in non-relative foster care (NRFC) and formal kinship care (FKC) stayed in the same placement type when they moved, children in residential or group homes, detention, or shelter placements were more likely to move into NRFC than FKC. This suggests a selection process through which children who are more difficult to place or have a higher risk of disruption enter NRFC at higher rates than FKC. Moreover, over 1 in 4 children left NRFC to go into FKC, a type of move that is intentional rather than the result of a deficit in the NRFC placement. Thus, research suggesting that kinship care is more stable than NRFC may overstate the benefits if they do not consider the types of

moves children experience in each placement type. In sum, for the majority of children in foster care for whom kinship care is not an option, it does not appear that they will be substantially more unstable than comparable children in FKC.

In the final paper, I use a national sample of 1,215 children, ages 6 to 17, who spent some time in formal kinship or non-relative foster care to estimate the associations of placement type with academic achievement, behavior, and health. Data come from the first cohort of the National Survey of Child and Adolescent Well-Being. Several identification strategies are used to reduce selection bias, including OLS, change score models, propensity score weighting, and instrumental variables regression. The results consistently reveal a negative association between kin placements and reading scores, but kin placements appear to have no association with child health, and findings on children's math and cognitive ability scores and behavioral problems are mixed. Estimated declines in both academic achievement and behavioral problems were concentrated among children who were lower functioning at baseline.

### **Background**

In 2012, nearly half a million children lived in out-of-home placement under the supervision of a state or local child protection agency, with over 1 in 4 of those children placed in the care of a relative (U.S. Department of Health and Human Services 2013). An additional 2.5 million children lived in informal kinship care arrangements (Annie E. Casey Foundation, 2014). In the child welfare context, formal kinship care is understood as the placement of a temporary ward of the state in the home of a relative or other person meeting the definition of kin in a given state.

The federal government primarily regulates formal kinship care. Yet, informal kinship care (voluntary placement of a child in the care of a relative by a parent or legal guardian) is also

increasingly relevant to child welfare systems, because many states use it to divert children from the formal foster care system (Casey Family Programs, 2007). Indeed, many of the children in informal kinship arrangements have a history of maltreatment (Gleeson, 2009).

The surge of state and federal policy initiatives over the past several decades suggest that kinship care is increasingly viewed as not simply an alternative to non-relative family foster care, but a superior option. While formal kinship care placements initially rose in prevalence during the 1980's to alleviate a deficit in the supply of non-relative foster parents (Berrick 1998; Gibbs and Müller 2000; Schwartz 2002), it quickly became a substantial portion of the foster care system. In addition to needing kinship caregivers to meet the influx of children into the system, there are other rationales for preferring kinship care (either formal or voluntary) to other out-of-home care arrangements. First, when temporary or long term removal is necessary, the CPS system is mandated to place children in the least restrictive, most family-like setting available, with most states having this concept reflected in their statutes (Child Welfare Information Gateway 2010). Kinship care has been elevated by this principle, as it is, by definition, more "family-like" than other forms of out-of-home placement (Leos-Urbel, Bess, & Geen, 1999). Second, leaving the responsibility for care to families rather than the government is consistent with this country's tendency to prefer a limited government approach to social services. Third, federal laws dictating foster care reimbursement have been written in such a way that kinship care may cost less. The laws do not express this motive explicitly. However, whereas laws dictate that *licensed* formal kin placements receive the same reimbursement as non-relative foster parents, there is still the option to place children with *unlicensed* kin (who are not required to be

paid equally). As a result, there is a strong economic incentive for kin placements, and particularly unlicensed kin placements.<sup>1</sup>

### **Policy Context**

Foster care policy has evolved to reflect a clear preference for formal kinship care<sup>2</sup> over several decades. Some of the earliest movement in that direction came from the 1978 Indian Child Welfare Act and the 1980 Adoption Assistance and Child Welfare Act. Both of these acts indicate preference for kin arrangements for children in need of out-of-home care by emphasizing the need for family-like settings and maintaining familial ties, leading to an increased focus on kin placements in state policy (Schwartz 2002). The 1996 Personal Responsibility and Work Opportunity Reconciliation Act made this preference more explicit by including a provision instructing states to consider relatives for placement when children entered out-of-home care (Boots & Geen, 1999).

Shortly thereafter, the 1997 Adoption and Safe Families Act brought the federal government into the arena in two important ways. First, it addressed concerns about the safety of kinship placements by requiring kin to meet the same licensing standards as non-relative foster parents in order to receive federal reimbursement, though states could opt to pay unlicensed kin caregivers with state or local funds (Leticq, Bailey, & Porterfield, 2008). Second, this act allowed some leeway to ignore the termination petition requirements for children in kin placements, thus recognizing kinship care as a form of permanency (Stein, 2000).

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<sup>1</sup> Caregivers may also have the option to become licensed and decline, particularly when licensure requires extensive training. In addition, after 2008, states had the option to license kin under more lax standards, which may have impacted both kin caregivers' ability and desire to become licensed.

<sup>2</sup> Formal kinship care involves children who are involuntarily removed from parental care, and thus falls under the scope of the child protection system. Informal kinship care does not, and thus is subject to few regulations.

The most recent major piece of federal legislation affecting kinship placements was the Fostering Connections to Success and Increasing Adoptions Act (FCSIAA) of 2008. This act presented a clear kin preference by formally mandating that, within a month of any child's removal, "the State shall exercise due diligence to identify and provide notice to all adult grandparents and other adult relatives of the child", and, furthermore, to provide those relatives with documentation regarding the removal of the child which "explains the options the relative has... to participate in the care and placement of the child" (FCSIAA 2008).

Moreover, FCSIAA attempts to increase the number of relatives eligible to receive foster care payments. Notably, in 1979, the U.S. Supreme Court decided in *Miller v. Youakim* that kin foster parents who meet the standards for licensure are entitled to receive equal reimbursement to non-relative foster parents. Yet, many kinship caregivers continued to be compensated through Temporary Assistance to Needy Family funds (TANF) rather than foster care payments (Leos-Urbel, et al., 1999), with foster care payments tending to be more generous than TANF (Thornton 1991). This is in part due to a provision in AFSA that required kinship caregivers to meet the same licensing standards as non-relative caregivers in order for the state to receive federal reimbursement for placement, standards that kinship foster parents were sometimes unable to meet. Hence, FCSIAA relaxes those rules by allowing states to waive non-safety licensing requirements for kin. Consequently, states have used this law to waive training, health status, criminal history, income, home maintenance and space requirements (U.S. Children's Bureau 2011). Yet, despite the easing of licensing requirements for relative caregivers, nearly half of kinship placements are in unlicensed homes, and this rate is as high as 90% in some states (U.S. Children's Bureau 2011). Furthermore, despite the proliferation of kin-preference policies in child welfare, limited evidence has been presented to support a preference for kin placement.

Notably, This dissertation begins to fill the gap in research by estimating associations of out-of-home care placement type with child safety, stability, and well-being.

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PAPER 1:  
ARE CHILDREN SAFER WITH KIN?  
A COMPARISON OF MALTREATMENT RISK IN OUT-OF-HOME PLACEMENTS

In a given year, nearly 5 percent of U.S. children will reside away from their families of origin. Of these, nearly half a million reside in out-of-home care (OOHC) under the supervision of a state or local child protection agency; the plurality are placed with non-relative foster parents, and a quarter are placed with kinship caregivers (U.S. Department of Health and Human Services, 2012). In addition to children in formal foster care placements, there are also over 2 million children in informal kinship care (IKC). These children may or may not be known to the child welfare system, though some evidence suggests that children enter IKC for some of the same reasons as children enter the formal foster care system: parent substance abuse, abandonment, instability, lack of resources, mental illness, and incarceration, though they may also enter for dissimilar reasons such as parental death or illness (Gleeson et al., 2009; Goodman, Potts, Pasztor, & Scorzo, 2004). Informal kinship caregivers may agree to care for children specifically to avoid involvement with the child protection system, or as a result of inaction by the child protection system (Gleeson et al., 2009). Thus, child welfare systems should be concerned about children in informal arrangements as well, given their potential vulnerability.

The extent to which children are safe in these different care arrangements is an important consideration for child welfare policy. The primary goal of placement in state-supervised OOHC is to prevent further harm to children who were maltreated in their familial homes. Consequently, maltreatment experienced in OOHC is a key safety metric that states are required to track and report each year. The federal performance standard mandates that the rate of substantiated maltreatment among children in OOHC be less than half of one percent of all foster children in a

given year, though many states do not meet this standard (U.S. Department of Health and Human Services, 2011). Moreover, the rate of substantiation for complaints of maltreatment in OOHC is far lower than for familial complaints (Benedict, Zuravin, Brandt, & Abbey, 1994), and some scholars suggest that more cases warrant substantiation (DePanfilis & Girvin, 2005).

Consequently, the true rate of maltreatment in OOHC may be substantially higher than state estimates. In addition, these rates do not capture informal kin placements, and there are no estimates available on the prevalence of maltreatment in IKC. Overall, maltreatment in OOHC remains a problem for child welfare systems, and research can help states identify which factors place children in OOHC at higher risk.

This study seeks to address two questions: (1) What are the risks of maltreatment in three placement types: non-relative foster care (NRFC), formal kinship care (FKC), and informal kinship care (IKC)?; and (2) How do these risks vary over time? These analyses contribute to current knowledge on safety in out-of-home placements in several ways. Generally speaking, very little research exists on maltreatment in OOHC, partly because it is a very difficult outcome to capture in survey data. As the incidence rate is quite low, an empirical investigation of this issue requires a very large sample of children to be observed over a substantial time frame. Prior estimates of maltreatment across OOHC arrangements have been limited by small, non-representative samples and a lack of longitudinal data, and thus have relied on bivariate, cross-sectional estimates of group differences. This study uses a statewide administrative database containing over 50,000 children across an 8 year span to estimate risk of maltreatment across placement types. This allows for a more robust estimate of risk, in that some potentially confounding factors can be controlled, and there is sufficient length of observation to assess

changes in risk over time. Second, there are no known studies on maltreatment in informal kinship care, and thus, this study extends our understanding to that population.

### **Conceptual Framework**

Several perspectives are relevant to the consideration of whether the risk of maltreatment would differ across placement types. First, placements may differ in risk of maltreatment, because of the individual characteristics of the caregivers in these settings. For example, socioeconomic disadvantage is consistently linked to increased risk of maltreatment and substandard parenting (Berger, 2004; 2007; Slack et al., 2011; Slack, Holl, McDaniel, Yoo, & Bolger, 2004), potentially through increased risk of material deprivation, and through the effect of poverty on the stress level of the caregiver (Conger, Ge, Elder, Lorenz, & Simons, 1994). In FKC, caregivers are, on average, far more socioeconomically disadvantaged than are caregivers in NRFC (Berrick, 1997; Dolan, Casanueva, Smith, & Bradley, 2009; Ehrle & Geen, 2002; Harden, Clyman, Kriebel, & Lyons, 2004; Stacks & Partridge, 2011). In part this may occur because income requirements to which non-relative foster parents are held may be waived for formal kin caregivers (U.S. Children's Bureau, 2011). Informal kinship caregivers are estimated to be even more socioeconomically disadvantaged than are formal kinship caregivers (Strozier & Krisman, 2007). Thus, one may hypothesize that children in either formal or informal kinship placements would be at higher risk of maltreatment than children in NRFC, given poverty is believed to affect maltreatment risk.

Similarly, other issues of socioeconomic status and social capital have been linked to maltreatment reports or risk of maltreatment, including education, social support, and neighborhood poverty (Coulton, Korbin, & Su, 1999; Kotch, Browne, Dufort, Winsor, & Catellier, 1999), all of which suggest higher risk among kinship placements. Specifically, kinship

caregivers are more likely to have less support for parenting—specifically, they are more likely to be single caregivers and report lower amounts of social support, and tend to live in more impoverished communities (Ehrle & Geen, 2002; Harden et al., 2004).

Despite potential resource disadvantages for kin caregivers, it is also suggested that humans are innately driven to protect and nurture persons with shared blood lineage (Lawler, 2008). If true, this would suggest a lower propensity to maltreat a related child than a non-related child. Moreover, kin may have already invested some amount of resources, personal or financial, in their relative children, and caregivers are less likely to maltreat children in whom they have already invested (Malkin & Lamb, 1994). Non-relative foster parents require some amount of time to forge a bond with the foster child, and thus, all else equal, kin may be less likely to perpetrate maltreatment early on in the placement.

However, familial or biological ties could also disadvantage children in both formal and informal kinship care. It is suggested that familial patterns of maltreatment, parenting styles, substance abuse, and mental health problems are a product of both environmental and genetic traits that are shared across generations (Dixon, Browne, & Hamilton-Giachritsis, 2009; Kendler, Davis, & Kessler, 1997; Kim, 2009; McCloskey & Bailey, 2000; Pears & Capaldi, 2001; Van Ijzendoorn, 1992). That is, grandparents are the most common kinship caregivers, and it may be the case that traits of the maltreating parent are present in the past generation as well. Studies suggest that many parents involved with the child welfare system were victims of maltreatment in their own childhoods (Dixon, Browne, & Hamilton-Giachritsis, 2005). For parents who, as children, were victimized by their own parents, the pool of potential relative placements for their children may be quite limited—given that a history of perpetrating maltreatment would disqualify one from consideration for placement.

Lastly, it is important to understand that non-relative foster parents and kinship caregivers select into their roles for different reasons. Kinship caregivers are brought into the child welfare system due to the placement needs of a specific and known child, and thus their primary motivation may be to fulfill family obligations. Moreover, kinship caregivers may be sought out by the child welfare system (Berrick et al, 1994). To contrast, non-relative foster parents have had time to carefully consider the decision to foster. At the same time, because they are not motivated by the needs of a specific child, their desire to be a foster parent may not be actualized through a commitment to a given child in their care. Whether, and in what ways, these different motivations are likely to affect maltreatment risk is unclear.

After considering that the risk of maltreatment may differ by placement type, I also suggest that the risk of being reported for maltreatment may differ by placement type (Biehal & Parry, 2010). That is, some proportion of maltreatment is likely to go unreported, and it may be the case that children experiencing maltreatment may be less willing to disclose when the abuser is a relative. Additionally, caseworkers may make fewer visits to kinship foster homes than non-relative foster homes (Iglehart, 1994) thus leaving less opportunity for maltreatment to be identified or disclosed. While studies have not been able to assess this possibility directly, a comparison of studies using official maltreatment reports versus other measures of maltreatment risk suggests that the effect of placement type on safety is sensitive to measurement (Litrownik, Newton, Mitchell, & Richardson, 2003; Zuravin, Benedict, & Somerfield, 1993).

Moreover, maltreatment while in out-of-home care can be perpetrated by anyone, not only the surrogate caregiver. It may be expected that different placements would present different types of risks. For instance, in IKC, there are no state-imposed restrictions or oversight on continued contact between children and their biological parents, and similarly, children in

FKC have more contact with their families of origin than do children in NRFC. Thus, children in either type of kinship care may face a higher risk of maltreatment from their family of origin. An Illinois study suggests that as many as a third of maltreatment allegations occurring while a child is in out-of-home care allege maltreatment by someone other than the foster caregiver, including the potential for retrospective allegations against a child's family of origin (Poertner, Bussey, & Fluke, 1999; Tittle, Poertner, & Garnier, 2001).

The characteristics of children in each placement type are also known to differ, and these differences may place children in NRFC at higher risk of maltreatment. As compared with either kinship setting, children in NRFC are more likely to have disabilities or health problems (Beeman, Kim et al. 2000; Grogan-Kaylor 2000), and disability is linked with higher risk of maltreatment, (Hershkowitz, 2007; Westat, 1993). Particularly at the time of entry to OOHC, children who enter non-relative placements tend to have more behavioral problems than children in kinship care (Font, 2014), and children with behavioral disorders experience maltreatment at higher rates (Jaudes & Mackey-Bilaver, 2008; Sullivan & Knutson, 2000). Yet, children in IKC are on average older than children in NRFC (Strozier & Krisman, 2007), who tend to be older than children in FKC (Grogan-Kaylor, 2000), and younger children are more frequently the victims of maltreatment (U.S. Department of Health and Human Services, 2011). Thus, it is somewhat unclear how the differences in the average characteristics of children in non-relative and kinship care are likely to influence their maltreatment risk.

### **Literature Review**

While it is difficult to get an accurate account of maltreatment in out-of-home care, available studies suggest the rate may be higher than the federal mandate of .57 percent. Bolton and colleagues (1981) estimate the rate of maltreatment allegations in foster care to be 7 percent

over 3 years, while others have suggested a rate of 15 percent over 5 years (Zuravin et al., 1993). Including children's complete durations in care, rates of reported maltreatment were estimated to be as high as 18.5 percent in NRFC and as low as 2.2 percent in FKC (Winokur, Crawford, Longobardi, & Valentine, 2008). States' estimates of substantiated maltreatment in foster care have ranged from 0.24 to 1.7 percent, with the lowest rates for sexual abuse and higher rates for physical abuse and neglect (Billings & Moore, 2004; California Department of Social Services, 2001; Spencer & Knudsen, 1992). Psychological maltreatment among foster children has been estimated at nearly 25 percent (Baker, Brassard, Schneiderman, & Donnelly, 2013). The vast differences in available estimates reflect wide diversity in the localities sampled, sample size, when the data were collected, and duration of observation of these studies, among other factors.

Moreover, the types of maltreatment reported in foster care are believed to differ from the general population. While neglect is the most commonly experienced type of maltreatment among the population, sexual and physical abuse are the most frequently reported and substantiated forms of maltreatment in foster care (Benedict et al., 1994; Hobbs, Hobbs, & Wynne, 1999; Rosenthal, Motz, Edmonson, & Groze, 1991). This is perhaps unsurprising given that, at least among licensed placements, foster parents are often held to income requirements which would make physical neglect resulting from economic hardship less likely.

Few empirical studies investigate maltreatment in OOHC by placement type. Some evidence indicates that reports of maltreatment were less likely to occur in formal kinship placements than in non-relative care (Zuravin et al., 1993), particularly sexual abuse (Benedict et al., 1994). However, these studies are limited by small, non-representative samples, and are primarily descriptive. To add perspective, there is a small body of research that, while not measuring maltreatment directly, examines maltreatment-related outcomes among foster



children. For example, children in formal kin placements were found to have significantly higher exposure to physical violence when compared with children in non-relative care (Litrownik et al., 2003). Formal kin caregivers have also been found to use harsher disciplinary techniques than non-relative foster parents (Tripp De Robertis & Litrownik, 2004), view the use of corporal punishment more favorably (Gebel, 1996), and report a stronger reliance on physical disciplinary approaches (Gaudin & Sutphen, 1993). Similarly, Timmer and colleagues (2004) report that formal kin caregivers scored significantly higher on the Child Abuse Potential Index as compared with non-relative foster parents. Yet, substandard parenting may also be considered a risk for maltreatment, and the evidence in that area is inconclusive. Harden and colleagues (2004) find more problematic parenting attitudes among kinship foster parents, though this appears to be primarily a function of kinship caregivers being older. However, Dolan and colleagues (2009) suggest that kinship grandmothers outperform non-relative foster parents in terms of overall home environment, despite displaying higher levels of physical discipline. No known studies have looked at maltreatment rates in informal kinship care.

## **Method**

### **Data**

This study uses an administrative dataset from the state of Wisconsin between the years 2005 and 2012. These data include all children who spent any time in out-of-home care during those years, including children placed in informal kinship arrangements. The initial sample was 151,687 placements. Observations were dropped if it was believed they were entered in error: this includes observations where the begin date was equal to the end date of the placement, observations that appeared to duplicate other observations and observations which indicated a child as having been in two or more placements at the same time. While it is likely that some of

these entries were real placements, there is no reliable way to determine which were entered in error. After that exclusion, there were 147,687 placements involving 56,238 children. However, a few additional exclusions were made. First, placements which were believed to be incorrectly matched with child birthdate were excluded (732 placements)<sup>3</sup>. Second, placements which began prior to 2004 were excluded even if they continued past 2005 (N=6,480). Third, placements in a setting other than NRFC, FKC, or IKC were excluded (N=46,769).<sup>4</sup> This results in a final analytic sample of 95,713 placements involving 46,557 children. These placement data were then merged with information on CPS reports from an administrative database.

## Measures

**Outcome measures.** The outcome of interest is maltreatment in OOHC, operationalized in two primary ways. First, a dichotomous indicator of alleged maltreatment was constructed, equal to 1 if any CPS investigation occurred during a placement. A second indicator is equal to 1 if there were any substantiated CPS investigations during a placement. The date of any investigation or substantiated investigation was also used to identify the length of time between the beginning of a placement and any maltreatment.

Because the date of the referral is not per se the date of the alleged maltreatment, some steps are taken to ensure investigations are being attributed to the correct placement. Any report that occurred within the first 2 days of a placement was attributed to the child's preceding placement (either a different foster placement or, most frequently, the pre-placement home).

While some of these instances were potentially wrongly reattributed, given that the majority of

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<sup>3</sup> These were cases where the ID number of the child in the placement was linked to a birthdate that indicated the child was not yet born or an adult at the time of placement.

<sup>4</sup> This was done for three primary reasons: (1) there is some ambiguity in these data as it pertains to restrictive placements, in terms of whether the placements were through CPS or the juvenile justice system, (2) some of these other placements, such as hospitals and shelters, are expected to be very short term, and (3) the characteristics of children in these placements are vastly different than their counterparts in NRFC, IKC, or IKC, particularly in terms of age and gender.

investigations occurring on the first 2 days of a placement allege the perpetrator to be a biological, step or adoptive parent, it is believed that these are unlikely to be maltreatment incidents that occurred during the early stages of a placement.

However, these measures alone are inadequate. First, some reports of maltreatment that occur during a placement may be delayed disclosures of maltreatment by children's pre-placement caregivers, or allegations of maltreatment that occurred during visitation with those caregivers. Thus, further analyses explore investigations by perpetrator type. The identity of the perpetrator was categorized in the data by the relation of the perpetrator to the alleged victim. These data were used to construct indicators of any investigated and any substantiated maltreatment by two groups of perpetrators – biological, step or adoptive parents (pre-placement caregivers), and OOHP caregivers. Unfortunately, this still presents some potential for error, given the available categories. For example, a category of relative includes both kinship foster parents as well as other relatives with whom children may have had contact prior to placement. See Appendix A for the categories counted for each perpetrator type.

**Predictor variables.** The primary predictor for this study is placement type. Two variables were constructed to represent formal kinship care and informal kinship care, and non-relative foster care was the reference. In this study, non-relative foster care included only family foster care, not institutional or group homes.

**Covariates.** As this study uses administrative data, potential covariates are limited. However, models control for some demographic characteristics: race and ethnicity, age, and sex. Race/ethnicity was measured with the following dummy variables: white (reference), black, Hispanic, American Indian, and other race. Age refers to age at start of placement and was categorized into 4 developmental groupings: years 0 to 2, 3 to 5, 6 to 10, and 11 to 18. In

addition, to account for the extent and type of maltreatment experienced prior to entering an out-of-home placement, official records of maltreatment investigations pertaining to these children that occurred prior to their initial entry into an OOHP were retrieved.<sup>5</sup> From these data, a dichotomous indicator was created to indicate whether the child was the subject of four or more maltreatment investigations. In addition, a series of non-exclusive dummy variables were created to indicate whether children were alleged to have experienced neglect (supervisory or physical), physical abuse, or sexual abuse prior to entering out-of-home care.<sup>6</sup> Finally, county characteristics were also controlled. These included logged population, number of CPS reports per 1000 children, number of maltreatment victims per 1000 children, and a dichotomous indicator of whether the county is racially homogenous (equal to 1 if the county is more than 90% white).<sup>7</sup> While county fixed effects would be a better adjustment, these were not included due to concerns about statistical power in estimates for some of the lower incidence events, particularly substantiated investigations.

### **Analytic Approach**

This study took two approaches to estimation. First, the lifetime risk of experiencing a maltreatment investigation or substantiation during a placement was estimated, as a function of placement type, length of placement, and child characteristics. This model took the form:

$$\ln\left(\frac{P_{(Y=1)}}{1 - P_{(Y=1)}}\right) = \alpha + \beta_1 PL_i + \beta_2 X_i + \varepsilon_i$$

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<sup>5</sup> Notably, these records are believed to be not entirely complete prior to mid-2004. Thus, these records may be less reliable for children who entered care earlier.

<sup>6</sup> Maltreatment history is believed to affect children's socio-emotional and behavioral well-being, and in turn, behavioral problems are associated with a higher risk of being maltreated (Font & Berger, 2014). The effect of maltreatment on these outcomes is believed to vary both by type and chronicity.

<sup>7</sup> Some prior research has suggested that higher concentrations of minority groups may be associated with lower levels of CPS-reported maltreatment (Molnar, et al, 2003; Maguire-Jack & Font, 2014).

where the outcome is the log odds of experiencing a CPS investigation,  $PL$  represents placement type (IKC, FKC, NRFC),  $X$  is a vector of demographic characteristics, and  $\varepsilon$  is an error term. This model was overly simplistic, however. It estimated only the overall risk and failed to account for the extent to which risk changes over time.

Next, piecewise exponential survival models were used to estimate the risk of maltreatment in out-of-home care as a function of placement type and a set of covariates. Survival analysis is an approach used to estimate a dichotomous outcome that occurs both as a function of characteristics and time. It is the preferred approach when respondents in the data enter and exit observation at different times, and are observed for different durations of time, such is the case with children in out-of-home placements.

The piecewise exponential model has several advantages. First, unlike the more common semi-parametric Cox proportional hazards model, proportionality need not be assumed. This is important because the hazards are not proportional across placement types. Second, a piecewise model is not restricted by assumptions about the baseline hazard in the way that fully parametric models are. That is, parametric models can be modeled using various distributions, but all of them assume that the constant is flat or changing at a constant rate. To the contrary, piecewise exponential models identify intervals of time across which the baseline hazard may vary; however, they assume constancy of the hazard within time points. While several time intervals were considered, goodness of fit tests suggested that segmenting time at the 25<sup>th</sup>, 50<sup>th</sup>, and 75<sup>th</sup> percentiles produced the best model of the underlying hazard. These cutoffs equated to time segments of 0-3 months, 4-8 months, 9-17 months, and 18-60 months. As the effect of placement type on the hazard function may vary over time, placement type was interacted with time to produce a series of dummy variables for each placement type-time segment combination. The

reference group was NRFC placements in months 0-3. Thus, for each outcome, the log hazard was estimated as:

$$\ln(h(t)) = h_0(t) + \beta_1(PL_1 * TS_1) + \beta_2(PL_2 * TS_2) + \dots + \beta_{k-1}(PL_k * TS_k) + \delta X_i + \varepsilon_i$$

where  $\beta$  represents the set of hazard coefficients for each combination of placement type ( $PL$ ) and time segment ( $TS$ ),  $\delta$  represents the hazard coefficients for the set covariates ( $X$ ), and  $\varepsilon$  is an error term. The primary unit of observation for these models was the placement, rather than the child, though standard errors were adjusted to account for clustering at the child level.

## Results

### Descriptive Results

Table 1 describes the characteristics of placements by type. Compared to NRFC or FKC, IKC placements are less likely to involve white or American Indian children, and more likely to involve black children. IKC and NRFC placements more frequently involve older children, whereas FKC has the highest proportion of children under age 5. IKC placements are also more likely to be in more diverse and heavily population counties, with higher rates of CPS reports. Additionally, while neglect is the most common form of prior maltreatment experienced in all groups, this is especially true for FKC placements. NRFC placements are more likely than IKC or FKC to involve children with histories of physical or sexual abuse.

### Logistic Regression Results

**Investigations.** Table 2 shows the results of logistic regression models predicting any maltreatment investigation, as well as investigations of an OOHP caregiver or a pre-placement caregiver. The probability of experiencing a given outcome is also expressed as the predicted proportion of placements experiencing the outcome by placement type, with all covariates set to the mean. Results suggest that about 14 percent of IKC placements experience a maltreatment

investigation, a rate nearly twice as high as NRFC or FKC placements. Compared with NRFC placements, FKC placements are slightly less likely to experience any investigation (7 percent versus 8 percent).

In addition, IKC placements experience higher rates of investigations of OOHP caregivers than either FKC or NRFC placements, with nearly 12 percent of IKC placements experiencing that outcome. FKC and NRFC placements are approximately equally likely to experience an investigation of an OOHP caregiver. The difference between the two groups, though statistically significant, suggests that FKC placements are .4 percentage points (20 percent) less likely to have an investigation of an OOHP caregiver. The largest difference, however, is for investigations of pre-placement caregivers. Compared with NRFC or FKC placements, IKC placements are about 3.5 to 4 percentage points more likely to experience an investigation of a pre-placement caregiver – a nearly three-fold increase in the odds compared with NRFC placements.

**Substantiations.** Table 3 shows the results of logistic regression models predicting any maltreatment substantiation, as well as substantiations of an OOHP caregiver or a pre-placement caregiver. FKC and NRFC placements are equally likely to experience any substantiated investigation, at a rate of 1.6 and 1.7 percent, respectively, whereas IKC placements are slightly more likely. The probability of a substantiated investigation of an OOHP caregiver is very low across all groups, with no more than  $\frac{1}{2}$  of 1 percent of placements experiencing that outcome. Specifically, FKC and NRFC placements are equally likely to have a substantiated investigation of an OOHP caregiver (.21 and .26 percent probability), while IKC placements are roughly twice as likely as the others (.5 percent probability). Lastly, substantiations against pre-placement

caregivers, which are also quite uncommon overall, are least common in NRFC placements and highest in IKC placements.

### **Survival Model Results**

**Investigations.** Table 4 displays the results of the survival model predicting the hazard of a maltreatment investigation. The initial model (M1) suggests that, in the first 3 months of a placement, FKC placements are about 31 percent less likely to experience a maltreatment investigation as compared with NRFC placements, whereas IKC placements are about 41 percent less likely. This suggests that, while NRFC placements have a rate of 17.6 investigations per 1,000 placement months in the first three months, FKC placements have a rate of 12.1 and IKC placements have a rate of 10.3. Over time, the gap in the risk level for placements diminishes. The rate for NRFC placements drops from 17.6 to 7.4 investigations per 1,000 placement-months, a decrease of 58 percent; while the rates for FKC and IKC declined by approximately 59 percent and 66 percent (to 5.5 and 4.2), respectively.

Turning to investigations of OOHP caregivers, the results suggest that NRFC placements have a higher rate than FKC, and both NRFC and FKC placements have a higher rate than IKC, placements for all time periods. The gap between IKC placements and FKC placements grows over time, while the gap between NRFC and FKC placements narrows. This is because the rates for IKC and NRFC placements drop by about 40 percent between months 0-3 and months 18-60, compared with a decline of 27 percent for FKC placements. The rate of investigation for pre-placement caregivers is initially highest in IKC placements as compared with both NRFC or FKC placements, but the gap disappears after 8 months. Rates for all groups drop drastically after the first three months.



**Substantiations.** Table 4 displays the survival models predicting substantiated maltreatment generally, by an OOHP caregiver, and by a pre-placement caregiver. For any substantiation, there are no differences in risk between FKC and NRFC placements in either the first 3 months, or after 18 months; however, NRFC placements experience a slightly higher risk of substantiation in months 4 through 17. The difference, though statistically significant, equates to approximately .5 substantiated investigations per 1,000 placement months. IKC placements have a lower initial risk of a substantiated investigation than either NRFC or FKC, though FKC and IKC have equal risk after the first 3 months. Again, it is important to note that the differences observed here, while statistically significant, are so small that there is no practical difference in the risk across placement types.

In the model predicting substantiated maltreatment by an OOHP caregiver, estimates suggest that NRFC placements are at higher risk than FKC and IKC placements in the first 3 months (.6 substantiations per 1,000 placements months versus .3 and .2, respectively), but there are no statistically significant differences after that time. Notably, the risk of having a substantiated investigation of an OOHP caregiver is very low; indeed, less than 350 instances were observed across over 95,000 placements.

Substantiated maltreatment by a pre-placement caregiver is most common in the first three months of placement, with FKC and NRFC placements more likely to experience this outcome than IKC placements. However, risk of substantiated maltreatment by a pre-placement caregiver is equivalent after the first three months.

### **Supplemental Models**

**Multiple failures.** Notably, there are over 1,000 instances of a placement having more than 1 investigation. The primary models do not allow for multiple failures given that this is a

small proportion of the sample, and some of the standard tests to determine the suitability of a model cannot be applied with multiple failures (e.g. the Cox-Snell Residuals test). However, multiple failure models are estimated as a sensitivity test, and no substantial differences were seen. These models are found in Appendices B and C.

**Maltreatment history.** While all models control for maltreatment history, it is important to note that IKC placements are significantly less likely to have a maltreatment history at all, and hardly any placements involve children with a history of multiple maltreatment investigations. There are also a few NRFC and FKC placements that have no documented maltreatment history. This may occur when a child is removed from the home following a maltreatment investigation in which another child in the home is the alleged victim. Thus models were estimated excluding all children who were not the alleged victim on any maltreatment reports preceding out-of-home care. This exclusion slightly diminished some of the observed differences by placement type, but findings were generally similar. These models are found in Appendices D and E.

**Risk dependence.** Additionally, the primary models assume that the censoring mechanism (the reason a placement leaves observation) is independent of the risk of failure (experiencing a maltreatment outcome). For placements that simply continue past the end of observation (December 2012), there is no reason to expect censoring to be associated with failure risk. However, this may not be true for cases in which a placement ends prior to any maltreatment incident, which may occur due to reunification, adoption, aging out, or placement disruption. Of these, placement disruption is least likely to be independent of maltreatment risk. For example, sometimes placements end due to conflict between the child and foster parent. In such a case, had the placement not ended, maltreatment may have occurred. Models excluding

placements which ended due to factors related to the child or caregiver were estimated, and results were largely similar. These models are found in Appendices F and G.

**Licensure.** The risk of maltreatment in out-of-home care is believed to differ by licensure status for kin placements (Nieto, Fuller, & Testa, 2009). There is some indication of licensure status in the data, though it is unclear whether it captures all unlicensed placements. Nevertheless, models comparing NRFC and IKC placements to unlicensed FKC placements are found in Appendices H and I. Results suggest that unlicensed kin placements are not as safe as licensed kin placements, but are similar to NRFC placements. Maltreatment by pre-placement caretakers is more common in unlicensed kin placements.

### **Discussion**

This study estimated the risk of officially reported maltreatment in out-of-home care across placement types. The body of research on this topic is small, and its conclusions are primarily limited to small samples and bivariate relations. Available knowledge on this question is of great importance, however, given two facts: (1) it is the sole indicator used by the federal government to assess safety for children in out-of-home care; and (2) child safety has been and continues to be the primary mandate of the child welfare system. Moreover, given policy preferences for kinship care, and the use of informal kinship placements as a way of keeping children out of the formal foster care system, an understanding of how maltreatment risk varies across placement type is vital to evaluating those policies and practices.

This study suggests that a maltreatment investigation occurs during approximately 8 percent of out-of-home placements, though only about half of those investigations include allegations against the OOHP caregiver. Additionally, only 0.3 percent of placements experience substantiated maltreatment perpetrated by the OOHP caregiver. This suggests that rate of

substantiation for allegations of maltreatment by an OOHP caregiver is far lower than the substantiation rate overall. Thus, it may be the case that OOHP caregivers are at higher risk for false allegations of maltreatment, or, as has been suggested elsewhere, these cases are not being substantiated when they should be (DePanfilis & Girvin, 2005). Yet, the risk of a maltreatment investigation, or even the risk of a maltreatment substantiation, is not equivalent to the risk of maltreatment. The National Incidence Studies estimate that up to a third of maltreatment incidents go unreported (Sedlak et al, 2010) and the factors that affect the likelihood of a maltreatment incident being reported are not well understood, particularly in the context of out-of-home care. It is possible that there are disparities in reporting by placement type that reflect differences in the willingness of children to disclose maltreatment by a relative versus a non-relative. Future research should assess the extent to which a maltreatment investigation, or substantiation, is an accurate measure of maltreatment incidence in out-of-home care. Moreover, while the federal government focuses its performance assessment in this area on substantiated investigations, the rate of investigation warrants consideration as well. Several scholars have suggested that substantiated and unsubstantiated investigations are no different in their consequences (Hussey et al., 2005; Leiter, Myers, & Zingraff, 1994), and thus a focus on substantiated investigations may overlook children at risk.

Nevertheless, at least by this metric, foster care is quite safe overall, particularly when compared to previously published estimates of reported maltreatment among children who remain in the home after an investigation (23 percent are re-reported within 2 years of investigation), or are returned home after foster care (26 percent within 2 years of reunification) (Connell et al., 2009; Lipien & Forthofer, 2004). Moreover, a substantial proportion of the investigations and substantiations that occurred during an out-of-home placement identified the

biological, step, or adoptive parent as a perpetrator. This suggests one of two things: potentially high rates of delayed disclosure, or some children are being inadequately supervised during visits with their parents. This is not able to be cleanly assessed in these data, though the substantial drop in allegations and substantiations after the first week in out-of-home care (particularly for children in formal foster care) suggests that a large portion of these reports may represent delayed disclosures. This would be consistent with Tittle and colleagues (2009), who find that 9 percent of reports in kinship foster homes and 23 percent of reports in non-relative foster care are retrospective.

Turning to placement type, it appears that there are both overall and temporal differences in maltreatment occurrence. Lifetime risk of maltreatment, either investigated or substantiated, is highest in IKC placements by a sizable margin. Yet, because IKC placements have a much longer average duration, these placements have a significantly lower risk in any given month than either FKC or NRFC placements. FKC placements tend to be of slightly lower risk both overall and at most times points, when compared with NRC placements. Yet, for both FKC and NRFC placements, risk decreases substantially if the placement endures past 3 months, suggesting that placements may need additional supports early on to facilitate positive attachments between children and caregivers. Alternatively, heightened risk in the first 3 months may represent an ill-fit between children and caregivers. Increased understanding of how to appropriately match children and foster homes may decrease the risk of maltreatment allegations.

Future research must replicate these findings in other state or national samples. While these data include the full foster care population of Wisconsin, these results may not be generalizable to all states. Foster care systems' standards for investigation and substantiation vary across states, as do their practices regarding the placement of children in formal or informal

care, preferences for kinship care, and use of group or institutional care. In addition, these analyses should not be interpreted as causal estimates. Due to limitations in available covariates, there are important variables that are not controlled in the models. Such factors include disability status, preceding behavior problems, and characteristics of the biological parents. These are factors that are known to differ across placement types, with children in non-relative care tending to be less advantaged prior to entering placement (Font, 2014). Since children with disabilities and behavioral problems are at higher risk for maltreatment, these estimates may incorrectly identify benefits of kin placement that are actually attributable to the different average characteristics of children who enter either placement type.

### **Conclusion**

In sum, maltreatment in out-of-home placement is a rare event when measured by the federal standard of substantiated maltreatment by an out-of-home placement caregiver. However, maltreatment investigations during an out-of-home placement are much more common, particularly in the first three months of a non-relative or formal kinship placement. Yet, over the life of a placement, Informal kinship care placements are at higher risk than formal foster care placements. While nearly 15 percent of IKC placements were investigated for maltreatment, these placements generally receive little oversight or supportive service. Providing informal kinship caregivers with increased awareness and access to voluntary support services may benefit children in these arrangements.

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Table 1

*Descriptive Statistics by Placement Type*

<i>N</i>	NRFC		IKC		FKC	
	<u>%</u>	<u>M</u>	<u>%</u>	<u>M</u>	<u>%</u>	<u>M</u>
	46,927		23,245		25,541	
CPS Investigation	7.7		12.1		6.9	
Substantiated investigation	1.6		2.1		1.5	
Investigation of out-of-home caretaker	3.4		5.3		3.0	
Substantiation of out-of-home caretaker	0.3		0.4		0.2	
Investigation of pre-placement caretaker	2.2		5.2		2.6	
Substantiation of pre-placement caretaker	0.5		0.7		0.6	
Male	51.3		48.7		50.0	
NH White	42.8		27.8		44.3	
NH Black	33.2		51.8		32.6	
American Indian	4.5		3.3		5.5	
Hispanic	9.2		9.0		9.4	
Other/multiracial	10.4		8.1		8.2	
Age 0 to 2	17.8		10.9		19.7	
Age 3 to 5	17.2		17.4		22.4	
Age 6 to 10	21.4		25.6		24.8	
Age 11 to 18	43.6		46.1		33.1	
History of neglect	62.9		35.6		68.0	
History of physical abuse	35.5		14.8		30.8	
History of sexual abuse	18.3		7.8		13.3	
4 or more prior CPS complaints	21.1		6.9		17.4	
County > 90% white	45.6		26.8		42.2	
Maltreatment victims per 1,000 children		3.7		3.7		3.9
Logged population 2012		12.1		12.7		12.3
CPS reports per 1,000 children		33.3		38.2		34.8

Notes: All differences statistically significant at minimally  $p < .05$  unless noted here: Substantiated investigation (NRFC=FKC); Substantiation of OOH caretaker (NRFC=FKC); Substantiation of pre-placement caretaker (FKC=VKC); Black (NRFC=FKC); Hispanic (all groups equal); Other/multiracial (VKC=FKC); Age 3 to 5 (NRFC=VKC); Maltreatment victims per 1,000 (NRFC=FKC).

Table 2

*Risk of investigated maltreatment over life of placement*

	Any			OOHP Caregiver			Pre-Placement Caregiver		
	OR	SE	Risk	OR	SE	Risk	OR	SE	Risk
Non-Relative Foster Care			8.00%			3.14%			2.44%
Formal Kinship Care	.810	.026	6.99%	.796	.038	2.71%	1.027	.053	2.69%
Informal Kinship Care	1.86	.059	14.36%	1.670	.079	5.98%	2.913	.144	6.17%
NRFC = FKC		***			***				NS
NRFC = IKC		***			***				***
FKC = IKC		***			***				***

*Notes:* Results of logistic regression models controlling for child demographics, maltreatment history, and geographic characteristics. Risk calculated at the mean of covariates. Standard errors clustered by child.

NS = not statistically significant; \*\*\*  $p < .001$

Table 3

*Risk of Substantiated Maltreatment over Life of Placement*

	Any			OOHP Caregiver			Pre-Placement Caregiver		
	OR	SE	Risk	OR	SE	Risk	OR	SE	Risk
Non-Relative Foster Care			1.73%			.26%			.56%
Formal Kinship Care	.921	.059	1.61%	.762	.126	.21%	1.183	.121	.68%
Informal Kinship Care	1.521	.104	2.47%	1.881	.291	.50%	1.877	.215	.85%
NRFC = FKC		NS			NS			NS	
NRFC = IKC		***			***			***	
FKC = IKC		***			***			***	

*Notes:* Results of logistic regression models controlling for child demographics, maltreatment history, and geographic characteristics. Risk calculated at the mean of covariates. Standard errors clustered by child.

NS = not statistically significant; \*\*\*  $p < .001$

Table 4

*Piecewise Survival Models for Investigated Maltreatment in Out-of-Home Care*

Placement	Months	Any		By an Out-of-Home Placement Caregiver			By a Pre- Placement Caregiver			
		Hazard Ratio	SE	Risk per 1,000 placement months	Hazard Ratio	SE	Risk per 1,000 placement months	Hazard Ratio	SE	Risk per 1,000 placement months
Nonrelative Foster Care (NRFC)	0-3	-	-	17.6	-	-	7.0	-	-	5.6
	4-8	.677	.027	11.9	.783	.044	5.4	.533	.038	3.0
	9-17	.516	.023	9.1	.623	.039	4.3	.408	.033	2.3
	18-60	.419	.028	7.4	.589	.049	4.1	.271	.034	1.5
Formal Kinship Care (FKC)	0-3	.685	.028	12.1	.590	.039	4.1	.898	.057	5.0
	4-8	.487	.026	8.6	.562	.042	3.9	.482	.043	2.7
	9-17	.428	.025	7.6	.506	.041	3.5	.435	.042	2.4
	18-60	.313	.029	5.5	.451	.051	3.1	.251	.043	1.4
Informal Kinship Care (IKC)	0-3	.586	.026	10.3	.487	.034	3.4	1.035	.067	5.8
	4-8	.429	.021	7.6	.431	.032	3.0	.661	.050	3.7
	9-17	.326	.016	5.7	.382	.026	2.7	.432	.034	2.4
	18-60	.235	.011	4.2	.286	.019	2.0	.299	.022	1.7
NRFC=FKC	0-3		***			***			NS	
	4-8		***			***			NS	
	9-17		**			*			NS	
	18-60		**			*			NS	
NRFC=IKC	0-3		***			***			NS	
	4-8		***			***			*	
	9-17		***			***			NS	
	18-60		***			***			NS	
FKC=IKC	0-3		**			*			*	
	4-8		*			**			**	
	9-17		***			**			NS	
	18-60		**			***			NS	

Notes: N=95,713 placements (46,553 children). Standard errors clustered by child. Risk calculated at the mean of covariates. Models control for child demographics, maltreatment history, and geographic characteristics.

NS = not statistically significant. \* p<.05 \*\* p<.01 \*\*\* p<.001



Table 5

*Piecewise Survival Models for Substantiated Maltreatment in Out-of-Home Care*

Placement	Months	Any		By an Out-of-Home Placement Caregiver		By a Pre- Placement Caregiver				
		Hazard Ratio	SE	Risk per 1,000 placement months	Hazard Ratio	SE	Risk per 1,000 placement months	Hazard Ratio	SE	Risk per 1,000 placement months
Nonrelative Foster Care (NRFC)	0-3 (reference)	-	-	3.8	-	-	0.6	-	-	1.4
	4-8	.595	.050	2.2	.626	.133	0.4	.376	.059	0.5
	9-17	.394	.040	1.5	.470	.111	0.3	.203	.042	0.3
	18-60	.267	.041	1.0	.576	.159	0.3	.185	.053	0.3
Formal Kinship Care (FKC)	0-3	.906	.072	3.4	.440	.111	0.3	1.169	.135	1.6
	4-8	.444	.052	1.7	.868	.193	0.5	.258	.059	0.4
	9-17	.261	.041	1.0	.373	.121	0.2	.210	.057	0.3
	18-60	.152	.041	0.6	.311	.142	0.2	.083	.049	0.1
Informal Kinship Care (IKC)	0-3	.518	.051	2.0	.358	.099	0.2	.677	.100	0.9
	4-8	.376	.041	1.4	.702	.155	0.4	.465	.077	0.6
	9-17	.255	.029	1.0	.587	.123	0.3	.208	.042	0.3
	18-60	.167	.019	0.6	.349	.076	0.2	.119	.025	0.2
NRFC=FKC	0-3		NS			**			NS	
	4-8		*			NS			NS	
	9-17		*			NS			NS	
	18-60		NS			NS			NS	
NRFC=IKC	0-3		***			***			**	
	4-8		***			NS			NS	
	9-17		**			NS			NS	
	18-60		**			NS			NS	
FKC=IKC	0-3		***			NS			***	
	4-8		NS			NS			*	
	9-17		NS			NS			NS	
	18-60		NS			NS			NS	

Notes: N=95,713 placements (46,553 children). Standard errors clustered by child. Risk calculated at the mean of covariates. Models control for child demographics, maltreatment history, and geographic characteristics. NS = not statistically significant. \* p<.05 \*\* p<.01 \*\*\* p<.001

## Appendix A

Categorizations of Perpetrator Types

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Pre-placement caretaker

Biological parent(s)

Step Parent(s)

Partner/friend of parent sharing dwelling

Adoptive parent(s)

Out-of-home placement caretaker

Relative/Primary Care Provider(s)

Foster Parent/Non-Relative(s)

Individual(s) who share a Foster Home

Certified family home provider(s)

Non-certified family home provider(s)

Foster Parent/Relative(s)

Relative/Court-Ordered Care Provider(s)

Non-Relative Guardian(s)

Non-Relative(s) - informal agreement

Non-Relative(s) - Power of Attorney

Other temporary caregiver(s)

Indian Custodian(s)

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Appendix B

*Multiple Failure Models for Investigated Maltreatment*

Placement	Months	Any		By an Out-of-Home Placement Caregiver		By a Pre- Placement Caregiver				
		Hazard Ratio	SE	Risk per 1,000 placement months	Hazard Ratio	SE	Risk per 1,000 placement months	Hazard Ratio	SE	Risk per 1,000 placement months
Nonrelative Foster Care (NRFC)	0-3 (reference)			18.1		7.1				5.6
	4-8	.585	.021	12.9	.665	.036	5.6	.470	.032	3.1
	9-17	.523	.021	10.0	.612	.036	4.5	.409	.032	2.4
	18-60	.403	.026	7.7	.520	.046	4.0	.295	.040	1.6
Formal Kinship Care (FKC)	0-3	.699	.028	12.3	.626	.041	4.2	.919	.060	5.0
	4-8	.417	.021	8.9	.474	.034	4.0	.423	.036	2.7
	9-17	.423	.022	8.2	.477	.036	3.7	.457	.041	2.7
	18-60	.318	.024	6.1	.446	.045	3.3	.250	.038	1.4
Informal Kinship Care (IKC)	0-3	.645	.029	10.4	.535	.039	3.4	1.164	.076	5.8
	4-8	.386	.019	8.0	.381	.028	3.2	.639	.047	4.0
	9-17	.339	.015	6.5	.396	.026	3.1	.444	.033	2.6
	18-60	.249	.011	4.7	.288	.018	2.2	.320	.023	1.8
NRFC=FKC	0-3		***			***				NS
	4-8		***			***				NS
	9-17		**			*				NS
	18-60		*			NS				NS
NRFC=IKC	0-3		***			***				NS
	4-8		***			***				**
	9-17		***			***				NS
	18-60		***			***				NS
FKC=IKC	0-3		***			***				**
	4-8		NS			*				***
	9-17		***			*				NS
	18-60		**			***				NS

Notes: N=95,713 placements (46,557 children). Standard errors clustered by child. Risk calculated at the mean of covariates. Models control for child demographics, maltreatment history, and geographic characteristics.

NS = not statistically significant. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

Appendix C

*Multiple Failure Substantiated Maltreatment Models*

Placement	Months	Any		By an Out-of-Home Placement Caregiver		By a Pre- Placement Caregiver		Hazard Ratio	SE	Risk per 1,000 placement months
		Hazard Ratio	SE	Hazard Ratio	SE	Hazard Ratio	SE			
Nonrelative Foster Care (NRFC)	0-3			3.9		0.6				1.4
	4-8	.661	.053	2.6	.792	.045	0.4	.556	.039	0.5
	9-17	.476	.044	1.9	.639	.039	0.3	.431	.034	0.3
	18-60	.337	.048	1.3	.571	.045	0.3	.294	.036	0.3
Formal Kinship Care (FKC)	0-3	.883	.071	3.5	.597	.039	0.3	.900	.057	1.6
	4-8	.463	.054	1.8	.562	.042	0.5	.487	.043	0.4
	9-17	.284	.041	1.1	.525	.041	0.2	.475	.045	0.3
	18-60	.188	.044	0.7	.459	.049	0.2	.244	.040	0.1
Informal Kinship Care (IKC)	0-3	.516	.052	2.0	.486	.034	0.2	1.033	.066	0.9
	4-8	.391	.042	1.5	.446	.032	0.4	.715	.052	0.7
	9-17	.319	.035	1.3	.432	.029	0.3	.466	.036	0.3
	18-60	.209	.022	0.8	.308	.020	0.2	.329	.024	0.2
NRFC=FKC	0-3		NS			**			NS	
	4-8		**			NS			NS	
	9-17		**			NS			NS	
	18-60		*			NS			NS	
NRFC=IKC	0-3		***			***			**	
	4-8		***			NS			NS	
	9-17		**			NS			NS	
	18-60		**			NS			NS	
FKC=IKC	0-3		***			NS			***	
	4-8		NS			NS			*	
	9-17		NS			NS			NS	
	18-60		NS			NS			NS	

Notes: N=95,713 placements (46,553 children). Standard errors clustered by child. Risk calculated at the mean of covariates. Models control for child demographics, maltreatment history, and geographic characteristics. NS = not statistically significant. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

Appendix D

*Investigated Maltreatment Models Excluding Cases with No Maltreatment History*

Placement	Months	Any		By an Out-of-Home Placement Caregiver		By a Pre- Placement Caregiver		Risk per 1,000 placement months		
		Hazard Ratio	SE	Hazard Ratio	SE	Hazard Ratio	SE			
	0-3			17.8		6.9		5.4		
Nonrelative Foster Care (NRFC)	4-8	.694	.029	12.3	.773	.047	5.4	.593	.045	3.2
	9-17	.538	.026	9.6	.630	.042	4.4	.452	.039	2.4
	18-60	.426	.030	7.6	.587	.052	4.1	.296	.040	1.6
	0-3	.670	.029	11.9	.581	.041	4.0	.890	.063	4.8
Formal Kinship Care (FKC)	4-8	.495	.028	8.8	.534	.043	3.7	.530	.051	2.9
	9-17	.420	.027	7.5	.477	.043	3.3	.461	.049	2.5
	18-60	.321	.033	5.7	.432	.054	3.0	.265	.049	1.4
	0-3	.656	.034	11.7	.541	.045	3.8	1.192	.090	6.4
Informal Kinship Care (IKC)	4-8	.487	.029	8.7	.426	.040	3.0	.820	.073	4.4
	9-17	.368	.022	6.5	.416	.034	2.9	.523	.049	2.8
	18-60	.260	.015	4.6	.316	.025	2.2	.357	.032	1.9
	0-3		***			***			NS	
NRFC=FKC	4-8		***			***			NS	
	9-17		***			**			NS	
	18-60		*			*			NS	
	0-3		***			***			*	
NRFC=IKC	4-8		***			***			**	
	9-17		***			***			NS	
	18-60		***			***			NS	
	0-3		NS			NS			***	
FKC=IKC	4-8		NS			*			***	
	9-17		NS			NS			NS	
	18-60		NS			*			NS	

Notes: N=70,509 placements (31,665 children). Standard errors clustered by child. Risk calculated at the mean of covariates. Models control for child demographics, maltreatment history, and geographic characteristics. NS = not statistically significant. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

Appendix E

*Substantiated Maltreatment Models Excluding Cases with No Maltreatment History*

Placement	Months	Any		By an Out-of-Home Placement Caregiver		By a Pre- Placement Caregiver		Hazard Ratio	SE	Risk per 1,000 placement months
		Hazard Ratio	SE	Hazard Ratio	SE	Hazard Ratio	SE			
Nonrelative Foster Care (NRFC)	0-3									3.4
	4-8	.669	.061	.692	.154	.484	.083			2.3
	9-17	.435	.048	.481	.122	.229	.055			1.5
	18-60	.303	.050	.591	.175	.229	.072			1.0
Formal Kinship Care (FKC)	0-3	.866	.078	.405	.114	1.140	.160			3.0
	4-8	.484	.061	.926	.216	.285	.076			1.7
	9-17	.259	.045	.390	.133	.224	.070			0.9
	18-60	.154	.047	.290	.148	.123	.072			0.5
Informal Kinship Care (IKC)	0-3	.619	.074	.272	.109	.961	.174			2.1
	4-8	.447	.062	.624	.180	.729	.147			1.5
	9-17	.300	.043	.538	.143	.354	.084			1.0
	18-60	.209	.029	.427	.105	.177	.045			0.7
NRFC=FKC	0-3		NS		**		NS			
	4-8		*		NS		NS			
	9-17		**		NS		NS			
	18-60		*		NS		NS			
NRFC=IKC	0-3		***		**		NS			
	4-8		**		NS		NS			
	9-17		*		NS		NS			
	18-60		NS		NS		NS			
FKC=IKC	0-3		**		NS		NS			
	4-8		NS		NS		**			
	9-17		NS		NS		NS			
	18-60		NS		NS		NS			

Notes: N=70,509 placements (31,665 children). Standard errors clustered by child. Risk calculated at the mean of covariates. Models control for child demographics, maltreatment history, and geographic characteristics. NS = not statistically significant. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

Appendix F

*Investigated Maltreatment Models Excluding Child and Foster Parent Requested Moves*

Placement	Months	Any		By an Out-of-Home Placement Caregiver		By a Pre- Placement Caregiver		SE	Risk per 1,000 placement months
		Hazard Ratio	SE	Hazard Ratio	SE	Hazard Ratio	SE		
	0-3								18.1
Nonrelative Foster Care (NRFC)	4-8	.673	.027	.781	.046	.526	.038		12.9
	9-17	.515	.023	.623	.040	.404	.033		10.0
	18-60	.420	.028	.583	.050	.267	.034		7.7
									7.1
Formal Kinship Care (FKC)	0-3	.687	.028	.593	.040	.895	.057		12.3
	4-8	.483	.026	.555	.042	.468	.043		8.9
	9-17	.433	.025	.517	.042	.435	.042		8.2
	18-60	.313	.029	.445	.052	.251	.043		6.1
Informal Kinship Care (IKC)	0-3	.592	.026	.499	.035	1.027	.067		1.4
	4-8	.435	.022	.444	.033	.661	.050		8.0
	9-17	.331	.016	.396	.028	.430	.034		6.5
	18-60	.238	.011	.291	.019	.296	.022		4.7
NRFC=FKC	0-3		***		***		NS		
	4-8		***		***		NS		
	9-17		**		*		NS		
	18-60		**		*		NS		
NRFC=IKC	0-3		***		***		NS		
	4-8		***		***		**		
	9-17		***		***		NS		
	18-60		***		***		NS		
FKC=IKC	0-3		**		*		NS		
	4-8		NS		*		**		
	9-17		***		**		NS		
	18-60		**		***		NS		

Notes: N=92,889 placements (46,408 children). Standard errors clustered by child. Risk calculated at the mean of covariates. Models control for child demographics, maltreatment history, and geographic characteristics.

NS = not statistically significant. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

Appendix G

*Substantiated Maltreatment Models Excluding Child and Foster Parent Requested Moves*

Placement	Months	Any		By an Out-of-Home Placement Caregiver		By a Pre- Placement Caregiver		Risk per 1,000 placement months
		Hazard Ratio	SE	Hazard Ratio	SE	Hazard Ratio	SE	
	0-3							3.8
Nonrelative Foster Care (NRFC)	4-8	.584	.050	.601	.129	.362	.058	2.2
	9-17	.381	.039	.423	.103	.195	.042	1.4
	18-60	.269	.042	.568	.157	.185	.053	1.0
Formal Kinship Care (FKC)	0-3	.893	.071	.433	.110	1.147	.134	3.4
	4-8	.448	.052	.850	.189	.245	.058	1.7
	9-17	.262	.041	.364	.118	.209	.056	1.0
	18-60	.141	.040	.242	.123	.083	.049	0.5
Informal Kinship Care (IKC)	0-3	.516	.051	.329	.093	.679	.100	1.9
	4-8	.374	.041	.667	.148	.468	.078	1.4
	9-17	.253	.029	.559	.118	.202	.041	1.0
	18-60	.168	.019	.341	.074	.119	.025	0.6
NRFC=FKC	0-3		NS		**		NS	
	4-8		*		NS		NS	
	9-17		*		NS		NS	
	18-60		*		NS		NS	
NRFC=IKC	0-3		***		***		**	
	4-8		***		NS		NS	
	9-17		**		NS		NS	
	18-60		**		NS		NS	
FKC=IKC	0-3		***		NS		***	
	4-8		NS		NS		*	
	9-17		NS		NS		NS	
	18-60		NS		NS		NS	

Notes: N=92,889 placements (46,408 children). Standard errors clustered by child. Risk calculated at the mean of covariates. Models control for child demographics, maltreatment history, and geographic characteristics. NS = not statistically significant. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$



Appendix H

*Investigated Maltreatment Models Excluding Licensed Kinship Placements*

Placement	Months	Any		By an Out-of-Home Placement Caregiver			By a Pre- Placement Caregiver			
		Hazard Ratio	SE	Risk per 1,000 placement months	Hazard Ratio	SE	Risk per 1,000 placement months	Hazard Ratio	SE	Risk per 1,000 placement months
Nonrelative Foster Care (NRFC)	0-3			17.5			6.9			5.5
	4-8	.677	.027	11.9	.783	.044	5.4	.533	.038	2.9
	9-17	.516	.023	9.0	.623	.039	4.3	.407	.033	2.2
	18-60	.419	.028	7.4	.589	.049	4.1	.270	.034	1.5
Formal Kinship Care (FKC)	0-3	.874	.058	15.3	.758	.087	5.2	1.343	.126	7.4
	4-8	.463	.055	8.1	.529	.092	3.6	.558	.103	3.1
	9-17	.398	.060	7.0	.535	.107	3.7	.382	.100	2.1
	18-60	.509	.122	8.9	.712	.206	4.9	.336	.152	1.9
Informal Kinship Care (IKC)	0-3	.591	.026	1.4	.492	.035	3.4	1.053	.068	5.8
	4-8	.432	.021	7.6	.435	.032	3.0	.674	.051	3.7
	9-17	.328	.016	5.8	.385	.027	2.7	.441	.035	2.4
	18-60	.237	.011	4.2	.289	.019	2.0	.305	.023	1.7
NRFC=FKC	0-3		*			*			**	
	4-8		**			*			NS	
	9-17		NS			NS			NS	
	18-60		NS			NS			NS	
NRFC=IKC	0-3		***			***			NS	
	4-8		***			***			**	
	9-17		***			***			NS	
	18-60		***			***			NS	
FKC=IKC	0-3		***			***			*	
	4-8		NS			NS			NS	
	9-17		NS			NS			NS	
	18-60		**			**			NS	

Notes: N=78,488 placements (42,865 children). Standard errors clustered by child. Risk calculated at the mean of covariates. Models control for child demographics, maltreatment history, and geographic characteristics. NS = not statistically significant. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

Appendix I

*Substantiated Maltreatment Models Excluding Licensed Kinship Placements*

Placement	Months	Any			By an Out-of-Home Placement Caregiver			By a Pre- Placement Caregiver		
		Hazard Ratio	SE	Risk per 1,000 placement months	Hazard Ratio	SE	Risk per 1,000 placement months	Hazard Ratio	SE	Risk per 1,000 placement months
Nonrelative Foster Care (NRFC)	0-3			3.8			0.6			1.4
	4-8	.595	.050	2.2	.627	.133	0.3	.376	.059	0.5
	9-17	.393	.040	1.5	.472	.112	0.3	.202	.042	0.3
	18-60	.267	.041	1.0	.582	.161	0.3	.184	.053	0.3
Formal Kinship Care (FKC)	0-3	1.202	.142	4.5	.476	.221	0.3	1.727	.272	2.4
	4-8	.255	.081	1.0	.516	.300	0.3	.119	.085	0.2
	9-17	.180	.081	0.7	.000	.000	0.0	.249	.145	0.3
	18-60	.097	.097	0.4	.582	.588	0.3	.000	.000	0.0
Informal Kinship Care (IKC)	0-3	.518	.052	1.9	.367	.103	0.2	.681	.102	0.9
	4-8	.376	.041	1.4	.722	.161	0.4	.469	.079	0.6
	9-17	.254	.029	1.0	.605	.128	0.3	.209	.043	0.3
	18-60	.167	.019	0.6	.362	.080	0.2	.119	.025	0.2
NRFC=FKC	0-3		NS			NS			**	
	4-8		NS			NS			NS	
	9-17		NS			***			NS	
	18-60		NS			NS			***	
NRFC=IKC	0-3		***			***			*	
	4-8		***			NS			NS	
	9-17		**			NS			NS	
	18-60		NS			NS			NS	
FKC=IKC	0-3		***			NS			***	
	4-8		NS			NS			NS	
	9-17		NS			***			NS	
	18-60		NS			NS			***	

Notes: N=78,488 placements (42,865 children). Standard errors clustered by child. Risk calculated at the mean of covariates. Models control for child demographics, maltreatment history, and geographic characteristics.

NS = not statistically significant. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

PAPER 2:  
PLACEMENT INSTABILITY IN KINSHIP AND NON-RELATIVE FOSTER CARE:  
UNDERSTANDING WHY FOSTER CHILDREN MOVE AND WHERE THEY GO

The United States child welfare system cares for nearly half a million foster children each year. The system is tasked with providing children with a safe and stable environment until a permanent arrangement is achieved. The stability of foster care arrangements has been a focal point of foster care practice and policy reforms given evidence that instability is associated with negative impacts on foster children's immediate and long term well-being (Newton, Litrownik, & Landsverk, 2000; Unrau, Seita, & Putney, 2008). Since the 1997 Adoption and Safe Families Act, the federal government, in their Child and Family Service Reviews, has assessed states on the placement stability of children in their foster care systems. In the most recently released findings, no states met the high performance target for stability across all reviewed cases.<sup>1</sup> According to states, an insufficient number of foster care placements, lack of foster parent training, and limited resources to support foster parents present challenges to placement stability (U.S. Department of Health and Human Services, 2011). However, the review concluded that kinship care was a viable approach for improving stability outcomes. If true, this would appear to be a less expensive approach than allocating funds for improving recruitment, training, and support services.

Notably, while stability and permanency are often considered together, I focus only on stability in this study. Stability is about the movements of children during their time in foster

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<sup>1</sup> Despite states failing to meet the high federal standards for stability, it remains the case that the majority of foster children do not experience frequent moves (Wulczyn, Kogan, & Harden, 2003). The majority of children exit care before two years (U.S. Department of Health and Human Services, 2013), and frequent moves only become the typical foster care experience for children who remain in care past that time. Forty percent of children in care for 12 to 24 months, and 66 percent of those in care for more than 24 months, experienced more than 2 placements (U.S. Department of Health and Human Services, 2011).

care, irrespective of where they may ultimately end up – returned home, adopted, long term foster care, or some other outcome. On the other hand, permanency is about whether children ultimately achieve a permanent living arrangement, and how long it has taken to achieve that outcome.

In the current study, I use a statewide administrative database to explore differences in placement change experiences by placement type. While there have been many studies on this topic, this study is able to address some limitations of prior work. Specifically, past research has been limited, to varying degrees, by non-representative samples, interval censored data, small lengths of observation, and an atheoretical approach to analysis. This study includes 8 years of data from an entire state, and includes exact dates of placement entries and exits rather than interval censored data. This permits for more generalizable and precise estimates. Secondly, the data used here explore additional questions to address not simply whether kinship care placements are more stable than non-relative foster care (as prior research broadly concludes), but also *why* that seems to be the case. To wit, I examine 3 questions: (1) Is the increased stability associated with kinship care concentrated among high-risk subgroups of children?; (2) Do the reasons given for moves vary by placement type?; and (3) When children move from non-relative foster care or formal kinship care, what are the respective probabilities of moving to more, equally, or less preferred placements? All of these questions have important implications for how to best use kinship care, and for efforts to expand kinship care.

## **Literature Review**

Most children do not experience frequent moves while in foster care, although the risk of multiple moves increases the longer a child remains in care (Wulczyn, et al 2003). James, Landsverk and Slymen (2004) suggest that foster children who spend at least 18 months in foster

care experience an average of 4.4 placements, and while the majority of foster children are in a stable placement within 9 months, a third of children do not achieve long term stability.

Several studies have examined the association between placement type and placement stability; particularly examining whether children in formal kinship care (FKC) have higher placement stability than children in non-relative foster care (NRFC). Studies differ in their generalizability, rigor in accounting for social selection, and length of observation. These differences in measurement and study methods lead to somewhat different conclusions, though nearly all studies suggest greater stability in kinship care, at least in the short term (Chamberlain et al., 2006; Koh & Testa, 2008; Koh, 2010; Strijker, Knorth, & Knot-Dickscheit, 2008; Usher, Randolph, & Gogan, 1999; Webster, Barth, & Needell, 2000; Winokur, Holtan, & Valentine, 2009).

One of the few studies that documents patterns of placements across placement types uses a 1993 cohort of children (Usher, et al 1999). While much may have changed since then, given both the Adoption and Safe Families Act (1997) and Fostering Connections to Success and Increasing Adoptions Act (2008), their findings are nevertheless informative. They suggest that among children who began in FKC and exited within 3 years, 80 percent experienced only one placement, compared with 49 percent of children who began in NRFC. However, of those who remained in care after 3 years, most had multiple placements, irrespective of the type of placement in which they were first placed. It is unclear whether children who stay in care longer are more likely to have multiple placements simply because they remain at risk of placement disruption for a longer period of time, or because the characteristics associated with long stays in foster care are also associated with placement instability.

Other studies add nuance to these conclusions. The difference in the risk of placement disruption between kinship and non-relative foster care is generally highest for the first placement, and smaller for all subsequent placements (Koh & Testa, 2008; Koh, 2010). That is, studies that look at any placement change and those that follow children for a shorter period of time tend to find larger effects of kinship care. Conclusions from these studies would suggest that children in NRFC have nearly double the risk of disruption than children in FKC (Chamberlain et al, 2006; Webster et al, 2008).<sup>2</sup> In addition, one study focused specifically on behavior-related placement changes (James, 2004). Findings from that study suggest that each additional day in kinship care is associated with a 1 percent lower risk of placement disruption, after controlling for behavior problems. However, this study is limited in that days in kinship care are not compared only with non-relative foster care specifically, but rather all other placement types, including those which are intended to be short-term, such as emergency shelters. Moreover, this is a single site study, and Koh (2010) suggests significant variation in associations between kinship care and stability outcomes across states.

Several other factors are associated with placement instability. Specifically, evidence suggests that age, history of sexual abuse, and behavior problems are the best predictors of placement instability (Barber, Delfabbro, & Cooper, 2001; Chamberlain et al., 2006; James, 2004; Oosterman, Schuengel, Wim Slot, Bullens, & Doreleijers, 2007). In addition, placement changes may exacerbate existing behavior problems (Newton et al, 2000), which is consistent with data suggesting that each placement change increases the risk of a subsequent placement change (Webster et al., 2000). Other factors associated with risk of instability include timing, in that most placement moves occur within 6 months of entering foster care (Wulczyn et al., 2003).

### **Conceptual Framework**

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<sup>2</sup> This finding did not hold for treatment foster care (Fisher et al, 2011).

## Theory

Prior work on placement type and stability has been notably atheoretical. The broader literature on kinship care and child safety and well-being can provide insight, however. Specifically, theory offers some indication that perhaps kinship care would be more stable, at least to the extent that kinship foster parents may be less likely to request a child be moved from the home. As behavior problems are suggested in prior research as an important antecedent to moves, how non-relative and kinship foster parents are likely to deal with children's behavior problems warrants consideration. Specifically, assuming a pre-existing caregiver-child bond, and perhaps a sense of familial obligation to the child or child's parents, kinship caregivers may be more willing to work with maladaptive behaviors. While many studies have considered behavior problems to be an outcome affected by placement type, the data derived from such studies suggests something potentially more complex. That is, caregiver reports of behavior tend to suggest children have better behavior in kinship care (Holtan, Rønning, Handegård, & Sourander, 2005; Keller et al., 2001; Rubin et al., 2008), while teacher ratings of children's behavior on the same or similar measures tend to suggest no differences in the behavior of children in NRFC and FKC (Hegar & Rosenthal, 2009; Shore, Sim, Le Prohn, & Keller, 2002). While children may simply behave differently at home versus at school, this may also suggest that there are no differences in actual behavior, but rather that kinship caregivers have a higher tolerance for behavior problems than non-relative foster parents. A higher tolerance for behavior problems may prevent, or at least delay, a disruption to the placement. In this case, it would be expected that the highest risk children would benefit most from kinship care.

Alternatively, kinship caregivers may be less likely to elicit problematic behaviors from children in the first place. That is, children behave differently in different settings, and they may

be less inclined to act out when they are familiar with or bonded to their caregiver. Attachment theory is one lens through which the possible advantages of kinship care may be viewed. While lineage is not requisite for such a bond (Dozier, Stoval, Albus, & Bates, 2001), the length of the caregiving relationship is positively associated with foster parent commitment (Bernard & Dozier, 2011). Thus, as kinship caregivers may have had a previous caretaking role in the child's life, there may already be, at the time of placement, a child-caregiver bond to ease adjustment into the new setting (Shlonsky & Berrick, 2001). An easier transition may prevent or delay disruption in the near term, whereas placements that endure past that transition period, thereby allowing for non-relative caregivers to forge a bond with the child, would be expected to have approximately equal risks of disruption. Again, while bonds need not be biological to be influential, there is some evidence to suggest that relatedness is a factor in how much families invest in children (Anderson, 2005). There may be biological reasons to believe that kin receive a higher level of investment than non-relative children (Lawler, 2008), and investment may include continuing to care for a child in the face of economic hardship, health or other ailments, or the child's maladaptive behaviors. However, it is important to understand that moves occur for a variety of reasons other than caregiver or child requests, and there is limited understanding of why kinship care would have lower risk of other types of moves.

### **Selection Factors**

Parsing out the extent to which observed differences between children in FKC and children in NRFC are attributable to the placement itself versus the types of children who enter each type of placement is difficult. Thus, in assessing placement stability across placement types, there is a concern about making an apples-to-oranges comparison; that is, attributing differences



to the type of placement rather than the type of child in the placement.<sup>3</sup> Studies comparing stability outcomes of children in NRFC and FKC require the general assumption that children in NRFC and FKC are comparable, meaning that they are similar on all relevant characteristics, or that all relevant differences are known and accounted for in the model. However, assignment to a given type of placement is not random – placement decisions are made based on children’s unique circumstances as well as policy priorities. As it pertains to children’s circumstances, children going into kinship care tend to have more advantageous characteristics prior to entering OOHC, including fewer behavior problems and higher cognitive abilities (Font, 2014). Children entering kinship care are also less likely to have disabilities or health problems (Beeman et al, 2000; Grogan-Kaylor et al, 2000). This suggests a process through which higher-functioning children enter kinship arrangements at a higher rate than non-relative placements.

Moreover, setting aside observed differences, it is likely to be the case that children entering kinship care differ on unobservable characteristics as well. Following a wave of policy changes in the last few decades, today’s children generally only enter NRFC if a kinship placement is not available. Having a relative who is willing and able to provide care is not likely to be an isolated factor – the mere existence of a relative who is both able and willing to take a child into their home suggests that child may have stronger familial ties or a more involved extended family. Moreover, given evidence suggesting intergenerational patterns of maltreatment, substance abuse, and mental illness (Kendler, Davis, & Kessler, 1997; Kim, 2009; McCloskey & Bailey, 2000), all of which are common antecedents to out-of-home placement, having relatives that are able to be approved for placement by the relevant child welfare agency may be advantageous in itself, irrespective of whether the placement occurs. That is, the

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<sup>3</sup> Similarly, foster parent characteristics are known to differ by placement type. See, for example Ehrle and Geen, 2002.

percentage of foster children in kinship placements in 2012 was 28 percent, which, despite being an increase since bottoming out at 24 percent in 2002, is exactly the same proportion observed in 1998 (U.S. Department of Health and Human Services, 2006, 2013). That suggests that, despite widespread efforts to increase kinship placements, there is a large swath of children for whom there is no relative who is able to meet placement standards and is willing to foster them. Thus, children who do enter kinship care may constitute a unique subset of children entering the foster care system.

### **Conflicting Policy Priorities**

Not all moves can be considered a negative outcome. First, whereas placement moves are generally framed in a negative way, moves may also occur to meet important policy objectives or case planning needs. For instance, a child may move in order to be placed in the same home as siblings, to be closer to one's school or birth family, or to be placed in an adoptive home. These moves are intentional, and not a result of any particular problem with the existing caregiver or placement, and thus should not be used to infer a deficit with the initial placement type. Rather, these types of moves may be necessary for long term stability needs, even if they create instability in the immediate term. For these sorts of moves not to bias a comparative estimate, it must be the case that they are randomly distributed across placement type. However, this is not likely to be the case, as relatives are more likely to live in the same neighborhood from which the child originated (i.e. closer to family of origin and school) (Testa, 1997). In addition, some moves are believed to be more harmful than others; specifically unplanned moves are believed to be more disruptive to children than planned moves (Ward, 2009).

Potentially more problematic for the interpretation of stability, however, are intentional moves that may occur as a result of policy preferences for kinship care. Consider a case wherein

a child enters OOHC and is placed in non-relative foster care because a kinship caregiver had not been identified or needed to be screened further. When a kinship caregiver is identified and approved, that child will be moved into the kinship home. This type of move is not the result per se of any deficit in the NRFC placement, but rather, the deficit is that the placement is non-relative. These types of moves should not be used to indicate a lower level of stability in NRFC, not only because they are intentional, but also because there is no similar situation which occurs in FKC. If a child is in a kinship home, the only reason a child is moved to NRFC is because the FKC placement was not tenable for some reason. Thus, these cross-type moves must be considered differently.

### **Caregiver Quality**

Prior research findings have been used to suggest that kinship care should be used in more OOHC situations (Winokur, Crawford, Longobardi, & Valentine, 2008). However, such assessments are based on a perception that kin placements are inherently superior, whereas an alternative explanation would be that relatives who are allowed to be kinship foster parents are a select and elite group of relatives. That is, prior to 2008, kin were required to meet the same licensing standards as non-relative foster parents in order to be IV-E eligible (i.e. reimbursable through federal funds). However, the 2008 Fostering Connections to Success and Increasing Adoptions Act paved the way for exemptions to a variety of licensing standards, including criminal records, income, and space requirements (U.S. Children's Bureau, 2011), and states can use unlicensed placements that do not receive foster care reimbursement payments. While some researchers have suggested that kin should be held to different, more flexible, standards (Flynn, 2002), it has never been demonstrated whether licensing standards, even those that are ostensibly non-safety related, are unrelated to placement outcomes. When caregivers are licensed, there is at

least some assurance that certain criteria are met. Given that there is no policy or practice incentive to avoid placement with eligible relatives, it may be the case that kinship care is being employed to the maximal extent possible while still maintaining quality standards; thus, an expansion of kinship care may result primarily in increased use of unlicensed placements or placements that are licensed under weakened standards. Before recommending such changes, it is important to ascertain whether licensure is an important quality check. That is, in this case, use of unlicensed placements may be associated with higher instability because placements are later found to be inappropriate or unsustainable.

### **Current Study**

In this study, I take multiple approaches to understanding how stability varies across placement type. First, I identify subgroups of children that are more likely to be similar on unobserved characteristics based on their observed characteristics and use the stability gap among those subgroups to identify the extent to which the overall stability gap may be attributable to qualities of the children or the placements themselves. Specifically, here I consider selection-based reasons for which a stability gap may be observed between children in NRFC and FKC – including the ease in placing children and characteristics of children, such as maltreatment history, that may be associated with both placement type and risk of placement change.

Second, I consider the context in which these placement changes occurred. Specifically, I examine the identified reason for the placement change. That is, placements change for any number of reasons. Whereas caregiver- or child-requested moves are most easily understood, the majority of placement changes are intentional and not initiated by the caregiver or child (James, 2004; Wald, 2009). I focus on the differential distribution of such disruption across placement

types. Third, I consider the extent to which specific types of placement changes may occur in order to further other policy goals versus placement changes that move children to less desirable placement arrangements.

## Method

### Data

This study uses Wisconsin administrative data for years 2005 through 2012.<sup>4</sup> There were 52,752 foster care episodes (43,184 children) in which the first placement was on or after January 1, 2005. Episodes beginning within six months of the end of observation (December 31, 2012) were excluded, unless the placement ended within six months (3,000 placements excluded). After exclusion of duplicate or erroneous placements, exclusion of children with unexplained gaps in their placement trajectories, and exclusion of children with mismatched birthdates, nearly 50,000 episodes (over 41,000 children and 106,763 placements) remained. No other exclusions were made for some of the descriptive analyses. However, some descriptive statistics and the regression models focus on placements in NRFC or FKC, and sometimes only on placement episodes that begin in NRFC or FKC. The relevant sample sizes and inclusion criteria for all models are reported in the applicable table.

### Measures

**Placement type.** The data include 7 basic types of placements (notably, some cannot be categorized): non-relative foster care (NRFC), formal kinship care (FKC), shelter placement, residential or group home, detention facility, informal kinship care, or a pre-adoptive home. Analyses are primarily concerned with NRFC and FKC placements, though other types are explored where relevant. For each of the 7 placement types, I calculated both mutually exclusive

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<sup>4</sup>There are about 450 placements that note an end date of January 2013 and thus are observed slightly past the 2012 year.

dichotomous indicators of current placement type, and non-mutually exclusive dummies indicating whether the episode included time in that placement type after the initial placement.

**Reasons for moving.** Children may move from one foster care placement to another as a result of any number of factors. In this study, I broadly categorized them as child-related reasons, foster parent request, agency request, other reason, or unknown reason. Child-related reasons include: child requested the move (rare), child went into a correctional facility, and child went AWOL (ran away). Foster parent requested moves and agency requested moves were identified as such in the administrative data. Other reasons include moves occurring due to request of the parent/pre-placement caregiver (most frequently) or due to caregiver quality issues (less frequent). The unknown category includes moves for which there was no reason noted, or the reason was ambiguous.

**Types of moves.** I considered three types of placement moves – moves to more preferred, equally preferred, and less preferred placements. These were defined based on where the child was moved to, relative to the placement they moved from. Policy suggests that children should be in the most family-like, least restrictive setting possible. Moreover, placements should be made with an expectation that they will create stability and permanency for a child. Thus, from these criteria, placement desirability could be ordered in a hierarchy of desirability. Moves to informal kinship care or a pre-adoptive home are considered moves to more preferred placements for both NRFC and FKC (less restrictive, more family-like, more permanent), while moves to an residential or group home, detention center, or shelter placement are considered moves to less-preferred placements (more restrictive, less family-like, less permanent). Moves from NRFC to FKC are considered moves to more preferred placements, as FKC is considered more family-like and potentially more permanent. Likewise then, a move from FKC to NRFC is

coded as a move to a less preferred placement. This hierarchy is generally consistent with acknowledged policy priorities for placement of children. Within-type moves are considered neutral, or moves to equally-preferred placements. The categorization and prevalence of each type of move (more, equally or less preferred) can be found in Appendix A.

**Covariates.** Available child demographic data include age, sex and race. Age is measured in developmental segments of 0 to 2, 3 to 5, 6 to 10, and 11 years or older. Sex is measured as is typical (male=1, female =0). For race, mutually exclusive categories are constructed as follows: white only, black only, Hispanic – any race, American Indian only, and other race/multiracial. I also include an indicator of whether the placement is intended to be long term. This is a dichotomous item entered by the caseworker, with 1 indicating the placement is intended to be long term, and 0 otherwise. In addition, to account for the extent and type of maltreatment experienced prior to entering an out-of-home placement, official records of maltreatment investigations pertaining to these children that occurred prior to their initial entry into an OOHP were retrieved.<sup>5</sup> Several variables were created from these records. First, the number of times children were the subject of an investigation prior to entering OOHP ranged from 0 to 26; from these data, a dichotomous indicator was created to indicate whether the child was the subject of four or more maltreatment investigations – this is the 80<sup>th</sup> percentile. Then, a series of non-exclusive dummy variables were created to indicate whether children ever, prior to entering OOHP, were alleged to have experienced neglect (supervisory or physical), physical abuse, or sexual abuse.<sup>6</sup> County level demographics include county population, child poverty rate, and the percent of the county that is nonwhite. These measures are derived from 2010 Census data for

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<sup>5</sup> Notably, these records are believed to be not entirely complete prior to mid-2004. Thus, these records may be less reliable for children who entered care earlier.

<sup>6</sup> Maltreatment history is believed to affect children's socio-emotional and behavioral well-being, and in turn, behavioral problems are associated with a higher risk of being maltreated (Font & Berger, 2014). The effect of maltreatment on these outcomes is believed to vary both by type and chronicity.

Wisconsin. County population is split into three categories: rural (< 20,000) midsize (reference group; 20,000 to 100,000), and large/urban (>100,000).

### **Analytic Approach**

Survival analysis is used to estimate the effect of being in either NRFC or FKC on the predicted hazard of placement change. Survival analysis is useful in this context because it takes into account that children are observed for different lengths of time, and they both enter and exit the sample at different times. The flexible piecewise exponential model is used, as it does not assume that the hazard changes at a constant rate. Additionally, time-varying factors can be incorporated easily into this framework. These models use the OOHC episode as the unit of observation, which is the same as the child if they only entered OOHC one time. If the child experienced an exit and reentry into foster care, the second and subsequent OOHC episodes are considered new observations.

As children may experience multiple placement changes, survival models can be modeled as single or multiple failure models. In the former, only the hazard of a first placement change is considered. This limits the sample more specifically to OOHC episodes that began in NRFC or FKC. However, there are several problems with this approach. The first is that episodes may begin in one placement type and move to another type. Limiting the analysis to the first placement in an episode excludes many NRFC and FKC placements from consideration. Moreover, given that many OOHC episodes involve 2 or more placement changes, it cannot be assumed that a disparity in the hazard rate for a first placement is equal across all subsequent placement changes. Indeed, prior research suggests that the disparity between NRFC and FKC in the time to a first placement change is much larger than in subsequent placement changes (Koh, 2010). To assess this phenomenon in these data, I also estimate the hazard rate for a second



placement change, conditional on having experienced 1 placement change already. Then, to account for the occurrence of multiple failures (multiple placement changes per episode), the estimates are stratified by risk set (placement number). That is, all episodes are initially observed in the first stratum, but once a placement change occurs, the second placement in an episode is estimated within the second stratum, and so forth. Given the skewed right tail of placement changes, all placement changes that occur subsequent to the sixth placement change are estimated within stratum 6.

The analyses progress in four main pieces. First, I consider basic models where I estimate the hazard of any placement change. I estimate first an empty model, containing only the interacted dummies for placement type and time. I use the time cut-point of two months, based on descriptive data (Appendix B) that suggest a large reduction in the probability of a placement change after two months in the placement. Second, I re-estimate the model, this time controlling for child demographics, maltreatment history and county characteristics.

In the second part of the analysis, several subgroup analyses are considered. Here, I attempt to test two countervailing hypotheses. First, it may be the case that children with a readily available relative placement are advantaged overall compared with NRFC children, and that, given similarly disadvantaged children, NRFC and FKC placements would be equivalent. Second, theory would suggest that FKC caregivers would be more invested than NRFC caregivers in a child, and thus children at greater risk would benefit most from FKC.

To do this, I identify subgroups of children who would theoretically be at higher or lower risk for a placement disruption and may have been more difficult to place initially. The first two comparisons are based on child characteristics: (1) chronic maltreatment history vs. no chronic maltreatment history, and (2) ages 11 to 18 vs. ages 0 to 2. Given that maltreatment experiences

are consistently associated with behavioral and socio-emotional problems (Font & Berger, 2014) and such problems increase risk of placement disruption (Barber, et al., 2001; Chamberlain et al, 2006), this would suggest children with the most chronic maltreatment histories would be at highest risk for placement disruption. Similarly, older age is a risk factor for placement disruption (Oosterman et al, 2007).

Subsequent comparisons are based on placement history and thus necessarily exclude episodes where children began in either FKC or NRFC. Specifically, I focus on children who begin in non-family-based care and then enter NRFC or FKC. (A description of how children who began in NRFC or FKC differ from children who began elsewhere and then entered NRFC or FKC can be found in Appendix C.) The first of these compares episodes beginning in a shelter placement, followed by either NRFC or FKC (higher risk) vs. all other situations (lower risk). Episodes beginning in shelter placements are likely to be more similar for two reasons. First, it means that a relative was not immediately identified or approved for placement, which undermines the possibility of an innate advantage. Second, these are children for whom a family-based placement was more difficult to find – meaning they are more likely to be children that are older, and may be more likely to have behavioral or emotional disturbances. The last of the subgroup analyses compares episodes that included a prior restrictive placement, meaning a residential or group home placement or a placement in a detention facility (higher risk) vs. all other situations (lower risk).<sup>7</sup> A prior restrictive placement indicates a higher probability of behavioral problems and delinquency, and a history of residential care is itself identified as a risk factor for disruption (Oosterman, et al., 2007). A comparison of special needs placements (i.e.

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<sup>7</sup>The combined number of episodes in this comparison exceeds the total number of episodes -- this is not an error. This is because episodes can be included in both samples, though placements within episodes cannot. For example, if an episode contains 3 placements in this order: FKC, residential/group home, FKC, then placement 1 is included in the lower risk group, placement 2 is excluded in both groups, and placement 3 is included in the higher risk group.

treatment foster care homes) was not able to be estimated because there are very few kinship placements identified as treatment foster care.

Third, I assess whether the reasons for moves differ across placement types. I first describe the proportion of moves in NRFC and FKC that were attributed to child-related reasons, foster parent request, or agency request.<sup>8</sup> Then, I estimate survival models of the same variety as above, but using these move reasons as dependent variables.<sup>9</sup> Lastly, to assess the types of moves children experience, I first describe, by initial placement type, the types of placements children experience thereafter. Then I categorize these changes as moves to more preferred, equally preferred or less preferred placements, based on established policy and practice preferences for various placement arrangements. I then estimate the hazard, again using survival analysis, of experiencing each type of move.

## **Results**

### **Sample Description**

A description of the NRFC and FKC sample is found in Table 1. (A more complete sample description that includes other placement types can be found in Appendix C.) NRFC and FKC placements are statistically significantly different on nearly all comparisons, but given the large sample size, significance is found for some differences that are too small to be meaningful. Differences of note include the following: NRFC placements are more likely to involve children ages 11 to 18 and children with histories of alleged physical or sexual abuse, and less likely to be

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<sup>8</sup> There is some concern that the variable used to identify the reason for the move is unreliable, in part because there is some subjectivity in how caseworkers may choose to answer this item.

<sup>9</sup> In these analyses, the counterfactual includes other types of moves, in addition to not moving and censoring (i.e. exiting foster care entirely). While these risks are mutually exclusive in that only one reason can be given for the end of the placement, there is some question as to whether they are independent. That is, an agency may request a move based on contact with a child or caregiver who expresses concern about the placement, and thus the agency request may have pre-empted an impending child or foster parent request. Typical survival models assume independence of these risks, however, thus primary estimates may be biased.

intended as long term placements, to involve children with histories of alleged neglect, or children under 5.

Figure 1 shows the number of placements children's foster care episodes involved, by initial placement type. Episodes that began in FKC were 5 percentage points less likely to have multiple placements than episodes beginning in NRFC. However, subsequent differences are minimal.

Many children who ultimately spend time in family-based care (either NRFC or FKC) do not begin there. Figure 2 shows the proportion of OOHC episodes that began in another placement type and then later moved to NRFC or FKC. Episodes that began in residential/group home, shelter placement, or detention facility are more likely to have subsequent NRFC placements than FKC placements. Over 15 percent of episodes that began in residential/group home or detention facility placements then enter NRFC, about 3 times the proportion of those entering FKC. However, episodes beginning in informal kinship care are more likely to then enter FKC. The consequence of this difference is that, compared with FKC, the makeup of children in NRFC at any given time is higher risk. Pre-adoptive home placements are not included in this chart because episodes that begin there are highly unlikely to involve any moves.

### **Results 1: Risk of Any Placement Change**

Table 2 compares the estimated hazards of placement change for children in NRFC or FKC placements. In the table, the estimated hazard rates are displayed, as well as the difference in hazards between FKC and NRFC, with a negative value indicating lower risk in FKC, and a positive number indicating lower risk in NRFC. In M1, only children who began in NRFC or FKC are included and their risk of experiencing a placement change from that placement is calculated (i.e. single failure model). The second model, M2, is also a single failure model, but

includes only children whose second placement was NRFC or FKC, irrespective of their first placement type, and estimates the hazard of moving to a third placement. Lastly, a multiple failure model is estimated (M3), which includes all placement moves from an NRFC or FKC placement. Overall, the multiple failure models estimate lower probabilities of a move than the single failure models.

In the empty, first-failure model (M1A), the hazard of a placement change in the first two months for FKC-placed children is half that for NRFC-placed children (.132 versus .264). This is a relatively large difference. However, after 2 months, differences between placement types drop substantially, both in absolute and relative size. The hazard of disrupting from a second placement remains lower for FKC than NRFC: about 4.6 percentage points (35 percent) lower in the first two months, and 1.3 percentage points (18 percent) lower thereafter. The multiple failure models suggest a smaller absolute difference between the NRFC and FKC hazard rates than was found in M1, but a similar relative difference: a 7.5 percentage point (42 percent) lower probability for FKC in the first two months, and a 2 percentage point (25 percent) thereafter. Results suggest that the covariates had little effect on the estimated stability gap between NRFC and FKC children, with estimates remaining quite similar to the empty models.

## **Results 2: Comparison of high and low risk subgroups**

Table 3 presents multiple failure models comparing high and low risk subgroups (single failure models can be found in Appendix D). Among children with a chronic maltreatment history, the NRFC-FKC stability gap in the first 2 months is 2.9 percentage points (24 percent lower risk in FKC). Without a chronic maltreatment history, the stability gap in the first 2 months is 4.6 percentage points (35 percent lower risk in FKC).

Similarly, for the oldest children (ages 11 to 18), the NRFC-FKC gap is 5.5 percentage points (31 percent lower risk in FKC) in the first two months, compared with 6.6 percentage points (39 percent lower risk in FKC) for younger children. However, this pattern does not persist after the first 2 months, wherein the NRFC-FKC stability gap for the oldest children remains high, and the gap for the youngest children drops substantially. Generally speaking, it does not appear that, kinship placements are substantially more stable specifically in high or low risk subgroups.

Next, I explore two other high risk subgroups, this time using placement histories to identify groups that, based on their placement experiences, may be at increased risk of disruption. Multiple failure results are shown in Table 4 (see Appendix E for single failure results). In the first comparison, I find that among children whose OOHC episode began in a shelter placement, subsequent FKC placements have a 1.3 percentage point (20 percent) higher risk of placement change in the first 2 months than subsequent NRFC placements. However, when those children are excluded from the full sample, FKC placements are at substantially lower risk than NRFC placements. Similarly, among placements where the child had a restrictive placement earlier in the same episode, there is no difference in the hazard of placement change in FKC as compared with NRFC; whereas, with those placements excluded from the full sample, a large difference is observed. However, it warrants note that children who began in shelter placements do not have a higher risk of disruption overall than those who did not. This suggests that, while they may have been more difficult to place initially, their eventual family-based placements were well-matched. Children with prior restrictive placements were at higher risk of disruption than children without prior restrictive placements in FKC, but not in NRFC. These

analyses suggest, again, that FKFC placements are not performing disproportionately better with higher risk children.

### **Results 3: Reasons for Moves**

Figure 3 shows the proportion of placement moves that occurs for each of 4 reasons (child related, foster parent request, caregiver quality and agency request) by placement type, along with the proportion of move reasons that were unidentifiable. Child related reasons include child was placed in a correctional facility, child went AWOL and child requested the move. These were not separated due to the very low incidence of child requested moves (< 1% of all moves). Child-related moves were uncommon in both NRFC (3 percent) and FKFC (2 percent). Caregiver-requested moves are basically equivalent in FKFC compared with NRFC, with 1 in 5 moves resulting from a foster parent request. Notably, agency-requested moves are the most common type of move in both categories, at nearly half of all moves. Other types of moves (those related to caregiver quality or moves requested by the pre-placement parent or guardian) were fairly uncommon. However, a substantial proportion of move reasons could not be determined, particularly for NRFC (26 percent) and FKFC (21 percent).

Table 5 shows the results of multiple failure models for specific move reasons (single failure models are in Appendix F), comparing children in NRFC to children in FKFC. These models are not limited to observations that experience a placement change. Statistically significant differences are found for all types. It is important to note, however, that given the large sample, differences can be statistically significant and yet too small to be meaningful in any practical way. Moves that occur for child-related reasons are 36 percent (first 2 months) and 25 percent (after 2 months) more probable in NRFC than FKFC, though the absolute difference amounts to less than half a percentage point. FKFC-placed children have a 1.2 percentage point

(33 percent) lower probability of a caregiver-requested move in the first 2 months than NRFC placed children (.024 vs. .036). However, after two months, while still statistically significant, the difference in hazards falls to 0.3 percentage points (20 percent lower risk in FKC). The most sizable difference between NRFC and FKC is found in agency requested moves. Children in NRFC placements are at least twice as likely to experience an agency-requested move in the first two months compared with children in FKC placements. This disparity persists after 2 months, but becomes much smaller, both in relative and absolute terms: a 0.4 percentage point (13 percent) lower risk in FKC. Moves for “other” reasons are more likely to occur in FKC, 0.1 percentage points (13 percent) more likely in the first 2 months, and 0.2 percentage points (100 percent) more likely thereafter.

#### **Results 4: Moves to More, Equally, and Less Preferred Placements**

Figure 4 depicts the later placement experiences of foster care episodes that began in NRFC or FKC. Overall, children who change placements are most likely to experience placements of the same type in which their foster care episode began. Over forty percent of children whose foster care episode began in NRFC had a subsequent NRFC placement, whereas just over 30 percent of episodes beginning in FKC had subsequent FKC placements. Nearly 1 in 5 episodes that began in NRFC later moved to FKC, and the opposite is true as well. Episodes beginning in NRFC are slightly more likely to have subsequent placements in residential/group homes, detention facilities, or pre-adoptive homes, and less likely to have subsequent informal kinship care or shelter placements.

The estimated hazard rates for moves to more, equally and less preferred placements are shown in Table 6.<sup>10</sup> Results suggest that FKC-placed children have a lower hazard of moving to a

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<sup>10</sup>Single failure estimates are found in Appendix G. Models limited to placements that eventually fail are found in Appendix H.



more preferred placement and an equally preferred placement. The difference in moves to equally preferred placements becomes non-significant after the first 2 months. Compared with NRFC-placed children, FKC-placed children have a 2.8 percentage point (148 percent) higher probability experiencing a move to a less preferred placement in the first 2 months, and a 1.5 percentage point (188 percent) higher probability thereafter.

Given that moves to more preferred placements are not an issue for concern, I also estimate the risk of a move to less or equally preferred placement. Results suggest that, in the first 2 months, FKC placements have a 2 percentage point (20 percent) lower probability of a move to an equally or less preferred placement compared with NRFC, but the difference thereafter is nonsignificant.

### **Discussion**

When the federal government suggests that relative placements are a strategy for decreasing placement disruption rates, the assumption behind that assertion is that, were it possible to observe the same child simultaneously in NRFC and FKC, the FKC placement would be less likely to disrupt. Yet, studies have not been able to ensure that children are comparable, and even if the children were statistically equivalent, the context is not. That is, children in FKC are different from children in NRFC, and at the same time, NRFC and FKC placements are considered differently by policy and likely also in practice. Third, it must be considered that one result of giving preference to kinship care is that some children will be moved from NRFC placements that may not have otherwise disrupted in order to be placed with kin. The extent to which the preferences themselves are contributing to instability in NRFC has previously been unknown.

This study attempted to establish some boundaries for understanding potential stability benefits of FKC by addressing the fore-mentioned unanswered concerns. In the most basic of models, I find that the hazard of a placement move in FKC is substantially lower than in NRFC for both a first and second move, though the gap is larger when looking only at the first placement. This is consistent with prior research (Koh & Testa, 2008; Koh, 2010). The remainder of the analyses sought to shed light on the reasons that kinship care placements have a lower risk of ending in a move.

Placements end for a variety of reasons, but benefits of kinship care are premised on the attributes of the caregiver and the child-caregiver relationship. Thus, we might expect the highest risk children to benefit most from kinship care, in that those are the placements in which the caregivers' patience may be most tried, and their commitment to the child may be most relevant. However, my findings suggest that child characteristics account for little of the difference in the risk of disruption between NRFC and FKC, and that the stability gap is generally smaller or nonexistent in the higher risk subgroups as compared with lower risk subgroups.

Second, if kinship care is more stable because of attachment, familial obligation or other caregiver/child relationship reasons, then stability benefits should be concentrated in caregiver or child requested moves, rather than agency requested moves. However, only about 20 percent of moves are documented as occurring due to foster parent request, whereas half are agency-requested. This is consistent with a finding from James (2004) that the majority of placement changes are attributable to system or policy mandates (e.g. moving children to be placed with siblings). Though, it is certainly possible (arguably probable) that at least some of these moves were requested by the agency at the behest of the caregiver or child. Nevertheless, the largest observed difference between FKC and NRFC placement changes is based on agency requested

moves. While it is implicitly assumed in many endorsements of kinship care that higher stability is attributable to attributes of the caregiving environment (i.e. attachment, cultural similarity, etc.), this is only partially supported by the data. While FKC-placed children have a 33 percent lower risk of a caregiver-requested move in the first 2 months, and a 20 percent lower risk thereafter, this is a smaller relative difference than in overall moves, suggesting that caregiver-requested moves are not driving stability differences. Moreover, these moves account for a small portion of all moves. The absolute difference in the probability of a caregiver-requested move is about 1.2 percentage points in the first two months, and 1/3 of a percentage point thereafter.

Lastly, the survival models highlight that differences in stability are also very time limited. Nearly all differences, even in the full sample and including all moves, become of minimal prevalence after the first two months. This finding is consistent with the idea that NRFC caregivers and foster children need time to forge a bond, and over time the caregivers' commitment to the child increases. In addition, because the risk of a placement move is highest during those first two months, this suggests that all placements and especially NRFC placements, may benefit from more intensive support from caseworkers early on. Alternatively, it may be the case that placements that disrupt, given that the majority disrupt quickly, were not a good match to start. This is bolstered by the observation that, whereas children originally placed in shelter placements may be more difficult to place, those who subsequently enter NRFC or FKC have a lower risk of disruption than those who began in family-based care. That is, the shelter placement may have bought caseworkers some time to identify the most suitable longer term arrangement, with foster parents who have the necessary skills and training to meet the needs of the child. Caseworkers and agencies have a limited amount of time to identify a suitable placement once children are removed from their homes, often only a few hours. Thus it is not particularly

surprising that some mismatched placements will occur; however, additional research may be able to identify risk factors for placement disruption based on combined child and caregiver characteristics and use such an algorithm to identify placement matches. States are implementing a variety of strategies to improve placement stability, including increased support services and efforts to match placements better, but the effectiveness of these approaches lack rigorous evaluation (Blakey et al., 2012).

### **Are Placement Moves the Right Measure?**

Certainly, number of placement moves are an easy measure of stability. However, the extent to which the measure should be used to make inferences about the quality of a placement or to compare the quality of placement types is another question entirely. In part, this study sought to identify the extent to which various moves should be considered a negative outcome. That is, there are two policy-encouraged reasons that NRFC placements may be more likely to result in moves than FKC placements. First, policy preferences for kinship care, made explicit in 2008 with the federal Fostering Connections to Success and Increasing Adoptions Act<sup>11</sup> (though they have been operating on the state level for much longer), encourage agencies to place with kin whenever possible. Thus, NRFC placements may be intentionally disrupted once a kin placement is identified. Secondly, while long-term placement in kinship care (irrespective of adoption status) is considered having achieved permanency, this is not the case for NRFC. Thus, the probability of a child in NRFC moving into a pre-adoptive home is much higher than children in FKC. Again, this type of move can hardly be considered contrary to achieving stability. When considering moves in terms of where children go next (moves to more, equally,

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<sup>11</sup> The Adoption and Safe Families Act (ASFA) in 1997 also made explicit advances in favor of kinship care, primarily by allowing some kin placements to be considered permanent in the absence of a formal arrangement. However, the Fostering Connections Act constituted a much larger policy change. Two changes were particularly important—(1) relative search requirements, and (2) allowing states to waive licensing standards for kin placements and still receive federal reimbursement via Title IVE.

or less preferred placements) the stability gap looks much different than it does when simply comparing moves generally. In the traditional model, it was estimated that children in FKC had a 7.5 percent point lower probability of failure in the first two months. However, if we only look at moves to less preferred placements, FKC placements are at higher risk, and when looking at moves to equally preferred or less preferred placements, the gap is 2.1 percentage points in the first two months and insignificant thereafter, far less concerning than the generic estimates.

Furthermore, there is a significantly higher risk of entering a restrictive placement or detention center following NRFC as compared with FKC. This suggests that at least some children who initially entered NRFC were inappropriate for family foster care in the first place, a claim that has been noted elsewhere in this field of study (Barber et al, 2001). Similarly, qualitative data suggest that, in the event of caregiver-requested moves, many placements may have been maintained if the child welfare system had provided appropriate services, but the majority were considered unsalvageable due to safety concerns, verbal abuse, or criminal activity (Gilbertson & Barber, 2003). When safety concerns are present, it is not clear that either NRFC or FKC is appropriate or sustainable, particularly when there are other children present in the home. That is, in these instances, it is difficult to imagine how a kinship caregiver would have been in a position to prevent such disruptions.

### **Implications for Expanding Kinship Care**

Related to the use of stability to make inferences about placement quality is the extent to which stability differences logically suggest an expansion of kinship care. This study finds a reasonably high risk of moving from FKC to NRFC, which highlights an important problem. Of all children whose OOHC episode began in FKC, nearly 1 in 5 will end up in NRFC (more than 1/3 of all FKC movers). This suggests that a portion of kin placements may not have been

appropriate in the first place. That notion is supported by supplemental models (Appendix K), which show that NRFC placed children have a significantly lower risk of a placement move than children placed in unlicensed kinship care, whereas licensed kinship placements have the lowest risk.

These findings in some ways highlight a conundrum for child welfare policy and practice. Specifically, there are a set of priorities for placements – safety, stability, well-being, placement with relatives, placement with siblings, keeping children in the same school district, and so forth. These priorities may find themselves in conflict, and thus all priorities cannot be considered of equal importance. However, it is unclear where kinship care falls in the hierarchy of placement priorities. For instance, when a relative is identified after a child has been in care, and prioritizing kinship care requires moving a child from an existing placement, is the disruption created justified by benefits of kinship care? This study cannot answer this question, but must pose it as a critical area of future research.

### **Conclusion**

This study has several implications for kinship care research, policy and practice. First, it suggests that research has yet to explain why kinship care is more stable. If kinship care is to be preferred to non-relative foster care, in part based on assumptions about higher rates of stability, it is important that research understand the mechanisms through which kinship care produces higher rates of stability. Second, findings suggest that at least some portion of the stability gap that is being considered a benefit of kinship care, and used to promote kinship preferences, is better explained by the policy preferences themselves. That is, children in non-relative foster care are more likely to experience positive placement changes (i.e. moves to a more desirable placement, as defined through policy priorities), whereas placement changes in kinship care tend

to be to less desirable placements. Future research must be explicit about the extent to which placement changes are uniformly identified as negative outcomes. Lastly, that the highest risk of placement change is in the first two months suggests a need to improve child-placement matching to prevent placements that are likely to disrupt from occurring in the first place, and to provide increased support to foster caregivers and children early in placement.

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Table 1

*Sample Description by Placement Type*

	<u>NRFC</u>	<u>FKC</u>	<u>Sig.</u>
<i>N</i>	35,952	20,717	
%	35.1	20.2	
Male	50.6	49.8	
NH White	44.0	47.6	***
NH Black	30.8	28.7	***
Hispanic (any race)	9.6	9.5	
American Indian	4.9	5.8	***
Other race / Multiracial	10.8	8.4	***
Age 0-2	28.1	31.0	***
Age 3-5	17.1	21.1	***
Age 6-10	20.6	22.5	***
Age 11-18	34.2	25.4	***
History of neglect	67.0	71.9	***
History of physical abuse	35.8	31.6	***
History of sexual abuse	17.1	13.2	***
4+ prior CPS reports	21.7	18.6	***
Long term placement intended	68.8	76.1	***
Population <20,000	5.6	4.9	**
Population > 100,000	68.7	68.7	
% children in poverty	20.8	21.1	***
% county non-white race	17.1	18.2	***

Notes: Data are organized by placement, not child.

\*\* p<.01 \*\*\* p<.001

Figure 1

*Number of Placements Experienced by Initial Placement Type*

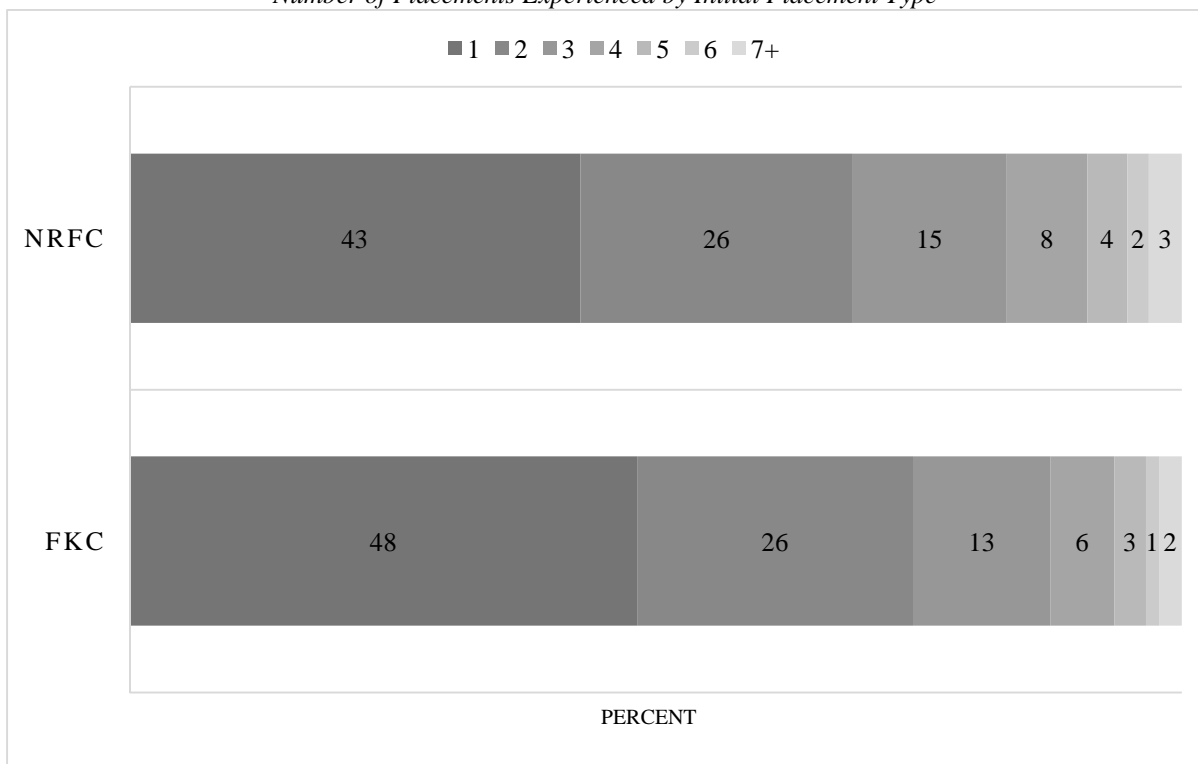


Figure 2

*Subsequent NRFC and FKC Placements by Initial Placement Type*

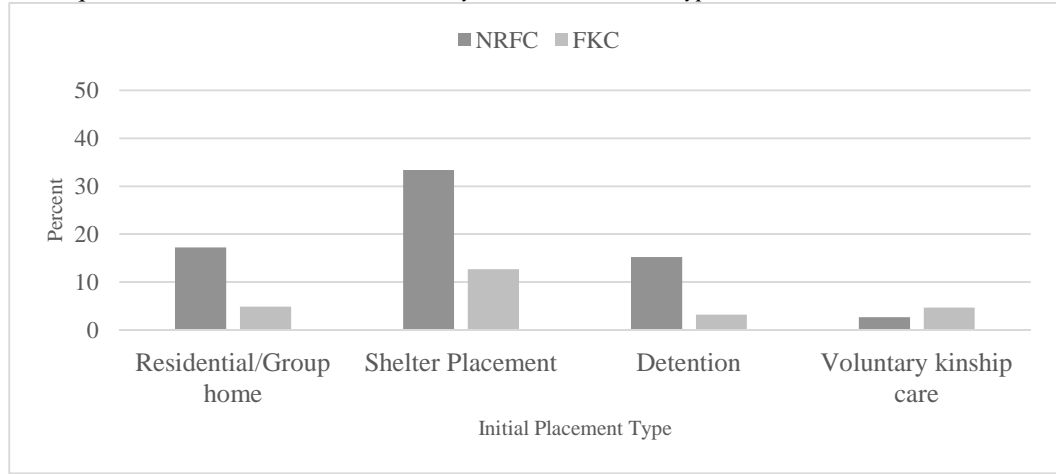


Table 2

*Placement Change Hazard Rate Estimates*

	M1: First placement		M2: Second placement		M3: Multiple failure	
<i>N episodes</i>	25,201		15,089		29,892	
<i>N moves</i>	13,669		8,115		30,897	
	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>
<b>A. Empty model</b>						
<i>Months 0-2</i>						
NRFC	.264	.004	.131	.003	.180	.002
FKC	.132	.003	.085	.003	.105	.002
Difference	-.132***		-.046***		-.075***	
<i>After 2 months</i>						
NRFC	.080	.001	.072	.001	.080	.001
FKC	.057	.001	.059	.001	.060	.001
Difference	-.023***		-.013***		-.020***	
<b>B. Covariate adjusted</b>						
<i>Months 0-2</i>						
NRFC	.260	.004	.128	.003	.176	.002
FKC	.130	.003	.085	.003	.104	.002
Difference	-.130***		-.043***		-.072***	
<i>After 2 months</i>						
NRFC	.081	.001	.072	.001	.080	.001
FKC	.057	.001	.059	.001	.061	.001
Difference	-.024***		-.013***		-.019***	

Notes: M1 includes only those who were initially placed in NRFC or FKC. M2 includes those whose second placement was in NRFC or FKC, irrespective of their first placement type. M3 is stratified by risk set.

\*\*\* p<.001

Table 3

*Comparison of Predicted Hazards for Any Move by Select Child Characteristics*

	Chronic Maltreatment History		No Chronic Maltreatment History		Ages 11 to 18		Ages 0 to 2	
<i>Episodes</i>	5,526		24,294		9,738		9,495	
<i>Moves</i>	7,086		23,733		9,891		8,803	
	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>
<b><i>Months 0-2</i></b>								
NRFC	.119	(.003)	.130	(.002)	.175	(.003)	.174	(.003)
FKC	.090	(.003)	.084	(.002)	.120	(.004)	.108	(.004)
Difference	-.029***		-.046***		-.055***		-.066***	
<b><i>After 2 months</i></b>								
NRFC	.090	(.002)	.079	(.001)	.095	(.001)	.062	(.001)
FKC	.064	(.002)	.057	(.001)	.071	(.002)	.057	(.002)
Difference	-.026***		-.022***		-.024***		-.005**	

Notes: Multiple failure models. All models control for child demographics, maltreatment history, and county characteristics. Sample sizes differ across models. Standard errors in parentheses. Models stratified by risk set.

\* p<.05; \*\*p<.01; \*\*\* p<.001



Table 4

*Multiple failure models for higher and lower risk subgroups*

	Began in Shelter Placement				Prior Restrictive Placement			
	Yes (Higher risk)		No (Lower risk)		Yes (Higher risk)		No (Lower risk)	
<i>Episodes</i>	3,102		26,718		2,300		28,407	
<i>Moves</i>	3,207		27,612		2,570		28,249	
<b>Months 0-2</b>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>
NRFC	.066	(.003)	.185	(.002)	.147	(.006)	.180	(.002)
FKC	.079	(.005)	.103	(.002)	.146	(.012)	.090	(.002)
Difference	.013*		-.082***		-.001		-.090***	
<b>After 2 months</b>								
NRFC	.081	(.002)	.080	(.001)	.103	(.002)	.078	(.001)
FKC	.073	(.003)	.060	(.001)	.094	(.005)	.059	(.001)
Difference	-.008*		-.020***		-.009		-.019***	

Notes: Predicted hazard rates shown. All models control for child demographics, maltreatment history and county characteristics. Sample sizes differ across models. Standard errors in parentheses. Models stratified by risk set.

\* p<.05; \*\*\* p<.001

Figure 3

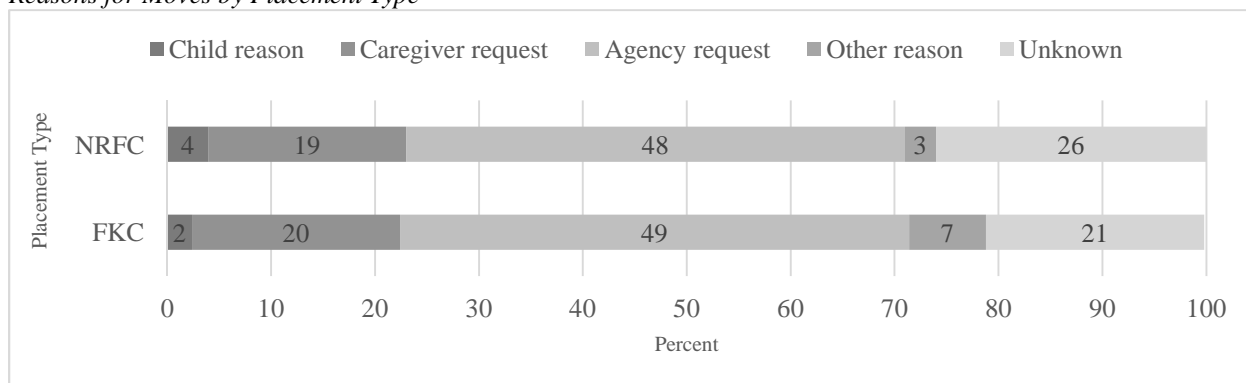
*Reasons for Moves by Placement Type*

Table 5

*Predicted Hazards for Specific Move Reasons*

	Child reason		Foster Parent request		Agency request		Other reason	
	<i>1,885</i>		<i>6,041</i>		<i>14,929</i>		<i>1,375</i>	
<i>N moves</i>								
<b>Months 0-2</b>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>
NRFC	.011	.000	.036	.001	.108	.002	.008	.000
FKC	.007	.001	.024	.001	.052	.001	.009	.001
Difference	-.004***		-.012***		-.056***		.001*	
<b>After 2 months</b>								
NRFC	.004	.000	.015	.000	.032	.000	.002	.000
FKC	.003	.000	.012	.000	.028	.000	.004	.000
Difference	-.001***		-.003***		-.004***		.002***	

Notes: Multiple failure models. N episodes = 29,892. Estimates are the predicted hazard rates based on piecewise exponential survival models, controlling for child demographics, maltreatment history, and county characteristics. Standard errors in parentheses.

\* p<.05; \*\*\* p<.001

Figure 4

*Subsequent Placement Experiences of Foster Care Episodes Beginning in NRFC or FKC*

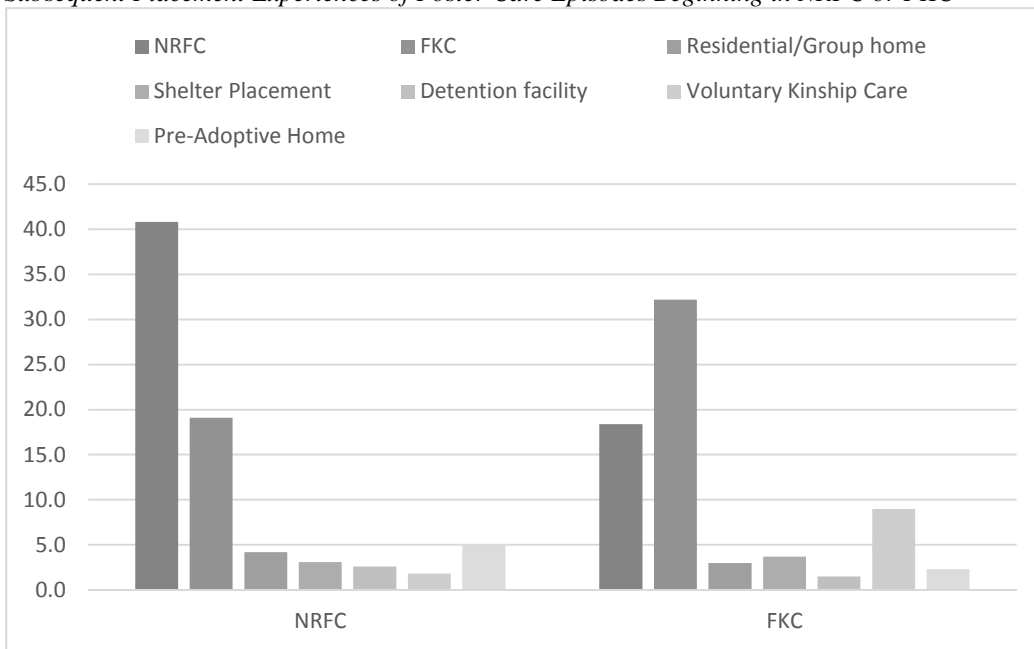


Table 6

*Estimated Hazards for Moves to More, Equally, and Less Preferred Placements*

<i>N Moves</i>	<u>More Preferred Placement</u>		<u>Equally Preferred Placement</u>		<u>Less Preferred Placement</u>		<u>Less or Equally Preferred Placement</u>	
	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>
	4,593		16,229		5,808		21,999	
<b><i>Months 0-2</i></b>								
NRFC	.048	.001	.100	.001	.019	.001	.117	.002
FKC	.002	.000	.052	.001	.047	.001	.096	.002
Difference	-.046***		-.048***		.028***		-.021***	
<b><i>After 2 months</i></b>								
NRFC	.015	.000	.042	.001	.008	.000	.050	.001
FKC	.002	.000	.030	.001	.023	.001	.051	.001
Difference	-.013***		-.012***		.015***		.001	

Notes: N=29,892 episodes. Multiple failure models. Standard errors in parentheses. Models control for child demographics, maltreatment history, and county characteristics. Models are stratified by risk set.

\*\*\* p<.001

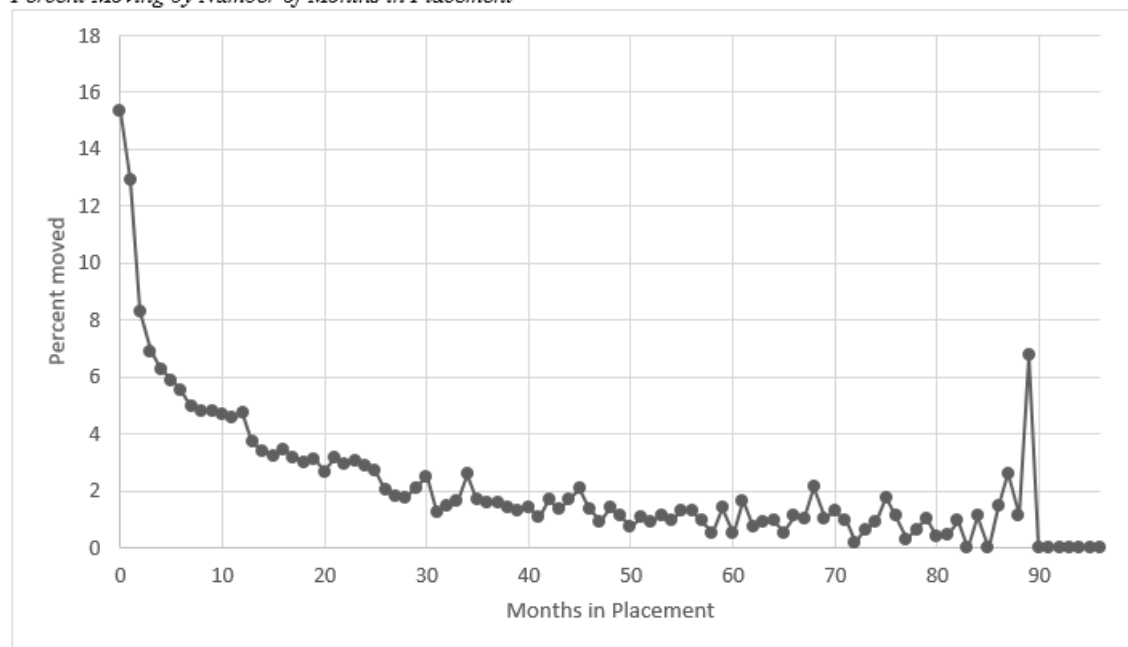
## Appendix A

*Moves to More, Equally and Less Preferred Placements: Categorization and Prevalence*

<i>N moves</i>	NRFC		FKC	
	20,840		9,979	
	<u>Type</u>	<u>% of moves</u>	<u>Type</u>	<u>% of moves</u>
NRFC	=	53.15	-	24.88
FKC	+	17.72	=	51.31
Residential/Group home	-	4.77	-	2.48
Shelter Placement	-	4.27	-	4.91
Detention Facility	-	2.69	-	1.42
Informal Kinship Care	+	0.11	+	1.04
Pre-Adoptive home	+	2.74	+	2.04
Other/unknown	NA	14.55	NA	11.92

+ Move to more preferred placement; - Move to less preferred placement; = Move to equally preferred placement

## Appendix B

*Percent Moving by Number of Months in Placement*

## Appendix C

*Sample Description by First Placement Type if Ever Spent Time in NRFC or FKC*

			<u>Residential/</u>	<u>Shelter</u>	<u>Detention</u>	<u>Informal</u>	<u>Pre-</u>
	<u>NRFC</u>	<u>FKC</u>	<u>Group</u>	<u>Placement</u>	<u>Facility</u>	<u>Kinship</u>	<u>Adoptive</u>
<i>N</i>	15,700	9,501	931	2,905	21	763	21
NH White	43.3	52.9	53.1	50.6	66.7	35.9	28.6
NH Black	28.5	22.9	28.7	27.8	14.3	43.4	57.1
American Indian	5.3	5.8	3.2	3.3	9.5	6.2	4.8
Hispanic (any race)	10.5	9.7	6.8	8.6	9.5	8.7	0.0
Other race / Multiracial	12.5	8.8	8.3	9.6	0.0	5.9	9.5
Male	50.6	50.5	58.1	52.0	28.6	49.5	52.4
1st placement intended							
long term	65.7	72.2	52.3	52.7	38.1	91.6	85.7
Age 0-2	36.4	32.4	2.0	17.7	0.0	28.6	66.7
Age 3-5	17.3	20.7	0.5	8.8	0.0	16.8	14.3
Age 6-10	20.9	23.1	7.4	12.9	0.0	26.1	19.0
Age 11-18	25.4	23.8	90.0	60.6	100.0	28.6	0.0
History of neglect	66.1	71.0	42.5	64.1	47.6	56.4	28.6
History of sexual abuse	14.2	12.5	29.0	24.1	28.6	12.6	4.8
History of physical abuse	31.9	31.3	45.1	43.5	66.7	25.2	0.0
Population <20,000	6.4	5.8	5.0	3.2	4.8	3.1	4.8
Population >100,000	66.1	65.4	55.6	79.7	57.1	73.9	76.2
% non-white	17.0	16.5	14.9	14.6	8.3	21.7	27.6
% children in poverty	20.8	20.4	20.2	19.3	17.4	23.0	25.7



## Appendix D

*Single Failure Estimates for Table 3*

	Chronic Maltreatment History		No Chronic Maltreatment History		Ages 11 to 18		Ages 0 to 2	
	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>
<i>Episodes</i>	4,412		20,784		6,240		8,804	
<i>Moves</i>	2,673		10,993		3,275		4,901	
<b><i>Months 0-2</i></b>								
NRFC	.277	.009	.256	.004	.233	.007	.240	.006
FKC	.162	.008	.123	.003	.129	.006	.139	.005
Difference	-.115***		-.133***		-.104***		-.101***	
<b><i>After 2 months</i></b>								
NRFC	.088	.003	.081	.001	.088	.003	.068	.002
FKC	.057	.003	.057	.001	.063	.003	.058	.002
Difference	-.031***		-.024***		-.025**		-.010***	

Notes: Estimates are the predicted hazard rates based on piecewise exponential survival models, controlling for child demographics, maltreatment history, and county characteristics. Models include only those who were initially placed in NRFC or FKC.

\*\*p<.01; \*\*\* p<.001

## Appendix E

*Single Failure Models for Table 4*

	Began in Shelter Placement				Prior Restrictive Placement			
	<u>Yes (higher risk)</u>		<u>No (lower risk)</u>		<u>Yes (higher risk)</u>		<u>No (lower risk)</u>	
<i>Episodes</i>	2,354		12,695		575		14,474	
<i>Moves</i>	1,316		6,772		313		7,775	
	<u>h(t)</u>		<u>SE</u>		<u>h(t)</u>		<u>SE</u>	
<b>Months 0-2</b>								
NRFC	.112	.004	.132	.004	.103	.001	.129	.003
FKC	.142	.007	.078	.003	.135	.029	.084	.003
Difference	.030*		-.054***		.032		-.045***	
<b>After 2 months</b>								
NRFC	.074	.002	.072	.001	.083	.006	.072	.001
FKC	.064	.004	.059	.001	.069	.011	.059	.001
Difference	-.010		-.013***		-.014		-.013***	

Notes: Estimates are the predicted hazard rates based on piecewise exponential survival models, controlling for child demographics, maltreatment history, and county characteristics. Models include only those who were initially placed in NRFC or FKC.

\* p<.05; \*\*\* p<.001

## Appendix F

*Single failure models for Table 5*

<i>N moves</i>	Child reason		Foster parent request		Agency request		Other	
	<i>h(t)</i>	<i>SE</i>	<i>h(t)</i>	<i>SE</i>	<i>h(t)</i>	<i>SE</i>	<i>h(t)</i>	<i>SE</i>
	480		2,475		7,739		790	
<b><i>Months 0-2</i></b>								
NRFC	.008	.001	.046	.002	.177	.003	.014	.001
FKC	.004	.001	.028	.001	.072	.002	.014	.001
Difference	-.004***		-.018***		-.105***		.000	
<b><i>After 2 months</i></b>								
NRFC	.003	.000	.013	.000	.039	.001	.003	.000
FKC	.002	.000	.011	.000	.029	.001	.004	.000
Difference	-.001**		-.013***		-.010***		.001***	

Notes: N episodes = 25,201. Estimates are the predicted hazard rates based on piecewise exponential survival models, controlling for child demographics, maltreatment history, and county characteristics. Models include only those who were initially placed in NRFC or FKC.

\*\* p<.01; \*\*\* p<.001

## Appendix G

*Single Failure Models for Table 6*

<i>N Moves</i>	<u>More Preferred</u>		<u>Equally Preferred</u>		<u>Less Preferred</u>		<u>Equally or Less Preferred</u>	
	<i>2,544</i>		<i>7,634</i>		<i>2,165</i>		<i>9,799</i>	
	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>
<b><i>Months 0-2</i></b>								
NRFC	.088	.002	.149	.003	.017	.001	.164	.003
FKC	.001	.000	.071	.002	.051	.002	.122	.003
Difference	-.087***		-.078***		.034***		-.042***	
<b><i>After 2 months</i></b>								
NRFC	.018	.000	.045	.001	.005	.000	.050	.001
FKC	.001	.000	.032	.001	.018	.001	.049	.001
Difference	-.017***		-.013***		.013***		-.001	

Notes: N=25,197 episodes. Estimates are the predicted hazard rates based on piecewise exponential survival models, controlling for child demographics, maltreatment history, and county characteristics. Models include only those who were initially placed in NRFC or FKC.

\*\*\* p<.001

## Appendix H

*Estimated Hazards for Moves to More, Equally, and Less Preferred Placements, Conditional on Moving*

<i>Episodes</i>	<i>Single Failure</i>						<i>Multiple Failure</i>					
	<u>More Preferred</u>		<u>Equally Preferred</u>		<u>Less Preferred</u>		<u>More Preferred</u>		<u>Equally Preferred</u>		<u>Less Preferred</u>	
<i>N Moves</i>	2544		7634		2165		4,593		16,196		5,808	
	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>
<b><i>Months 0-2</i></b>												
NRFC	.145	.004	.249	.005	.028	.001	.080	.002	.168	.002	0.033	.001
FKC	.003	.001	.154	.005	.112	.004	.004	.000	.112	.003	0.105	.002
Difference	-.142***		-.095***		.084***		-.076***		-.056***		.072***	
<b><i>After 2 months</i></b>												
NRFC	.033	.001	.089	.002	.010	.001	.027	.001	.079	.002	0.016	.000
FKC	.004	.000	.092	.002	.054	.002	.005	.001	.081	.002	0.064	.001
Difference	-.029***		.003		.044***		-.022***		.002		.048***	

Notes: Only episodes involving multiple placements were included in these models. Estimates are the predicted hazard rates based on piecewise exponential survival models, controlling for child demographics, maltreatment history, and county characteristics. Multiple failure models are stratified by risk set. Single failure models include only those who were initially placed in NRFC or FKC.

\*\*\*  $p < .001$

## Appendix I

*Hazard Rates by Long and Short Term Placement Intentions*

	Single failure				Multiple failure			
	<u>Long term</u> <u>intent</u>		<u>Short term</u> <u>intent</u>		<u>Long term</u> <u>intent</u>		<u>Short term</u> <u>intent</u>	
<i>Episodes</i>	17173		8023		23135		12252	
<i>Moves</i>	9772		3894		23043		7768	
	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>
<b><i>Months 0-2</i></b>								
NRFC	.250	.004	.301	.007	.168	.002	.203	.004
FKC	.109	.003	.201	.008	.089	.002	.158	.005
Difference	-.141***		-.100***		-.079***		-.045***	
<b><i>After 2 months</i></b>								
NRFC	.077	.001	.098	.003	.060	.001	.085	.002
FKC	.055	.001	.060	.003	.079	.001	.062	.002
Difference	-.022***		-.038***		.019***		-.023***	

Notes Estimates are the predicted hazard rates based on piecewise exponential survival models, controlling for child demographics, maltreatment history, and county characteristics. Short or long term intention is reported by the caseworker. Single failure models only include the first placement of episodes in which the first placement was NRFC or FKC. Multiple failure models are stratified by risk set. Single failure models include only those who were initially placed in NRFC or FKC.

\*\*\* p<.001

## Appendix J

*Covariate-Adjusted Estimates with County Fixed Effects*

	M1: Disruption from first placement		M2: Disruption from second placement		M3: Multiple Failure	
<i>N Episodes</i>	25,196		15,049		29,280	
<i>N Moves</i>	13,666		8,088		30,819	
	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>	<u>h(t)</u>	<u>SE</u>
<b><i>Months 0-2</i></b>						
NRFC	.259	.004	.128	.003	.176	.002
FKC	.128	.003	.084	.003	.103	.002
Difference	-.130***		-.040***		-.073***	
<b><i>After 2 months</i></b>						
NRFC	.083	.001	.072	.001	.081	.001
FKC	.057	.001	.059	.001	.061	.001
Difference	-.030***		.013***		-.020***	

Notes: Estimates are the predicted hazard rates based on piecewise exponential survival models, controlling for child demographics, maltreatment history, and county. M1 includes only those who were initially placed in NRFC or FKC. M2 includes those whose second placement was in NRFC or FKC, irrespective of their first placement type. M3 is stratified by risk set.

\*\*\* p<.001

## Appendix K

*Unlicensed Kinship Caregivers*

<i>N Episodes</i>	25,245	
<i>N Moves</i>	24,241	
	<u><i>h(t)</i></u>	<u><i>SE</i></u>
<b><i>Months 0-2</i></b>		
NRFC	.177	.002
FKC (unlicensed)	.221	.005
Difference	.044***	
<b><i>After 2 months</i></b>		
NRFC	.081	.001
FKC (unlicensed)	.055	.002
Difference	-.026***	

Notes: Multiple failure models. Estimates are the predicted hazard rates based on piecewise exponential survival models, controlling for child demographics, maltreatment history, and county characteristics. Models stratified by risk set.

\*\*\*  $p < .001$



PAPER 3:

KINSHIP AND NON-RELATIVE FOSTER CARE:  
THE EFFECT OF PLACEMENT TYPE ON CHILD WELL-BEING

**Introduction**

The well-being of children who become temporary or permanent wards of state as a result of parental maltreatment is a concern across states and municipalities in the United States. While the primary focus when placing a child in out-of-home care (OOHC) is to ensure his or her safety until reunification or another form of permanency can be achieved, well-being is also a focus of public policy. State and municipal responsibility for the well-being of children in OOHC is established and monitored in the annual federal Children and Family Services Reviews.

While there may be many strategies child welfare agencies undertake to maintain or improve the well-being of children in their care, where and with whom children are placed is of utmost importance. During placement, children will interact more with their surrogate caretakers than their caseworkers, the courts, or their biological parents. The most common placement types are non-relative foster care and kinship care. Non-relative foster care refers to the formal placement of children with adults who are licensed by the local child welfare authority to provide care for wards of state. Kinship care, also known as relative foster care, is the formal placement of children removed from their familial homes with persons related to the child through blood, marriage, or adoption, with some variation across states on the definition of kin. Of the nearly half a million children in OOHC in the United States, about 1 in 4 reside in kinship care, while slightly less than half reside in non-relative foster care (U.S. Department of Health and Human Services 2012). Kinship care is viewed as an appealing alternative to non-relative foster care for

a variety of reasons. With regard to system needs, kin placements supplement the insufficient number of available non-relative foster families (Schwartz, 2002), and it is financially beneficial to use unlicensed kin placements because they are not entitled to reimbursement equivalent to licensed foster parents, though some states opt to do so (Boots & Geen, 1999; Leos-Urbel, Bess, & Geen, 1999). However, there are also child-focused reasons to prefer kinship care. First, kinship care may be perceived as more normative and less stigmatized than non-relative foster care (Messing, 2006); and second, there is some evidence that children in kinship care have better outcomes (safety, stability, and well-being) than children in non-relative care. Consequently, state and federal policies now facilitate kin placements by requiring vigorous efforts to identify potential kin placements and allowing broad exceptions for kin to meet foster care standards (U.S. Children's Bureau, 2011).

Despite increasing policy preferences for kin placements, it remains unclear whether the associations observed in prior research between kin placement and child well-being are attributable to the type of placement, or whether the associations observed are explained by the different characteristics of children or caregivers in each placement type. Improving strategies to address selection bias in placement type is essential to assess the advantages or disadvantages that may result from placement in kinship care. Hence, the goal of this paper is to produce an unbiased estimate of kin placement (as opposed to non-relative placement) on children's well-being. Specifically, I employ multiple methods, including OLS, change scores, propensity score weighting, and instrumental variables regression. Each approach has different strengths and weaknesses that limit causal inference, but consistency of results across methods provides more compelling evidence of any effects.

### **Conceptual Framework**

There are two basic concepts that I use to frame discourse on the comparative benefits of kinship care and non-relative foster care—resource capacity and resource investment. Resource capacity, in this case, refers to the set of resources—both tangible and socio-emotional—that a parent-surrogate (kin or non-relative foster parent) possesses, which could potentially be used to facilitate positive outcomes for children in their care. Resource investment refers to the motivation or willingness of that parent-surrogate to use available resources to further the well-being of the child.

As it pertains to resource capacity, it is well-established in the descriptive literature that kin caregivers are more materially disadvantaged than non-relative foster parents, both personally and in terms of the neighborhoods in which kin caregivers are more likely to reside (Ehrle & Geen, 2002). Kin caregivers also tend to have worse personal health, are less likely to have a secondary caregiver in the home, and have lower average educational attainment (Harden, Clyman, Kriebel, & Lyons, 2004). These socioeconomic disadvantages may diminish children's cognitive abilities through decreased provision of cognitive stimulation and the inability to purchase academic supports, like homework assistance and enrichment activities (Brooks-Gunn & Duncan, 1997; Guo & Harris, 2000). Moreover, economic distress, as experienced by many kin caregivers, may manifest in higher levels of hostility and conflict in the home, which is believed to affect children's behavioral development (Conger et al, 1994). In addition, more impoverished neighborhoods tend to be less safe and have lower quality schools, which may increase exposure to high-risk situations and hinder academic progress. Lastly, the lack of secondary caregivers in the home may make adequate supervision of the child more difficult, or reduce the length or quality of interactions with a caregiver. For young children, who are most vulnerable to the effects of substandard care, infrequent access to an adult caregiver, and

particularly a caregiver who can provide needed stimulation, may be especially detrimental (Lupien, McEwen, Gunnar, & Heim, 2009).

In addition, kinship caregivers are often not required to complete the same training and licensure activities as non-relative caregivers (Shlonsky & Berrick, 2001). Children who experienced maltreatment often face additional emotional, developmental and behavioral problems, and addressing those difficulties may require training that one would not acquire through parenting one's own children. This may be especially pertinent for adolescents, whose developmental status increases their likelihood of experiencing conflict with caregivers and participating in high risk behaviors (Lupien et al, 2009; Spear, 2000). Consequently, kin caregivers, who often receive less training, may not have acquired the specialized skills to address behavioral or academic challenges of the youth in their care.

Moreover, there is a perspective that maltreatment and related behaviors and conditions are intergenerationally transmitted. That is, mental health, substance abuse, violence, and some forms of neglect have been shown to be transmitted through both biological and environmental conditions that are shared within a family or bloodline (Kendler, Davis, & Kessler, 1997; Kim, 2009; McCloskey & Bailey, 2000). Consequently, a kin placement may be placing a maltreated child in the same conditions that influenced the parent of that child, who was identified by the child protection and juvenile court systems to be unfit. That is, kin caregivers may be more likely to suffer from hardships or conditions that limit their internal resources.

However, there are other, potentially important, socio-emotional resources that kin caregivers would be more likely to have. For example, kin placements may be better suited to facilitate the maintenance of family and cultural ties and assist children in developing their own cultural identities, as kin caregivers are more likely than non-relative foster parents to have a

shared cultural background with the children in their care (Schwartz, 2007). Cultural dissimilarity between foster children and their caregivers has been linked to negative psychosocial outcomes, particularly among minority children (Anderson & Linares, 2012; Jewell, Brown, Smith, & Thompson, 2010). In addition to familial and cultural continuity, children who enter care may have other strong ties to their communities. As kinship caregivers are more likely to reside in the same neighborhoods as their relatives, children in kin placements may experience less disruption to the non-parental relationships and institutions in their lives.

As it pertains to investment, there are three mechanisms that might lead to differential treatment of children by kin and non-relative foster parents. First, drawing from theories of evolutionary biology, Lawler (2008) suggests that shared genetic relationships compel kin to care for their own; an instinct or drive that would not otherwise exist, absent the genetic linkage. If indeed individuals are biologically driven to protect and nurture members of a shared blood lineage, then adults may be more likely to invest their resources in a related child than an unrelated child. Thus, in a scenario where kin and non-relative caregivers had the same capacity to provide resources, biological theory would suggest that children would receive more of the available resources from kin caregivers than non-relative foster parents.

However, helping behaviors are not exclusively directed at kin, and thus social bonds are also a relevant consideration. An attachment perspective, coupled with theory on selective investment, may suggest that determinations about the investment of resources stem from the child-caregiver bond (Brown & Brown, 2006). While attachment may not be dependent upon a genetic relationship between child and caregiver (Dozier et al, 2001), if the bond between child and relative caregiver predates OOHC, then the transition into OOHC may be less distressing or traumatic (Shlonsky & Berrick, 2001). That is, kinship bonds rely on shared experiences and

associated similarities that supersede other adversities (Ainsworth, 1989) and hence, children placed with kin (with whom they have a pre-established bond) may struggle less initially with issues of belongingness and adjustment. Similarly, a kin caregiver, again assuming a pre-established bond between that caregiver and child, may be more likely to extend effort and resources to meet the needs of that child. Contrarily, when children are placed in non-relative care, both children and caregivers will require time to forge attachment bonds.

Lastly, kin and non-relative foster parents have different reasons for fostering. While kin mostly respond to a situation already in progress (a relative child being removed from home), and may agree to foster based on feelings of obligation, or desire to preserve the family (Testa & Slack, 2002), non-relative foster parents make a proactive decision to foster children that is unrelated to the circumstances of a specific child. Non-relative foster parents may choose to foster children based on religious motivations, an inability to have biological offspring, replacement of grown children, or as a prosocial response to their own childhood victimization (Cole, 2005). Motivations for fostering may be associated with different child outcomes, with motivations that are not child-centered suggested to produce negative outcomes (Buehler, Cox, & Cuddeback, 2003; Cole, 2005). While there is insufficient research in the area of motivation, it may be the case that non-relative foster parents, who typically have made a more intentional and planned choice to select into fostering, are more likely to have child-centered motivations.

In sum, a consideration of the differences between kin and non-relative foster parents, in terms of both resource capacity and resource investment, suggests a theoretically ambiguous expectation regarding the effects of placement type on children's well-being. While available knowledge generally suggests that non-relative foster parents have more resources to provide for the well-being of children in their care, they may be less invested in the children's outcomes than

kin caregivers. Yet, while resource capacity is more so about static qualities and circumstances of caregivers, investment could change over time as children and their non-relative caregivers develop stronger bonds. Additionally, it is unclear which factors have the most influence on children's well-being. It is known, for example, that economic resources are associated with child well-being, but it is not established that economic resources are more important than the maintenance of familial and cultural bonds. Consequent to the fairly ambiguous indications drawn from available theory, no *a priori* hypotheses are proffered.

### **Literature Review**

While children in OOHC generally demonstrate a wide range of difficulties in academic achievement (Trout et al, 2008), behavior (Pilowsky & Wu, 2006) and physical health (Steele et al, 2008), less is known about the variation in functioning across placement types. Most studies examining well-being in kinship and non-relative foster care have focused on mental and behavioral health, typically measured using caregiver or teacher assessments of child behavior. Studies using caregiver reports of child behavior have consistently found an advantage for children in kinship care (Holtan, Rønning, Handegård, & Sourander, 2005; Keller et al., 2001; Rubin et al., 2008; Shore, Sim, Le Prohn, & Keller, 2002; Tarren-Sweeney & Hazell, 2006; Timmer, Sedlar, & Urquiza, 2004). To the contrary, studies using teacher reports have found a null or negative effect of kin placement (Hegar & Rosenthal, 2009; Iglehart, 1994; Shore et al., 2002). Caregiver ratings of behavior have been found to be inversely correlated with teacher ratings in foster care samples (Zima et al., 2000), suggesting that children's behavior may be highly fluid across settings, or that behavioral assessments lack interrater reliability in this population. When using other measures of behavioral well-being, Taussig and Clyman (2011) suggest that time in kinship care is significantly associated with higher rates of risky behaviors

such as delinquency, sexual activity, and substance abuse, but because their study measures time with kin as an amount of time rather than as a percentage of time in care, this could simply be capturing an effect of being in care longer, since kinship care is associated with longer stays in OOH (Pabustan-Claar, 2007; Smith, Rudolph, & Swords, 2002).

Few studies have specifically focused on academic or cognitive outcomes for children in either kinship or non-relative care. Primarily descriptive work suggests similar levels of academic difficulties among children in kin and non-relative foster care (Farmer, 2009; Iglehart, 1994; Sawyer & Dubowitz, 1994), or higher school competence among kin-placed children (Tarren-Sweeney & Hazell, 2006), though these studies are unable to account for confounding factors. Of the more rigorous studies, a study using NSCAW found no significant difference between placement types for the developmental trajectories of children ages 0 to 6 (Stacks, Beeghly, Partridge, & Dexter, 2011). However, for older children, one empirical study suggests a decrease in school grades for children spending more time in kinship care (Taussig & Clyman, 2011). Only one study was found comparing health outcomes, which suggested equal rates of health problems for children in kin and non-relative care (Dubowitz et al, 1994).

In addition to evidence of associations between kin placement and well-being, there is also evidence that kin placement is positively associated with factors that are themselves associated with better outcomes. For example, kinship placements tend to be more stable than non-relative placements, and placement stability is associated with reduced behavioral problems and fewer school disruptions (Courtney & Needell, 1997). On the whole however, existing evidence on associations between placement type and child well-being suggests that children who spend more time in kin placement may express fewer behavioral problems at home, but perhaps not overall; and are expected to experience similar academic trajectories.



### **Barriers to Identification and Causal Inference**

Overall, the existing body of research suggests positive associations between kin placement and some aspects of well-being, such as behavior, and null or uncertain associations with others, such as academic achievement or development. However, those studies are unable to account for differential selection into placement types. To attribute a difference in outcomes to the placement type itself, it would have to be the case that children who enter kinship care are, on average, the same as children who enter non-relative care, and that placement is unrelated to caregivers' selection into fostering. Yet, descriptive research informs us that this is not the case—children who enter kinship care are generally younger, less likely to have a disability or health problem, and more likely to be nonwhite (Beeman, Kim, & Bullerdick, 2000; Grogan-Kaylor, 2000; Iglehart, 1994). The age at entry to care is particularly important, as children who enter care later tend to have more mental health and behavioral problems (Tarren-Sweeney & Hazell, 2006) and efforts to address those problem are more successful with children who enter care at an earlier age (Tarren-Sweeney, 2008). Moreover, as discussed above, the average characteristics of kin and non-relative foster parents differ on socioeconomic, demographic, and geographic characteristics.

In addition, there are likely to be a number of unobserved characteristics that differ between these two groups. Kin-placed children, by definition, have a relative who is willing, able, and deemed appropriate (by the child protection system and the juvenile court) to provide a placement for them. This fact may to be indicative of a more fundamental advantage, in that these children had access or exposure to adults who were able to meet certain state and federal standards of appropriateness, which may in turn indicate that the offending parent's behavior was

anomalous rather than in keeping with generational or familial patterns of maltreatment-related behavior.

All of the preexisting differences between the children and caregivers selecting into each type of placement have the potential to bias estimates of the effect of kinship placement if not accounted for in the methodological approach. While some of the selection factors can easily be controlled in a model, like age at entry or race, the differences in the availability or suitability of extended family are more difficult to measure explicitly or otherwise control. Moreover, as children often experience multiple placements, it is improbable that a given data set is able to accurately collect information on the characteristics of each caregiver with whom a foster child resides. Consequently, this particular research question is well-suited to an instrumental variables approach, which improves upon past research by better accounting for unobserved selection mechanisms.

## **Method**

### **Data and Sample**

This study uses data from the first cohort of the National Survey of Child and Adolescent Well-Being (NSCAW). NSCAW contains two samples: the Child Protective Services (CPS) sample is a nationally representative sample of child welfare investigations in the United States, while the Long Term Foster Care (LTFC) sample is a subset of children who have been in foster care for approximately one year. Cases were selected using a stratified cluster sampling strategy, with oversampling of children in OOHC and children reported for sexual abuse. The CPS sample was measured at 5 points in time, whereas the LTFC sample was only followed for 4 time points.

The CPS sample contains 5,501 cases and the LTFC sample includes 727 cases, for a combined sample of 6,228. From this number, several exclusions were made. First, children who

spent no time in OOHC or who were never observed while in OOHC were excluded (N=3,392). Children under the age of 6 at baseline were also excluded, because they were ineligible for the cognitive measures taken at W1 (N=1,455), with most still ineligible for the child interview at W4. Thus all participants are between the ages of 6 and 17 at baseline. Cases were excluded if the child's only time in OOHC was spent in restrictive (residential or group home) placements (N=166). This leaves a final sample of 1,215 children.

## **Measures**

**Outcomes.** Three cognitive outcomes, two behavioral outcomes, and one health outcome are included in this study. First, I use the math scores (summary score based on mathematic calculations and reasoning) and reading scores (summary score based on reading identification, vocabulary, and comprehension) from the Woodcock-McGrew-Werder Mini-Battery of Achievement (Woodcock, 1994). Additionally, the standard summed score of the vocabulary and matrices portions of the Kaufman Brief Intelligence Test [KBIT] (Kaufman, 1990) is included, which is intended as a measure of verbal and nonverbal ability. Behavioral problems are measured using the internalizing and externalizing behavior subscales of the Child Behavior Checklist (Achenbach, 1991), which is completed by the caregiver. The externalizing behavior scale includes measures of aggressive, hyperactive, noncompliant and undercontrolled behaviors, while the internalizing behavior scale measures anxious, depressed, and overcontrolled symptomology. All academic and behavioral outcomes are continuous measures which are then rescaled into standard deviation units by age for the purposes of interpretation. Child health is a single item, reported by children's current caregiver, rating the overall health of the child on a 5-point scale from poor to excellent, which is dichotomized due to a highly skewed distribution, such that 1 indicates very good or excellent overall health. It should be noted that while a single

item indicator of health is commonly used in surveys and is predictive of future health outcomes, its limitations are well identified, particularly when the reporter is not oneself (Van Ginneken & Groenewold, 2012). These measures were completed at waves 1, 3, and 4 for the full sample (CPS and LTFC), and this study uses W4 scores as the outcome measure, controlling for W1 scores. W4 was completed approximately 3 years after W1.

**Predictors.** The primary predictor of interest is placement type. Due to limited within-person variation in placement type post-baseline, the best measure of placement type is unclear. That is, while over half of the children in the analytic sample experienced multiple placements, most children (> 80 percent) remained in the same type of placement (either kin or non-relative) throughout their time in OOHC. Consequently, I construct a measure indicating whether the amount of time in kin placement as a percentage of total time in out-of-home care met or exceeded 50% (termed “mostly kin”). Models using alternative measures of placement are shown in Appendix E. These include an indicator of whether children were ever observed in kinship placement during their time in OOHC and an indicator of spending all OOHC time in kin placement.

**Covariates.** Three types of covariates are included: child characteristics; case characteristics; and geographic factors. Child characteristics include sex (1=male, 0=female), race (dummy indicators for black and Hispanic or other race, reference white), more than three siblings, and age at W4 (measured in years). I also include a continuous measure of age at entry to OOHC and an indicator for whether the child was sampled as part of the LTFC sample.

Three indicators of child level of need are included. Dummy variables are used to indicate disability status, with one indicating whether the child has been identified as having a cognitive disability (i.e. autism, mental retardation, etc.) and a second variable indicating

whether the child has any health conditions that are long-lasting or recurrent. These measures are both based on reports by the current caregiver at W1, and thus should capture conditions that predate placement in OOHC. Lastly, service needs are constructed based on caseworker-reported information about the services a child is in need of in the 12 months prior to the wave in question –with the measure completed for the LTFC sample only at W1, and in the first 3 waves for the CPS sample. The first wave in which this information was available for a given child was used to construct the service needs measure. Variables indicative of special needs or disability status are included as covariates because health and disability status are known predictors of OOHC placement type (Beeman et al, 2000; Grogan-Kaylor, 2000).

Case characteristics are all items reported by the caseworker that pertain to the initial CPS investigation that precipitated selection for the NSCAW sample. This includes the initial allegations, measured by dummies for physical or sexual abuse, neglect, and other (includes emotional abuse and other non-specified allegations). These indicators are not mutually exclusive, as one case can contain multiple allegations. A dummy variable is included for parental substance abuse issues, because parental substance abuse has been found in prior literature to predict placement type in OOHC (Beeman et al, 2000; Metzger, 2008). In addition, the initial risk score is included as a predictor because it is the best available measure of the conditions of children’s biological families for children already in care at the first wave, and the number of maltreatment risk factors to which children were exposed may vary by placement type and affect later well-being. The risk score is based on the sum of a series of dichotomous items about risk factors that were present at the time of the initial investigation pertaining to the child’s family of origin. This includes risk factors such as parenting, mental health, and substance abuse,

among other factors. I convert the risk score to a dichotomous indicator of falling within the top quintile of risk, because this better predicted placement type than the linear version.

Several geographic characteristics are included. First, I control for population density using a dichotomous indicator of whether the local area is populated by fewer than 50,000 people, and for region of the country using dummy variables for northeast, south, and west, with Midwest as the omitted region. Then, I attempt to capture community level disadvantage with three additional control measures. These include a dichotomous measure of whether the community is a low-income area, which is equal to 1 if the per capita income of the area in which the child resides is in the bottom 20 percent of the distribution (less than \$17,000); and continuous measure of the percentage of the community area that is black. Lastly, I include an indicator of whether the child welfare system in that area operates on the county level, as opposed to a state-run system. The coefficients for the covariates are not shown in the results tables; however, joint significance tests for each block of covariates are found in Appendix C.

### **Analytic Approach**

The approaches used in this study follow generally works by Berger and colleagues (2009) and Doyle (2007) to estimate the effect of placement in OOHC on children's outcomes. Berger and colleagues used multiple approaches to account for differences in baseline characteristics, under the logic that, while each approach has its own limitations, a consistent finding across methods provides more compelling evidence as to the causal nature of associations than a single-method study. Doyle used caseworker-level variation in OOHC placement rates to instrument removal to OOHC –meaning that, while removal to OOHC is endogenous, the effect of removal can be isolated using the differential probability of removal which is based solely on random assignment to a particular caseworker. This study applies

aspects of both studies to identify the effect of placement type. First, I use multiple modeling strategies to identify associations between kinship placement and child well-being, and then exploit agency-level variation in preferences for kinship care to instrument placement type.

There are several possibilities for modeling the outcomes of interest. For this study, I first use basic OLS regression to directly model W4 outcomes while adjusting for child, case, and geographic factors, with the fully controlled model estimated as:

$$Y_{i,W4} = \alpha + \beta_1 KIN_i + \beta_2 COV_i + \varepsilon_i \quad (1)$$

where *KIN* is the primary predictor, *COV* represents the full set of control variables and  $\varepsilon$  represents an error term. This strategy adjusts for some observed characteristics, but does not account for potential differences in baseline (W1) scores on the outcome measures modeled.

Thus, a second strategy is employed. Residualized change models (also known as lagged dependent variable models) model children's W4 outcomes while controlling for W1 measures of these same outcomes. This is estimated as:

$$Y_{i,W4} = \alpha + \beta_1 KIN_i + \beta_2 COV_i + \beta_3 Y_{i,W1} + \varepsilon_i \quad (2)$$

where the baseline score on a given outcome is estimated as a coefficient in the model. Another approach to adjusting for differences in the dependent variable at baseline is to measure the outcome as a change in scores over time. Simple change models use the difference between W1 and W4 scores as the outcome variable:

$$(Y_{i,W4} - Y_{i,W1}) = \alpha + \beta_1 KIN_i + \beta_2 COV_i + \varepsilon_i \quad (3)$$

The primary difference between residualized change models and simple change models is that in Eq. 2, I am estimating the overall level of W4 scores, whereas Eq. 3 estimates the difference in scores across waves. The former approach is less rigorous, whereas the latter may potentially be more prone to bias from measurement error.

Each of these three models attempts to adjust for relevant baseline characteristics, but two concerns remain. First, regression-adjusted estimates of the effect of kinship care are only reliable to the extent that the overlap in covariates is sufficient to compare the two groups. To better adjust for these baseline differences, I re-estimate these three basic models using a weighting scheme based on propensity scoring. Propensity score weighting is a technique that estimates, based on observed characteristics, the probability of receiving treatment—which, in this case is the probability of spending 50% or more of OOHC time in kin placement. For the change models, the propensity score is calculated as:

$$\Pr(KIN_i = 1) = \alpha + \beta_1 COV_i + \varepsilon_i \quad (4)$$

where the propensity score takes into account child, case, and geographic characteristics (as well as baseline outcome scores for the residualized change models). Each child then has a propensity score, which is converted to a weighting scheme called inverse propensity for treatment weighting ([IPTW] Austin, 2011). Propensity score weights are used because this technique allows for the full sample to be retained, which eliminates the problem of reduced statistical power that can occur when using nearest neighbor or other propensity score matching schemes. A child's propensity score weight is then calculated as:

$$W_i = \frac{KIN_i}{pscore_i} + \frac{(1-KIN_i)}{(1-pscore_i)} \quad (5)$$

These weights are then used to adjust the regression models for group differences in the characteristics associated with spending the majority of OOHC time in kin placement. By comparing weighted means (Appendix A), it was confirmed that the propensity score weights achieved balance between the mostly kin and mostly non-kin groups.

While IPTW is a better adjustment for differences in characteristics than is normal multivariate regression, it only accounts for observed differences. In order to remove bias



resulting from unobserved selection mechanisms, I employ an instrumental variables (IV) approach. The goal of IV regression is to overcome the selection bias that inhibits causal inference in other types of models. That is, IV regression uses an exogenous variable  $z$  to isolate some exogenous portion of an endogenous predictor  $x$ —in this case, placement type. Consider Eq. 1, where  $KIN$  is an endogenous variable, meaning it is correlated with the (unobserved) error term  $\varepsilon$ . An instrument  $z$  is proposed to address the bias stemming from the association between  $x$  and  $e$ . The instrument  $z$  is a variable that meets the following conditions: (1)  $z$  predicts  $KIN$ ; (2)  $z$  does not belong in the structural equation (i.e.  $z$  is only associated with  $Y$  through its association with  $KIN$ ); and (3) the covariance of  $z$  and  $\varepsilon$  is equal to zero. Then the estimation model is:

$$Y_{i,w4} = \alpha + \beta_{IV}KIN_i + \beta_2COV_i \quad (6)$$

Because the covariance between  $z$  and  $\varepsilon_i$  is expected to equal zero,  $\beta_{IV}$  is therefore a stable estimate of the effect of  $KIN$ . For the purposes of this study, two instruments are included. The first is a proxy for agencies' preferences related to kinship care. This is obtained by regressing a dichotomous indicator of kin placement for children in OOHC on agency dummies for each wave (before any sample exclusions are made), then calculating the predicted probability of kin placement for each agency (AG). This function, for child  $i$  at wave  $w$ , is estimated as;

$$\Pr(KC_{i,w} | OOHC_{i,w} = 1) = \beta_{AG}AG + \varepsilon \quad (7)$$

I calculate the average of these functions over waves 1 through 4, such that the instrument captures the average propensity of each agency to utilize kin placements. Using the average is presumed to smooth out any anomalies in estimates in a single wave. However, which agency handles a given case is based on location and thus, it is possible that the characteristics of a given agency would predict placement type, and also be associated with county or regional conditions that affect child well-being. This concern is addressed in two ways – first, by

controlling for relevant geographic characteristics such as region, population, and local conditions; and second, by using an additional instrument. With more than one instrument, it is possible to test the validity of the instruments (assumption 3) using an overidentification test, which is discussed below.

The second instrument is a dichotomous indicator of agency-level pre-service training requirements for licensed kinship caregivers, equal to 1 if an agency requires more than 4 days of training. Four days was used as a cutoff because many cases were clustered at the bottom of the distribution (i.e. fewer days of training), and this cutoff marked the tail end of the distribution. Approximately 15% of cases were assigned to agencies requiring 4 or more days of training for licensed kin. The assumptions for this instrument are that, in agencies where the training requirements for kin placements are high, potential kin caregivers may be less willing to select into providing care, and that training requirements may be inhibitive for the caseworkers making those placement decisions. The strength of both instruments were assessed using Kleibergen-Paap's underidentification test along with the Stock-Yogo weak identification test, and the combined set of instruments were found to have sufficient strength (refer to Appendix B for first stage coefficients). The Sargen-Hansen test of overidentification was used to test whether the instruments were correlated with the error term for each of the six outcomes, the results of which suggested the instruments are indeed valid for all outcomes.

For each configuration of the dependent variable, models are estimated in 5 steps: (1) empty model; (2) add full set of controls; (3) add propensity score weighting; (4) IV regression without weights; and (5) IV regression with propensity score weights. All models adjust standard errors for clustering at the agency level. In interpreting these models, we can consider each subsequent model as improving on the identification strategy. From the base model (1), where I

make minimal adjustments for group differences, Model 2 simply controls for observed characteristics. The propensity score weighted estimates in Model 3 further adjusts for group differences by employing a weighting scheme based on the propensity of a child to spend the majority of their OOHC time in kin placement, in order to approximate two groups of children who differ on percent of time in kin placement but are statistically equivalent on all observed characteristics. The IV models (4 and 5) essentially estimate the effect of the exogenous portion of kin placement. If all characteristics that are related to both the percentage of time in kinship care and the outcomes of interest are observed and controlled in the earlier models, then models 4 and 5 will produce estimates similar to those of models 2 and 3, respectively.

### **Missing Data**

Missing data for all measures were imputed using Stata MI program. Specifically, chained equations were used to impute and combine 100 data sets. The number of imputations chosen was purposely rather large, as the use of multiple imputation in combination with instrumental variables is likely to result in particularly large standard errors. Of the analytic sample of 1,215 children, about just over 20 percent had missing data on either W1 or W4 well-being measures. It is noted that while there continues to be debate on imputing dependent variables, there is precedent for this approach (Graham, 2009). The most frequently missing covariates were risk, number of siblings and probability of returning home. The number of observations with missing data did not exceed 30 percent on any individual item. As both the propensity score weighting and instrumental variables regression command structure have not been formally adapted for use with multiply imputed data, these models were estimated by estimating the models on each imputed dataset and averaging the coefficients and standard errors, with the standard errors adjusted to account for imputed data.

## Results

### Descriptive Results

A comparison of the characteristics of children by kinship status is shown in Table 1. Several significant differences were found between the two groups. Children who spent more time in kin placement are younger, were identified as needing fewer services, and are more likely to be black and female, and are marginally less likely to have a cognitive disability. Additionally, children who spent more time in kinship care are less likely to have been physically abused and are marginally more likely to come from homes where substance abuse was a problem. In addition, those who spent more time in kinship care are more likely to reside in the western or southeast states of the U.S, and lived in areas with a higher percentage of black residents. Children who spent 50% or more of OOHC time in kin placement scored significantly lower on baseline internalizing and externalizing behavior problems, and significantly higher in math and (marginally) in reading scores. Differences in baseline intelligence test scores and health were not statistically significant. This suggests that children's initial level of functioning may be a selection factor in which higher functioning children have a higher probability of entering kinship care.

Trajectory of outcomes also appears to differ across groups. As shown in Figure 1, children who were mostly in non-kin placements are below average on all academic measures at W1, but improve sharply over time. Contrarily, children in mostly kin placements are above the sample average on all academic measures at baseline, but decline over time in reading scores, and make little improvement in math and basic intelligence. On the behavioral measures, different patterns emerge. While both groups exhibit declining levels of internalizing and externalizing behavior problems over time, the children who were in mostly kin placements had

lower behavioral problems at baseline, and thus by W4 still scored lower on both behavior measures. Both groups showed minimal average change in overall health between W1 and W4.

### **Regression Results**

The results of the regression models are displayed in Table 2. In the empty models (1), each construction of the outcome measure (basic, residualized change, and simple change) produce somewhat conflicting estimates. In the basic model, associations between mostly kin placements and math, reading, and health are non-significant, though mostly kin placements predict significantly lower intelligence scores (.14 standard deviation lower), as well as significantly lower internalizing and externalizing behavior problems, at a magnitude of approximately 1/3 and 1/5 of a standard deviation, respectively. The residualized change models predict substantially smaller negative associations with behavior problems, with the estimate for externalizing behaviors nearing zero. In addition, the empty residualized change models suggest declines in all three achievement outcomes for children in mostly kin placement, though the difference in math scores is only marginally significant. The simple change models indicate larger negative associations between mostly kin placements and academic achievement outcomes, and non-significant associations with behavior problems and health.

When the covariates and propensity score weighting are added in Models 2 and 3, respectively, the basic models indicate smaller but still statistically significant associations between mostly kin placements and internalizing behavior problems, whereas the estimate for externalizing behavior problems becomes non-significant in Model 3. The residualized change models suggest lower internalizing behavior problems, but no difference in externalizing behavior problems, while the simple change models suggest no significant association between kin placement and either type of behavior problems. The basic and change models all predict

lower reading and intelligence scores for children in mostly kin placements (though the results are non-significant at  $p < .05$  in the basic Model 2). Estimates of the association between mostly kin placements and math scores are not consistently statistically significant across models, but trend negative. Overall the fully controlled and propensity score weighted models suggest that the differences in baseline characteristics tended to favor children in mostly kin placements, such that once those factors are controlled, the gap in academic achievement widens slightly and the gap in behavioral problems diminishes. The association between mostly kin placements and health is non-significant in all models.

#### **IV results**

In Table 3, the results of the instrumental variables regressions, both with and without propensity score weights, are shown for the basic, residualized change, and simple change models. When the instruments are employed in the models without the propensity-score weights, the basic and change models all suggest a decline in reading scores for children in mostly kin placements, though the effect is marginally significant in the simple change model. The basic model also suggests a marginally significant  $\frac{1}{2}$  standard deviation decline in intelligence score for children in mostly kin placements. The coefficients in the reading and intelligence IV models are actually larger than those in the standard regression models, suggesting that the differences in statistical significance may be due inflated standard errors rather than a nullification of effects, a common problem in IV models (Woolridge, 2013). The unweighted models produce no other statistically significant findings, though, notably, the coefficients for both behavior problems are sizably negative.

In the propensity score weighted IV models (5), there remains a predicted decline in reading scores for children in mostly kin placements, though the effect is only statistically

significant in the basic model, and marginally significant in the residualized change model. In addition, the basic model 5 suggests a marginally significant decline in intelligence scores and a significant decline in externalizing behavior problems for children in mostly kin placements, though the change models do not mirror those findings. None of the significant effects on math scores, intelligence, or internalizing behavior problems found in the standard regression models are found in the IV models, though the estimated coefficients for intelligence and behavior problems remain fairly sizeable in magnitude, again suggestive of low statistical power. Consistent with the earlier models, no effect of mostly kin placements was found for health.

It is noteworthy, however, that the IV models produced coefficients that were quite different in magnitude (and occasionally direction) across the basic, residualized and change models. While it is seemingly unusual for the residualized change and simple change models to produce directionally different coefficients, this is likely due to weaknesses of both change estimators. Specifically, the residualized change estimator tends to underadjust for baseline differences (Allison, 1990). This is particularly problematic when there are substantial baseline differences, as was observed in several of the outcome measures. However, the simple change estimator is also flawed, in that it does not account for the extent to which some amount of the change in scores over time is attributable to measurement error. This is likely to be especially important with multiply imputed data, where estimates may be less precise.

However, given that it was anticipated that the basic and change models would produce similar conclusions in the IV estimation, a post-hoc analysis was conducted to determine whether the effect of the mostly kin placements is moderated by baseline functioning. To assess this, a dichotomous measure was constructed to identify children who were lower functioning at baseline. First measures were calculated to identify children in the “worst” 20 percent for the 5

continuous wave 1 outcome measures (i.e. above the 80<sup>th</sup> percentile for each of the behavior measures and below the 20<sup>th</sup> percentile for each the academic achievement measures) and children identified as poor or fair health. Children were then coded as low functioning if they identified as in the bottom of the distribution for at least 2 of the 6 W1 outcome measures.

The results of Model 5 estimated separately by baseline functioning are shown in Table 4. It appears that, for children who are lower functioning at W1, mostly kin placements have a strong deleterious effect on reading and intelligence scores, and potentially math scores, but also may produce a decrease in behavioral problems. It should be noted that the simple change model for math scores was overidentified in this subgroup analysis. However, the size of estimates should be interpreted with caution, given likely imprecision due to the reduced sample size. Overall, there is no consistent effect of kin placement for children who are higher functioning at W1.

### **Discussion**

The goal of this study was to produce an unbiased estimate of the effect of increased time in kin placement (as the majority of OOHC time) on academic achievement, behavior, and overall health. By employing multiple and more rigorous identification strategies than prior studies, this study adds compelling evidence on the effects of kin and non-relative foster care on children in OOHC. Study results suggest contrasting effects of spending the majority of OOHC time in kin placements (as compared with non-relative placements) on academic and behavioral outcomes than is reported in prior research. The majority of studies on academic or cognitive outcomes have suggested null or positive associations with kin placement (Sawyer & Dubowitz, 1994; Stacks et al., 2011; Tarren-Sweeney & Hazell, 2006). Yet, the results of this study suggest that the effect of spending the majority of OOHC time in kinship care on reading scores is



significantly negative. Similarly, the effect of being in mostly kin placements on intelligence scores is consistently and sizably negative, though in most of the IV models, the effect is not statistically significant. However, the effect estimated by the IV models is similar in magnitude to the statistically significant effect estimated by the OLS models.

Additionally, there is no statistically significant effect of kin placement on behavior problems in the most rigorous models. While the estimated effects of mostly kin placements on internalizing behavior are consistently and sizably negative and only lose statistical significance in the IV models, the estimates for the effect of kin placements on externalizing behavior are non-significant even in the standard regression change models, indicating no consistent causal effect. This is somewhat in conflict with prior work on kinship care and behavioral outcomes, which overwhelmingly finds reduced behavior problems for children in kin placement when using caregiver reports (Holtan et al., 2005; Keller et al., 2001; Rubin et al., 2008; Shore et al., 2002; Tarren-Sweeney & Hazell, 2006; Timmer et al., 2004). However, given the large standard errors in the IV models, and the consistent negative trend of the coefficients for the effect of kin placement on behavior problems, particularly for internalizing behavior, the nonsignificant results may still reflect weak statistical power, rather than a true null effect.

Lastly, the results of this study suggest that both the adverse effects and potential benefits of kin placement are concentrated within the subgroup of children who were lower functioning at baseline. That is, children faring worse on initial well-being measures saw greater declines in academic achievement and greater improvements in behavior. This is consistent with the concept of differential susceptibility, which posits that some children are inherently more affected by their environments, whether positive or negative (Belsky, Bakermans-Kranenburg, & van IJzendoorn, 2007). While this concept is typically applied to the overall quality of an

environment, it may also apply to different aspects within an environment. Kin placements may be less able to provide academic support and resources, given the lower average income and education, and lower probability of a dual caregiver environment, and these conditions may be most detrimental to children already struggling academically. At the same time, kin placements may have assets conducive to behavioral improvements, including a better ability to maintain cultural and familial ties, and potentially a pre-established bond with the child; things that may disproportionately benefit children with the most behavior problems initially.

While this study does not test the mechanisms through which kin placement produces different outcomes than non-relative foster care, it is reasonable to suggest that changes in children's well-being outcomes while in OOHC are, at least in part, a product of the quality or characteristics of their surrogate caregiving environments. With that in mind, there are two potential explanations for the results of this study. While theory suggests that both biological instincts and attachment may produce more favorable outcomes in kinship care (Lawler, 2008; Shlonsky & Berrick, 2001), the findings of this study suggest that non-relative foster parents are equally or possibly more successful in fostering the well-being of children in their care. Thus, it may be that there are not differences in the investments made by kin and non-relative caregivers, or it may be that the higher level of investment by kinship caregivers is not able to usurp the advantages of non-relative foster homes, such as higher average income and less impoverished neighborhoods. Future research should focus on identifying the differences in the characteristics, behaviors, or circumstances of kin and non-relative foster parents that are associated with children's well-being. However, there are other outcomes that warrant consideration for well-being, including quality of interpersonal attachment relationships, general happiness and mental health, which are not assessed in this study. Thus, there may be advantages of kinship care that

are not captured by the outcomes examined here. Moreover, the reasons that kin placement is producing the same or (for some academic achievement measures) worse results as non-relative care are not entirely clear. Possible explanations include the extent to which kinship caregivers are economically and socially disadvantaged when compared with non-relative foster parents or the lower levels of training kinship caregivers receive in some locales. As kinship caregivers have lower average educational attainment and more caregivers, this may mean they have lesser ability and time to assist or facilitate children's academic progress.

However, it is important to note that the estimates produced by the instrumental variables regression models are specific to children affected by differential preferences and needs of agencies – meaning, the estimates are most relevant to those children whose characteristics do not strongly predispose them to entering one type of placement over the other. Hence, for those children, a variety of explanations are plausible. As efforts to increase kin placements emerge, the changes in standards for kin placements may produce a decline in the quality of those placements. For instance, requiring an exhaustive search for relative placements may mean that some children are entering kin arrangements where there was not a strong pre-established bond with that caregiver, which may negate some of the perceived advantages of kinship care. Similarly, agencies have the discretion to waive some (ostensibly) non-safety-related foster care standards (e.g. income, criminal records, housing quality) for kin placements (U.S. Children's Bureau, 2012). While it is arguable whether those standards are unrelated to child safety, it may be that these standards do have an effect on child well-being. That is, it may be that the observed differences in kinship and non-relative foster care are a function of different standards for placement, such that child outcomes may be equal or even superior in kin placements that met

the same set of licensing standards as non-relative placements. Such an analysis is outside the scope of this study, but should be a focus of future work.

### **Limitations**

Several limitations should be taken into account when considering these results. First, as it pertains to the scope of the study, it does not assess the value of placement in OOHC relative to remaining in home—that is, there is no normative comparison group, and foster care placement itself is likely to uniquely impact children, irrespective of placement type. Second, with regard to generalizability, this study excludes children under the age of 6, and the effect of kin placements may differ for younger children. Specifically, given that younger children are more vulnerable to the effects of poverty and material disadvantage, there may be a stronger negative effect on cognitive outcomes for younger children in kinship care. Similarly, there appears to be some heterogeneity in effects across age within the current sample, with negative effects concentrated in the 6 to 8 age range (final models separated by age can be found in Appendix F). Moreover, this study approximates a local average treatment effect estimate of kin placements, meaning it is applicable only to those children who would be affected by the instruments used—that is, those children whose probability of kin placement varies by the preferences and training requirements of their local CPS agency. Additionally, this study cannot distinguish between licensed and unlicensed placements. This may be important because licensing affects foster care payment levels, and children with unlicensed relatives may be exposed to greater economic and material hardships. Additionally, the characteristics of relatives who cannot be licensed are distinct from the characteristics of licensable kinship caregivers in potentially important ways.

Also, this study looks at changes between Waves 1 and 4, which is approximately a 3 year gap in time. By only using Wave 1 and 4 measures, the change scores assume a linear change in the outcome measures, which may not accurately reflect the full trajectory for these children's academic, behavioral, and health outcomes. Moreover, a three year gap estimates differences in intermediate-term outcomes and may not be applicable to immediate or long term outcomes. Lastly, placement instability is a factor that is consistently associated with negative child outcomes, yet is not controlled in this model. This factor was excluded as a potential covariate because (1) placement instability may be a mechanism through which different outcomes manifest, given some evidence of higher placement stability in kinship care (James 2004; Winokur, et al. 2008); and (2) the measure of instability has concerning inconsistencies and a substantial number of missing or invalid values in the data set.

### **Conclusions and Implications**

As governments seek to improve outcomes for children in OOHC, the role of placement type has become of central importance. Thus, it is essential that policy-makers be equipped with empirical evidence about the effects of different placement arrangements on children. While prior research has identified positive effects of kinship care, this is one of the few studies to directly address the issue of selection bias. After accounting for this bias, I find evidence of declining academic achievement among children for whom the majority of their time in OOHC is spent in kin placement, and inconclusive effects on health and behavior. While certainly there are some children for whom kin placement is clearly the best option, this study suggests that, for those children on the margin, the effect of increasing the proportion of out-of-home care time that is spent in kin placement is more ambiguous – it may be deleterious to academic achievement, but can produce equivalent health and potentially better behavioral outcomes.

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Table 1

*Descriptive Statistics*

	0-49% Kin placements N=668			50-100% Kin placements N=547			<u>Sig.</u>
	<u>M</u>	<u>SE</u>	<u>Pr</u>	<u>M</u>	<u>SE</u>	<u>Pr</u>	
W1 Reading	.03	.04		.14	.04		+
W1 Math	-.15	.04		.04	.04		**
W1 Intelligence	-.10	.04		-.06	.04		ns
W1 Internalizing behavior	.23	.04		-.03	.04		***
W1 Externalizing behavior	.21	.04		-.10	.04		***
W1 Health			.70			.71	ns
LTFC sample			.31			.21	***
Male			.50			.42	**
Black			.35			.44	**
Hispanic/Other race			.22			.19	ns
W4 Age	13.03	.11		12.52	.12		**
Age at entry to OOHC	10.33	.11		10.33	.13		ns
4 or more siblings			0.26			.24	ns
No. service needs	4.51	.09		3.26	.11		***
Cognitive disability			.25			.21	+
Chronic health condition			.25			.26	ns
Unlikely to return home			.74			.68	+
Parental substance abuse			.43			.49	+
Highest quintile risk score			.21			.13	***
Abuse			.47			.42	+
Neglect			.69			.70	ns
Other maltreatment			.26			.24	ns
Child population < 50,000			.32			.29	
Low income area			.23			.23	ns
Northeast			.15			.11	+
South			.33			.38	+
West			.17			.22	*
Percent black population	14.93	.56		17.11	.66		*
County run CW system			.39			.40	ns

Notes: ns = not statistically significant; +  $p < .1$  \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

Figure 1

*Changes in Outcomes from Wave 1 to Wave 4*

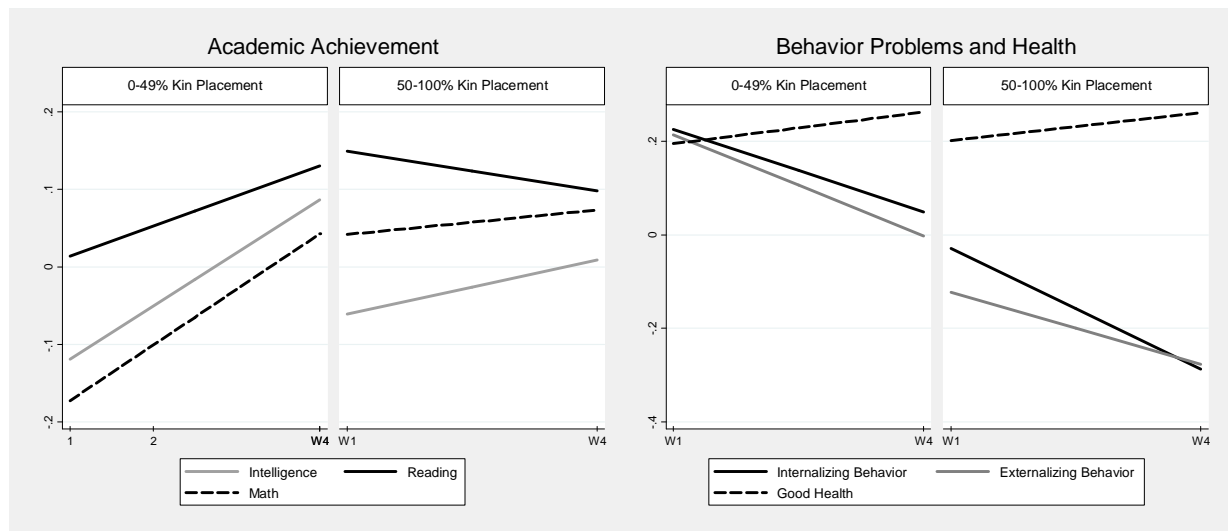


Table 2

*OLS and Propensity Score Weighted Regression Estimates*

	<u>Reading</u>	<u>Math</u>	<u>Intelligence</u>	<u>Internalizing Behavior</u>	<u>Externalizing Behavior</u>	<u>Health</u>
<b>Basic OLS Models</b>						
Model 1: Empty model						
> = 50 % kin placement	-.053 (.076)	.059 (.074)	-.137* (.069)	-.315** (.096)	-.210** (.078)	-.006 (.023)
Model 2: Full controls						
> = 50 % kin placement	-.146* (.073)	-.020 (.081)	-.198** (.067)	-.224* (.103)	-.098 (.083)	-.028 (.025)
Model 3: With PS weighting						
> = 50 % kin placement	-.147* (.072)	-.047 (.082)	-.216** (.068)	-.232* (.100)	-.116 (.081)	-.028 (.026)
<b>Residualized Change Models</b>						
Model 1: Baseline Only						
> = 50 % kin placement	-.135* (.055)	-.098+ (.057)	-.170** (.054)	-.175+ (.092)	-.016 (.078)	-.007 (.024)
Model 2: Full controls						
> = 50 % kin placement	-.138* (.055)	-.102 (.063)	-.201*** (.053)	-.146 (.098)	.011 (.081)	-.028 (.025)
Model 3: With PS weighting						
> = 50 % kin placement	-.136* (.055)	-.102 (.064)	-.181*** (.051)	-.168+ (.098)	-.015 (.082)	-.038 (.026)
<b>Simple Change models</b>						
Model 1: Empty model						
> = 50 % kin placement	-.137* (.062)	-.152** (.052)	-.174** (.056)	-.037 (.090)	.116 (.080)	-.028 (.025)
Model 2: Full controls						
> = 50 % kin placement	-.130* (.053)	-.124+ (.070)	-.198*** (.056)	-.065 (.097)	.091 (.087)	-.036 (.026)
Model 3: With PS weighting						
> = 50 % kin placement	-.112* (.054)	-.131+ (.070)	-.189** (.056)	-.067 (.095)	.075 (.088)	-.035 (.027)

Notes: N=1,215. Clustered standard errors in parentheses.

+  $p < .1$  \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

Table 3

*Instrumental Variables Estimation*

	<u>Reading</u>	<u>Math</u>	<u>Intelligence</u>	<u>Internalizing Behavior</u>	<u>Externalizing Behavior</u>	<u>Health</u>
<b>Basic OLS Models</b>						
Model 4. IV regression						
> = 50 % kin placement	-.679*	-.150	-.571+	-.307	-.468	-.031
	(.273)	(.356)	(.296)	(.358)	(.298)	(.088)
Model 5. IV with PS weighting						
> = 50 % kin placement	-.507*	-.042	-.419+	-.307	-.565*	-.003
	(.246)	(.303)	(.241)	(.313)	(.265)	(.082)
<b>Residualized Change Models</b>						
Model 4. IV regression						
> = 50 % kin placement	-.441*	-.023	-.250	-.224	-.242	-.027
	(.217)	(.253)	(.238)	(.346)	(.295)	(.089)
Model 5. IV with PS weighting						
> = 50 % kin placement	-.389+	-.056	-.219	-.199	-.364	-.029
	(.201)	(.217)	(.196)	(.317)	(.259)	(.083)
<b>Simple Change Models</b>						
Model 4. IV regression						
> = 50 % kin placement	-.365+	.003	-.155	-.178	-.107	-.012
	(.219)	(.257)	(.253)	(.357)	(.331)	(.105)
Model 5. IV with PS weighting						
> = 50 % kin placement	-.289	.010	-.154	-.199	-.205	.006
	(.209)	(.228)	(.219)	(.308)	(.283)	(.101)

Notes: N=1,215. Clustered standard errors in parentheses.

+  $p < .1$  \*  $p < .05$

Table 4

*Model 5 Comparison by Baseline Functioning*

	<u>Reading</u>	<u>Math</u>	<u>Intelligence</u>	<u>Internalizing Behavior</u>	<u>Externalizing Behavior</u>	<u>Health</u>
<u>W1 Low Functioning</u>						
Basic Model						
>= 50% Kin placements	-1.253*	-1.137+	-1.058*	-.496	-.880+	.101
	(.520)	(.636)	(.511)	(.660)	(.475)	(.178)
Simple Change						
>= 50% Kin placements	-.773+	-.264	-.639+	-.592	-.391	.036
	(.426)	(.513)	(.379)	(.570)	(.510)	(.194)
<u>W1 High functioning</u>						
Basic Model						
>= 50% Kin placements	-.214	.412	-.170	-.172	-.265	-.063
	(.257)	(.314)	(.254)	(.330)	(.316)	(.092)
Simple Change						
>= 50% Kin placements	-.043	.175	.060	-.005	-.027	-.019
	(.243)	(.248)	(.258)	(.342)	(.321)	(.109)

Notes: High functioning = 838, Low functioning = 377. Under and overidentification tests were conducted for these subgroups as well, with all models satisfying the underidentification test and all models except the simple change models for math passing the overidentification test.

+  $p < .1$  \*  $p < .05$

## Appendix A

*Comparison of propensity score weighted means and proportions*

	0-49% Kin placements N=668			50-100% Kin placements N=547		
	<u>M</u>	<u>SE</u>	<u>%</u>	<u>M</u>	<u>SE</u>	<u>%</u>
LTFC sample			25.5			24.7
Male			46.8			46.4
Black			40.1			40.0
Hispanic/Other race			20.6			19.6
W4 Age	12.8	0.05		12.7	0.14	
Age at entry to OOHC	10.3	0.13		10.2	0.14	
4 or more siblings			24.6			25.2
No. service needs	4.0	0.10		4.0	0.15	
Cognitive disability			22.6			22.3
Chronic health condition			25.5			25.7
Unlikely to return home			71.6			70.7
Parental substance abuse			46.5			45.9
Highest quintile risk score			17.2			17.5
Abuse			43.9			43.6
Neglect			70.2			70.4
Other maltreatment			25.1			25.5
Population < 50,000			29.4			29.6
Poor area			22.7			23.4
Northeast			13.0			12.8
South			34.8			34.2
West			20.4			20.9
Percent black population	16.5	0.78		16.3	0.70	
County run CW system			40.2			39.2



## Appendix B

*First Stage Coefficients for IV Model (5)*

	<u>Unweighted</u>	<u>Weighted</u>
<b>1. Without W1 outcome score (Basic and simple change models)</b>		
Agency preference for kinship care	.010*** (.001)	.012*** (.001)
Agency has high training requirements for kin	-.083* (.035)	-.097* (.043)
<b>2. With W1 outcome score (Residualized change model)</b>		
Agency preference for kinship care	.010*** (.001)	.012*** (.001)
Agency has high training requirements for kin	-.083* (.035)	-.096* (.042)

Notes: First stage coefficients are displayed for the reading scores models, though these estimates are the mostly identical across models, with very slight variations for the residualized change models.

\* p < .05 \*\*\* p < .001

## Appendix C

*Joint Significance of Covariate Blocks in Model 2*

	<u>Reading</u>	<u>Math</u>	<u>Intelligence</u>	<u>Internalizing Behavior</u>	<u>Externalizing Behavior</u>	<u>Health</u>
<b>Basic</b>						
F test: Child factors	10.61***	9.97***	12.32***	2.35*	4.12***	5.70***
F test: Case & risk factors	1.34	.60	2.88*	.63	1.05	1.62
F test: Geographic controls	2.47*	3.56**	1.82+	1.14	1.50	.54
<b>Residualized change</b>						
F test: Child factors	1.01	1.94+	1.71+	1.02	1.43	5.08***
F test: Case & risk factors	.67	.75	1.12	.65	.40	1.6
F test: Geographic controls	2.31*	4.61***	1.28	1.14	1.13	.55
<b>Simple change</b>						
F test: Child factors	1.15	1.92+	.80	1.20	1.26	3.18**
F test: Case & risk factors	1.58	1.12	.83	.97	.48	.44
F test: Geographic controls	2.81*	4.09***	1.01	1.84+	1.04	.47

+ p < .1 \* p < .05 \*\* p < .01 \*\*\* p < .001

## Appendix E

*Alternative Specifications of Kin Placement for Model 5*

	<u>Reading</u>	<u>Math</u>	<u>Intelligence</u>	<u>Internalizing Behavior</u>	<u>Externalizing Behavior</u>	<u>Health</u>
<b>Alternative specification 1: Only in kin placements</b>						
Basic model						
Only in kin placements	-.563* (.281)	-.040 (.356)	-.495+ (.288)	-.268 (.374)	-.650* (.325)	.005 (.095)
Residualized change						
Only in kin placements	-.350 (.234)	.029 (.256)	-.244 (.246)	-.169 (.358)	-.376 (.308)	.008 (.095)
Simple change						
Only in kin placements	-.267 (.246)	.037 (.262)	-.158 (.269)	-.122 (.362)	-.202 (.340)	.009 (.116)
<b>Alternative specification 2: Ever in a kin placement</b>						
Basic model						
Ever in kin placement	-.555* (.262)	-.039 (.346)	-.493+ (.273)	-.414 (.315)	-.477 (.309)	.045 (.108)
Residualized change						
Ever in kin placement	-.453+ (.254)	-.062 (.246)	-.292 (.224)	-.325 (.311)	-.263 (.295)	.050 (.107)
Simple change						
Ever in kin placement	-.421 (.277)	-.075 (.254)	-.230 (.248)	-.270 (.328)	-.131 (.321)	.051 (.121)

Notes: N=1,215. Standard errors in parentheses.

+ p&lt; 0.1 \* p&lt; 0.05

## Appendix F

*Model 5 Comparison by Age*

	<u>Reading</u>	<u>Math</u>	<u>Intelligence</u>	<u>Internalizing Behavior</u>	<u>Externalizing Behavior</u>	<u>Health</u>
<b>W1 age 8 or younger</b>						
Residualized change						
>= 50% Kin placements	-.743*	-.269	-.264	-.230	-.389	-.116
	(.375)	(.421)	(.333)	(.441)	(.382)	(.150)
Simple change	-.518	-.238	-.096	-.317	-.429	-.141
>= 50% Kin placements	(.371)	(.428)	(.343)	(.425)	(.417)	(.155)
<b>W1 over age 8</b>						
Residualized change						
>= 50% Kin placements	-.136	.199	-.177	-.183	-.384	.025
	(.220)	(.250)	(.233)	(.377)	(.316)	(.238)
Simple change						
>= 50% Kin placements	-.152	.152	-.184	-.106	-.087	.025
	(.227)	(.266)	(.255)	(.407)	(.349)	(.120)

Notes: Age 8 or younger N = 383, Over age 8 N = 832. Cluster standard errors in parentheses.

+ p < .1 \* p < .05 \*\* p < .01

## CONCLUSION

### Summary of Dissertation Findings

This dissertation presented three original research papers, each focused on outcomes for children in out-of-home care arrangements. Generally speaking, I find that the effects of kinship care are not uniformly positive or negative; rather, conclusions require much nuance. Safety, which I examine in the first paper, is expected to be the first consideration in any placement decision. However, differences in safety, at least, as measured using official maltreatment reports, are minimal in size and the incidence of maltreatment in out-of-home care is low overall. Thus, in my second and third papers, I turn to stability and well-being, respectively, to assess for potential differences in quality.

In Paper 2, I find that kinship placements are less likely to result in placement moves. However, there is not strong evidence to suggest that this disparity is attributable to the quality of the caregiver or caregiving environment. Only a small portion of moves are caregiver-requested, so the stability gap does not appear to be largely driven by caregivers' commitment to children. Rather, policy preferences for kinship care appear to explain a large portion of the gap. That is, 1 in 5 children initially placed in non-relative care are re-placed into kinship care, which is considered a more preferred placement. As it pertains to well-being (Paper 3), the results are again mixed. There appear to be both academic disadvantages to kinship care and potential behavioral benefits. Both the advantages and disadvantages of kinship care, in this study, were found to be concentrated among lower functioning children.

How can we make sense of these conflicting findings? Understanding potential benefits and deficits of kinship care should be firmly grounded in theory. While a variety of theories could be applied to this issue, on the whole, there is no consensus on what should be expected of

kinship care. While the majority of research suggests kinship care is better on a variety of outcomes, the theoretical basis underlying this body of research is limited. In paper 3, I suggest a theoretical framework centered on resources – personal, economic, cultural, and social. Specifically, I consider the amount and type of resources placement types are likely to have, and how available resources are likely to be invested. Drawing from a blend of biological, economic and social perspectives, I conclude that while kin may be more likely to invest their resources in a foster child, they, on average, have fewer resources to invest.

### **Implications for Social Work Research, Practice and Policy**

#### **Future Research**

While this dissertation sought to answer some questions about the effects of kinship care, it also identified several areas needing additional research. One important research issue raised in these papers is the need to carefully examine how child welfare outcomes are measured. Consider safety –in the case of out-of-home care, it is measured as the absence of a maltreatment substantiation against a foster caregiver. However, this is a very narrow measure, one likely to underestimate the prevalence. It also may lead to biased estimates of the comparative safeness of non-relative versus kinship foster care. Children may be less likely to disclose maltreatment by a relative, and caseworkers have less contact with kinship foster homes than non-relative foster homes; thus, if maltreatment occurs, it is more likely to be detected in non-relative foster care. Similarly, with stability, all moves are typically counted in research studies, despite not being equivalent in quality, nor being necessarily relevant or attributable to the initial placement type. Research using multiple measures may elucidate these issues.

Second, this dissertation highlights the need to further examine the role of licensure. While licensure status could only be evaluated in the first 2 papers, both studies found that

children placed with unlicensed caregivers do not fare better, and sometimes fare worse, than children in either non-relative foster care or licensed kinship care. This could suggest that the licensure criteria are themselves important to children's outcomes. Yet, it may also suggest that the payments to which only licensed caregivers are entitled play an important role in supporting children's outcomes. Nevertheless, the majority of studies have not considered licensure, and it appears that the factors that make one ineligible for licensure may be negatively associated with at least some placement outcomes. This is particularly important given federal law allowing states to waive licensure requirements for kinship caregivers.

Third, there is a critical need for foster care research to explore potential mechanisms. Across the spectrum of outcomes, results are somewhat conflicting, and it is important to know why. The roles of attachment, biology, economic resources, or cultural similarity in explaining associations between placement type and child welfare outcomes are largely unknown, and yet incredibly important for policy. For instance, if attachment matters more than biology, perhaps the definition of kin need be expanded to include family friends, teachers, neighbors, or others with whom a child may be bonded. Or, if cultural similarity were to explain better behavioral outcomes for children in kinship care, there are important implications for the recruitment of foster parents. Particularly, given that kinship is not an option for every child, we cannot wholly rely on it to solve the problems of the foster care system. In sum, an understanding of mechanisms can help to reshape policy and practice toward improving the conditions of foster children, irrespective of placement type.

### **Policy and Practice**

It is likely that preferences for kinship care will continue on both the state and federal level. Kinship care, as an alternative to traditional foster care, is politically popular and

economically advantageous. Furthermore, it is generally believed that children benefit from such arrangements. Yet, while kinship care policies have changed greatly in the past two decades, many of those changes have yet to be rigorously assessed. The fore-mentioned implications for future research would greatly help in identifying the utility of existing kinship care policies and ways in which policy could better promote foster children's safety, stability, and well-being.

Finally, this dissertation has some implications for child welfare practice. First, on the whole, where safety, stability, and well-being are concerned, kin caregivers and the children placed in their care are not immune from the same problems afflicting non-relative foster care. Yet, prior research has consistently suggested that fewer services, less caseworker contact, and less monitoring are provided to kinship foster homes. Placements, irrespective of type, should be afforded services wherever needs are identified. Second, some discourse is needed to address how agencies and caseworkers should prioritize placement decisions when there are competing policy objectives. For instance, is the instability created by moving children from non-relative to kinship care usurped by foreseeable benefits of being in kinship care? Or, if a potential kinship caregiver has a history of multiple, but unsubstantiated, maltreatment allegations, is that environment still preferable to non-relative foster care? These scenarios suggest a need to understand the extent to which kin remain the preferred placement type in the face of apparent deficits. Yet, this is, to some extent, a subjective standard, which is open to interpretation across all levels of influence, from states to family court judges. This is not to advocate for removing discretion – but rather, for policy to be explicit about the ordering of priorities.