Changes in Placement among Children in Foster Care: A Longitudinal Study of Child and Case Influences

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Abstract

Using Cox regression modeling, this longitudinal study examines child and case characteristics associated with changes in placement among 5,909 Rhode Island children in foster care. Results suggest that half of all children experience at least one placement change while in care. Infants change placements least, and risk increases with child age. Emergency shelter settings have the highest risk of placement change, followed by nonrelative settings, group home settings, and relative foster care. The reasons for removal from the home and the history of previous placements also predict placement changes, as do the interactions between foster care setting and some child characteristics.

Numerous accounts document the often-deleterious psychological and health consequences of frequent changes in placement for foster care children. Placement changes are associated with compromised developmental trajectories and poor adult outcomes (Fanshel and Shinn 1978; Pardeck 1984; Newton, Litrownik, and Landsverk 2000; Rutter 2000; Wulczyn, Kogan, and Harden 2003). Accounts of such negative consequences have prompted the public and legislators to call for action. As a result, laws were enacted that, among other things, emphasize shorter lengths of stay and more stable placements for children in foster care such as the Adoption Assistance and Child Welfare Act of 1980 [U.S. Public Law 96-272] and the Adoption and Safe Families Act of 1997 [ASFA; U.S. Public Law 105-89]. As a result of concerns voiced in ASFA legislation with levels of placement stability, placement stability also is incorporated as an indicator of child welfare system functioning in the ongoing federal Child and Family Services Review (CFSR) process.

Research shows a relation between multiple placement changes and negative developmental outcomes for children. Children who experience multiple placement changes are more likely to exhibit attachment difficulties (Palmer 1996), externalizing behavior problems (Pardeck 1984; Fanshel, Finch, and Grundy 1989; Palmer 1996; Fernandez 1999; Barber, Delfabbro, and Cooper 2001), and internalizing behavior problems (Newton et al. 2000). Placement changes are associated with disruption in educational settings and decreased academic performance (Zima et al. 2000). Multiple placement changes are linked to increased levels of physical and mental health service use, as well as to the economic cost associated with such patterns of service use (Rubin et al. 2004). Finally, placement instability is associated with increases in rates of juvenile delinquency among male foster youth (Ryan and Testa 2005).

Multiple changes in placement also result in delayed permanency outcomes, such as reunification, adoption, and guardianship (Proch and Taber 1985). A history of repeated placements is linked to subsequent placement instability (Fernandez 1999; Webster, Barth, and Needell 2000), a reduced likelihood of reunification and exiting from care (Pardeck 1984; Goerge 1990; Fernandez 1999), an increased likelihood of returning to care after reunification (Courtney 1995), and placements in costly and restrictive settings (Usher, Randolph, and Gogan 1999; Redding, Fried, and Britner 2000).

Despite recognition of the importance of stability in foster care placements, rigorous research on the issue is not as commonly pursued as is research on such child welfare outcomes as exits from or reentry to foster care. Moreover, operational definitions of placement instability vary widely across existing studies, and study samples frequently are limited to children in foster homes or group home settings, excluding children placed in shelter settings. This is problematic because shelter placements occur with increasing frequency in the child welfare system, particularly as a temporary placement for young children (U.S. Department of Health and Human Services 2004). Limits to generalizability of study findings result from the use of high-risk samples such as those involved in specialized or treatment foster care (e.g., Staff and Fein 1995; Smith et al. 2001) or remain in foster care for extended periods (e.g., Webster et al. 2000).

Owing to differences in methodology across studies estimates of placement breakdown vary and interpretation of study findings is uncertain (Usher et al. 1999). In general, although research suggests that most children in traditional foster care placements experience relative stability (e.g., Wulczyn et al. 2003), there is evidence that some children experience multiple changes in placement. For example, several studies report that between one-quarter and one-half of children experience three or more placement changes during their first year in care (Pardeck 1984; Millham et al. 1986; Kufeldt, Armstrong, and Dorosh 1989).

The limited available research suggests that rates of change in placement are related to certain child and case characteristics. For example, findings suggest that older children are more likely to change placements than younger children (Barber et al. 2001; Smith et al. 2001; Wulczyn et al. 2003; James 2004). Gender effects usually are minimal (e.g., Newton et al. 2000) or disappear when other factors, such as child behavior problems, are controlled (Palmer 1996); but other studies find that girls are more likely to change placement settings

than boys in specialized foster care and residential settings (Smith et al. 2001; Wulczyn et al. 2003). Few studies of placement stability include race as a covariate, but those that have generally report that race is not a significant predictor of stability (e.g., Newton et al. 2000). Finally, studies show that the presence of child emotional or behavioral problems is a consistent risk factor for placement instability (Pardeck 1984; Palmer 1996; Newton et al. 2000; Barber and Delfabbro 2003; James 2004).

Some data suggest that children removed due to neglect are less likely to experience placement changes than children removed for other forms of maltreatment, including physical or sexual abuse (Webster et al. 2000). Sigrid James (2004) observes an increased risk for behavior-related placement changes among children removed for emotional abuse. In separate analyses of patterns of placement disruption, Sigrid James, John Landsverk, and Donald Slymen (2004) report that children removed from their homes for sexual abuse are over-represented in episodes of care marked by early stability (i.e., long-term placements lasting most of a 16-month period). However, the authors also report that children removed for sexual abuse are over-represented in a group composed of youth experiencing multiple foster care placement changes in which no setting lasted longer than 9 months.

Several studies report that relative and kinship foster care placements are more stable than other types of out-of-home placements (Fernandez 1999; Webster et al. 2000; Sallnäs et al. 2004). There also is evidence that children placed in residential settings change placements less frequently than children in nonrelative family foster homes (Sallnäs et al. 2004). Most studies of placement stability exclude children who are placed in shelter settings or who remain in care for limited periods. As a result, there is little empirical evidence on how such settings affect rates of placement stability.

Finally, most studies of outcomes for children in foster care restrict samples to those children entering care for the first time (e.g., Courtney and Wong 1996; Wells and Guo 1999). Few, if any, studies specifically examine whether experiencing more than one episode of foster care affects rates of changes in placement for children. This is in spite of research suggesting that significant numbers of children may re-enter care multiple times (Courtney 1995; Wells et al. 1999). Children with a history of prior system contact (either within child protection services or within foster care populations) are shown to be at greater risk for adverse child welfare outcomes (e.g., English et al. 1999; Marshall and English 1999) and are demonstrated to have different experiences in foster care than first-time entries (e.g., Smith et al. 2001; Connell et al., in press). At a minimum, research is needed to generalize findings from previous studies on placement stability to a broader range of foster care children, many of whom are in care after having been returned home from a previous episode.

This study examines predictors of placement change for a statewide sample of children who entered foster care between January 1998 and December 2002. Changes in placement are examined and predicted by child and case characteristics that have been shown to relate to child safety, permanency, or well-being. All children who enter care through a foster home, group home, or emergency shelter are included in the analysis. Using a Cox regression modeling approach appropriate for repeated events modeling, up to five placement changes

are included in the analytic model for any given episode. Estimations include interaction terms between foster care setting and a number of child characteristics as an aid in explaining some of the inconsistent findings in the literature and to increase the relevance of the analysis for child welfare agencies charged with maintaining placement stability across different types of foster care settings.

Hypotheses

Previous research suggests several hypotheses regarding the influences of child and case characteristics, respectively, to changes in placement. Age is likely to be a critical factor in risk for placement change, with children and adolescents at greater risk than infants. In addition, presence of an identified disability or diagnosed mental health problem is expected to increase risk for changes in placement. Based on the literature, foster care setting is expected to affect the rates of transition. Children placed in relative foster homes are anticipated to have the lowest rate of changes in placement, followed by children in nonrelative foster home placements and those in group home placements; children in emergency shelter settings are expected to have the highest rates of changes in placement. A history of prior removals also is expected to be associated with increases in rates of placement change relative to being removed and placed in care for the first time.

The present study also examines potential interaction effects between foster care placement setting and child-related factors, including gender, mental health problem, and disability status. Research on such interaction effects is lacking, limiting the relevance of studies for guiding appropriate child welfare services to promote placement stability. Interactions with gender are investigated because such effects may explain the equivocal relation of the variable to placement stability found in the literature. Mental health problems and disability status are chosen because the variables increase risk for placement change; the interaction analyses may help to point out the settings in which risk is highest. For example, group home settings may be better prepared than traditional foster homes to address the treatment needs for these specialized foster care populations. If so, the likelihood of placement change may be lower for children who have a mental health problem or identified disability and are placed in group home settings than for those placed in traditional foster home settings.

Method

Site

Data for this study are provided by the Rhode Island Department of Children, Youth and Families (RIDCYF). This state authority delivers a wide range of foster care services, including placing children in family foster homes (both relative and nonrelative households), group homes, institutional settings (e.g., psychiatric hospitalization and assessment settings), supervised apartments, and emergency shelter care. During the period of time under investigation, Rhode Island's foster care population remained relatively stable. Entries to foster care ranged from approximately 1,500 to 1,800 children per year.

Data and Sample

Data on all foster care placements in Rhode Island are extracted from the Rhode Island Children's Information System (RICHIST; the management information system for RIDCYF) for the period from January 1, 1998 through December 31, 2002. A foster care placement is defined as the period during which a child in state custody resides in a given foster care setting (e.g., a relative foster home, nonrelative foster home, or group home facility). Placements are grouped into episodes of care. An episode begins with a new removal from the child's home (i.e., entry to care) and continues until the child is discharged from foster care. Thus, a given episode in foster care involves one or more placements in foster care settings. The episode begins at removal from the home and includes any placements that occur until the child is either discharged from care or the data collection period ends. Although children may experience multiple episodes of foster care during the period under investigation, the present analyses only examine the first episode that begins during the window of observation.

For this study, placement data are extracted for a total of 6,723 children. Approximately 2 percent of these cases are excluded from the analyses due to data problems. For example, cases might be excluded because placement data end prior to the data collection period and no discharge is indicated, or because new removals occur without a report of discharge from a previous episode. An additional 10 percent of cases are excluded because the children were placed with Diagnostic Assessment Services (DAS), an inpatient program providing psychological and psychiatric evaluation services that lasts for a period of up to 2 weeks. Typically, children placed in DAS return home at the end of the 2-week assessment period. The final sample consists of 5,909 children served in foster care over a 5-year observational period. Demographic and case characteristics are provided in table 1.

Data Analysis

The present study examines child and case characteristics associated with likelihood of placement change. The statistical technique used is Cox regression modeling for repeated events (Wei, Lin, and Weissfeld 1989; Allison 1995) as implemented in the computer program SAS, version 9.1. Cox regression models provide a robust method for estimating likelihood of the occurrence of an event, and for estimating the factors associated with occurrence in the presence of cases for which the event time is not known due to censoring (i.e., the event does not occur during the observational period). Typically, Cox regression models are used to analyze events that occur only once during an observation period. From an analytic perspective, repeated events pose a problem because standard error estimates are biased downward and test statistics are biased upward if factors associated with the occurrence of the event are intracorrelated across the multiple events per case (Allison 1995). The method identified by L.J. Wei, D.Y. Lin, and L. Weissfeld (1989; hereafter, the WLW method) is used here to adjust the estimates of standard errors to correct for the intracorrelated data.

In the present analyses, the first foster care episode during the study period serves as the index event for a child entering foster care. Because children may experience multiple placement changes during a given episode, the analyses examine up to five placements for

each child. Analyses only consider five placements in an effort to capture the majority of placements experienced by children without weighting the analyses too much in favor of the handful of children who experiences many changes.

There are two possible methods to measure time in analyses with repeated events. One method is to calculate time from a common origin, in this case, the time since removal from parental custody (Allison 1995). The second method is to calculate the time since the last event (i.e., the time since the previous placement change). This study uses the common origin approach, which is most appropriate when it is "reasonable to argue that the hazard depends on time since the individual first became at risk, regardless of how many intervening events have occurred" (Allison 1995, 246). For censored cases in which a change in placement does not occur, total time is calculated as the period from entry into care to the end of the observational period. Data on children who exit foster care (i.e., who were discharged from the index episode) are censored at the time of discharge.

Cox regression models provide unbiased estimates of the effect of a particular characteristic on the likelihood of event occurrence. That estimate can be expressed in the form of a risk ratio. A risk ratio corresponds to the percentage change in the hazard rate of the occurrence of an event for a change in value of a covariate (e.g., age of entry, gender, race or ethnicity) relative to a reference value for that covariate. A risk ratio of 1 indicates no difference in probability between the reference and the comparison value. A risk ratio statistically less than 1 indicates a decrease in the probability of the occurrence of an event for the comparison value, and a ratio statistically greater than 1 indicates an increase in likelihood of the occurrence of the event for the comparison value compared to that of the reference value.

Data Preparation and Coding—Demographic characteristics (e.g., age, gender, race and ethnicity) used in the analysis are extracted directly from RICHIST, as are variables measuring the reason for removal and placement settings. Case workers may enter up to 15 potential reasons for removal in RICHIST. The current analyses rank removal reasons according to seriousness, and children are assigned the most serious indicated removal reason. Removal due to sexual abuse is rated as the most serious, followed by physical abuse, neglect, parental substance abuse (alcohol or drug abuse), child behavior problems (combined with child alcohol or drug use), and other reasons. This last category includes such reasons for removal as abandonment, relinquishment, inadequate housing, parental incarceration, and parental death.

Caseworkers identify a child's placement setting from dozens of potential settings within RICHIST. We collapse these setting types into four broad categories: placements in a relative foster home, nonrelative foster home, group home (including placement in a group home, residential facility, supervised apartment setting, independent living facility, or institutional placement such as a psychiatric hospital), and emergency shelter (i.e., temporary group care facilities).

Finally, each case's history of prior foster care removals, child disability status, and diagnosed mental health problem are measured based on state submissions to the federal

Adoption and Foster Care Analysis and Reporting System (AFCARS). Child disability status is measured as a composite variable indicating whether children are diagnosed with a disability, including mental retardation, visual or hearing impairment, or physical disability. Mental health problem is measured as whether children are diagnosed with an emotional disturbance under the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM IV; American Psychiatric Association 1994).

Results

Descriptive results suggest that the mean number of placements for the study sample is 2.9 (SD = 3.2). The median number of placements is 2.0, and the range is from 1 to 37 placements during the period of observation. These results suggest that half of all children in the sample experience at least one change in placement. This is the case even if the length of stay in foster care varies from child to child; many children are present for only a portion of the observational period (i.e., they entered care during the observational period and remained in care at the completion of the data window). Figure 1 provides information on the pattern of changes in placement during the first five placements in care for index episodes.

Kaplan-Meier analyses suggest that the median time to the initial change in placement is 3.9 months. However, this figure varies considerably depending on the type of initial placement setting. Analyses suggest that median time to the initial change in placement is longest for relative foster home placements (15.7 months), followed by group home placements (5.5 months), nonrelative foster home placements (2.5 months), and emergency shelter placements (0.2 months). Differences in median time for each setting are statistically significant ($p < 0.05$).

Figure 2 provides a kernel-smoothed hazard function for the initial change in placement. Because cumulative hazard functions are very erratic in continuous-time Cox regression models, the kernel-smoothed hazard function may be used to gain some sense of the estimate of the hazard (that is, rate of occurrence of the event) within a given time frame called the bandwidth. This analysis provides a more readily interpretable estimate of the pattern of risk for the occurrence of an event over the time an individual is at risk (Allison 1995; Singer and Willett 2003). Such analyses are not able to incorporate repeated events, which in this case include the multiple placements per child. Instead, they only provide a perspective on risk for the first occurrence of an event (change in placement). Figure 2 suggests that, given a 3-month bandwidth, there is a relatively high risk for a change in placement immediately following entry into care. This risk appears to decline throughout the ninth month in the first placement; a brief period of stability follows (approximately 3 months). There is a sharp increase in risk for a change in placement at the 12-month mark. That increase continues through the sixteenth month, after which the risk for a change in initial placement undergoes a period of consistent decline. The spike in the hazard function after the thirtieth month is likely due to the low number of children who remain in their initial placement for that length of time. It should not be interpreted as a significant increase in risk at that point (Singer et al. 2003). From an initial sample of 5,909 children entering foster care, only 79 children remained in their initial placement after 30 months.

Results of the Cox regression models for change in placement are presented in tables 2 and 3. Tests of model significance are presented in table 2; table 3 provides the parameter estimates, standard errors, and risk ratios for the main effects model (model 1) and for two models that estimate two-way interaction effects. One model interacts foster care setting and child gender (model 2). Another interacts foster care setting and diagnosis of a mental health problem (model 3). A fourth model was calculated to estimate interaction effects for foster care setting and child disability status. That model is not reported in the table because it does not produce results statistically different from those calculated under model 1. For ease of presentation, models 2 and 3 present only those beta weights and risk ratios attached to the interactions. Full multivariate models were tested, and the beta weights and risk ratios for other factors essentially remain consistent across models.

As table 3 suggests, the inclusion of covariates improves fit of the model predicting changes in placement over that of the base hazard model for model 1 to a statistically significant degree ($\chi^2 = 2,801.3$ [24], $p < 0.001$). The table reveals that demographic and case characteristics have a number of statistically significant relationships with the probability of experiencing a change in placement. With respect to demographic characteristics, age is related to the rate of change to a statistically significant degree ($\chi^2 = 95.02$ [4], $p < 0.001$), with infants having the lowest estimated rate. The likelihood of a change in placement is modeled to be greater for youth in older age groups than for infants in care (risk ratio $_{2-5 \text{ yrs}}$ = 1.29, $p < 0.001$; risk ratio $_{6-10 \text{ yrs}}$ = 1.24, $p = 0.002$; risk ratio $_{11-15 \text{ yrs}}$ = 1.66, $p < 0.001$; risk ratio $_{16-21 \text{ yrs}}$ = 1.69, $p < 0.001$). In the model, gender, child race and ethnicity, disability status, and mental health problem are not related to rates of changes in placement to a statistically significant degree.

With respect to case-level characteristics, a history of previous removals is modeled to relate to the likelihood of a change in placement to a statistically significant degree ($\chi^2 = 12.9$ [2], $p = 0.002$). Although results do not suggest that children with one prior foster care removal have elevated rates of changes in placement compared to children removed for the first time, they do suggest that children with two or more such removals experience higher rates of changes in placement (risk ratio= 1.20, $p < 0.01$). The results suggest that the primary reason for removal is associated with the rate of change in placement ($\chi^2 = 32.1$ [5], $p < 0.001$). Compared to children removed because of neglect, those removed due to sexual abuse (risk ratio = 0.73, $p < 0.001$) or for other reasons (risk ratio = 0.78, $p < 0.001$) are modeled to experience lower rates of changes in placement. The rates of changes in placement for children removed due to physical abuse, parental substance abuse, and child behavior problems, respectively, do not differ to a statistically significant degree from the rates of children removed as a result of neglect. The largest coefficient is attributed to placement setting ($\chi^2 = 1,926.8$ [3], $p < 0.001$); children placed in a relative foster care home have statistically lower rates of changes in placement than children in other settings. Comparing children in relative foster home placements with children in all other care settings, those in an emergency shelter have the highest estimated rate of changes in placement (risk ratio = 8.86, $p < 0.001$), followed by children in nonrelative foster homes (risk ratio = 3.18, $p < 0.001$), and children in group home placements (risk ratio = 2.37, $p < 0.001$).

Model 2 tests the two-way interactions between service settings and gender. In this model, the main effect of service setting remains, and one statistically significant interaction effect emerges ($\chi^2 = 29.7$ [3], $p < 0.001$). After controlling for the main effects of all covariates (including gender and service setting) the estimated rate of changes in placement is statistically lower for males in group home settings than for those in the reference category (risk ratio = 0.54, $p = 0.01$).

Model 3 tests the two-way interactions between service settings and presence of a mental health problem. The results suggest that the main effects for service setting generally are consistent with those in model 1, though a statistically significant coefficient emerges for mental health problem ($\chi^2 = 5.1$ [1], $p = 0.02$; risk ratio = 1.78, $p = 0.02$). Further, a statistically significant interaction effect emerges ($\chi^2 = 20.4$ [3], $p < 0.001$). Results suggest that the risk in for changes in placement is lower among children with an identified mental health problem who are in group home settings risk ratio = 0.47, $p < 0.01$) or emergency shelter settings (risk ratio = 0.56, $p = 0.04$) than for those in the reference category. These results suggest that children with mental health problems are less likely to experience changes in placement when placed in settings other than foster homes. Failure to include this interaction effect may mask potential differences in rates of placement change for children with mental heath problems, as shown in model 1.

Two sets of post-hoc analyses examine whether sampling procedures affect the findings of this study. The first set of analyses addresses the potential effect of including cases in which children have experienced episodes of foster care prior to the study period (i.e., children with a history of previous foster care placements rather than a first-time entry cohort). For these analyses, cases with one or more prior episodes of care are excluded. The results of these analyses are nearly identical to those reported above. The one minor exception is that, in the first-time entry cohort, children with an identified disability are found to be less likely to experience changes in placement than those without an identified disability. The second set of analyses address whether the results are affected by including emergency shelter placements in the analyses. These analyses exclude such placements from the data set. Children who also experienced other types of placement settings (e.g., foster home or group home) were retained in the analyses while in the other settings. These post-hoc analyses reveal only two findings that differ from those reported in the initial models. A statistically significant effect of gender emerges; males in the post-hoc analyses are less likely than counterparts in the initial analyses to experience a change in placement. In addition, children removed from home because of child behavior problems are found to have higher rates of change in placement in the post-hoc analyses than in the initial set of models.

Discussion

The results of the Cox Regression analyses are generally consistent with the study's hypotheses regarding the factors that influence changes in foster care placement. Consistent with other studies (e.g., Usher et al. 1999; James 2004) findings show that a significant number of children in care experience at least one placement change. Charles Usher and colleagues (1999) highlight potential methodological flaws that can artificially inflate levels of change in placement (e.g., use of cross-sectional, truncated, or high-risk samples),

arguing that a more accurate representation of risk can be obtained using longitudinal designs and a more broadly representative sampling approach. The current approach is consistent with these recommendations. The use of a longitudinal design and a sampling strategy that includes all children entering care during the study window may explain why the rate of changes in placement found here is lower than that reported elsewhere (e.g., Staff et al. 1995; Webster et al. 2000; Smith et al. 2001; James 2004).

In the current data, initial placements last a median of 3.9 months. There is wide variability in the time to the first placement change. Time to change varies with the type of foster care setting; ranging from 0.2 months in emergency shelter placements to over 15 months in relative foster home settings. The pattern of risk for a change in placement suggests a relatively high initial risk (likely partially attributed to the extremely quick transitions observed in emergency shelter settings) followed by a decline in risk through the ninth month in care and a period of relative stability from the ninth through the twelfth month. There is a sharp increase in risk for an initial change in placement from the twelfth to the sixteenth month, after which the likelihood of an initial change in placement drops. The increase in initial placement changes from months 12 to 16 is notable since it appears to coincide with the ASFA time frames for making permanency decisions.

As in previous research, and in line with study hypotheses, a number of demographic and case characteristics are found to increase the likelihood a child experiences a change in placement. As expected, age is the primary child characteristic associated with increased risk a change in placement. Child gender and race and ethnicity are not associated with rates of placement change. That is not unanticipated in light of the equivocal findings in the literature. Results of a two-way interaction between foster care setting and gender suggest that the risk of a change in placement for boys in group home settings differs from that for girls in such settings; the boys experience fewer placement changes than the girls. These results parallel findings that girls are at greater risk for running away from placement than boys (e.g., Courtney et al. 1996; Connell et al., in press) and suggest that more research is needed to understand movement trajectories for girls in settings other than foster care homes.

Model 1, which tests main effects for child and case characteristics, contains the unanticipated finding that children with an identified disability or mental health problem are not more likely than children with out such risk factors to experience changes in placement. A subsequent test for the two-way interaction between foster care setting and mental health problem reveals that children with an identified disorder are more likely to experience changes in placement while in care, though their risk appears to be lower in settings other than foster homes (i.e., group home or emergency shelter settings) than in relative and nonrelative foster home settings. Disability status does not demonstrate similar interactions with foster care setting. The use of an active specialized developmental disabilities unit within RIDCYF, and the unit's strong emphasis on placement stability, may reduce the effect of disability on placement instability.

Case characteristics, particularly the current placement setting, appear to play a prominent role in changes in placement. As expected, children in relative foster placements are found

to have the lowest rate of changes in placement. Children in a group home are nearly two and one-half times as likely to have a change in placement as children in a relative foster care setting. Children in nonrelative foster homes are over three times as likely to have a placement change as children in relative foster homes. Children placed in an emergency shelter have the highest rates of changes in placement, nearly nine times the rate of children in relative foster homes.

Reasons for removal are also found to affect the likelihood of a change in placement. Children removed as a result of sexual abuse or other reasons are less likely to have a change in placement than children removed due to child neglect. The finding for other removal reasons is not surprising because previous analyses suggest that cases in which children are removed for other reasons have fairly high rates of reunification (Connell et al., in press). The finding with respect to sexual abuse is especially encouraging. Previous research suggests that children who experience sexual abuse exit care to reunification or adoption more slowly than are children removed due to neglect or physical abuse (Courtney et al. 1996; Connell et al., in press). However, the current findings suggest that children removed for sexual abuse are being placed in relatively stable long-term foster care settings. Finally, although a history of one prior removal is not associated with increased risk for a change in placement, a history of two or more prior removals is associated with increased risk.

Potential concerns about the effects of our sampling procedure are addressed through a series of post-hoc analyses. The exclusion of children who were previously removed reveals only one difference from the initial model. Excluding emergency shelter placements from the model results in only two changes from our initial model. The post-hoc analyses provide further evidence for the validity of the study findings. By retaining children with varying placement histories in the study sample (i.e., children with a history of prior removals, children who have been in emergency shelters), this research is able to examine a sample of children who more closely resembled the entire diverse group of children in substitute care at any given time. Further studies of the factors that influence likelihood of changes in placement should examine what effects, if any, can be attributed to particular placement experiences such as emergency shelter or a history of prior removals.

This study has implications for child welfare practice, as well as for future avenues of research. The findings suggest that there are particular time periods when children are at increased risk for experiencing an initial change in placement. The pattern of risk for a change indicates that efforts to promote stability should be targeted during the first 6 months in care and that efforts to ensure stability should be renewed as workers begin to make critical permanency decisions after 12 months in care. Some of the placement changes that occur after 12 months in care may result from system-level efforts to address the permanency plan, but care must be taken to help the child plan for such changes in placement after a year-long period of marked stability.

Setting also plays a critical role in the likelihood of a change in placement. It comes as little surprise that children in emergency shelter settings change placements at a high rate; shelters are a temporary placement setting for children who enter care or who may not have a more

stable placement option. More research is needed to understand how shelters are currently used. Research should also assess the effects of such placements on child well-being and later placement stability when alternative placement options become available.

This study also finds that relative foster care settings offer a greater likelihood of placement stability than other settings, but compared to other settings, relative care arrangements are found by other research to result in longer foster care stays than other care settings (Testa 2001; Connell et al., in press). This is an extension of the trade off often faced by child welfare systems, which must balance the need to expedite reunifications and the demand to maximize placement stability. Perhaps training of foster parents may increase stability in foster home settings, particularly related to the special challenges associated with fostering older youth or children with identified mental health or behavioral problems. Rigorous training programs demonstrate promise at reducing rates of disruptive behavior and associated changes in placement (e.g., Fisher, Ellis, and Chamberlain 1999; Fisher and Chamberlain 2000).

Despite the promising findings of the present study, a number of limitations are acknowledged. First, the child and case characteristics used in the analytic model are abstracted from an administrative database. The limitations of administrative data are noted elsewhere (e.g., Drake and Jonson-Reid 1999; Vogel 1999; English, Brandford, and Coghlan 2000). They include potential concerns over data quality, as well as a recognition that data elements are typically fairly narrow in focus. Some characteristics, such as mental health or disability status, may pose greater concerns for data quality than others, such as service setting. That said the authors made a significant effort to augment the RICHIST data with variables extracted from AFCARS to capture a range of child and family factors. Despite its limitations the administrative data do provide a means of tracking a large cohort of children over time, as is critical in child welfare research.

A second limitation of the present study is that the design is purely observational. The pattern of effects is observed in this single cohort, and it is not clear how well the findings generalize to other states. Despite its small geographic size, Rhode Island does encompass urban, exurban, and rural environments. The state has a diverse population in urban and exurban areas.

Lastly, the focus on changes in foster care placement ignores the potential reasons why such changes are made in the first place. Although placement changes may occur as a result of problematic child behavior or a need for more intensive services (e.g., James 2004), other changes may represent a move toward less-restrictive settings. To capture such information, Rhode Island is revising its tracking system and attempting to clarify the reasons why placement changes occur.

Despite these limitations, the present study provides a comprehensive investigation of the rate and pattern of placement changes for a longitudinal, statewide cohort of children entering foster care between 1998 and 2002. It examines a broad array of factors drawn from the limited research that has been conducted on this issue and uses an expanded definition of changes in placement. The study is also significant in its inclusion of children entering care

from a variety of settings (including emergency shelter placements) as well as those who remain in care for only a limited time. Results of the study suggest that most children in care are likely to experience at least one change in placement and risk for such transitions is strongly linked to placement setting as well as to a number of child and case characteristics. It is critical that future work continue to investigate the mechanisms by which such factors affect placement change, as well as the immediate and longer-term effects of such experiences on children in care.

Acknowledgments

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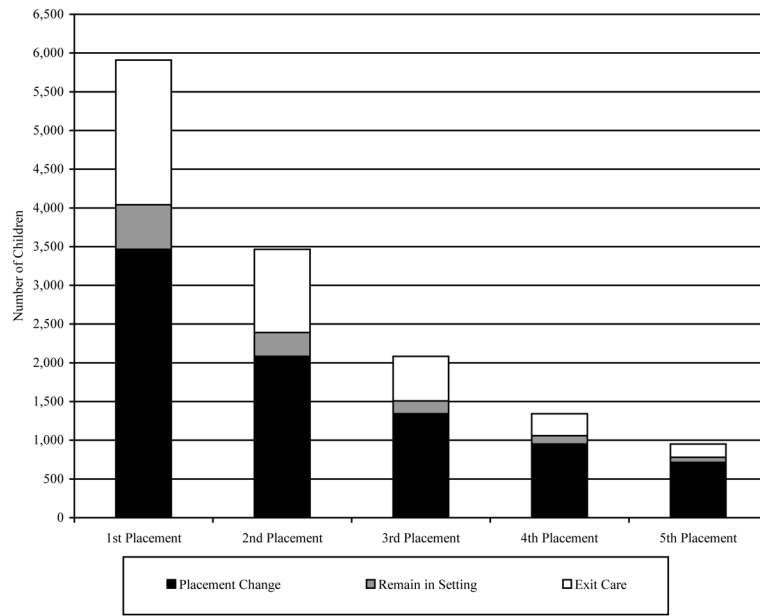
Figure 1.
Placement changes experienced by children in foster care (first five placements in care).
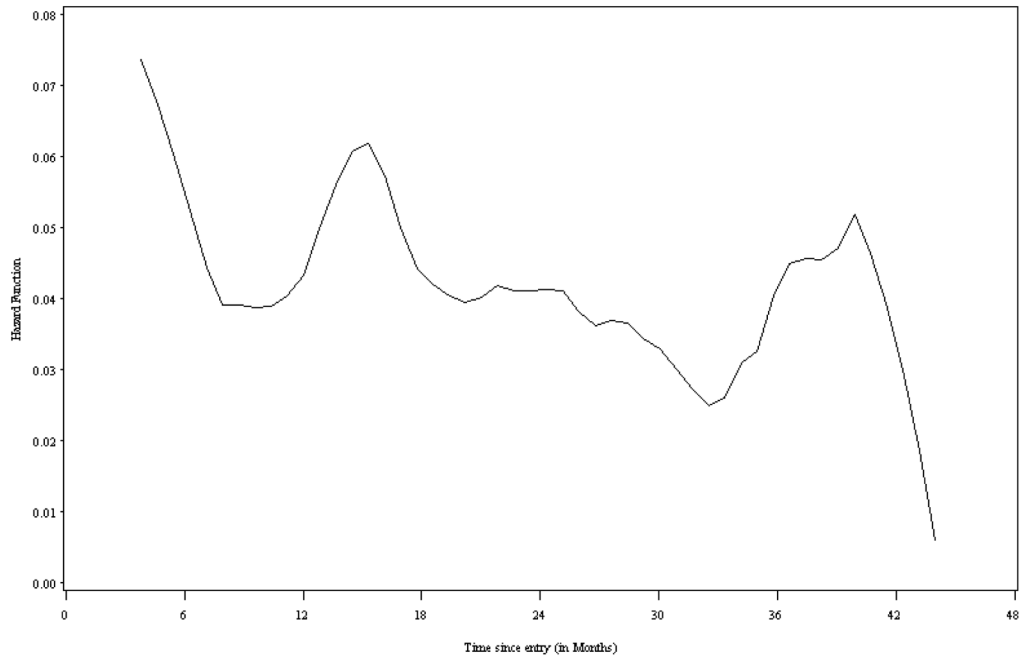
Figure 2.
Kernel-smoothed hazard function for first placement change (bandwidth = 3 months).

Table 1

Demographic and case characteristics of children in foster care (Jan. 1, 1998–Dec. 31, 2002).

Variable	N	Percent
Child characteristics:		
Gender:		
Male	3,266	55.3
Female	2,635	44.6
Missing	8	0.1
Race and ethnicity:		
African American	1,034	17.5
Asian or Pacific Islander	106	1.8
Caucasian	3,337	56.5
Hispanic (Caucasian)	932	15.8
Native American	94	1.6
Two or more races	288	4.9
Missing	118	2.0
Age: [a]		
0–1	1,158	19.6
2–5	871	14.7
6–10	990	16.8
11–15	1,940	32.8
16 – 20	942	15.9
Missing	8	0.1
Child risks:		
Child disability	1,151	19.5
Child mental health problem	626	10.6
Case characteristics:		
Primary reason for removal:		
Sexual abuse	186	3.1
Physical abuse	1,264	21.4
Neglect	1,699	28.8
Parental substance abuse	643	10.9
Child behavior problems	1,490	25.2
Other[b]	624	10.6
Missing	3	0.1
Primary reason for removal:		
Nonrelative foster care	1,310	22.2
Relative foster care	2,108	35.7
Group home	1,013	17.1
Emergency shelter	1,478	25.0
Primary reason for removal:		
None	4,816	81.5

Variable	N	Percent
1 prior	617	10.4
2 or more priors	342	5.8
Missing	134	2.3

[a]X = 9.4 years, SD = 6.1 years.

[b]For example, the reasons include abandonment, relinquishment, inadequate housing, parental incarceration, and parental death.

Table 2

Model significance tests.

	−2 Log L without Covariates	−2 Log L with Covariates	Model Chi-square	df	P
Model 1	130,581.8	126,260.5	2,801.3	22	<.0001
Model 2	130,581.8	126,168.7	2,361.9	25	<.0001
Model 3	130,581.8	126,205.0	2,072.4	25	<.0001

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Table 3

Cox regression model for change in placement.

Variable	Model 1: Main Effects Model B	SE	Risk Ratio	Model 2: Setting X Gender Interaction B	SE	Risk Ratio	Model 3: Setting X Mental Health Problem Interaction B	SE	Risk Ratio
Age at entry to care:									
0 – 1[a]	—	—	—						
2 – 5	0.26	0.05	1.29**						
6 – 10	0.22	0.06	1.24**						
11 – 15	0.51	0.06	1.66**						
16 – 20	0.53	0.06	1.69**						
Gender:									
Female[a]	—	—	—	—	—	—			
Male	−0.05	0.03	0.95	0.13	0.22	1.13			
Race and ethnicity:									
Caucasian[a]	—	—	—						
African American	−0.03	0.04	0.97						
Hispanic	0.06	0.04	1.06						
Native American	0.03	0.15	1.03						
Asian or Pacific Islander	−0.04	0.11	0.96						
Two or more races	0.00	0.06	1.00						
Child risk factors:[b]									
Child disability	−0.06	0.04	0.94						
Mental health problem	0.06	0.05	1.06				0.58	0.25	1.78*
Prior removals:									
None[a]	—	—	—						
1 prior	−0.06	0.05	0.94						
2 or more prior	0.18	0.06	1.20**						
Reason for removal:									
Neglect[a]	—	—	—						

Variable	Model 1: Main Effects Model			Model 2: Setting X Gender Interaction			Model 3: Setting X Mental Health Problem Interaction		
	B	SE	Risk Ratio	B	SE	Risk Ratio	B	SE	Risk Ratio
Physical abuse	−0.02	0.05	0.98						
Sexual abuse	−0.32	0.08	0.73 **						
Parental substance Abuse	−0.07	0.06	0.94						
Child problem behavior	−0.06	0.05	0.94						
Other [c]	−0.25	0.06	0.78 **						
Service setting:									
Relative foster care [a]	–	–	–	–	–	–	–	–	–
Nonrelative foster care	1.16	0.05	3.18 **	1.20	0.20	3.32 **	1.17	0.12	3.22 **
Group home	0.86	0.06	2.37 **	1.26	0.25	3.51 **	0.97	0.16	2.65 **
Emergency shelter	2.18	0.06	8.86 **	2.21	0.27	9.13 **	2.25	0.16	9.44 **
Setting X Gender Interaction:									
Relative foster care X male				–	–	–			
Nonrelative foster care X male				−.08	0.23	0.92			
Group home X male				−.62	0.25	0.54 *			
Emergency shelter X male				−.08	0.28	0.92			
Setting X mental health problem interaction:									
Relative foster care X mental health problem							–	–	–
Nonrelative foster care X mental health problem							−0.24	0.27	0.78
Group home X mental health problem							−0.76	0.29	0.47 **
Emergency shelter X mental health problem							−0.58	0.29	0.56 *

*
p < .05

**
p < .01

[a] Reference category for contrasts

[b] Reference category for Child and Family Risk Factors is "not present"

[c] For example, the reasons include abandonment, relinquishment, inadequate housing, parental incarceration, and parental death.

Note: A total of 12,839 placements were included in analyses; of these 8,083 experienced an event (i.e., placement change) and 4,746 were censored (37%).