

# Factors Associated with the Reunification of Foster Children with Their Families

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This article reports the results of a study of the family reunification process for a sample of children placed in foster care in California. A Cox proportional-hazards model was developed to explore the effects of child, family, and system variables on the hazard rate for family reunification. Children initially placed in kinship care were less likely to go home in the first few months than other children. The effects of explanatory variables and interactions between those variables with respect to reunification rates are discussed.

"Permanency planning," the philosophy behind the Adoption Assistance and Child Welfare Act of 1980 (P.L. 96-272) and its implementation legislation enacted at the state level, calls for prompt action to maintain children in their own homes or return them safely to their own homes as soon as possible when they are placed into foster care. In the event that children placed in foster care cannot be returned home, permanency planning requires that they be placed, as quickly as possible, in permanent homes with other families. While the goals of permanency planning are laudable, they have not always been met in practice. In particular, efforts to keep abused and neglected children in the homes of their natural parents have not resulted in long-term stability, let alone a decrease in the foster care population. For example, the number of children in foster care in California (the location of the study reported in this article) on any given day has doubled since 1984 and now exceeds 70,000.<sup>1</sup> The proportion of children in

foster care grew 55 percent from 62 per 10,000 California children in 1986 to 96 per 10,000 in 1990. Similar growth in the foster care population has been observed in other large states and nationally.<sup>2</sup>

While foster care has been growing, the changes in the characteristics of children entering the system have created new challenges. This is particularly true of the large and diverse foster care population in California. A shifting ethnic mix in California's child population would lead one to expect some proportional growth in the population of non-Caucasian children receiving child welfare services. However, this is not the case. Asian-American and Hispanic children are less likely to be in foster care than their overall numbers would indicate, whereas Caucasian children are in foster care at a rate that is proportional to their share of the child population. African-American children, however, are more than three times as likely to be in foster care as their overall numbers would indicate.

California's child population has also been getting younger, contributing to a change in the age distribution of foster children. The growth in the population under 5 years old accounts for more than half of the growth in the overall child population between 1980 and 1990.<sup>3</sup> This trend (along with the crack epidemic, which has sent many infants needing protection into foster care) has changed the age distribution of children receiving child welfare services. The average age of children in out-of-home care decreased from 9.3 years in 1985 to 7.8 years in 1989. Furthermore, children under 3 years old increased from 19 percent of all foster children in 1985 to 28 percent in 1989.

While the characteristics of the families and children needing services have changed, so have the characteristics of the substitute caregivers of abused and neglected children. In particular, foster care placements in homes of relatives, referred to in the child welfare literature as "kinship" foster placements, have increased dramatically. Two-thirds of the growth in foster care placements in California between 1984 and 1989 can be accounted for by the growth in relative-provided foster care.

Nearly two-thirds of the children who left foster care in California during the last half of the 1980s were reunified with their parents. However, the remainder, an increasingly large group, were left in need of other permanent homes. Moreover, in spite of the preference for adoption as a permanent placement, the percentage of foster children being adopted has remained relatively constant at around 10 percent of those children leaving foster care at any point in time.

These changes in the dynamics of the foster care system, along with an ongoing concern over the continuing presence of large numbers of children in foster care, have raised a number of issues for policymakers and child advocates. How well are the goals of permanency planning being met for children entering foster care? Are children going

home in a timely manner? Are some children more likely to go home than others, and, if so, why? What are the prospects for the increasing numbers of infants entering foster care? Are they going home to their families at the same rate as children who entered foster care in the past? What are the implications for permanency planning of the rapid growth of "kinship care?" Are foster children placed with relatives more or less likely to go home to their natural parents than children who are placed with nonrelatives?

This study attempts to shed more light on the child, family, and foster care system variables that are associated with the timing of an important element of the permanency planning process: family reunification. Administrative data from California's Foster Care Information System are examined to assess the impact of selected variables on the probability that a child will return home from foster care. The results of the study are presented in the context of other recent research on this subject. The findings suggest changes in child welfare policy and practice as well as directions for further research.

### Justification for This Study

Although much interest has been devoted to the paths of children through the foster care system over the past 30 years, the picture that emerges remains unclear. Most previous research regarding length of stay in foster care relied on point-in-time snapshots of the foster care population that provide inherently biased estimates of duration in care.<sup>4</sup> A few studies have examined foster care duration by using longitudinal methods that are adequate to the task, although some of them suffer from significant sample limitations.<sup>5</sup> These studies generally conclude that foster care is a relatively short-term experience (under 1 year) for the vast majority of children who enter care. Moreover, even fewer studies have employed methods that allow for multivariate analysis of factors associated with foster care stay, and only one of these focused on the reunification process in particular.<sup>6</sup> Furthermore, the findings of these studies are not consistent with regard to the effects of child, family, and foster care system variables on the exit process in foster care.

California has the largest and one of the most ethnically diverse foster care populations in the United States. Trends in foster care in California, such as the growth of infant placements and kinship care, are similar to those found in other large states, such as Illinois and New York, where administrative data regarding foster care have been used to the greatest advantage.<sup>7</sup> Furthermore, the administrative foster care database in California includes characteristics of children, families, and the child welfare system that have not been employed in previous studies of other large states.

## Sample and Methods

The analysis relies on administrative data on foster care careers of all children who entered foster care in California for the first time between January 1988 and May 1991.<sup>8</sup> A random sample of 8,748 children (approximately 10%) was drawn from the larger group. Data from the sample were organized into a framework that was amenable to longitudinal analysis.

The study examines the outcomes of foster care placement retrospectively. The data suffer from some significant limitations that deserve discussion. First, the relatively short time frame of the data limits their usefulness in examining longer-term foster care outcomes (e.g., adoption, emancipation). However, this time frame does allow for the examination of events (e.g., initial placement, reunification) that take place within, and for some time after, the 18-month permanency planning time limit for California. Second, the administrative data contain a relatively limited number of child- and family-related factors. Third, some of the items recorded in the database are of questionable reliability or validity for various reasons.<sup>9</sup>

In spite of these limitations, the data are a rich source of information regarding child, family, and system characteristics pertinent to the study of children's paths through foster care. In particular, the data contain family characteristics such as family structure (i.e., single mother, single father, two parents) and Aid to Families with Dependent Children (AFDC) eligibility of the child's family that were not employed in previous large-sample studies using administrative data. The longitudinal format of the data facilitates the examination of the dynamics of foster care placement for a very large and diverse foster care population. The reliability and validity of database items used in the analysis are enhanced by the simplicity of the items (e.g., gender, age, region), by the fact that some items are used to comply with federal reporting requirements, and because reporting of some items is required for either the county or the provider to be reimbursed for services rendered (e.g., AFDC eligibility, placement type, placement dates). With the exception of the items measuring preplacement services, removal reason, and health status, all of the variables used in this study are considered by child welfare officials in California to accurately reflect the reality of a child's situation at any point in time in foster care. Nevertheless, some unknown proportion of reporting errors undoubtedly occurs. In order not to misconstrue the data, the variable "removal reason" was interpreted in this study as the primary reason for removal given by the social worker rather than as an objective measure of the child's prior experience. Similarly, "health status" served only to indicate those children who have easily identifiable and relatively severe physical, mental, and emotional health problems.

The Appendix lists the independent variables employed in the event-history model of this study. Child, family, and placement characteristics of the sample are presented in table 1.

This study examined the outcome of the first foster care "spell," the period of time defined by a child's entry into foster care to the child's exit from care. A spell in foster care may include more than one placement. "Foster care" in this study is defined as court-supervised out-of-home placement of nondelinquent minors. While the first foster care spell for every child will eventually end for one reason or another, in this sample a great number of spells remained "open" in the sense that the child was in care at the time of data analysis. It is interesting to note that, even over the relatively short span of 3.5 years, more than 10 percent of the children entering care experienced more than one spell in foster care, and some experienced as many as seven.

## Event-History Analysis

Event-history analysis has a number of advantages over methods used in most previous studies of the family reunification process.<sup>10</sup> The most important of these for the purposes of this study are the ability to make use of "incomplete" data on foster care duration and the availability of regression models that allow for the simultaneous analysis of the effect of multiple explanatory factors on reunification rates over time. For example, in the study of life events, such as the transition from "foster care" status to "reunified" status, the researcher often encounters the problem of how to deal with events that have not yet occurred at the time the data are collected. In this study, about half of the children in the study had not left foster care at the time of the creation of the database. The event times for these children are considered to be "censored" in that we do not know their true value, only that they occurred after a particular point in time. Event-history analysis provides methods for dealing with this problem.

In order to simultaneously assess the effect of child, family, and foster care system variables on the reunification process, a regression model of the hazard rate for family reunification was created. In general, the continuous-time hazard function  $h_{ij}(t)$  for the transition from state  $i$  to state  $j$  is defined as

$$h_{ij}(t) = \lim_{\Delta t \rightarrow 0} \frac{\text{pr}(t \leq T < t + \Delta t \mid T \geq t)}{\Delta t}.$$

If  $T$  is the time of the transition from an initial state  $i$  (e.g., placement in foster care) to another state  $j$  (e.g., return to the home of a parent),

**Table 1****CHILD, FAMILY, AND PLACEMENT CHARACTERISTICS OF FOSTER CARE SAMPLE**

|                                         | Frequency | %    |
|-----------------------------------------|-----------|------|
| Gender:*                                |           |      |
| Female .....                            | 4,671     | 53.4 |
| Male .....                              | 4,074     | 46.6 |
| Race:                                   |           |      |
| Caucasian .....                         | 3,633     | 41.5 |
| African American .....                  | 2,720     | 31.1 |
| Latino .....                            | 2,122     | 24.3 |
| Asian American .....                    | 112       | 1.3  |
| Other race/ethnicity .....              | 161       | 1.8  |
| Age of child at entry into foster care: |           |      |
| Less than 1 year .....                  | 2,166     | 24.8 |
| 1-3 .....                               | 1,732     | 19.8 |
| 4-6 .....                               | 1,305     | 14.9 |
| 7-12 .....                              | 2,173     | 24.8 |
| 13 and older .....                      | 1,372     | 15.7 |
| Child's health condition:               |           |      |
| Health problems .....                   | 394       | 4.5  |
| No health problems .....                | 8,354     | 95.5 |
| Initial foster care placement:          |           |      |
| Foster home .....                       | 4,763     | 54.4 |
| Kinship home .....                      | 2,811     | 31.2 |
| Group home .....                        | 623       | 7.1  |
| Guardianship .....                      | 271       | 3.1  |
| Other .....                             | 280       | 3.2  |
| Home from which the child was removed:  |           |      |
| Mother .....                            | 6,923     | 79.1 |
| Both parents .....                      | 1,223     | 14.0 |
| Father .....                            | 394       | 4.5  |
| Other relative .....                    | 208       | 2.4  |
| Reason for placement in foster care:    |           |      |
| Caretaker absence or incapacity .....   | 2,305     | 26.3 |
| General neglect .....                   | 1,689     | 19.3 |
| Severe neglect .....                    | 1,830     | 20.9 |
| Physical abuse .....                    | 1,388     | 15.9 |
| Sexual abuse .....                      | 918       | 10.5 |
| Emotional abuse .....                   | 121       | 1.4  |
| Disability or handicap .....            | 137       | 1.6  |
| Voluntary placement .....               | 275       | 3.1  |
| Other reasons .....                     | 85        | 1.0  |
| Preplacement preventive services:       |           |      |
| Emergency response (ER) .....           | 6,155     | 70.4 |
| ER and family maintenance .....         | 840       | 9.6  |
| None provided .....                     | 1,753     | 20.0 |
| AFDC eligibility of child's family:     |           |      |
| AFDC eligible .....                     | 4,384     | 50.1 |
| Not eligible .....                      | 4,364     | 49.9 |
| Placing county:                         |           |      |
| Los Angeles .....                       | 3,495     | 40.0 |
| Other urban/suburban .....              | 4,767     | 54.5 |
| Rural .....                             | 486       | 5.6  |

NOTE.—Total sample = 8,748 (approximately 10% of all children who entered foster care in California for the first time between January 1988 and May 1991).

\* Gender of child was not recorded for three children who entered care shortly before the study date.

the hazard function identifies the instantaneous transition rate at time  $t$ , given that the individual has remained in state  $i$  until  $t$ .

Many regression models of lifetime data express hazard rates as a function of covariates and a function of time. Sometimes previous research and/or theoretical reasons lead an investigator to assume some parametric form for the relationship between duration in a particular state and the hazard rate for the transition out of that state. For example, Robert Goerge tested the hypothesis that the probability that a child in foster care will be reunified decreases the longer a child is in care.<sup>11</sup> He tested a number of fully parametric models for the hazard function for family reunification over the first spell in foster care, all of which implied that the hazard rate decreases over time. This is referred to as "negative duration dependence" in the hazard rate. A partially parametric model was employed for this study, however, because the study is primarily intended to examine the effects of explanatory factors on the family reunification process.

Proportional-hazards models assume that the hazard rates of two individuals with different characteristics are proportional over time.<sup>12</sup> Therefore, if two individuals have respective sets of characteristics represented by covariate vectors  $X_1$  and  $X_2$ , the ratio of their hazard functions,  $h(t|X_1)/h(t|X_2)$ , does not vary with time.

The most common expression of the proportional-hazards model expresses the hazard rate in terms of an unspecified function of time,  $q(t)$ , and a log-linear function of observed variables. This model can be written  $h(t) = q(t)e^{Bx}$ , where  $B$  represents a vector of regression parameters for the vector of covariates. The fact that  $q(t)$ —the underlying hazard rate—is not specified is an attractive characteristic of the proportional-hazards model. This is useful when one is not primarily interested in duration dependence in hazard rates or where the hazard rate does not conform to easily estimable forms. However, since  $q(t)$  is not specified, maximum-likelihood methods cannot be used to estimate the parameters of this model. As long as hazard rates conform to the restriction described above (i.e., they are proportional to each other over time), however, Cox's partial-likelihood method provides for the estimation of regression parameters.<sup>13</sup> The partial-likelihood estimation process also allows for censored data. In the event that the hazard rates of two or more groups in a population are not proportional (i.e., there is an interaction between a covariate's effect on the hazard rate and time), the interaction between the covariate and time can be modeled directly or the analysis can be stratified by those groups.

## Findings

Table 1 provides a breakdown of the sample by the child, family, and foster care system characteristics that are available for analysis. The

sample is approximately evenly divided by gender, while being reflective of the influx of young children into foster care in California over the past several years and the racial diversity of the foster care population. Nearly 45 percent of the children were under 4 years old when they entered foster care, while slightly less than 16 percent were in their teens. Fully 55 percent of the sample were of African-American or Latino heritage. Slightly less than 5 percent of the children were recorded as having significant health problems. Approximately two-thirds of the children are placed as a result of reported neglect or caretaker absence or as a result of caretaker incapacity. A much smaller number are placed because of physical abuse (15.9%) or sexual abuse (10.5%).

The children entering foster care appear to come from families living under relatively difficult social and economic conditions. Over four-fifths come from single-parent families, while about one-half come from families that were eligible for AFDC at the time of the child's placement.

Four-fifths of the children in the sample come from families who received some type of service that was intended to prevent placement. However, the vast majority (70.4%) received only "emergency response" services consisting of short-term family assessment and referral. Only one-tenth of the families received more extensive in-home family-maintenance services. One-fifth received no preplacement prevention services at all. Over half of the children were placed initially in a foster home with unrelated caregivers, while about 31 percent were placed with kin.<sup>14</sup> About 7 percent were initially placed in group care of some form, and about 3 percent were placed with a guardian (California provides court supervision of foster care placements with legal guardians). Another 3.2 percent were placed in "other" facilities, most of these in county-run shelters. Forty percent of the sample were placed by the child welfare agency in Los Angeles County. In contrast, only 30 percent of California's children live in Los Angeles County. Between 5 and 6 percent were placed by similar agencies in sparsely populated rural counties. The remainder were placed by child welfare agencies in counties other than Los Angeles with primarily urban and suburban populations.

Of children who entered care for the first time during the study period, slightly more than one-half remained in their first spell in foster care as of May 1991. Of those who left care (44.5% of the sample), 79.1 percent were reunified with their natural families or sent home on a trial visit, 4.3 percent were placed with relatives, 3.8 percent were placed with guardians, 3.4 percent were adopted, and 1.3 percent were emancipated. The remainder (8.1%) left foster care for a variety of reasons including running away from placement, refusal of services, incarceration, placement in a state hospital, abduction, and death.

Less than half of the children who entered care during the study period left care in the same period, although this figure can be misleading, since some children had a much longer exposure to foster care than others and therefore a greater chance to exit care. For example, approximately 57 percent of a cohort of 648 children who entered care between January 1988 and May 1988 had exited care by the study date. In contrast to the overall sample, all members of this entry cohort had at least 3 years to exit care prior to the study date. Slightly less than 40 percent of them had returned home prior to the study date, and another 17 percent had exited care via the other routes mentioned above. Even with the longer time frame, however, the data indicate that two out of five children entering foster care in California will spend at least 3 years in care.

Before proceeding, a discussion of the censoring process used in this study is warranted. In the present study, observations are treated as "censored" on the date that the child in question leaves the foster care population for a reason other than reunification (e.g., adoption) or the date of the study for children who remain in care on that date. Those censored for the latter reason represent observations on which the duration in foster care is limited by the fact that children entered care at different times in the study period and therefore have different probabilities of reaching the study date without experiencing reunification. They account for about 83 percent of the observations treated as censored in the study. This type of censoring does not present a problem for the methods employed in this study.<sup>15</sup>

However, it is problematic to treat the duration in foster care as censored at the time of exit for children who leave for reasons other than family reunification. Exit from foster care for a reason other than family reunification is not independent of exit via reunification. Some children in foster care will never be in a position to return home. Unfortunately, the administrative data on which this study is based cannot tell us which children fall into this category.<sup>16</sup> Furthermore, even if every child in foster care had some possibility of returning home, the various alternative exits function to some extent as competing risks for foster care exit. Thus, at any given point in time a child can exit via one of a number of mutually exclusive routes.

One method for dealing with a situation in which there is more than one exit is to construct a model of the competing risks.<sup>17</sup> Such a model simultaneously specifies the effects of explanatory factors on the probability of each event. A competing-risks approach to the question posed in this study was not pursued given the limitations of the available data.<sup>18</sup>

What are the possible consequences of treating as censored at exit the multiple forms of exit other than reunification? Conceptually this approach implies that the children who exited via these routes were

treated as "at risk" of reunification prior to their date of exit. This does not take into account the fact that some of these children (e.g., those whose parents are deceased) were never in a position to go home and that all of them were also at risk of exit via other routes. To the extent that the effects of the explanatory factors are related to these varying exits in different ways, the estimates of the coefficients of the regression parameters in a hazard-rate model would be subject to unidentifiable bias.

However, alternative exits do not account for a very large proportion (about 17%) of the censored observations in this study, and they are about one-quarter of the overall exits.<sup>19</sup> Nevertheless, the estimates of regression parameters that follow, as well as the inferences drawn from them, should be interpreted with caution and regarded as preliminary assessments of the reunification process in California prior to the estimation of a multiexit model.

In the current sample, a child who experienced reunification after 155 weeks in care is counted as an open case, because the reunification occurred after the limited time frame of the data. Therefore, the reunification process is undefined after approximately 3 years. However, as figure 1 illustrates, the rate of reunification becomes relatively stable after about 4 months of foster care. Reunifications after 18 months are few and fairly constant. Thus the current model may be a good approximation of the reunification process in general. Furthermore, unless the contributors to the reunification process are qualitatively different for those foster children who remain in care longer than 3 years, factors that affect the timeliness of reunification can also

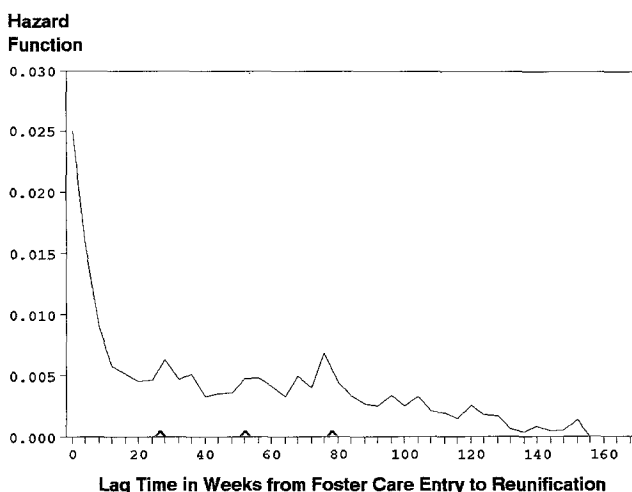


FIG. 1.—Hazard-function estimates for transition from foster care placement to home of parent. The hazard function is defined over 4-week intervals. A caret indicates the approximate timing of permanency planning hearings.

be interpreted as factors that affect the probability that a given foster child will ever be reunified with his or her family.

Overall, it appears that slightly less than half of the children entering foster care for the first time will be reunified with their parents within 3 years; the remainder either stay in foster care longer than 3 years or leave care for one of the other reasons mentioned above. Furthermore, of those children who are reunified, nearly half go home within 6 months of entering care and about 70 percent do so within 1 year or less. In short, the probability of reunification is greatest immediately following placement, a finding that is consistent with previous research on length of stay in foster care.<sup>20</sup> The hazard rate declines rapidly for about 4 months and continues to decline at a somewhat slower rate thereafter with the exception of slight increases that appear to correspond to the 6-, 12-, and 18-month permanency planning hearings.

### A Proportional-Hazards Model

The first step in constructing a proportional-hazards model for the family reunification process was a test of the proportionality assumption for each of the covariates. For all variables except type of initial placement, the ratio of hazard rates between strata were found to be constant over time.<sup>21</sup> The experience of children placed with kin or guardians differed significantly from that of children in all other placements. In particular, preliminary proportional-hazards models indicated that hazard rates were essentially the same for children placed in group homes, foster homes, or "other facilities" on the one hand and for those placed in kinship and guardianship on the other hand. For this reason, a dichotomous variable was created, representing kin placements versus all others. Figure 2 shows the estimated hazard functions for placement stratified by kin versus nonkin. It is clear that the hazard rate during the first several months of foster care for children placed initially with nonkin is much higher than that for kin placements. However, this difference in rates declines rapidly and is virtually eliminated after about 5 months. Thus, much of the difference in the proportion of each group remaining in care past a particular point in time stems from a large difference in the rate of transition home during the first 4–5 months. It is also clear that the hazard rates in these two groups are not proportional over time.

A more intuitive grasp of the difference in transition rates can be gained by considering the proportion of children reunified at various points in time for a cohort of children who entered care during the first 6 months of the study period (January 15, 1988–July 15, 1988). Overall, approximately 50 percent of children placed initially in nonkin foster care during this period were reunified with their families by the study date, whereas only about 36 percent of children placed

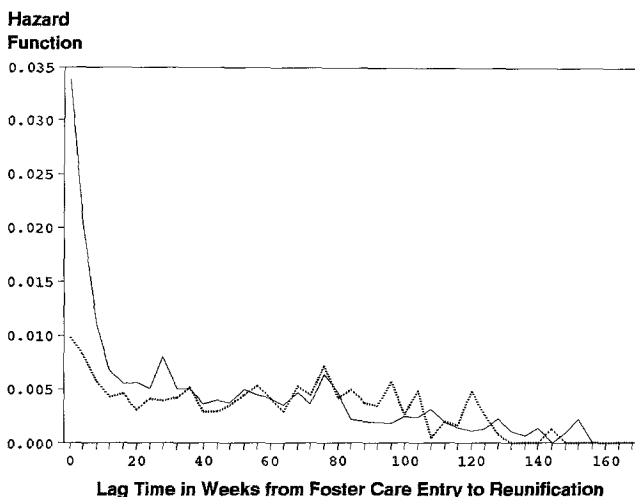


FIG. 2.—Hazard-function estimates for children placed initially with kin and for children placed with nonkin. The hazard function is defined over 4-week intervals. The broken line denotes kin placements, and the unbroken line denotes nonkin placements.

initially with kin had returned home. Much of this difference, however, is a reflection of the relatively quick exit of a large proportion of children initially placed with nonkin. At 1 month, 15 percent of these children had returned home, and 30 percent had gone home at 6 months. In contrast, only 5 percent of children initially placed with kin were home at the end of 1 month, and 10 percent were home by 6 months. Thus, the proportion of children placed with nonkin who returned home over the first 6 months in care was more than three times as large. However, the proportions of children in these groups who returned home between 6 and 18 months of having entered care did not differ by nearly so much. By 18 months, 27 percent of children placed initially with kin had returned home (up from 10% at 6 months), and 46 percent of children who had been placed with nonkin were home (up from 30 percent at 6 months).

As a result of this deviation from the proportional-hazards framework, two models were estimated: one for children placed initially with kin, and one for all other children. Since all regression coefficients are allowed to vary in the two models, it is possible to examine indirectly the interaction of placement with the other variables in terms of their effect on reunification rates. In addition, variables were created to directly model the effects of three two-way interactions (ethnicity by age, ethnicity by region, and removal reason by age) within strata. Interest in these interactions stems from their common use in previous research on foster care and its outcomes.

Tables 2 and 3 show the results of the stratified proportional-hazards regression analysis. The parameter estimates (representing the change

in the log-odds of the hazard rate) show the effects of child, family, and placement characteristics on the hazard rate for reunification, relative to the comparison category for each variable. Comparison categories were chosen to minimize the standard errors of estimated parameters and where it was not a problem to enhance the interpretation of findings. A positive value indicates a higher hazard rate than the comparison category, and a negative value represents a relatively lower hazard rate. By exponentiating the parameter estimates, one obtains a risk ratio for two groups. For example, table 2 indicates that the parameter in the additive log-odds hazard-rate regression model for nonkin placements corresponding to "health problems" is  $-.585$ . This implies that, all else being equal, children with health problems have a *lower* hazard rate for reunification than children without such problems. The risk ratio for this variable is  $.557$ . This means that, on average, a child with health problems is approximately more than half as likely to go home at any point in time as a child without such problems. The standard errors of the coefficients provide for rough comparisons between categories of the same variable in that the coefficients are approximately normally distributed (i.e., a difference of two standard errors is significant at  $p < .05$ ).

Table 2 shows the parameters of the model of family reunification for children initially placed with nonkin. All factors, with the exception of gender and preplacement prevention services, are shown to be related to the hazard rate for family reunification.

For nonkin placements, children removed from the home of a relative other than the parent go home to a parent at the slowest rate. Children removed from the homes of AFDC-eligible families also go home slower than the comparison group.

Several child characteristics are related to reunification rates for children placed with nonkin. As mentioned above, children with health problems or disabilities go home at a slower rate than children without these conditions. At the main-effects level, sexual abuse is associated with a much higher transition rate home than the comparison group, neglect. Similarly, in general, children from 4 to 12 years of age at entry to foster care go home much faster than infants (the comparison group), whereas the rates for the 1–3 group and the 13-and-older group lie between these extremes. However, removal reason and age interact with respect to the hazard rate for reunification. The strong effect of sexual abuse on hazard rates does not apply to older youth. However, children removed for "other reasons" (primarily voluntary agreement between a family and the child welfare agency) is shown to have a very significant effect on increasing the hazard rate, relative to those children placed because of neglect for every age-group except infants.

Age and ethnicity also interact with respect to family reunification rates. While the model indicates that African-American children go

Table 2

STRATIFIED PROPORTIONAL-HAZARDS MODEL FOR FAMILY REUNIFICATION: CHILDREN INITIALLY PLACED WITH NONKIN

| VARIABLE                               | TESTING GLOBAL NULL HYPOTHESIS (All Parameters = 0) |                       |                     |                  |             |               |  |
|----------------------------------------|-----------------------------------------------------|-----------------------|---------------------|------------------|-------------|---------------|--|
|                                        | Without<br>Covariates                               | With<br>Covariates    | Model<br>Chi-Square | df               | p           |               |  |
| -2 Log L .....                         | 36,969.406                                          | 36,585.989            | 383.417             | 49               | <.001       |               |  |
| Wald $\chi^2$ .....                    | ...                                                 | ...                   | 374.889             | 49               | <.001       |               |  |
|                                        | N                                                   | Parameter<br>Estimate | Standard<br>Error   | Wald<br>$\chi^2$ | Probability | Risk<br>Ratio |  |
| Preplacement services:                 | 4,828                                               |                       |                     |                  |             |               |  |
| Services .....                         | 791                                                 | -.124                 | .070                | 3.129            | .077        | .883          |  |
| No services .....                      |                                                     |                       |                     |                  |             |               |  |
| Gender:                                | 2,626                                               |                       |                     |                  |             |               |  |
| Male .....                             | 2,993                                               | -.034                 | .043                | .622             | .430        | .966          |  |
| Female .....                           |                                                     |                       |                     |                  |             |               |  |
| Home from which the child was removed: | 4,229                                               |                       |                     |                  |             |               |  |
| Mother .....                           | 266                                                 | -1.02                 | .100                | 1.035            | .309        | .903          |  |
| Father .....                           | 956                                                 | .066                  | .059                | 1.215            | .270        | 1.068         |  |
| Both parents .....                     | 168                                                 | -.518                 | .151                | 11.695           | .001        | .596**        |  |
| Other relative .....                   |                                                     |                       |                     |                  |             |               |  |
| Health:                                | 5,323                                               |                       |                     |                  |             |               |  |
| No health problems .....               | 296                                                 | -.585                 | .116                | 25.266           | .001        | .557**        |  |
| Health problems .....                  |                                                     |                       |                     |                  |             |               |  |
| Poverty:                               | 2,521                                               |                       |                     |                  |             |               |  |
| Not AFDC eligible .....                | 3,098                                               | -.179                 | .044                | 16.363           | .001        | .836**        |  |
| AFDC eligible .....                    |                                                     |                       |                     |                  |             |               |  |
| Region:                                | 3,486                                               |                       |                     |                  |             |               |  |
| Urban/suburban .....                   | 1,784                                               | -.012                 | .076                | .024             | .877        | .988          |  |
| Los Angeles .....                      | 349                                                 | .152                  | .097                | 2.455            | .117        | 1.164         |  |
| Rural .....                            |                                                     |                       |                     |                  |             |               |  |



Table 3

STRATIFIED PROPORTIONAL-HAZARDS MODEL FOR FAMILY REUNIFICATION: CHILDREN INITIALLY PLACED WITH KIN

| VARIABLE                               | TESTING GLOBAL NULL HYPOTHESIS (All Parameters = 0) |                       |                   |                  |             |               |
|----------------------------------------|-----------------------------------------------------|-----------------------|-------------------|------------------|-------------|---------------|
|                                        | Without<br>Covariates                               | With<br>Covariates    | Model<br>$\chi^2$ | df               | $p$         |               |
| -2 Log L .....                         | 13,596.572                                          | 13,368.845            | 227.727           | 49               | <.001       |               |
| Wald $\chi^2$ .....                    | ...                                                 | ...                   | 221.817           | 49               | <.001       |               |
|                                        | N                                                   | Parameter<br>Estimate | Standard<br>Error | Wald<br>$\chi^2$ | Probability | Risk<br>Ratio |
| Preplacement services:                 |                                                     |                       |                   |                  |             |               |
| Services .....                         | 2,113                                               |                       |                   |                  |             |               |
| No services .....                      | 946                                                 | -.222                 | .085              | 6.807            | .009        | .801**        |
| Gender:                                |                                                     |                       |                   |                  |             |               |
| Male .....                             | 1,415                                               |                       |                   |                  |             |               |
| Female .....                           | 1,644                                               | -.086                 | .069              | 1.566            | .211        | .918          |
| Home from which the child was removed: |                                                     |                       |                   |                  |             |               |
| Mother .....                           | 2,634                                               |                       |                   |                  |             |               |
| Father .....                           | 123                                                 | -.304                 | .181              | 2.835            | .092        | .738          |
| Both parents .....                     | 263                                                 | .352                  | .119              | 8.817            | .003        | 1.422**       |
| Other relative .....                   | 39                                                  | -.786                 | .417              | 3.559            | .059        | .456          |
| Health:                                |                                                     |                       |                   |                  |             |               |
| No health problems .....               | 2,966                                               |                       |                   |                  |             |               |
| Health problems .....                  | 93                                                  | -.348                 | .237              | 2.164            | .141        | .706          |
| Poverty:                               |                                                     |                       |                   |                  |             |               |
| Not AFDC eligible .....                | 1,811                                               |                       |                   |                  |             |               |
| AFDC eligible .....                    | 1,248                                               | -.366                 | .071              | 25.911           | .001        | .694**        |
| Region:                                |                                                     |                       |                   |                  |             |               |
| Urban/suburban .....                   | 1,243                                               |                       |                   |                  |             |               |
| Los Angeles .....                      | 1,685                                               | .092                  | .118              | .611             | .434        | 1.096         |
| Rural .....                            | 131                                                 | .421                  | .181              | 5.414            | .020        | 1.524*        |

|                            |       |       |      |       |      |
|----------------------------|-------|-------|------|-------|------|
| Removal reason:            |       |       |      |       |      |
| Neglect                    | 2,236 |       |      |       |      |
| Sexual abuse               | 263   |       |      |       |      |
| Physical abuse             | 435   | .378  | .513 | .544  | .461 |
| Other reasons              | 125   | .047  | .269 | .031  | .860 |
|                            |       | -.917 | .591 | 2.406 | .121 |
| Age category:              |       |       |      |       |      |
| Less than 1 year           | 660   |       |      |       |      |
| 1-3                        | 721   | .083  | .184 | .204  | .651 |
| 4-6                        | 524   | .207  | .192 | 1.166 | .280 |
| 7-12                       | 814   | -.015 | .182 | .007  | .935 |
| 13 and older               | 340   | .110  | .244 | .201  | .653 |
| Ethnicity:                 |       |       |      |       |      |
| Caucasian                  | 1,028 |       |      |       |      |
| African American           | 1,170 | -.606 | .222 | 7.470 | .006 |
| Latino                     | 787   | -.771 | .254 | 9.221 | .002 |
| Other ethnicity            | 74    | -.628 | .616 | 1.042 | .308 |
| Interaction terms:         |       |       |      |       |      |
| Ethnicity by age category: |       |       |      |       |      |
| Latino/7-12                | 226   | .615  | .273 | 5.058 | .025 |
| Ethnicity by region:       |       |       |      |       |      |
| Latino/Los Angeles         | 468   | .422  | .176 | 5.715 | .017 |
| Other/Los Angeles          | 26    | 1.345 | .517 | 6.761 | .009 |
| Event and censored values: |       |       |      |       |      |
| Event                      | 902   |       |      |       |      |
| Censored                   | 2,157 |       |      |       |      |
| Total                      | 3,059 |       |      |       |      |
| % censored                 | 70.51 |       |      |       |      |

NOTE.—AFDC = Aid to Families with Dependent Children.

\*  $p < .05$ .

\*\*  $p < .01$ .

home slower than Caucasian children (the comparison group) and Latinos, the interaction terms suggest that this is primarily the case for infants and older youth, whereas transition rates for African-American children between these ages are not significantly influenced by ethnicity.

Finally, the child's ethnicity and the region from which the child was placed interact to help explain transitions home. Latino children and children of "other" ethnicity (primarily Asian Americans) went home faster if they were from Los Angeles.

Table 3 shows the model of family reunification for children initially placed with kin. Gender, health conditions, age, and removal reason are not significantly related to family reunification.

Children from AFDC-eligible families generally experience a lower rate of transition home than nonpoor children. Children from two-parent families go home at a faster rate than children removed from single-parent homes or the home of a relative. Families who received preplacement prevention services have their children returned home from kinship homes faster than families who did not receive such services.

Ethnicity interacts with both age and placement jurisdiction to affect the hazard rate for return home. African-American children generally go home at about half the rate of Caucasian children regardless of age-group. Age appears to be an important contributor to the hazard rate for Latino children, but not for other ethnic groups. At the main-effects level, age is not related to reunification rates, whereas being of Latin-American heritage is associated with a slower rate than that of Caucasian children. However, much of the effect of Latin-American heritage on reunification rates seems to come from those Latinos who enter care under 1 year old. Three of the four interaction terms for Latino children over 1 year old at entry approach or are statistically significant at the  $p < .05$  level. The coefficients of these interaction terms suggest that the transition rates for these older children are probably not much different than those of Caucasian children of similar ages, all else held constant.

Ethnicity also interacts with region for children placed with kin. Being of Latino or "other" ethnic heritage is associated with an increase in the hazard rate for reunification relative to other effects in the model when a child is from Los Angeles. Children from rural areas of California generally exhibit a higher transition rate from kinship homes to the home of their biological family than children from urban and suburban areas.

## Discussion

The most striking result of the analysis of the time California's foster children spend in foster care prior to family reunification is the large proportion of children remaining in care relative to other states. In

previous studies, even recent ones in other large states, a majority of children have returned home within a year of entering care.<sup>22</sup> In contrast, for the time period of this study, at the permanency planning deadline of 18 months, about 40 percent of entering children have returned home. In the first 6 months of 1988, more than 40 percent of all entering children remained in care for over 3 years.

Whereas the overall length of time in care seems to be higher in California than that exhibited in other states that have been studied, the rate of exits via reunification appears to decrease at a similar rate to that found in other studies. As mentioned earlier, of those who return home in the first 3 years, around half do so within the first 6 months, and about 70 percent do so within 1 year.

These contrasts and similarities in the outcomes for children in foster care in different states and even within states suggest that we still have much to learn about the dynamics of foster care careers. We need a better understanding of the differences in the foster care populations between and within states, as well as more information about how the foster care systems function differently between and within states.

Some have suggested that a rapid decline in reunification rates calls for a reconsideration of permanency planning time lines and that the decision either to return a child to his or her parents or to make other long-term plans should come sooner than mandated in current law.<sup>23</sup> While this idea may ultimately have merit, it is not clear that a decline in transition rates for family reunification after the first few months of foster care should be used as its sole justification. It is more prudent to invest increased energy and resources into understanding which factors contribute to increasing or decreasing a child's probability of going home and when. Without such information, the child welfare system may inadvertently and unjustifiably function to favor some children and families over others in its efforts to preserve families and protect children.

A caveat should be raised regarding the longer length of stay before reunification in California. It may be that the tremendous growth in kinship placements has altered historic transition patterns that were similar to those observed in other states. In addition, this study covers a time period in which most of the children entering foster care were younger than those in earlier cohorts in California and other states in which similar research has been conducted. The relatively longer stays of these young children may account for much of the difference observed between California and the other states.

### *Kinship Care*

The emphasis in permanency planning on finding the most family-like and least restrictive placement for foster children has helped to

make kinship placement an important and growing resource available to child welfare workers. Court cases such as *Miller v. Youakim* and similar legal mandates at the state level have contributed to the impetus to place children with kin by providing equitable financial support to kin caregivers.<sup>24</sup> In spite of the rapid growth of kinship care as a placement option, there has been little research on its effects on permanency outcomes of foster care.

Although not explicit in the stratified model, this study indicates that children placed with kin initially go home more slowly than those placed with nonkin. Additional support for this hypothesis is provided by a preliminary regression model that includes the interaction between time in a particular placement and the hazard rate for reunification. The model shows a significant difference in hazard rates between the two groups, an interaction in which the difference decreased as a function of time. The finding of a slower transition to home for children placed with kin is consistent with the findings of the studies done in Maryland and Illinois.<sup>25</sup>

Although the data used in this study cannot explain the varying hazard rates between kin and nonkin placements, some speculation can be made. For example, it could simply be that there are unmeasured differences in families or children placed with kin and nonkin that actually cause the different transition rates. Anecdotal evidence indicates that the presence of kin willing and able to take a child increases the likelihood of removal. However, if this were the case, then one might expect that only those children in the most dangerous situations would be sent to nonkin placements. In this scenario, one might also expect that the children placed with kin would go home faster since in general they would face less danger at home. This is not, however, the pattern observed in this study.

Analysis of the data, as well as of a survey of providers in California, shows that kinship care is more likely to be provided to nonwhite and poor children by nonwhite and poor kin caregivers.<sup>26</sup> Thus, an alternative hypothesis suggests that perhaps families who are already at some disadvantage in our society are more likely than white middle-class families to take on the added burden of caring for the abused and neglected children of their kin. Of course, for many of these families the added responsibilities carry the benefit of AFDC or AFDC foster care payments. Although this study controlled for differences in race and gross differences in economic well-being, it is possible that socioeconomic factors predominate in the unmeasured variables that might explain the varying hazard rates between kin and nonkin placements.

However, it may be that, when a placement is made in a foster home, shelter, or group home, the imperative to reunify is greater in the mind of the social worker or judge than when the child is placed with kin. This might result from a belief in the "damage" that might

be more likely to happen to a child from a stay in a traditional foster care setting. Preservation of the limited stock of nonkin foster homes and institutional placements may also be a factor.

There is another scenario, one consistent with less scrutiny by social workers of kinship care, that might contribute to a slower reunification rate for children placed with kin. If kin are more likely to encourage parental visiting of the children in their care than are nonkin foster care providers, then the parents of children placed with kin may be less likely to feel a need to engage in efforts to regain custody of their children. They may see their children as continuing to reside "in the family."

It is not possible with these data to know whether the difference in transition rates is "good" or "bad" for children and their families. It could be that children "drift" in kinship care, or it could be that family problems are simply given more time to be resolved. Indeed, existing evidence suggests that a quick return home (such as that exhibited by many nonkin placements) is associated with greater risk of repeated placement in foster care.<sup>27</sup>

### *Kin and Nonkin Care*

The similarities between the two strata in the model are that gender appears not to be related to the probability of reunification and that poverty is associated with a slower rate of return home. There are also similar region-by-ethnicity interactions in the two strata, with placements from Los Angeles exhibiting a more rapid transition home for Latinos and children of "other" ethnic or racial heritage.

The finding that poverty is related to a slower transition home, although not surprising, is nevertheless disturbing. The child welfare system ideally ought to provide the services and resources necessary to assist a family in regaining custody of its children when that can be appropriately done, regardless of the family's financial status. The child welfare system remains limited in resources to give families a chance to remain intact.

The differences in the effects of explanatory factors between the two strata are several. The provision of preplacement preventive services is associated with a high hazard rate for kinship-placed children but not for nonkin placements.

Family structure also plays a different role in contributing to hazard rates in the two groups. Coming from an intact, two-parent family significantly increases the rate of reunification over that for single-parent families for children placed with kin but not for children placed with nonkin. This is difficult to explain. Perhaps kinship caregivers are less willing to engage in long-term care of children when there are two parents available to take the child back. Long-term care of

the child of a single relative (and perhaps even direct support of the parent) may be more in keeping with the support patterns of extended families. This phenomenon may also be a reflection of the relatively greater ability of intact families to counter the inertia of the system after kinship placement has been made.

It is difficult to know without more qualitative information why health problems would slow down the reunification process for children placed with nonkin but not for children placed with kin. There may be qualitative differences between the two groups, not captured by the measures used in the study, in the types or severity of health problems. Do kinship caregivers provide more support to parents of children with health problems, enabling them to regain their children faster than would otherwise be expected?

One of the most striking findings is the varying effect of removal reason on reunification rates for the two placement groups. For children placed with kin, the chances of returning home from foster care seem to have no relationship to the reason that they were placed. However, for children, except teenagers placed with nonkin, placement because of sexual abuse is associated with a much higher reunification rate relative to placement because of neglect (the largest group). Adolescents who enter foster care because of sexual abuse may not exhibit the faster rate of return home either because the problem has been ongoing for a much longer time period before being disclosed and is therefore less amenable to treatment or because they prefer not to engage in efforts at reunification.

The higher reunification rate for sexual abuse victims placed with nonkin relative to those suffering from neglect is contrary to the finding in Illinois that children placed because of neglect return home at a faster rate than those placed for other reasons but is generally consistent with the findings of Elizabeth Lawder, John Poulin, and Roberta Andrews with regard to the experiences of foster children in Pennsylvania.<sup>28</sup> The difference between the results reported here and those of the Illinois study may be due to differences in reporting in the two states (e.g., California does not list "dependency" as a reason for placement). It remains perplexing that removal reason was not related in any way to reunification for children who were placed initially with relatives.

A similar difference in outcomes is evident when reunification rates are compared by age category between children placed with kin versus those placed with nonkin. For children placed with nonkin, those between the ages of 4 and 12 years old at entry to care go home the fastest, particularly when compared with the slow rate of reunification for infants. The discrepancy in transition rates for infants and older children is especially pronounced for African-American children in foster care.

This relationship between age at entry to foster care and the subsequent probability of reunification is generally consistent with the findings of the Illinois study but is difficult to explain. As mentioned in the introduction, the proportion of young children entering foster care in California, particularly infants, has increased significantly since the mid-1980s. This trend has also been apparent in New York and Illinois.<sup>29</sup> It coincides with the drug epidemic and may be largely a reflection of that epidemic. Perhaps infants in the study population return home at a relatively slow rate because their parents are unable to participate in reunification efforts as a result of problems with substance abuse.

At any rate, the placement into foster care of large numbers of infants and very young children who exhibit a relatively low probability of return home should be a cause for great concern. Even with a leveling of the overall growth in foster care placements, the foster care population itself is likely to remain large as this multiyear cohort of children grows up in foster care. Increased efforts should be made to enhance early intervention programs aimed at the families of these children so as to maximize their potential for reunification and to promptly assess the realistic chances of reunification. Adoption programs should also be bolstered, especially foster adoption, lest these youngest members of the foster care population have no permanent placement option other than long-term foster care.

In contrast to the relationship exhibited in the model for nonkin placement, the effect of age on reunification outcomes for children placed initially with kin is insignificant, with one exception. The interaction between age and ethnicity for Latino foster children suggests that the lower estimated reunification rate for Latino children relative to Caucasians is primarily the result of a lower rate for Latino infants.

African-American children return home at a slower rate than Caucasian children when placed with kin, regardless of region. Of children placed with nonkin, African-American infants are reunified at a much slower rate than Caucasian children, whereas transition rates for African-American children of other ages do not differ much from those of Caucasians.

This is not true, however, for Latino children. Latinos and Caucasians return home at approximately the same rate when placed initially with nonkin, with the exception that Latinos placed in Los Angeles return home slightly faster. The interaction between Latino heritage and placement in Los Angeles holds true for kinship placements as well. Latino infants placed with kin return home more slowly than Caucasian children placed with kin.

While the findings regarding the effect of race on placement outcome are consistent with a number of studies, they contradict others.<sup>30</sup> An interaction between race and region was found in this study as

well as in Goerge's analysis of foster care in Illinois.<sup>31</sup> Only future research can test whether this is a result of unmeasured child and family characteristics or a variation in the way child welfare systems function for different racial groups in different regions.

One general impression that the data give concerning the differences between initial placement with kin versus more traditional foster care placements is the "leveling" effect that kinship placement appears to have on the relationship between some child characteristics and reunification. In general, a child's age, health, and reason for removal from the home—factors that have been shown to be related to foster care outcomes in previous studies—have a very limited effect on reunification rates for children placed with kin. Conversely, family characteristics that might indicate a family's relative ability to interact effectively with the child welfare system (e.g., poverty and family structure) appear to be more powerfully associated with the reunification process for children placed with kin.

It is difficult to make sense of this disparity in the relationship of child and family variables to the reunification rate for children placed with kin. One speculation is consistent with the untested hypothesis mentioned above that kinship placements are dealt with in a less pressing manner than other placements with regard to permanency planning. If this is true, then child characteristics that might favorably affect the reunification process might be paid less attention if a child is placed with kin. Similarly, if there is less impetus for the child welfare system to speed the reunification process for kinship placements, then the ability of a child's parents to advocate independently on their own behalf might play a larger role than child characteristics in determining reunification rates.

Kinship care has emerged as the "placement of choice" according to many in the child welfare services community. Yet very little is known about how the availability of this placement resource has affected long-term outcomes for children placed with kin. This study suggests that initial foster care placement with kin is associated with a significantly slower rate of family reunification during the first several months of foster care than placement in other foster care settings. This initial difference in transition rates translates into a lower probability of reunification over a 3-year period for children placed with kin than for children placed elsewhere. Furthermore, a child's placement in kinship care interacts with other child and family characteristics to affect reunification rates in ways that are difficult to understand, given current knowledge and information.

While this study cannot establish whether this pattern of effects is "good" or "bad" for children placed in foster care, it does raise a serious question. In the absence of measurable differences in the characteristics of children and/or families, why should children placed with

kin fare differently than children placed elsewhere? Research is needed to explain the effects of kinship care on permanency planning and on the general well-being of children placed with kin. How does placement with kin affect relationships between a child and his or her parents, a child and the kin caregiver, and the parents and the kin? What kind of services and support are provided to kin foster parents, and how do they compare to those provided to other foster parents? Are the attitudes and expectations of the participants in the child welfare system (e.g., judges, social workers, kinship caregivers, and children) reflected in the outcomes of kinship care? These questions and others regarding the effect of kinship care on the foster care system and the lives of its clients await serious consideration.

## Appendix

### Variables Employed in the Event-History Model

1. Whether the child was initially placed with kin or in a nonkin foster setting (coded as a dichotomous variable).
2. Whether the child's family was provided with placement prevention services prior to foster care placement (coded as a dichotomous variable).
3. Child's gender (coded as a dichotomous variable).
4. Home from which the child was removed prior to foster care placement (mother, father, both parents, or other relative).
5. Medical, emotional, or behavioral conditions of the child as recorded by the child's social worker at intake (coded as a dichotomous variable).
6. Whether the child's family was AFDC eligible at the time of the child's placement (coded as a dichotomous variable).
7. Whether a child was from Los Angeles County, another urban/suburban county, or a rural county (a county with no population centers of more than 50,000).
8. Recorded reason that the child was removed from home (physical abuse, sexual abuse, neglect, or other reason).
9. Child's age at entry into foster care converted to a categorical variable (preliminary analysis suggested that age, when measured as a continuous variable, was not related to the outcomes of interest in a linear fashion).
10. Child's ethnicity (Caucasian, African American, Hispanic, other ethnicity).

## Notes

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1. Unless otherwise noted, all statistics pertaining to California child welfare services populations and programs were obtained from point-in-time analyses by the State of California, Department of Social Services.

2. Robert M. Goerge, "The Reunification Process in Substitute Care," *Social Service Review* 64 (1990): 422-57; Toshio Tatara, "Some Additional Explanations for the Recent Rise in the U.S. Child Substitute Care Population: An Analysis of National Child Substitute Care Flow Data and Future Research Questions" (report draft from project funded by the American Public Welfare Association, Washington, D.C., 1992).

3. Richard P. Barth, Jill D. Berrick, Mark E. Courtney, and Vicky Albert, *Pathways through Child Welfare Services* (Berkeley, Calif.: Family Welfare Research Group, 1992).

4. See, e.g., Shirley Jenkins, Beverly E. Diamond, Mark Flanzraich, John W. Gibson, June Hendricks, and Nabil Marshood, "Ethnic Differentials in Foster Care Placements," *Social Work Research and Abstracts* 19 (1983): 41-45; Henry S. Maas and Richard E. H. Engler, *Children in Need of Parents* (New York: Columbia University Press, 1959); James R. Seaberg and Eve S. Tolley, "Predictors of the Length of Stay in Foster Care," *Social Work Research and Abstracts* 22 (1986): 11-17. The problems with a point-in-time analysis of foster care careers are discussed in Alfred Kadushin, "Children in Foster Families and Institutions," in *Social Service Research: Reviews of Studies*, ed. H. S. Maas (Washington, D.C.: National Association of Social Workers, 1978), pp. 90-148. For a review of the methodological limitations of existing research on foster care duration, see Mark E. Courtney, "Reunification of Foster Children with Their Families: The Case of California's Children" (Ph.D. diss., University of California, Berkeley, 1992).

5. See, e.g., Mary I. Benedict and Roger B. White, "Factors Associated with Foster Care Length of Stay," *Child Welfare* 70 (1991): 45-58; Mary I. Benedict, Roger B. White, and Rebecca Stallings, "Race and Length of Stay in Foster Care," *Social Work Research and Abstracts* 23 (1987): 23-26; David Fanshel and Eugene B. Shinn, *Children in Foster Care: A Longitudinal Investigation* (New York: Columbia University Press, 1978); Goerge (n. 2 above); Shirley Jenkins, "Duration of Foster Care: Some Relevant Antecedent Variables," *Child Welfare* 46 (1967): 450-55; Elizabeth A. Lawder, John E. Poulin, and Roberta G. Andrews, "A Study of 185 Foster Children 5 Years after Placement," *Child Welfare* 65 (1986): 241-51; Stephen Magura, "Trend Analysis in Foster Care," *Social Work Research and Abstracts* 18 (1979): 29-36; Steven L. McMurtry and Gwat-Yong Lie, "Differential Exit Rates of Minority Children in Foster Care," *Social Work Research and Abstracts* 28 (1992): 42-48.

6. For studies that allow for multivariate analysis of factors, see Benedict, White, and Stallings (n. 5 above); Benedict and White (n. 5 above); Goerge (n. 2 above); McMurtry and Lie (n. 5 above). See Goerge for a study on the reunification process.

7. Fred H. Wulczyn and Robert M. Goerge, "Foster Care in New York and Illinois: The Challenge of Rapid Change," *Social Service Review* 66 (1992): 278-94.

8. It is possible that some of the children in the sample had experienced one or more spells in foster care prior to their entry to care after January 1988, which would not be recorded in the database. Because of the procedure utilized to purge the state foster care database of cases that have been closed for more than 3 years, however, these episodes must have occurred prior to January 1985 and must have ended prior to that date. Thus, for the purposes of this study, any foster care stay that occurs 3 years or more after the end of a previous stay is considered a "first" foster care episode for that child.

9. It is unclear whether significant differences in the recorded use of preplacement preventive services between Los Angeles County and the remainder of California are due to different reporting practices or actual differences in service provision. Social workers are required to report only the primary reason that a child is removed from the home and whether there is more than one reason. Thus, a child who is known to be abused and neglected will be reported as one or the other, but not both. It is generally the case, however, that when there is good evidence that a child has been abused and neglected, the removal reason will be listed as abuse, since this is a more justifiable reason for removal under existing legal mandates. Thus, it is not clear whether reports of abuse and reports of neglect indicate different types of events, or different intensities of events, or both. Social worker reports of the health problems of children are believed to underestimate such problems, particularly since drug exposure has only recently been added to the list of recorded health problems. Similarly, reporting practices regard-

ing the provision of other services to children and families (e.g., counseling, transportation, parenting training) and changes in the child's service plan are so inconsistent as to render them useless for analytic purposes.

10. Goerge (n. 2 above) provides a brief introduction to important concepts in event-history analysis in the introduction to his study of duration dependence in reunification rates. For more in-depth discussions of event-history analysis, see Paul D. Allison, *Event History Analysis: Regression for Longitudinal Event Data* (Newbury Park, Calif.: Sage, 1984); Nancy B. Tuma and Michael T. Hannan, *Social Dynamics: Models and Methods* (Orlando, Fla.: Academic Press, 1984); Kazuo Yamaguchi, *Event History Analysis* (Newbury Park, Calif.: Sage, 1991). The descriptive statistics and multivariate models reported in this article were created by using statistical procedures from the SAS statistical package, SAS Institute, *SAS/STAT User's Guide, Version 6*, 4th ed., 2 vols. (Cary, N.C.: SAS Institute, 1989).

11. Goerge (n. 2 above).

12. See, e.g., David R. Cox, "Regression Models and Life Tables," *Journal of the Royal Statistical Society*, ser. B, 34 (1972): 187-202; and Yamaguchi (n. 10 above).

13. Cox (n. 12 above).

14. Kin foster care providers in California are eligible for AFDC foster care payments if the child in their care was removed from the birth parent's home by court order and if the birth parent's household was eligible for AFDC. If kin do not qualify for AFDC foster care they are still eligible for AFDC-Family Group (FG) payments. The rates for AFDC foster care payments for one child are slightly higher than AFDC-FG payments for one child. The difference in rates becomes increasingly large, however, as the number of children in care increases. This is because AFDC foster care rates increase in proportion to the number of children in a home (e.g., the rate for the care of two children is twice the rate for the care of one child), whereas AFDC-FG rates only increase marginally with additional children.

15. For more in-depth discussions of censoring, see Tuma and Hannan (n. 10 above).

16. For example, some children came into foster care from the home of a relative. These children would be expected to have a low probability of reunification, as undoubtedly some of them have no parents. Similarly, some children placed for reasons of caretaker absence or incapacity have been effectively abandoned. However, preliminary analysis of the data suggests that a significant proportion of children in these categories are reunified with their biological families. In the absence of information that would distinguish those children with no potential for reunification from those with some probability of returning home, all children in these categories were retained for the analysis.

17. For a discussion of competing risks, see, e.g., Allison (n. 10 above); John D. Kalbfleisch and Ross L. Prentice, *The Statistical Analysis of Failure Time Data* (New York: Wiley, 1980), chap. 7; James J. Heckman and Bo E. Honore, "The Identifiability of the Competing Risks Model," *Biometrika* 76 (1989): 325-30.

18. Exits other than family reunification accounted for about one-quarter of all exits from foster care during the study period. However, this proportion is made up of 11 distinct exit types, several of which are difficult to group together for the purpose of constructing a meaningful alternative risk category for exit. Furthermore, even the categories other than family reunification that accounted for the most exits during the study period did not generate sufficient numbers to allow for a very powerful analysis of the effect of explanatory factors on exit rates. For example, the largest single exit category other than reunification (placed with a relative) accounted for a total of 170 exits (5% of the total). Other exits of obviously substantive merit (e.g., legal emancipation,  $N = 35$ ) had even smaller numbers. Part of the problem stems from the relatively short time frame of the study compared to the timing of the many possible exits from foster care. Exits to forms of permanent placement other than reunification (e.g., adoption, guardianship) tend to happen after a child has been in care for several years. Other exits are more likely to happen to older children (e.g., legal emancipation, incarceration), who are underrepresented in the study, since many older children in foster care have been there for many years. As the administrative data used for this study continue to be collected over time, and as more information becomes available about these other forms of exit from foster care, it will become possible to construct a competing-risks model that more adequately takes into account these other exit routes.

19. One way to explore the possible effect of the nonindependence of a censoring process on the parameters of a regression model of hazard rates is to create alternative regression models that treat the observations in question in different extreme ways (see, e.g., Allison [n. 10 above]; and Arthur V. Peterson, Jr., "Bounds for a Joint Distribution Function with Fixed Sub-distribution Functions: Application to Competing Risks," *Proceedings of the National Academy of Sciences* 73 [January 1976]: 11-13). This method was employed with the data used in this study. While the magnitude of some regression parameters changed somewhat depending on the model, in no case was the direction of the effect of an explanatory variable that was significant in the final model reversed. Furthermore, a logit analysis of the effect of the same explanatory factors on the odds that a child will be reunified by the permanency planning deadline (18 months in California) revealed similar relationships between the explanatory factors and this related dependent variable to those found in the proportional-hazards model. For a discussion of the logit model, see Courtney (n. 4 above).

20. Fanshel and Shinn (n. 5 above); Goerge (n. 2 above); Jenkins (n. 5 above); Lawder, Poulin, and Andrews (n. 5 above).

21. A plot of the logarithm of the negative logarithm of the survivor function was created for the different strata of each covariate (e.g., male and female for the covariate gender). This transformation of the survivor function is useful for testing the validity of the proportional-hazards assumption (see, e.g., Yamaguchi [n. 10 above]). The curves of two or more strata with proportional hazards will be roughly parallel. Deviations from this pattern suggest nonproportionality in hazard rates. A more formal test of the proportionality assumption involves testing the statistical significance of the interaction between a covariate and time (or log time) in a proportional-hazards model. If the interaction term remains significant in the model, then the proportionality assumption must be rejected. Visual inspection of these graphs for all covariates, and in some cases formal tests of the interaction of hazard rates and time, revealed a deviation from the proportional-hazards framework for only one variable: initial placement type. Estimates of the homogeneity of survivor functions between strata indicated that survivor functions for all placement types with the exception of "kinship home" were homogeneous, but they differed from the latter category. Thus, a test for the violation of the proportionality assumption for this variable was facilitated by grouping homogeneous strata into one category ("nonkin placements"), which is contrasted with kinship placements, and by creating a variable representing the interaction between the new dichotomous placement variable and time in care. A proportional-hazards model was created that included both of these variables, and the interaction term remained significant in the model (Wald  $\chi^2 = 140.82$ ,  $df = 1$ ,  $p < .001$ ), resulting in the decision to stratify the model.

22. Fanshel and Shinn (n. 5 above); Goerge (n. 2 above); Jenkins (n. 5 above); Lawder, Poulin, and Andrews (n. 5 above).

23. See, e.g., Goerge (n. 2 above); Michael S. Wald, "Family Preservation: Are We Moving Too Fast?" *Public Welfare* 46 (1988): 33-38.

24. *Miller v. Youakim*, 440 U.S. 125 (1979).

25. On studies done in Maryland, see Benedict and White (n. 5 above); and on studies done in Illinois, see Goerge (n. 2 above).

26. For a survey of providers in California, see Barth et al. (n. 3 above).

27. Fred H. Wulczyn, "Case Load Dynamics and Foster Care Reentry," *Social Service Review* 65 (1991): 133-56.

28. On the findings in Illinois, see Goerge (n. 2 above). On the findings in Pennsylvania, see Lawder, Poulin, and Andrews (n. 5 above).

29. Wulczyn and Goerge (n. 7 above).

30. For studies consistent with these findings, see Goerge (n. 2 above); Jenkins et al. (n. 4 above); McMurtry and Lie (n. 5 above). For studies that contradict the findings, see Benedict and White (n. 5 above); Lawder, Poulin, and Andrews (n. 5 above).

31. Goerge (n. 2 above).

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