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Visualizing and Describing Foster Care Placement Pathways

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Abstract

This paper introduces a flowchart-based methodology for describing the movement of foster youth in and out of placements of differing types and durations. This longitudinal methodology is designed to be sufficiently simple to appeal to policymakers and administrators seeking to chart the movement of groups of youth over time and the sequencing of their placements, and sufficiently descriptive to be of use to researchers seeking to predict the placement trajectories of subgroups of foster youth. The paper provides an example of the use of the method drawing upon state administrative data from a large study of preadolescent and adolescent youth in foster care situated in Oregon. Implications for the application of the methodology to different issues of interest to researchers, policymakers, and administrators are discussed.

Keywords

foster care; child welfare; placement; methodology; flowchart

Introduction

Youth in foster care who experience multiple placements are a critically important group. Federal statistics find that roughly two-thirds of youth in care over a year experience two or more placements (U.S. Department of Health and Human Services (USDHHS), 2014), and studies suggest that 22–70% of the U.S. foster care population experiences placement change each year (Blakey et al., 2012). As compared to youth who do not experience placement disruption, youth who must be removed from their current place of residence and then integrated into one or more new living situations remain in foster care longer, are more likely to have mental health service needs, fare worse in their academic performance and general health and wellbeing, and are less likely to achieve permanency than youth with stable placements (Cross, Koh, Rolock, & Eblen-Manning, 2013; Pritchett, Gillberg, &

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Minnis, 2013; Rock, Michelson, Thomson, & Day, 2015). Concern with reducing placement instability is explicit in federal and state child welfare legislation, and can be seen in the attention dedicated to placement stability within the Adoption and Safe Families Act of 1997, the Fostering Connections to Success and Increasing Adoptions Act of 2008, and the Child and Family Service Review evaluative process (USDHHS, 2015).

Attention to placement instability has supported interest in the development of policy, management, and research tools to identify and track individual youth in foster care and groups of foster youth at risk of experiencing multiple placements. The term *placement pathway* refers to the pattern of placement types, placement durations, and sequences of placements experienced by youth in foster care. Although child welfare systems are required to track the placement histories of foster youth, few approaches exist to describe the placement pathways of youth experiencing multiple placements. As a result, child welfare policymakers and agency administrators have tended to rely upon simple count variables of the placements experienced by youth over a particular period of time to identify those individuals experiencing the largest number of placements.

This reliance on static count data can be seen in federal and state child welfare outcomes reporting requirements. Currently, state child welfare systems record placement changes in their statewide automated child welfare information systems; this information is then aggregated at a national level through the federal Adoption and Foster Care Analysis and Reporting System (AFCARS). However, because AFCARS conceptualizes placement disruption via a count variable, reporting from this perspective provides little information on the specific nature of the placement instability experienced by youth over time.

More specifically, the use of placement pathways data can help policymakers, administrators, and researchers:

- Explore the potentially different placement histories of youth (e.g., youth who move between kin and stranger foster care, as opposed to youth who experience a succession of therapeutic placements).
- Examine changes in placement restrictiveness over time, whereby youth may be placed into increasingly institutionalized settings.
- Consider issues pertaining to the contextual experiences of youth within each placement experienced (e.g., length of stay).

Underlying these questions is the possibility that youth in foster care who experience multiple placements are not homogeneous. Distinguishing among foster youth with multiple placements is important, as youth have different cultural and community perspectives, service needs, and wellbeing profiles (Supplee, Kelly, MacKinnon, & Barofsky, 2013). Such variation in the placement experiences of youth cannot be fully explored through the use of aggregated descriptive statistics.

An enhanced methodology to describe foster care placement pathways is therefore needed to better understand how placement change is experienced, potentially helping improve agency responsiveness for youth experiencing multiple placements and enhance foster care

permanency planning. Such a methodology is designed to help child welfare system administrators and researchers track individual youth and groups experiencing multiple placements, identify the different placements experienced by youth, and differentiate among youth experiencing different placements over time. It is also important to identify youth who are less likely to experience reunification or adoption, and who may be placed in institutional, non-community based settings. Finally, examining placement pathways can support research identifying child welfare practices relating to critical policy and practice changes that may be associated with increased risk for impermanence (e.g., moving from less to more restrictive settings, or experiencing a succession of short-term placements). In this manner, policymakers, administrators, and researchers can distinguish between youth whose placement trajectories lead to permanency vs. youth for whom placement instability is a prelude to more restrictive placement settings and other adverse outcomes.

The intention of this paper is to introduce a visual methodology for documenting the different placements experienced by groups of youth in foster care. This methodology is allied to a descriptive statistical approach for tracking youth experiencing different placements over time. The paper has two specific aims: (a) to describe the proposed methodology for examining foster youth placement pathways; and (b) to provide an illustration of its use through the analysis of longitudinal administrative child welfare data from Oregon.

Identification and Study of Foster Youth Experiencing Multiple Placements

Placement instability and its consequences for youth in foster care have been of historic interest to child welfare policymakers and practitioners. This interest has grown in the current era of evidence-based policymaking and evidence-based management (Heinrich, 2007) due to legislative, fiscal, and administrative pressures to develop performance dashboards and other management information systems to identify at-risk subgroups of youth and track their experiences while in care (Cash et al., 2012).

Yet evidence suggests that state child welfare systems vary in the level of administrative infrastructure dedicated to this task. For example, Kum and colleagues (2015) illustrate their Knowledge Discovery and Data Mining framework to systematically collect and analyze critical information from administrative data sources. Using a website platform to host data from 100 North Carolina counties, the authors used various state-operated databases to provide point-in-time estimates across a number of practice dimensions and child welfare outcomes. In contrast, Blakey and colleagues (2012) conducted semi-structured interviews with 44 state and county administrators from 33 states to identify the research methods being used to address placement instability for youth in foster care. Nine approaches to promoting placement stability emerged. However, only 60% of respondents (from 20 states) reported engaging in research and evaluation to support the systematic examination of placement disruption. These findings highlight the continuing need for simple, reliable, and inexpensive methods that state child welfare systems—and the public and private agencies delivering child welfare services—can use to identify and track youth in foster care who are most likely to experience placement instability.

Research on Foster Care Placement Instability

The development of such methodologies has been of interest to researchers beginning with the first large-scale longitudinal studies documenting placement instability and foster care drift (Fanshel & Shinn, 1978). Research has described the child, caregiver/family, and systemic factors associated with placement instability (James, 2004; Koh, Rolock, Cross, & Eblen-Manning, 2014; Rock, Michelson, Thomson, & Day, 2015; Waid, 2014). Studies have also described the consequences of placement disruption for youth in foster care (for reviews of this literature, see Cross, Koh, Rolock, & Ehlen-Manning, 2013; Pritchett, Gillberg, & Minnis, 2013; Rock, Michelson, Thomson, & Day, 2015). This research has shown that foster care placement change can lead to school absences and disenrollment, discontinuity in educational programming, and result in negative effects on educational attainment (Allen & Vaca, 2010).

In addition, a link between mental health problems and placement instability has been established. Fawley-King and Snowden (2012) established bidirectional relationships between placement change and psychiatric crisis and inpatient service utilization; using data from 19,351 youth in their first 90 days of placement in the California foster care system, children who experienced placement change were more likely to require emergency mental health services, and children who required psychiatric hospitalization and crisis mental health services were subsequently more likely to experience a placement change. Placement instability has also been associated with a greater rate of outpatient mental health visits. James and colleagues (2004) retrospectively examined administrative data from the Child and Adolescent Services Research Center to classify the placement patterns of 430 children and youth in San Diego County between 1990–1991 (James, Landsverk, Slymen, & Leslie, 2004); multivariate analyses suggested that older age and externalizing behaviors increased the likelihood of placement instability. Finally, placement change has been associated with disruptions in health care utilization and continuity with the child's primary care physician. Using administrative child welfare data linked to Medicaid claims to retrospectively examine a cohort of 1,635 dependent youth who entered care between 1993–1995, Rubin and colleagues (2004) found that as the number of foster care placement increased, so did the use of emergency department visits relative to outpatient care.

Methodological Approaches for Describing the Placement Histories of Foster Youth—These studies of the antecedents and consequences of placement instability have benefited from research describing the placement histories of foster youth. This research can be organized based upon study methodology, including: 1) descriptive studies using frequencies and associations; 2) multivariate predictive studies accounting for the incidence, number, and time-to-event of placement disruptions; 3) classification-based approaches that identify unique placement trajectories and identify the characteristics of youth likely to experience these pathways; and 4) descriptive efforts to chart placement histories visually. Each of these methods relies upon the analysis of longitudinal data either prospectively or retrospectively (e.g., via the analysis of statewide administrative child welfare data).

Descriptive Associational Studies. Early studies of placement change focused on describing the youth experiencing movement. Staff and Fein (1995) examined retrospective

records of 244 children placed in treatment foster care between 1987–1991 through Casey Family Services in a 6-state region. The authors described the characteristics of youth experiencing 540 placements (which reflected the use of foster homes, residential care facilities and hospitals, reunification with family, and “other” placement arrangements) according to age, number of placement changes, and number of youth still receiving services at study termination. More recently, Ward (2009) examined the placement histories of 242 foster youth in care from 6 English localities over 1996–1997, examining youth needs (e.g., disability status), age, number of placements, length of each placement, and reasons for each change.

Multivariate Predictive Studies.: Placement changes have been examined by estimating the odds of placement disruption or the number of placements experienced over a particular period of time. Leathers (2006) prospectively examined caseworker-reported youth problem behaviors on the likelihood of placement change over five years. Webster, Barth, and Needell (2000) used California administrative data concerning 5,557 children in long term care to examine the number of placement experiences for youth in three age categories (i.e., infants, 1–2, 3–5) who were in care for an 8-year period of time. Placement instability was counted as experiencing at least three placements. Newton, Litrownik, and Landsverk (2000) examined the number of placement changes experienced by 415 youth from a larger cohort of youth placed into foster care in San Diego, California and prospectively examined the relationship between problem behaviors and placement change for an 18-month period of time. Using hierarchical regression analysis, the researchers utilized box plots to visualize the number of placement changes in relation to Child Behavior Checklist scores. More recently, Waid and colleagues (2016) utilized data concerning 328 middle adolescent youth in foster care from Oregon to examine the influence of family dynamics and household living composition on the odds of youth experiencing placement change over 18 months. The authors found a graded protective effect for family membership on the odds of experiencing a placement change, particularly for youth who were co-placed with their siblings. Specifically, youth who were living with their siblings in kinship care were 77% less likely to experience placement change than youth placed separately from their siblings in non-relative care, and youth who were co-placed with their siblings in non-relative care were 38% less likely to experience placement change.

Other studies have used event history modeling to address questions concerning the timing of foster care placement changes. Connell and colleagues (2006) utilized Cox regressions to examine child and case characteristics associated with placement change for 5,909 youth in the Rhode Island child welfare system between 1998 and 2002. The researchers examined time-to-placement change from entry to care, and analyzed demographic and case covariates of placement instability over time. Koh and Testa (2011) examined risk of re-entry for kin and non-kin groups using Illinois AFCARS data concerning 20,360 youth in care between 2001–2007. They used regression adjustment and propensity score matching to create kin and non-kin groups, and used an accelerated failure time model (a form of survival analysis) to examine the hazard of re-entry. Chamberlain and colleagues (2006) drew upon a sample of 246 California youth between the ages of 5–12 to examine the relationship between youth problem behaviors, demographic factors, and time to placement disruption. Fernandez

(1999) examined the duration of the substitute care experience of 201 youth in regards to reunification, placement change, and continuance in care. The study conceptualized placement pathways via six possible “careers” in care: still in care; reunified after first placement; reunified after second placement; moved to second placement; moved to third placement; and moved to fourth placement.

Classification Approaches.: Classification-focused methods have been used to identify specific patterns of placements and characteristics of youth experiencing different placement pathways. An early study in this domain was conducted by Usher, Randolph, and Gogan (1999). The researchers developed life history tables documenting the number and type of placements experienced by 1,456 youth across six state foster care systems. Wulczyn, Kogen, and Harden (2003) examined the frequency and timing of placement for 16,170 youth in care in New York City whose first placement occurred between 1997 and 1998, following youth through the end of 2000. Generalized linear event count regression was used to understand movement counts and to identify movement trajectories (e.g., early movement versus late movement); and mixture models identified latent movement trajectories. The researchers operationalized movement in care in relation to the number of moves experienced by youth, placement duration, and timing (using 6-month increments). As noted previously, James and colleagues (James, Landsverk, Slymen, & Leslie, 2004) used an inductive methodology to examine patterns of movement according to two dimensions: timing/duration of the longest placement; and movement along degree of restrictiveness. Patterns of movement were identified for four groups of youth based on their placement experiences over an 18-month period: early stability; late stability; variable, and unstable. Youth characteristics were compared for each classification category using multinomial logistic regression. More recently, Havlicek (2010) examined administrative data for 474 youth in Illinois foster care who were participants in the Midwest Study of the Adult Functioning of Former Foster Youth. Optimal matching and hierarchical cluster analysis identified patterns of placement instability, and multiple logistic regression identified covariates related to placement patterns. The study identified five major patterns of movement for youth: late movers; settled with kin; community care; institutionalized; and early entry. Demographic characteristics associated with membership in each group were then identified using multinomial logistic regression.

Mapping-Focused Studies.: A recent area of research concerns the visual depiction of placement change. Kim, Pears, and Fisher (2012) developed a charting system to help understand the longitudinal patterns and placement histories of 117 youth in care who were participants in a larger randomized controlled trial of the Multidimensional Treatment Foster Care intervention. Specifically, this study used a person-centered life history table methodology to track the number, type, and duration of individual placements experienced by youth. Each youth’s placements were then plotted visually along a timeline so as to depict the sequence of placements, and the timing of placement transitions, in relation to the total length of time in care.

Despite the growing and diverse body of research on foster care placement change, no study of which we are aware has sought to examine the placement pathways (indicating type, length of time, and sequencing of placements) experienced by groups of youth in foster care.

Current Study Aims

Review of the extant literature suggests that methodological approaches to the understanding of placement pathways should draw upon two principles. First, the methodology should describe the placement histories—with respect to type of placement, time within placement, and sequencing of placements in relation to the overall duration of the youth within foster care—and the characteristics of youth who experience different pathways. Second, the methodology should support performance dashboard development for policymakers, administrators, and researchers interested in mapping the placement experiences of youth over time (Cash et al., 2012; Kum, Stewart, Rose, & Duncan, 2015). Given the emphasis in performance management on presenting aggregated and disaggregated data (e.g., analysis of placement trends by race/ethnicity), visual analysis of placement pathways should also reflect population- as opposed to case-based analysis.

The current study reflects these principles in introducing a flowchart-based methodology. This method visually depicts the placement pathways experienced by youth in foster care, and can be scaled at a variety of levels (including to the population level). In the next section, we describe the methodology and present information on the empirical study used to illustrate it. Results are then provided, with emphasis on the visual depiction of placement pathways. In the final section, we discuss the implications of the study methodology, and present examples of future applications to the benefit of research, policy, and practice.

Methodology

The current study involved a retrospective longitudinal analysis of state administrative child welfare data. Specifically, all available placement data from the Oregon Department of Human Services (DHS) for 245 youth in foster care who had been universally recruited for participation in an RCT-based test of a sibling relationship intervention (Kothari et al., 2014; McBeath et al., 2014) was used to develop a set of flowcharts describing youth placement pathways.

The youth for whom DHS data were gathered were participants in the Supporting Siblings in Foster Care (SIBS-FC) study, the first large-scale randomized clinical trial to evaluate a sibling relationship development intervention for preadolescent and adolescent foster youth. The behavioral intervention program tested in the SIBS-FC study was designed specifically for preadolescent and adolescent youth in foster care. The study utilized a universal recruitment strategy that drew from the population of sibling pairs from a three county metropolitan region in Oregon. To be eligible for participation, youth had to be in the legal custody of the state child welfare agency at the time of study enrollment, reside in the three county region, meet age eligibility requirements, and speak English. The study limited inclusion to older siblings in care between 11 and 15 years of age, with a younger sibling within four years of age. (For further information on the parent study, see Kothari et al., 2014; McBeath et al., 2014).

Data Collection

A SIBS-FC research staff member who was also employed by Oregon DHS extracted data from the statewide administrative child welfare data portal (“ORKIDS”) for SIBS-FC youth study participants. An online data extraction tool was developed specifically for this data extraction process. This tool was used to gather key variables and information from each youth’s DHS electronic case file. Particular attention was paid to the tracking of siblings, so that information on the older and younger sibling could be gathered easily when details applied to both youth. The information that was gathered included placement history (e.g., number and type of placements during their time in care), medical and mental health history (e.g., diagnoses), information on maltreatment allegations and assessments conducted by DHS staff, and youth treatment and permanency plans.

Data extraction occurred after all study youth ($n = 328$ in the parent study) had completed the intervention. All available placement-related information was gathered, including placement episodes prior to study participation. A small number of cases ($n = 53$) was labeled in ORKIDS as containing sensitive information; information on these youth could not be accessed due to confidentiality concerns. For all remaining youth, available information in ORKIDS was gathered via the online data extraction tool. As a result, ORKIDS data were extracted for 275 youth for the current investigation.

In addition to ORKIDS data, trained assessors collected other information on the major project domains (i.e., mental health, education, quality of life, and sibling relationship quality) using multiple methods across the 18 months families were enrolled in the study. Assessors completed in-person interviews with youth participants, and data were collected from foster parents/caregivers via surveys and phone calls and from teachers and caseworkers via a web-based platform. Administrative data were also collected from the state Department of Education. The collection of these data permitted comparisons of youth for whom ORKIDS information was available vs. those without ORKIDS data (presented in the next subsection).

All data collection and study procedures were conducted in compliance with the Institutional Review Board of the university of the lead author as well as the Institutional Review Board of Oregon DHS.

Study Participants

The left-hand column of Table 1 provides descriptive information concerning the 275 youth for whom ORKIDS data were available at the point of study enrollment. As can be seen, study youth were apportioned equally across the experimental and control conditions, were evenly split in terms of gender, and were roughly 12 years old ($sd = 2.04$; range = 7–16 years) at the time of study enrollment. The mean difference in the age of siblings was 2.4 years ($sd = 1.04$; range = 0–4 years), and two-thirds of sibling dyads were full siblings ($n = 179$). Nearly three-quarters of youth were co-located in the same residence at study enrollment ($n = 204$). Over half of youth were in non-relative foster care (56%, $n = 155$), with 30% of youth living in a relative placement ($n = 82$), 11% living with one or more biological parents ($n = 30$), and 3% living with another caregiver ($n = 8$). Youth had been

placed in these locations for a mean of 2.2 years ($sd = 3.53$; range = 0–4,487 days). With respect to race and ethnicity, 62% of youth identified as non-Caucasian ($n = 165$), and 27% of youth identified as Hispanic ($n = 63$).

Of the 275 youth for whom ORKIDS data were available, 30 youth had not experienced placement change at the time administrative data were collected. Therefore, these youth were excluded from the statistical summaries and placement pathway flowcharts. Data for placement pathway flowcharts were based upon the remaining 245 youth.

Table 1 provides a comparison of the characteristics of youth in the active study sample vs. youth for whom ORKIDS information was unavailable for extraction. As compared to the latter group, youth with available data were more likely to include full siblings (65% vs. 43%; $\chi^2 = 10.69$, $p = 0.014$) and were more likely to be living together with their sibling (74% vs. 60%; $\chi^2 = 4.196$, $p = 0.041$). However, no other differences in the demographic characteristics of the two groups were significant at traditional p-values.

To provide additional context, the study sample had similarities to both the national child welfare population and Oregon child welfare population in their distributions of age, race/ethnicity, and placement type and duration. AFCARS data reported from the 2012 fiscal year (midway through the parent study) indicated that 39% of foster youth were in the 7–15 year age range and 58% were youth of color (USDHHS, 2012). In addition, 2012 AFCARS estimates suggested that 47% of youth were placed in non-relative foster homes, with 28% of youth in relative foster homes; with mean time in care of 22.7 months. While sibling-focused data were not readily available or reported in statewide and national reports of foster youth, in 2008—just prior to parent study start up—roughly 68% of youth were placed together with one or more of their siblings (State DHS child welfare database analysis conducted at our request).

Methodology Used to Develop Placement Pathway Flowcharts

The ORKIDS database organized placement information for each youth sequentially, beginning with the first placement after removal from the home of origin. Entry and exit dates for each placement and a brief description of placement type were used to develop youth-specific placement history tables consisting of placement type and length of stay in the placement. Types of placements fell into 10 main categories: relative foster home; non-relative foster home; residential placement; shelter; juvenile detention; trial reunification; runaway; therapeutic foster home; group home; or other. Placements included in the “other” category include a wide variety of additional living situations such as psychiatric hospital or treatment facilities.

The information in the individual placement history tables was aggregated and used to generate flowcharts at the level of the overall study sample. This aggregate information was used to track groups of youth who sequentially transitioned through the same placement types. *Placement type*, *placement sequence*, and *length of time spent in each placement* were the only variables used to construct the flowcharts, without regard to youth demographic factors or calendar year. Variables pertaining to placement type were paired with entry and

exit dates to calculate length of time spent in each placement. This information was summarized by placement type across all youth experiencing the same placement sequence.

Due to the high proportion of youth placed in relative, non-relative, or residential treatment center (RTC) settings, this study focused primarily on those three placement types, along with trial reunifications. Namely, 95% ($n = 262$) of the youth were placed in one of these four types of care during their first placement, as were 98.4% ($n = 242$) of the 246 youth who had a second placement, and 95.9% ($n = 188$) of the 196 youth who experienced a third placement. Thus, youth for whom ORKIDS information provided entry and exit dates, and who were in a relative, non-relative, and RTC setting at the first placement, formed the pool from which the flowcharts were populated ($n = 236$). Each flowchart contained the following information: the number of youth in each placement; the mean number of days youth spent in each placement; and the standard deviation of the mean number of days.

The `bysort` and `summarize` commands in Stata 14 generated the information needed to populate the flowcharts, which were created with the graphing software OmniGraffle 5. Flowcharts were developed using unique shapes to represent the following types of placements experienced by foster youth: relative placement (hexagon); non-relative placement (oval); residential care placement (square); and trial reunification (diamond). Flowcharts depicted the sequence of placements experienced by youth; the size of shapes was modified so that larger shapes corresponded to greater numbers of youth in that placement type. Shapes and paths with the highest frequency of youth sequencing were designated with bolded arrows.

Results

Description of the Study Sample

Youth experienced a maximum of 29 placements ($n = 1$), although 60% had 4 or fewer placements ($n = 161$), and 30 youth (13%) had more than 10 placements. Thirty youth (13%) experienced one placement: specifically, 20 youth (9%) were in relative care, 6 youth (3%) were in non-relative care, and 4 youth (2%) were in trial reunifications. Because these youth did not have an end date for their first placement, their length of stay information was not included in the statistical summaries or in the figures. The mean length for the first six placement episodes ranged from about 200 ($sd = 522.2$) to about 287 ($sd = 571.2$) days. As can be seen in Table 2, most youth were in relative care during the first placement (55%; $n = 132$), with fewer youth in non-relative care (33%; $n = 85$), and residential care (7%; $n = 19$). Youth who started in relative care had the lowest number of placements ($m = 4.78$; $sd = 4.5$) and the longest initial placement length in days ($m = 264$; $sd = 488$) as compared to non-relative care placements ($m = 4.81$; $sd = 4.7$) and length ($m = 149$; $sd = 300$), and RTC settings ($m = 5.63$; $sd = 2.9$) and length ($m = 25$; $sd = 33$). Length of stay in RTC placements was consistently shorter than in community or family care placements for the first five placements, but not for youth who were in an RTC at their sixth placement. Table 2 also notes how many youth were placed with relatives, or who successfully reunified with their caregivers ("Stayers"), by placement number.

Placement Pathways Experienced by Study Youth

Three distinct flowcharts were developed to describe the placement pathways of youth from their first through sixth placements. Figure 1 follows youth who started in relative care; Figure 2 follows youth whose first placement was non-relative care; and Figure 3 depicts youth whose first placement was in an RTC.

The flowcharts were designed to be read from top to bottom. Numbers of youth in the flowcharts decreased as placement number increased because youth either found permanency (see Figure 1) or transitioned to another type of placement not included in these analyses (e.g., being designated as a runaway or entering a specialized treatment facility). The pathways with the largest proportion of youth sequencing in the same pattern (i.e., the most common paths) were highlighted with bolded arrows.

First placement.—Out of the 236 youth in the placement pool, 56% ($n = 132$) started in relative care and stayed for a mean length of just under 9 months (range = 0–4,487 days); 36% ($n = 85$) were placed in non-relative foster care for about 5 months (range = 0–2,270 days); and 8% ($n = 19$) began in an RTC for 3 and a half weeks (range = 0–123 days).

Second and third placements for youth in relative care.—For youth whose first placement was relative foster care, 34% moved into another relative's home for 10 months ($n = 45$); 30% transitioned to a trial reunification with a parent for nearly a year ($n = 40$); 19% moved into non-relative foster care for over 9 months ($n = 25$); and 2% moved into residential care for 2 weeks ($n = 3$). Of the youth who experienced 2 relative placements in a row, 17 moved into a third relative placement for 5 and a half months (38%); 13 into a trial reunification for 5 and a half months (29%); 9 into a non-relative's home for nearly 2 years (20%); and 4 into residential care for more than a year (9%).

For youth who experienced a relative and then a non-relative placement, 4 moved into a relative placement for almost 4 months (16%); 5 into a trial reunification for 5 months (20%); 7 into a non-relative's home for 5 and a half months (28%); and 3 into an RTC setting for almost 2 months (12%).

Youth who transitioned from a relative placement to a trial reunification for their second placement then moved into relative care for just over 5 months ($n = 15$; 38%); non-relative care for a year and a half ($n = 5$; 13%); residential care for 11 months ($n = 4$; 10%); or another trial reunification for 6 months ($n = 1$; 3%).

Two of the youth who moved from relative care to an RTC were placed in relative care for just over a year, and 1 youth was moved to another residential placement for 5 weeks.

Second and third placements for youth in non-relative care.—For youth whose first placement was non-relative foster care, 14% moved into a relative's home for 8 months ($n = 12$); 29% transitioned to a trial reunification with a parent for about 6 months ($n = 25$); 46% moved into non-relative foster care for 6 months ($n = 39$); and 4% moved into an RTC setting for a few days ($n = 3$).

Of the youth who experienced two non-relative placements in a row, 15 moved into a third non-relative placement for about 9 months (39%); 7 into a trial reunification for 2 months (20%); 7 into a relative's home for a year and a half (18%); and 1 into residential care for a little under 8 months (3%).

For youth who experienced a non-relative and then a relative placement, 2 moved into a relative placement for just under a year (17%); 5 into a trial reunification for 6 months (42%); and 4 into a non-relative's home for a little less than a year (33%).

Youth who transitioned from a non-relative placement to a trial reunification for their second placement then moved into relative care for slightly more than a year ($n = 2$; 8%); non-relative care ($n = 10$; 40%) or residential care ($n = 1$; 4%) for about 3 months.

Two of the youth who moved from non-relative care to an RTC were placed in non-relative care for 3 days, and 1 youth was moved to a relative care placement for five weeks.

Second and third placements for youth in residential care.—For youth whose first placement was an RTC, 21% moved into a relative's home for a month ($n = 4$); 11% transitioned to a trial reunification with a parent for 6 months ($n = 2$); 37% moved into non-relative foster care for 6 months ($n = 7$); and 21% moved into another residential care placement for just under a year ($n = 4$).

Of the youth who experienced two RTC placements in a row, 1 was moved into a third residential placement for 5 weeks, and 2 were placed in relative care for more than a year. Youth who moved from residential care to relative care moved into either non-relative care ($n = 2$) for 6 and a half months, or a trial reunification ($n = 2$) for 2 months.

Six of the youth who experienced a non-relative placement following an RTC placement were moved into another non-relative home for 2 and a half months. Both youth who transitioned from residential care to a trial reunification were then placed in a non-relative home for 6 weeks.

Discussion

For child welfare policymakers, administrators, and researchers, tracking youth experiencing multiple placements is essential. This paper explicated a descriptive methodology of tracking placement trajectories for foster youth. The method relied upon the development of placement tables describing the type, duration within, and sequencing of placements experienced by youth; and the creation of flowcharts to visualize the movement of groups of youth into placements over time. Our methodology was exemplified via analysis of administrative child welfare data from Oregon using a sample of preadolescent and adolescent youth in foster care who were participants in the SIBS-FC study. Our findings suggest that the pathways experienced by study youth were heterogeneous, although the most common pathways reflected combinations of non-relative and relative foster home settings. The presentation of the figures, as well as the associated tables, was in support of enhancing understanding of how the method could be applied to the analysis of longitudinal placement data in child welfare.

Implications for Policy and Management Practitioners

Specifically, the use of foster care placement pathways can support evidence-based management of child welfare systems and the development of interventions to reduce the risk of youth experiencing foster care drift. For administrators and policymakers, placement flowcharts can help to identify diverse pathways to permanency or potential barriers to it, thus broadening understanding of the ways youth enter and exit desirable placement types such as kinship care and reduce undesirable placement experiences (e.g., large numbers of placements, as in the case of the 30 youth who experienced 10 placements). This method can also allow for the linking of aggregated information on placement type and duration, to support evaluation of the overall quality of placements. Such analysis can support comparisons of length of stay in critical placement types for youth who arrive from different prior placements (e.g., length of stay in residential treatment for youth who were in non-relative foster care vs. shelters) and who vary by demographic characteristics (e.g., gender, race and ethnicity, and age). In tandem with these types of analysis, a placement-focused visual scorecard can be used to promote continuous quality improvement and communicate with policymakers, funders, and key stakeholders.

Our methodology complements case-based placement pathway charting approaches by providing a visual depiction of aggregated placement dynamics. Group-based placement flowcharts can be combined with the youth-specific Placement History Chart approach developed by Kim and colleagues (2012) to examine the extent to which the placement experiences of specific youth are similar to or different from those of similar groups of youth, thereby providing context for the experiences of youth with whom caseworkers and clinicians are working. For example, we found that small but important numbers of youth experienced residential treatment center-based placements late in their placement history. This finding suggests more careful evaluation of the availability and viability of community-based placements for foster youth. At the administrative level, visualization of placement paths of particular concern may provide evidence for managers to develop programmatic or policy interventions; and at the individual level, effort may be focused on case-based permanency planning.

Implications for Researchers

Our approach is also designed to complement statistical approaches to the analysis of placement instability in two ways. First, our method supports the use of classification-based techniques, in that visual and statistical exploration of the patterns uncovered in flowcharts may be used to identify subgroups of youth who change placements more vs. less frequently, as well as youth at greatest risk of moving from community-based foster homes into treatment facilities. Second, once discrete patterns of placement pathways can be identified that are comprehensive and mutually exclusive, our method can be combined with post-hoc statistical analysis to describe the characteristics of youth experiencing each pathway. In this manner, the current study proposes a method of visualizing and then statistically describing groups of youth who may need more permanency planning, social supports, and health and mental health services.

Although our approach to flowcharting reflected a focus upon placement type and length of stay, additional information can be included in each placement cell (e.g., race/ethnicity, gender, age), and the overall methodology can be modified as needed. For example, these figures, and the placement history tables used to develop them, can be disaggregated to explore subpopulations of particular importance to practice, policy, and theory, including:

- Youth at different developmental stages, to evaluate the placement trajectories of very young children vs. older youth.
- The placement experiences of youth of different races/ethnicities, in order to determine the specific location of racial/ethnic disparities in placement instability.
- By service delivery area, so as to test indirectly for differences in the geographic availability of community supports (e.g., the availability of foster homes) and different organizational approaches to permanency planning.
- By level of satisfaction of youth with their placements, whereby youth are asked for their assessment of the suitability and quality of each placement.

These examples reflect different approaches to using flowcharts to explore the overarching context of foster care service delivery. One approach to capturing context is to anchor flowcharts by time, such that separate flowcharts are developed for new cohorts entering care. Such analysis can be used to identify systemic shocks (e.g., the loss of congregate placements due to changes in policy/funding), policy effects (James, 2004), and system changes (e.g., new approaches to permanency planning and/or contracting with community providers). In addition, the incorporation of information pertaining to caseworker and organizational factors may allow for the development of multidimensional dashboards tracking critical inputs and throughputs (e.g., the implementation of specific evidence-based practices, or the development of new caseworker training programs) associated with different placement pathways.

The use of placement flowcharts can also support the development of time-based studies linking attention to placement pathways to developmental processes. The relationship between placement disruption and child development is complex and reciprocal: Placement changes may result from developmental changes as well as influence them (Wulczyn, 2010). A life course perspective may support examination of the relationship between placement change, child development, and the social ecology of youth. Changes in the relationships youth hold with relative caregivers, other family members, and other adults (e.g., non-relative foster parents) can either help or hinder developmental opportunities for youth, and transitioning in and out of family care can strengthen or stress lifelong relationships. Entering foster care can open opportunities for children and youth to link their lives with non-parental adults who can help them develop and exercise agency to work within whichever situation the youth find themselves. The developmental timing of when youth enter foster care may contribute to the cumulative risk of youth experiencing multiple placement transitions while in care (Nurius, Green, Logan-Greene, & Borja, 2015).

Finally, the use of flowcharts focused on sibling co-placement may help to focus attention on sibling-specific placement pathways, and support the longitudinal tracking of siblings in administrative databases. Some studies have examined sibling co-placement, but longitudinal research is needed on the placement pathways experienced by siblings, particularly from large sibling constellations and/or sibling groups in which one or more siblings has significant health/mental health needs (McBeath et al., 2014). Such groups may be particularly difficult to remain co-placed over time and are therefore of special concern to child welfare administrators and practitioners.

Study Limitations

These potential benefits should be understood in relation to limitations in the study methodology and our application of it. With respect to the former, the proposed method was developed to capture the range of placement pathways experienced by youth; as a result, the visual presentation of pathways may not reflect a parsimonious number of common placement experiences of youth. While the placement flowcharts depict the complexity of youth placement histories, it may be difficult to link their use to the analysis of specific placement pathways (e.g., from placement in kinship care to reunification with biological parent(s)). A second limitation concerns the significant data requirements needed to support the methodology. Research has demonstrated the information technology challenges of using statewide child welfare databases to track youth over time amidst changes in performance indicators and the availability of secondary data (Brownell & Jutte, 2013; Green et al., 2015). These challenges may make it difficult to apply the methodology to large groups of youth over long timeframes. Therefore, such a method may be most useful for understanding the pathways of youth following initial entry into care, or for understanding movement towards permanency for a limited length of time following the application of an intervention or specific child or family service.

Our application of the methodology using Oregon DHS administrative data also contained limitations. Because our study sample consisted of preadolescents and adolescents, study flowcharts disproportionately reflected youth with multiple moves and long stays in foster care. In addition, Oregon DHS data were used to examine the placement experiences of only SIBS-FC study youth. Although these youth were universally recruited from Oregon DHS, these considerations suggest that the active study sample was likely not generalizable to all youth in Oregon foster care or foster youth outside the state over the study period. Second, only four types of placements were used to construct the placement history tables (i.e., relative placement, non-relative foster home, residential care, trial reunification). While these placement types constituted nearly all the placements for the first three placements of youth, the current study did not reflect the full range of placement pathways experienced by all youth. However, because the categories represented in our current study are among the most common types of placements in foster care nationally, we would expect to see other states and jurisdictions refer to them regularly—thereby supporting the scalability of our method.

Conclusion

Complex foster care placement experiences reflect the accumulation of placement decisions influenced by individual needs, caregiver-family factors, and systemic factors that interact at different decision points (Chor, McClelland, Weiner, Jordan, & Lyons, 2013; Rock, Michelson, Thomson, & Day, 2015). The use of placement pathway flowcharts can advance understanding of those processes that lead some youth to experience multiple placements while in care. Our methodology may be aligned with existing multivariate and classification-based analytic approaches to identify youth at greatest risk for impermanence and other adverse outcomes. The ultimate goal of such analysis is to identify the factors promoting permanency, relational stability, and wellbeing.

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Figure 1.
Placement pathways for youth who begin in relative care

Figure 2.
Placement pathways for youth who begin in non-relative care

Figure 3.
Placement pathways for youth who begin in residential care

Table 1

Descriptive statistics for youth with complete vs. incomplete ORKIDS data

	Complete ORKIDS data (<i>n</i> = 275)	Limited or No ORKIDS data (<i>n</i> = 53)	Significance
<i>Treatment (TX) status, % (n)</i>			
Control	49% (134)	49% (26)	ns
TX	51% (141)	51% (27)	
Age, <i>M</i> (<i>SD</i>)	11.97 (2.04)	11.4 (1.74)	<i>t</i> (326) = −1.910, <i>p</i> = .057
Age Difference, <i>M</i> (<i>SD</i>)	2.39 (1.04)	2.66 (1.34)	ns
<i>Sibling Type, % (n)</i>			
Full	65% (179)	43% (23)	$\chi^2(3, n = 328) = 10.690, p = .014$
Half	34% (93)	55% (29)	
Step	0% (1)	2% (1)	
Other	1% (2)	0% (0)	
<i>Living Situation at Enrollment, % (n)</i>			
Together	74% (204)	60% (32)	$\chi^2(1, n = 328) = 4.196, p = .041$
Apart	26% (71)	40% (21)	
<i>Gender, % (n)</i>			
Female	49% (135)	55% (29)	ns
Male	51% (140)	45% (24)	
<i>Gender Composition, % (n)</i>			
OS male, YS male	31% (85)	25% (13)	ns
OS male, YS female	19% (52)	19% (10)	
OS female, YS female	29% (79)	36% (19)	
OS female, YS male	21% (59)	21% (11)	
Years siblings were in placement at TX start, <i>M</i> (<i>SD</i>)	2.2(3.53)	2.16(2.56)	ns
<i>Placement type at TX start, % (n)</i>			
Non-Relative Foster Parent	56% (155)	62% (32)	ns
Kinship Care	30% (82)	19% (10)	
Biological Parent(s)	11% (30)	12% (6)	
Other Caregiver(s)	3% (8)	8% (4)	
<i>Race, % (n)</i>			
American Indian or Alaskan Native	6% (16)	0% (0)	$\chi^2(5, n = 319) = 11.020, p = .051$
Asian or Pacific Islander	1% (4)	0% (0)	
Black or African American	13% (36)	8% (4)	
White	38% (102)	48% (25)	
Multi-racial	26% (70)	38% (20)	
Other	15% (39)	6% (3)	
<i>Ethnicity, % (n)</i>			
Hispanic	27% (63)	20% (10)	ns
Non Hispanic	73% (171)	80% (39)	

Table 2

Length of placements (days) by placement type

	<i><u>n</u></i>	<i><u>M</u></i>	<i><u>SD</u></i>	<i><u>MD</u></i>	<i><u>Stayers</u></i>
<i>First placement</i> ^a	236	203.3	413.7	50.5	25
Relative	132	264	488.6	85	19
Non-relative	85	149	300.4	29	6
Residential	19	24.7	32.9	11	-
<i>Second placement</i>	209	245.7	480.9	161	34
Relative	61	281.3	408.4	170	15
Non-relative	71	206	226.3	157	-
Residential	10	144.4	320	15	-
Trial reunifications	67	270.6	713.6	181	19
<i>Third placement</i>	154	241.2	365.7	152	24
Relative	41	268.2	473.3	177	9
Non-relative	64	270.7	489.5	17.5	-
Residential	15	167.2	227.1	39	-
Trial reunifications	34	154	88.2	179.5	9
<i>Fourth placement</i>	132	250.9	469.7	159	13
Relative	23	323.9	219.2	270	6
Non-relative	50	206	311.5	108	-
Residential	24	98	183.5	31	-
Trial reunifications	35	379.2	882.7	181	7
<i>Fifth placement</i>	99	287.4	571.2	128.5	18
Relative	22	248.7	359	66.5	8
Non-relative	39	484.7	871.9	154	-
Residential	19	89.5	126.4	33	-
Trial reunifications	19	196.1	119	182	10
<i>Sixth placement</i>	88	200.2	522.2	148	12
Relative	18	235.4	237.4	235.5	5
Non-relative	40	175.4	727	137	-
Residential	18	235.4	237.4	235.5	-
Trial reunifications	12	179.8	91.7	182	7

^aNote: 30 additional youth experienced a first placement in one of these four categories, but did not have exit dates. Therefore, the information from these youth was not included in these summaries.