



Minn-LInK Child Welfare Special Topic Report No. 6

Children in Treatment Foster Care:

*Using agency data to study cross-
system child outcomes*

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Center for Advanced Studies
in **Child Welfare**

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Minn-LInK

The Minn-LInK project at the Center for Advanced Studies in Child Welfare at the University of Minnesota School of Social Work relies on secondary administrative data obtained from statewide public programs. Minn-LInK provides a unique collaborative, university-based research environment with the express purpose of studying child and family well-being in Minnesota. The administrative data sets used in this descriptive analysis originate in the Minnesota Department of Human Services (utilizing the Social Services Information System, or SSIS) which oversees the state child protection system in Minnesota and student public school education records from the Minnesota Department of Education. All data use has been within the guidelines set by strict legal agreements between these agencies and the University of Minnesota that protect personal privacy.

Human service programs collect data for multiple purposes: program administration, compliance with federal and state reporting, fiscal management, and local outcome measures. Policy and practice research has rarely been the focus of either automated system development or data collection. While these realities do not prohibit the successful design, implementation, and completion of research, it does present researchers with unique challenges related to study design and time-frames for study group selection that do not occur when collecting and working with primary data. Instances in which data system conditions drove the structure of this study have been noted in this report.

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Executive Summary

This exploratory study matched a set of data from a treatment foster care population served in one Midwestern state during one calendar year with statewide data from public schools and child welfare agencies to create a broader picture of how these children were faring. Despite typical challenges to the quality of agency-level data, a significant proportion of child records could be matched to data from other systems. Important discoveries were made in terms of the attendance patterns of school-aged children and their participation in special education. The stabilizing effect of treatment foster care can be observed by high rates of child welfare involvement up to the point when children were placed in treatment foster care settings after which, they had very little, if any, subsequent child welfare involvement. Recommendations are provided for how treatment foster care agencies might not only enhance the quality of their data to improve their ability to report on their performance but to consider the broader research implications illustrated in the findings presented here.

Introduction

Research on children in treatment foster care is limited, especially when compared with the literature on children in non-specialized foster care. Treatment foster care, also known as intensive, therapeutic, or specialized foster care, is a relatively new way of caring for children who need to be removed from their biological homes and who have intensive mental, emotional, behavioral, or medical needs. Treatment foster care is intended to provide a normal home-based setting that also meets the unique needs of these children, avoiding more structured institutional settings. Treatment foster parents require specialized training and supporting services so that a pool of appropriate homes to meet the needs of this growing population of children can be maintained. Studies of the effectiveness of treatment foster care show mixed-to-positive results and have used a variety of methodologies, sample sizes and outcome measures yet, in many instances, the outcomes for regular foster care children are used as proxies for explaining the outcomes of treatment foster care children.

The potential to expand upon the limited literature on treatment foster care would be enhanced by an examination of the degree to which typical agency data might be used to conduct these much-needed treatment foster care studies. In this exploration, we assessed the degree to which the status of one Midwestern treatment foster care population could be described by using data from three public systems. If treatment foster care agencies are able to utilize data they already collect to support broader studies of child outcomes, this may reduce the need for the qualitative, longitudinal, and intervention-specific studies that are so expensive to undertake. Using administrative data in creative ways can promote research activities on this important population that may have indirect benefits to agencies in terms of improving data accuracy, better informing funders of successes, and cultivating a data-driven agency culture.

Background

Treatment foster care is a relatively new service modality, emerging and maturing over the past 30 years. Data collection and formal outcome and performance measures are likewise evolving. This study had two broad purposes: to explore the degree to which administrative data taken from one treatment foster care agency could be successfully joined to other statewide data systems; and 2) if successful, how these data might create a broader picture of the educational and child welfare status of those children served. The successful use of these administrative data has a number of important

implications for both treatment foster care agencies specifically, and treatment foster care generally, a field that could benefit from more research that is specific to the unique needs of their service population.

Treatment Foster Care

Treatment Foster Care (TFC) began during the 1970s as a way to provide specialized care to children involved with the child welfare system, who were in foster care, and whose needs were greater than could be met by the traditional family foster care setting. TFC, also known as specialized, therapeutic, or intensive foster care, was driven as much by need as it was by the movement to deinstitutionalize mental health systems in the 1970s and 1980s and by the financial pressures of Medicaid to reduce the amount of time children were in hospital or institutional care (Morrison Dore & Mullin, 2006). TFC settings are usually in a family home, with foster parents who have received special training to meet the unique mental health, social, and behavioral needs of children in their care. Every effort is made to create settings that are “normalized” while providing this specialized care, with the intent of keeping children out of institutional settings which were more restrictive and more expensive. Estimates are that nationwide, there are over 70,000 children in TFC (Castrrianno, 2007).

Children in Treatment Foster Care

The earliest attempts to describe TFC populations relied on data that was available on general foster care populations and to some extent this is still the case. For example, the mental health status of child welfare populations generally have been well-documented but less is known about children in TFC (Heflinger, Simpkins, Combs-Orme, 2000). Hussey & Guo’s 2005 study of the characteristics of children served in an Ohio treatment foster care program revealed racial proportions of TFC children that were reflective of the broader foster care population with an overrepresentation of African American children (88.2%), high rates of neglect (41.2%), and high rates of out of home placements prior to TFC placement (an average of 4.48 placements). Children in TFC were disproportionately from families where drug (76.5%) or alcohol (42%) use was common and children had experienced an average of over a year (425 days) in care. Although IQ scores were not available on all sample children, those that were available were lower than average and more than half (51.7%) had a history of psychopharmacologic treatment (Hussey & Guo, 2005). By virtue of being in TFC many children have at least one diagnosis of an emotional, behavioral, or developmental disorder.

During the 1990s a number of small-scale and agency-specific evaluations of TFC drove broad efforts to determine effectiveness as well as to develop a better understanding about children in care. A 1994 meta-analysis of 11 then current evaluations by Hudson et al. (1994) showed that evaluation

populations were often very small and served by highly variable service models that produced inconclusive results. One common finding across studies was that TFC programs were economical since their results were either better or no worse than other types of more structured, more expensive care. In 2006 Craven and Lee similarly examined another 18 studies of TFC and learned that researchers continued to rely upon data from broad foster care populations to inform their work when considering TFC populations. As was the case with Hudson et al.'s review twelve years earlier, study sample sizes were relatively small with a mix of service delivery models which hindered cross-study comparisons of results.

Although some problems with methodological rigor and generalizeability of findings persist, there is recognition that different age groups of TFC children, such as preschoolers (Zeanah, Larrieu, Heller, Valliere, Hinshaw-Fuselier, Aoki, & Drilling, 2001) and adolescents (Reddy & Pfeiffer, 1997) have different developmental needs that should be reflected when measuring program outcomes (Craven & Lee, 2006). In addition, recommendations for evaluation research include the need to take social context into account (such as through the measurement of education outcomes) (Reddy & Pfeiffer, 1997), the number of prior placements preceding TFC (Staff & Fein, 1995), and a sensitivity to sex-based differences in needs and outcomes (Chamberlain & Reid, 1994).

PATH Minnesota

PATH is a multi-state service provider supporting home-based treatment foster care. PATH was founded by social workers and foster parents in 1972 with the intent to serve the needs of children in care in family-based environments as opposed to institutional settings. In 2007, the Minnesota branch of PATH (PATH Minnesota) served 1,499 children, or 37% of all children served in the four PATH states (PATH, 2007). There are 50 different services offered by PATH that fall into four main categories: Treatment Foster Care for children up to age 18 with emotional, behavioral, intellectual, developmental, or medical needs; Respite Foster Care, providing temporary care to families who need a break from care; Bridge Builders, which assists older foster care children who are near "aging out" of care; and the Rural Expansion of Adoptive Communities and Homes, or REACH, which supports the adoption of children in rural areas who have special needs (PATH Minnesota Services Overview, 2007). Some services are available statewide and others are specific to particular areas of the state.

Children in need of TFC are connected to PATH through referrals from child welfare case managers at the time of placement and after having determined that regular foster care will not sufficiently meet their needs. The referring county social service agencies then make contact with a local PATH office, and a thorough clinical assessment of child needs is made to ascertain the best TFC

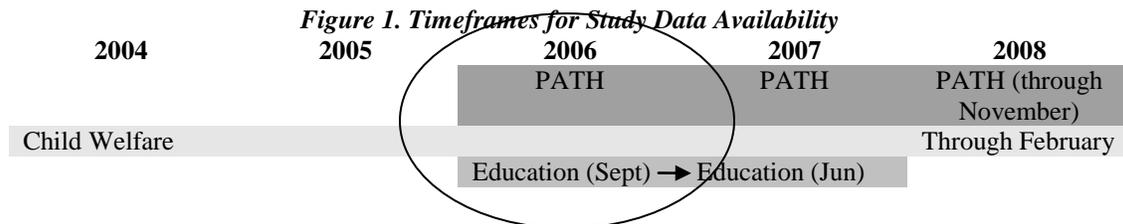
home and foster child fit. PATH works with communities to actively recruit and train families to provide TFC homes to children in need. PATH also engages in community education, advocacy, and fundraising to promote ongoing provision of services. Local community medical, psychological and educational resources are important collaborators.

Like most direct-service providers with limited budgets PATH maintains data that support reporting obligations and outcome measurement but its view of how children are faring across other systems and over time is limited to its own records and the limits of the data systems to which it has access. PATH collaborated with the University of Minnesota Minn-LInK Project during the summer of 2008 to explore to what extent PATH agency data could be linked to other statewide administrative data systems to create a broader picture of the status of the children served. Two data systems examined were public education records and child welfare data for the years before, during, and after placement in TFC during calendar year 2006.

Study Data and Design

Data Sources

PATH Minnesota provided identified program data (child names, some social security numbers, and birth dates) for the service delivery time period of calendar year 2006 through November, 2008. PATH and the University of Minnesota completed a data sharing agreement to allow for this data sharing and provision for its security. The file contained TFC placement information on 1,546 unique children served over this time period. At the Minn-LInK Project, child welfare data was available for the time period of January, 2000 through February, 2008 and education records for 2001 through 2007. Data use at Minn-LInK is governed by legal data sharing agreements with the state departments of Education, Human Services, and Health. The availability of data from these other systems helped identify the target year for the PATH service population.



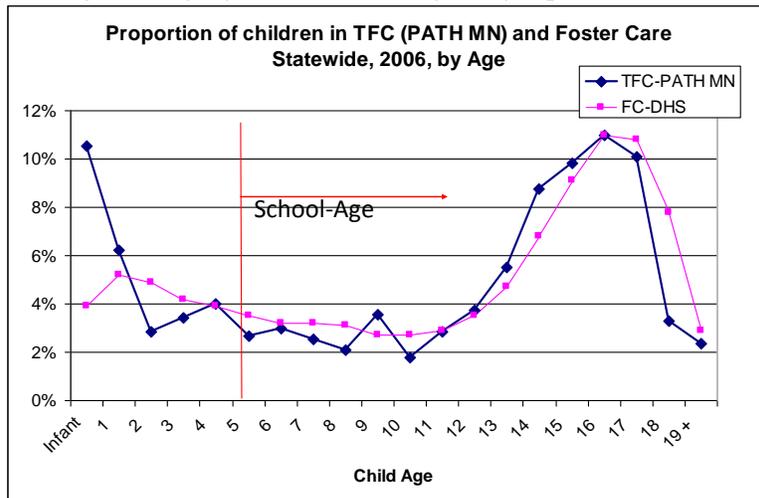
Because selecting a 2007 or 2008 calendar year cohort of PATH children would limit the examination of education outcomes for school-age children (due to the fact that education data was not yet available for the 2007-2008 school year) and because a pre- and post-TFC placement time period was sought for the child welfare data, children served during calendar year 2006 were selected for study (see Figure 1). This group comprised 673 children. Their age distribution is shown in Figure 2. Although this design creates cross-sectional limitations, it is somewhat offset by the inclusion longitudinal data from surrounding years creating a longer-term picture of the experiences of the children.

Results

Demographics

Significant proportions of TFC children served by PATH MN were either preschool-age or teens, consistent with a national longitudinal review of age at first foster care placement where over half of all children in placement in the United States between 1990 and 1997 were either preschoolers (up to age five) or teens, ages 13 through 17 (Wulczyn, Brunner Hislop, & Jones Harden, 2002). The TFC age distribution also closely follows the statewide age distribution for all children in foster care in Minnesota during 2006 (Minnesota Department of Human Services, 2007) with the exception of infants who are much more represented among PATH MN’s treatment foster care population (Figure 2).

Figure 2. Age of TFC Children (Age as of September 1, 2006)



The ages of children in this study group have important implications for the ability to learn about school attendance. The 2006 PATH group contains 491 children, (or 72.9% of the entire group) who were school-age as of September 1, 2006. Table 1 summarizes other demographics of PATH MN children in TFC during 2006 compared to Minnesota’s general foster care population that same year.

Table 1. Demographics and Match Rates for PATH MN TFC Children from 2006

		N	Percent	Out of Home Care Report, 2006-DHS (2007)
Gender	<i>Female</i>	321	47.7%	46.0%
	<i>Male</i>	352	52.3%	54.0%
Diagnosis Groups	<i>Adjustment disorders</i>	71	10.5%	-
	<i>Conduct disorders</i>	64	9.5%	-
	<i>Reactive Attachment / Oppositional Defiant</i>	94	14.0%	-
	<i>ADHD</i>	117	17.4%	-
Race	<i>Native American</i>	79	11.7%	11.6%
	<i>Hispanic</i>	28	4.2%	8.2%
	<i>Black/African American</i>	55	8.2%	20.7%
	<i>White/Caucasian</i>	340	50.5%	54.2%
	<i>Asian / Pacific Islander</i>	8	1.2%	2.1%
	<i>More than one race</i>	58	8.6%	-
	<i>Two or more races</i>			7.7%
	<i>Unknown/Missing</i>	105	15.6%	.6%
Match Rates	Child Protection System Match Rate (SSIS)	206	30.6%	-
	Public Education Match Rate (MARSS)	373	78.5%	-

PATH TFC children in 2006 were slightly more likely to be female (48% compared to 46% of females in foster care statewide that year), much less likely to be African American (8% among TFC children compared to 21% of the statewide foster care population in 2006), slightly less likely to be Hispanic (4.2% for TFC compared to 8.2% statewide), and the race for PATH MN children was much more likely (15.6%) to be unknown or missing (or multi-racial) than for foster care children statewide (.6%). PATH agency staff speculate that children of unknown race are more likely to be Native American than another race. Thirty-one percent (30.6%) of the 2006 PATH TFC group had records that matched to the statewide child welfare system over the period of 2004 through 2007 and among school-age children, 78% had matching public school records.

Child Welfare Involvement

For TFC children whose records matched to statewide child welfare records, contacts were quantified for the time period before and after their 2006 TFC placement. Figures 3-5 illustrate the trends in child welfare reports, substantiated maltreatment, and out-of-home placements for two years

prior to and one year after these children were placed in TFC in 2006. As might be expected for children in placement, reports and determined maltreatments fell off significantly in 2007.

Figure 3. Reports to Child Welfare

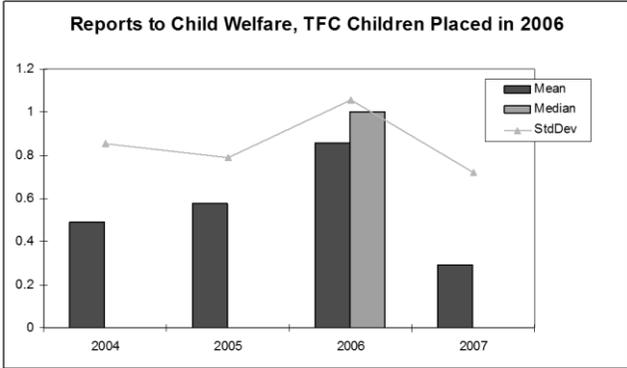


Figure 4. Determined (Substantiated) Maltreatment Findings

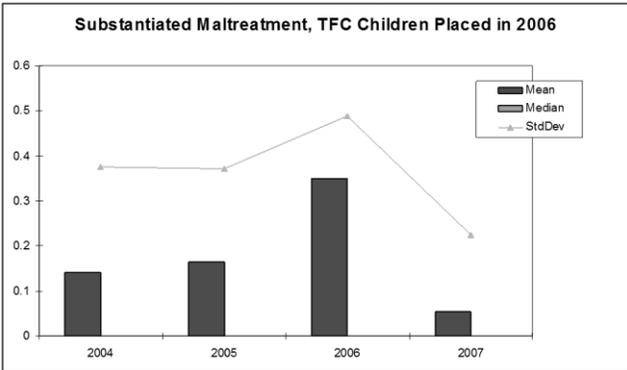
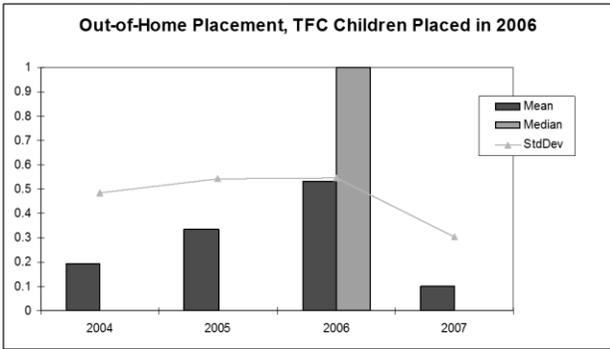


Figure 5. Out-of-Home Placements



With regard to all three types of child welfare involvement (reports, determined maltreatment, and placements) an increase in contacts is observed up to 2006 with a marked decrease one year later, in 2007. What these data do not show is whether or not children were in TFC placements during years prior to 2006. Data from PATH for 2007 show that the majority of the children placed in 2006 (90.5%) had no new TFC placements in 2007 and 95.5% had no new TFC placements for 2008 through early November. This activity implies that a majority of these children had increasing contacts with child

welfare up to the year in which they were placed in TFC after which there was a dramatic decrease in contacts in both the broader child welfare and TFC systems.

Education

One explanation for a portion of the 78.5% match rate to education records for school-age children is that some five year-olds were not eligible to begin kindergarten until they were closer to age six. At the other end of the age continuum, there were a total of 16 young adults who were age 19 or older who were in TFC placements during 2006 who may not have been eligible to attend public schools any longer or had graduated. Finally, as was the case with child welfare records, some portion of the unmatched records likely resulted from name and birth date data entry inaccuracies as well as a small minority of students who might have been attending non-public schools.

Figure 6. Grade in School

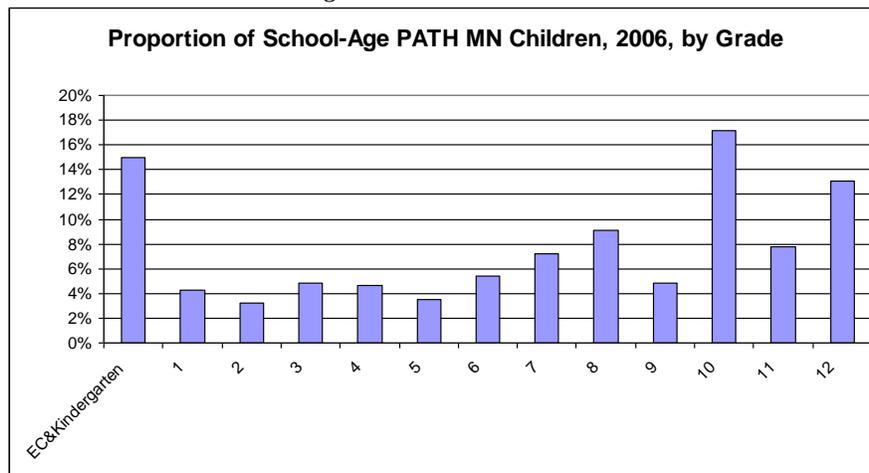


Table 2. Special Education, Poverty, Gifted & Talented Status, Disability

	<i>N</i>	<i>Percent</i>
Special Education Eligible	175	46.9%
Free Meal Eligible	232	62.2%
Reduced Price Meal Eligible	12	3.2%
Ineligible	129	34.6%
Gifted & Talented	4	.6%
Disabled	188	50.4%
<i>Emotional/Behavioral</i>	92	24.7%
<i>Specific Learning Disability</i>	25	6.7%
<i>Developmental Delay</i>	19	5.1%
<i>Mild-moderate Developmental Cognitive</i>	18	4.8%
<i>All other disabilities</i>	34	9.1%

High rates of special education participation and emotional and behavioral disabilities are expected findings for this population. Half of students whose education records could be matched

(49.6%) did not have a disability coded in the education record, nor were roughly 53% of students participating in special education. Surprised at this relatively low rate of special education participation, PATH requested that we examine the age and diagnosis categories from PATH data of school-aged children who were not participating in special education.

Sixty children had diagnoses according to PATH records but were not eligible for special education. There was evidence that this was particularly true for older students (see Figure 7).

Figure 7. Age of Students with PATH Disabilities but No Special Education Participation

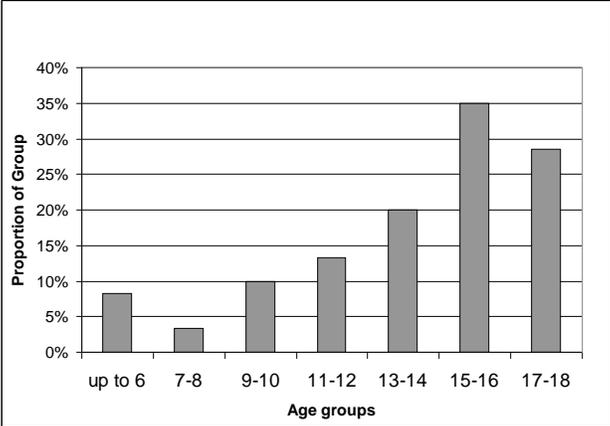
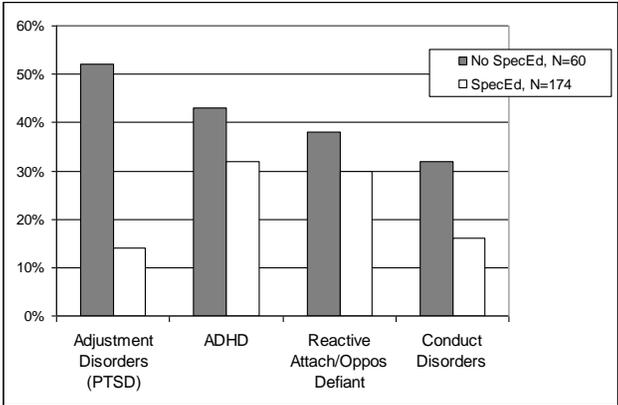


Figure 8. Proportion of PATH Children with and without Special Education Participation, by Diagnosis



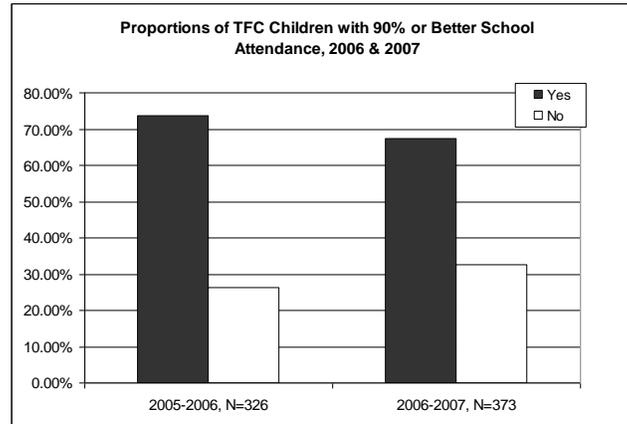
PATH children with Adjustment Disorders were less likely than children with other types of diagnoses to be participating in special education in school (Figure 8). As a proportion of each group (PATH children with and without special education eligibility) children with ADHD and Reactive Attachment/Oppositional Defiant disorders were nearly equally likely to be participating in special education.

One social context variable that is rarely available when examining the status of TFC populations is school attendance (Reddy & Pfeiffer, 1997). School attendance has strong correlations

with overall and long-term education outcomes for vulnerable students and for students of all ages. Lehr, Sinclair & Christensen (2004) learned that high school graduation can be accurately predicted by school attendance by as early as first grade. The attendance ratio (perfect attendance = 1.0) was calculated for TFC school-age children for both the 2006 and the 2007 school years. These academic years overlap the TFC placement calendar year time-frame, but together, they provide some sense of the degree to which school attendance improved changed over this two-year time period.

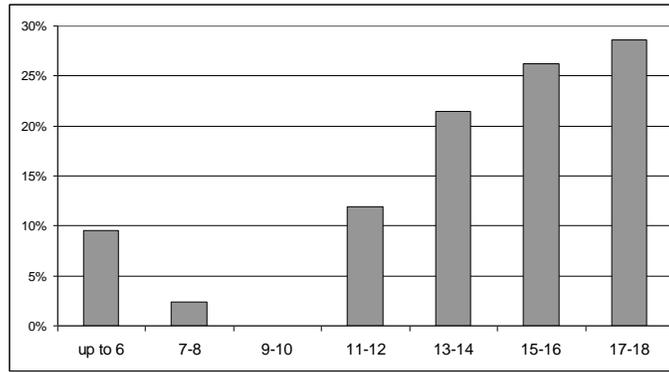
Many school districts and education researchers hold a 90% minimum annual attendance rate as a standard for learning (Chang & Romero, 2008) and attendance for this TFC group was examined for both school years to determine how many students met this threshold. Note that 326 students had education records match to 2006 and 373 students matched to 2007.

Figure 9. Attendance At or Above 90%



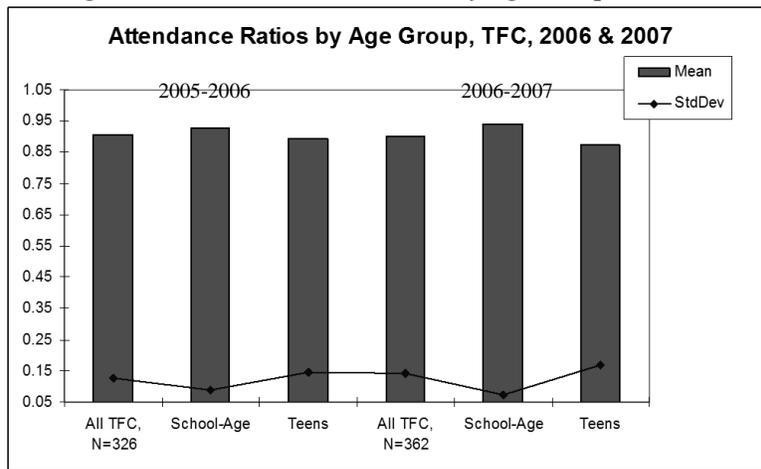
School-age PATH children were served during calendar year 2006 which means their TFC placement potentially overlapped the 2006 and 2007 school years. Over half of children served by PATH had attendance at 90% or better during both years (Figure 9). Of 240 TFC children who had attendance at or above 90% in 2006, 182, or 75.8% also had this level attendance in 2007. Forty-two students had attendance that was below 90% for both years. These students were disproportionately older students (see Figure 10), more likely to be female (63% versus 37% male) and were more likely to have participated in treatment foster care services (71.7%) and shelter (17.4%) than other services (Visitation, 10.9%; Independent Living Services, 10.9%; CTAA, 17.4%; and Adoption, 2.2%).

Figure 10. Age Groups of PATH Children with Two Consecutive Years of School Attendance Less than 90%



Examining school attendance by age groups shows that teens (over age 13) had slightly lower mean attendance ratios, consistently, compared to all TFC children and school-aged children (ages 6-12), for both school years (see Figure 11).

Figure 11. Mean Attendance Ratios by Age Group and Year



Outcomes by Specific Groups: Gender, Type of TFC, Diagnosis Status, and Race

PATH MN requested to see education status in relation to four independent variables: gender, type of treatment foster care, child diagnosis group, and race. Child welfare status measures were also examined when sub-groups were large enough. Some status measures such as education only apply to older children and child welfare reports, determined maltreatment, and placements fall significantly in 2007 and are not reported for all groups because Ns became too small. Status was examined in relation to the year of TFC placement and the year following (2006 and 2007) where data were available.

Gender

The mean school attendance ratio for TFC children was nearly the same for females (89.6%) as males (90.6%) and few differences were observed for child welfare reports or determined maltreatment

rates for either the year of TFC placement (2006) or 2007 (Figures 12-13). There were too few post-2006 placements to analyze by gender.

Figure 12. Child Welfare Reports by Gender

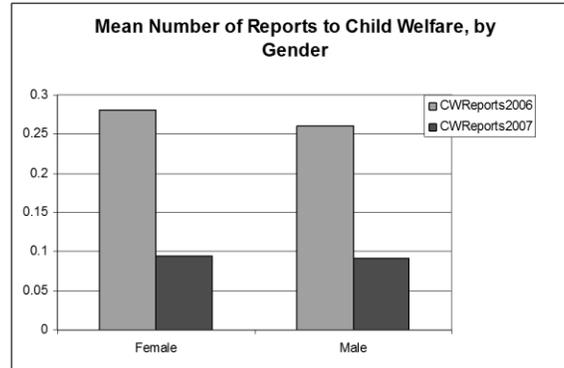
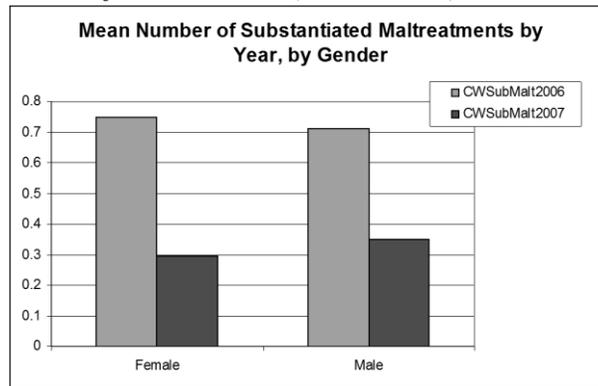


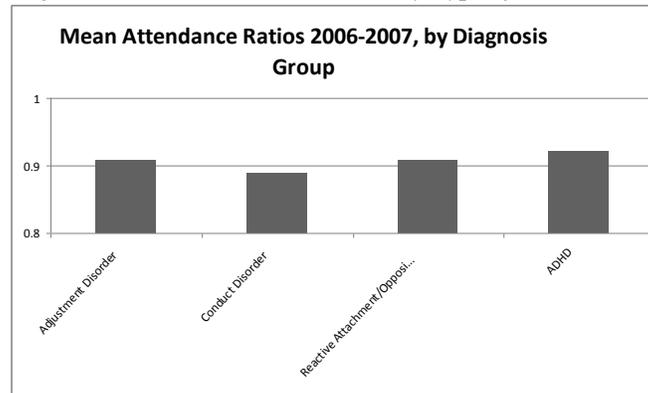
Figure 13. Child Welfare Determined (Substantiated) Maltreatments by Gender



Diagnosis

A majority of TFC children had school attendance that was near or at the 90% threshold (Figure 9) in spite of the fact that they entered care during that school year. When examining school attendance by diagnosis group, only slight variations are observed (Figure 14).

Figure 14. Mean Attendance Ratio by Type of TFC Service



Child welfare reports varied by type of diagnosis with children with ADHD and Adjustment disorders having significantly more reports than those with Conduct or Reactive Attachment/Oppositional Defiant disorders ($F= 3.742, df_{1,672}, p=.053$) (Figures 15-16). Children with Conduct disorders appear to have been more likely to experience substantiated maltreatment findings in 2007 (however, these differences were not statistically significant).

Figure 15. Mean Number of Child Welfare Reports by Diagnosis Group

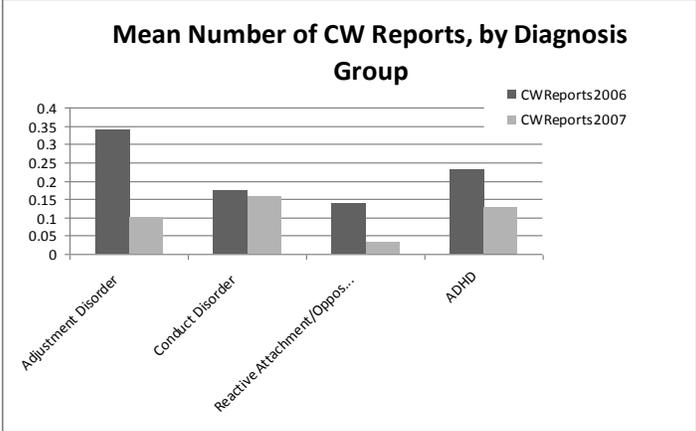
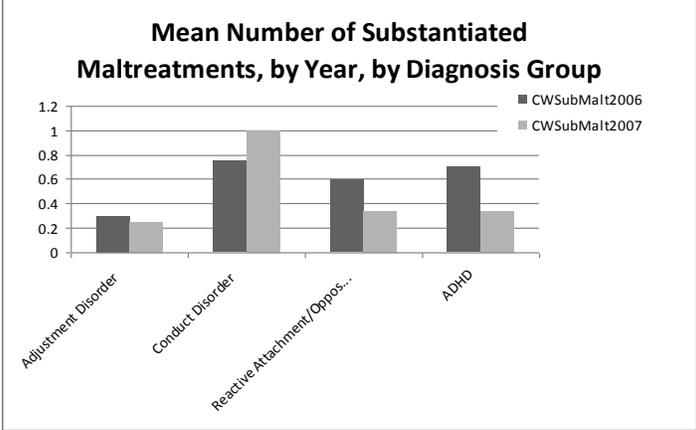


Figure 16. Mean Number of Determined (Substantiated) Maltreatment Findings by Diagnosis Group



Type of TFC Service

In most cases, school-age children in TFC placements during 2006 had mean attendance ratios that were at or above 90%. However, children in two types of services lagged below 90%: Independent Living Services (DHS / ILS on Figure 17) and Adoption (Figure 17).

Because service type is reflective of a child’s needs, child welfare status was not examined by TFC service type.

Race

In this analysis, we describe the distribution of children along particular measures by race. In Table 1, which describes the racial and ethnic composition of TFC children served by PATH MN, there is apparent under-representation of some children of color (Black/African American and Hispanic) compared to statewide foster care populations. In general there are more white children represented among PATH MN’s service population as well as among those with diagnoses (Figures 18-19).

Figure 18. Diagnosis by Race (White and Non-White)

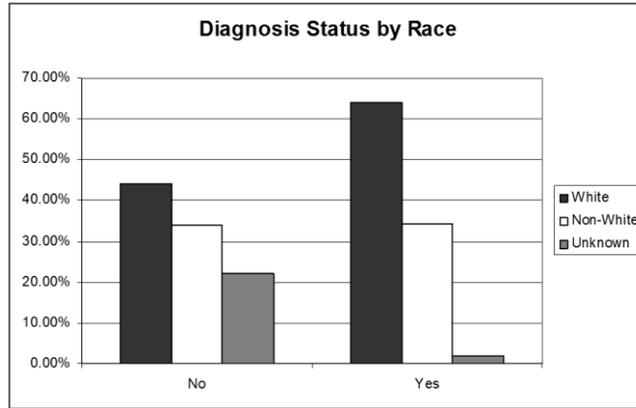
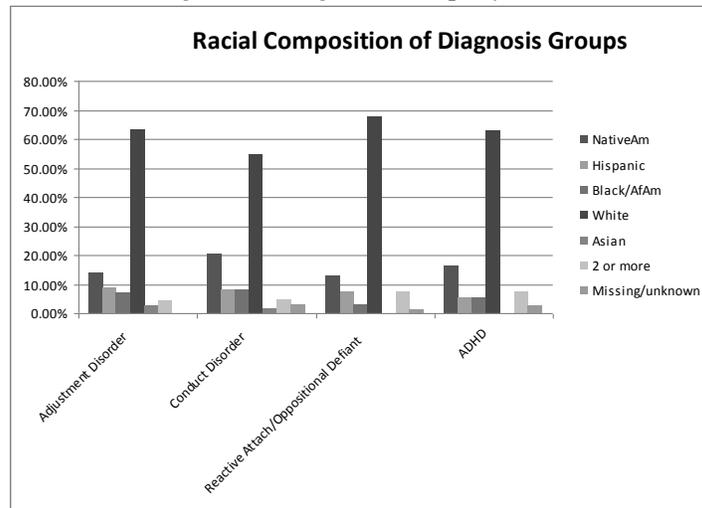


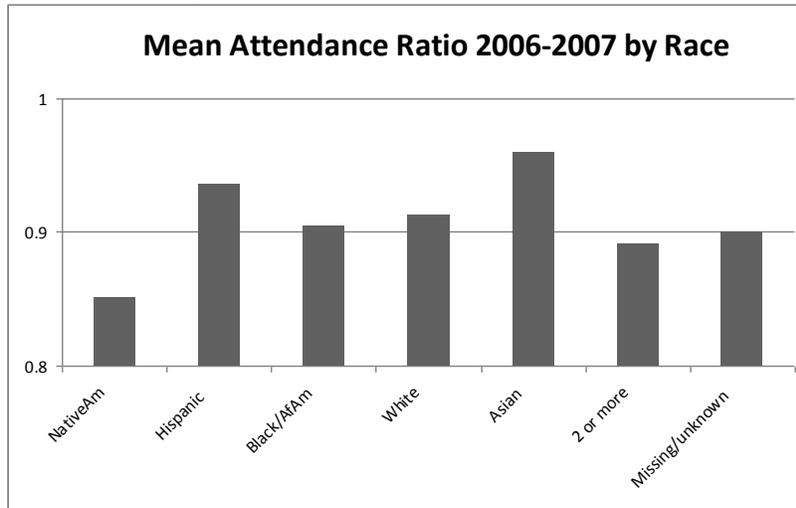
Figure 19. Diagnosis Groups by Race



Because child welfare involvement by race is discussed earlier and because a significant proportion of the race was missing for children, welfare status was not reexamined by race here.

Finally, the mean attendance ratios of racial groups reveal that most children were at or above 90% during 2007, with the exception of Native American children and those children of two or more races (Figure 20).

Figure 20. Mean Attendance Ratios by Race



Discussion

This exploration provided a unique opportunity to examine the status of a group of treatment foster care (TFC) children across multiple public systems. This contributed a new, TFC-specific descriptive analysis while evaluating the ability to work with real-world agency data to measure child status – something that is valuable if we are to continue to add to the body of TFC knowledge in economical and efficient ways. We learned that the ages of children served by PATH Minnesota were similar to the ages of all children in foster care in the state during the same time period with the exception of infants. We speculate that the over-representation of infants in the TFC population reflect data entry errors on birth dates that affected our ability to calculate age accurately.

While the age groups served by TFC were as expected, there were significant racial and ethnic differences that bear mentioning. While black and Native American children comprised a disproportionate share of the statewide foster care population in 2006, they were proportionately less than half (at 8.2%) of the TFC population (20.7%). Hispanic children are about twice as likely to be in regular foster care (8.2%) compared to TFC (4.2%) and while Native American children in TFC constituted 11.7% of the population (very much in agreement with the overall state proportion in foster care at 11.6%), agency staff assumptions that that the majority of “unknown” race TFC children were Native American would increase the proportion substantially to 27.3%. Clarification of race identification, along with a comparison to child ages would confirm whether TFC is subject to the claim that some children of color and particularly black children, are more likely to be in regular foster care via the juvenile justice system while children of other races’ needs are recognized as appropriate for “treatment” settings (Sickmund, 2004; Puzanchera, 2003; Commissioner of Minnesota Department of Corrections & Commissioner of Minnesota Department of Human Services, 2001; MacKenzie, 1999; Sickmund & Snyder, 1995; McCord, Widom, & Crowell, 2001).

In terms of education status, TFC children had surprisingly low special education participation rates (47%), particularly among children with a TFC Adjustment Disorder diagnosis. One possibility is that externalizing behavioral disorders that are more visible in the classroom might be more likely to come to the attention of teachers than internalizing disorders like Adjustment disorders which, at PATH, includes PTSD. It is unclear exactly why TFC children, who by virtue of requiring specialized care and who almost universally have at least one diagnosis, should have such low participation rates in special education in school. The TFC agency initially speculated that TFC children without special education participation would be younger children who had not yet received thorough school assessments. However, when we examined this by the age of children, we learned that in fact teens,

ages 15 and over, were the least likely to be participating in special education. One possible reason for this age-based difference is provided by what we observed in school attendance.

While most TFC children had attendance of at least 90% over both school years, the proportion of children with school attendance below 90% for two consecutive years climbs significantly at around age 13 (see Figure 10). Poor school attendance will significantly impair the ability of school staff to assess learning needs and if teens are in school less, as is the case with these TFC teens, they are much less likely to participate in special education. We may also infer an age-based rationale for poor teen school attendance and eventual special education participation by examining service type. Children in Independent Living Services (ILS) and Adoption services had lower attendance ratios than children in other types of services which might be due to the fact that children in ILS are older and are in the process of aging out of foster care. Many ILS children may not have a strong family support system and leave foster care without a plan in place. When children who are placed with relative foster care providers are adopted by those relatives, many of the financial supports that were in place for while the child was in foster care are no longer available once adopted. This may have a detrimental affect on families who are not prepared to fully meet the needs of these children, ultimately affecting educational engagement, including attendance. Regardless of the specific reason, it is clear that teens in TFC are highly likely to disengage in school which can have detrimental effects on their ability to receive the supportive services they need to be successful.

In this study we did not investigate school mobility, but it is also a contributing factor for poor school engagement and particularly for students in foster care. Nationally, children in foster care in 57% of states experience a significant number of school changes and the educational needs of children are not consistently addressed in 51% of states (U.S. Department of Health and Human Services, Administration for Children & Families, 2008). Overall, however, the school attendance rates of TFC children in this group were quite good (at or above 90%), and although 2007 school attendance is lower (Figure 9), it is impossible to disentangle the relationship between the exact start of placement and the start of an academic year. To determine whether TFC has a stabilizing effect on school attendance, it would be necessary to take note of when placement begins in relation to a given school year.

A surprisingly low proportion of TFC children had records in the state child welfare system (31%). Because it was necessary to conduct a name and birth date-based match across the TFC and child welfare data systems, we can only conclude that this low rate reflects data entry inaccuracies which can include a variety of misalignments including misspellings or missing information (particularly for children with multiple or hyphenated last names). Some of this confusion could be

reduced if agencies shared a unique identifier across systems such as a social security number or a state person index number that might be assigned by the child welfare system. For those children whose child welfare records could be located, we observed very logical child welfare involvement patterns. In particular, the escalation of contacts with child welfare are evident preceding the point at which children entered TFC, after which their contacts with child welfare fell off significantly. Child welfare data examined here can only illuminate whether there were contacts with the system but there are many more aspects of child welfare involvement that could be examined with more in-depth analysis. For example, we may choose to examine the history of placement type (family versus non-family) for children who enter TFC because we expect differential outcomes, we might examine reunification outcomes, or we might explore the average number of days in previous placements as an important indicator of a child's need for services. If we learn that children who eventually require TFC share a pattern of some days in care or a pattern of a number of placements, perhaps their needs can be identified earlier. Further, we might examine the allegations that are associated with particular maltreatment findings that precede TFC placements to help inform case planning or expected outcomes for children.

This exploration revealed some important insights into working with agency-level treatment foster care data to create a broader picture of the status of children served. The ability to locate matching records in public systems has important implications for research and although tedious, these implications are important to consider. Linkages to these other systems were imperfect due to differences in how first and last names are entered into systems, differences in birth-date entry, and inaccuracies in unique identifiers such as social security numbers, when they were available. While we do not propose that social security numbers are collected for social services receipt and they cannot be required for most services, having some unique identifier is a helpful tool when other data elements are beset by data entry errors.

To improve the accuracy of records, human services agencies engage in a number of data validation techniques including periodic matches to Social Security Administration records (to confirm the accuracy of social security numbers), validate mailing addresses through the use of software, and cross-checking client records to other government systems. Low-cost methods of mandating name data entry conventions and programming "forced" entry of particular data fields (which prohibits progression through the entry process when fields are left blank) to eliminate missing data can likewise improve overall data quality. These practices also include periodic quality checks of data in archive and the elimination of duplicate entries by the use of the assignment of unique client identifiers that can

facilitate longitudinal analyses and which can be easily assigned by many popular database programs. It is not our intent to be critical of the quality of this particular agency's data. On the contrary, this agency data was in fact very typical in its quality and completeness. In fact, we were able to match a significant portion of these records to the external systems of interest to create a broader picture of how these children were faring in spite of ordinary weaknesses. Improvements to these data would only clarify the picture we have formed.

The benefits to improving data accuracy are many. They include enhancing the ability of agencies to report to funders the work that is being done and monitor the day-to-day performance of processes. For systems like TFC which are part of a web of services utilized by a particularly vulnerable population with complex needs, data integrity can facilitate the types of analyses conducted here as well as illuminate the places in systems where change may be targeted. In this case, investigating the reasons why some TFC children are not participating in special education and should be, could, if remedied, dramatically enhance the learning experiences, school engagement, and ultimate successful completion of school for these students – something that is a shared outcome for both the education and child welfare systems. While many of these findings are reflective of the specific practices of one TFC system in one Midwestern state, there are implications for all agencies serving this too-seldom studied population to consider when maintaining their own local agency data as well as when contemplating the measurement of more longer-term outcomes for the children they serve. All social services providers must consider the role they play individually and collectively towards long-term human outcomes such as school completion and the avoidance of future child welfare involvement. It is only through the development of cross-system explorations such as the one undertaken here that we can begin to build the analytical foundation needed to answer these questions.

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