



Predictors of Parent-Child Reunification and Behavioral Health Services Use & Cost for Children in Foster Care

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Executive Summary

Florida's foster care system has been shouldering an increasing burden for over a decade. The number of children in foster care increased 35% during the 1990s, and the estimated median length of stay for a child entering foster care was 14.1 months in fiscal year (FY) 2000. Florida's rate of reunification for children in foster care lags behind the rest of the country, with only 45% of foster care children reunified with their custodial parents within 12 months (compared to the national standard of 76%). Additionally, children in the foster (and their custodial parents) have much higher need for and subsequent use of mental health and substance abuse treatment services than children not involved in the foster care system. Understanding the factors associated with successful reunification and the characteristics associated with behavioral health services use in this population will enable the Agency for Health Care Administration and the Department of Children and Families (DCF) to more appropriately target interventions that may lead to shorter lengths of stay, higher rates of successful reunification, and lower health services costs for foster care children and their custodial parents.

The purposes of the research reported here were to (1) identify the relevant predictors of successful parent-child reunification after an occurrence of documented child maltreatment and foster care placement, (2) examine the use and cost of behavioral health services for children in Florida's foster care system, and (3) explore the impact of parent-child reunification on the pattern and cost of behavioral health services used. DCF's Office of Family Safety Client Information System (OFS-CIS) data were used to identify children who had an occurrence of documented child maltreatment and foster care placement. The predictor study population included Florida Medicaid-enrolled children with a report of maltreatment who were placed into and exited foster care between July 1998 and June 2001, and their custodial parents. Child and parent characteristics and health services use and cost were derived from Medicaid administrative data after matching OFS-CIS and Medicaid data. In the service use study, we compared service use and cost for the following study and comparison groups: (1) foster care vs. non-foster care children, (2) successfully-reunified vs. non-successfully reunified children and (3) successfully-reunified vs. non-successfully reunified children with a diagnosis of serious mental illness. Also, an analysis of service use and cost before, during and after foster care placement was performed on the study population.

The strongest predictors of successful reunification in this study sample were the child's district of residence and the child's Medicaid eligibility status. The probability of successful reunification ranged from 6% for children in DCF District 11 (Miami) to 63% for DCF District 15 (Port St. Lucie). Children who were enrolled in Medicaid before their foster care placement (Type IV-E) were more than three times less likely to be successfully reunified than children who became eligible for Medicaid benefits because she/he was placed in foster care.

Our examination of behavioral health services use and cost yielded some interesting observations. Children in foster care used significantly higher amounts of inpatient, day treatment, case management, counseling, and other outpatient services than Medicaid-enrolled children not in foster care. Total behavioral health services costs for children in foster care were over eight times higher (\$210 per child per month versus \$26 per child per month for children not in foster care). Children in foster care used more

behavioral health services during their foster care placement than (1) before foster care placement and (2) after foster care discharge.

Parent-child reunification had a modest relationship with behavioral health services use and cost. Children who were successfully reunified were equally likely to have used one or more services as children who were not successfully reunified. Non-reunified children who used any behavioral health services received a significantly larger quantity of services than reunified children who used any behavioral health services, as reflected in higher average costs per month (\$204 per child per month versus \$127 per child per month). This difference in use and cost was primarily attributable to higher use of inpatient and outpatient services by children who were not successfully reunified.

There are several limitations to the study findings. The reunification results cannot be generalized to all children in foster care because the study sample was limited to children who could be matched to their custodial parents in the Medicaid data, and these families may be systematically different from those where children and parents could not be matched. There also are limitations associated with the use of administrative data. In particular, diagnosis information is not always accurately reported in the Medicaid data, and the OFS-CIS data lacks valid and reliable measures of maltreatment severity, which is often strongly related to behavioral health services need and use and might be strongly related to the likelihood of reunification.

Despite these limitations, the study findings have important implications for policymakers. The district level differences in rate of successful reunification suggest that a “one size fits all” approach to improving the foster care system may not be the optimal approach. Additional factors that may help explain district differences in reunification include district level demographic characteristics, Dependency Court characteristics, rates of poverty, single parenthood, and the quality and design of child welfare services provided. Investigation of these factors will be the focus of subsequent studies.

Our findings regarding behavioral health services use and cost are consistent with previous studies of children in foster care. They support the need for future research on behavioral health service utilization and associated need for mental health intervention. . Given the known, long-term, negative consequences for adults who experienced the foster care system as children, it is essential to both assure the provision of needed behavioral health services and better understand the role of child welfare services in accessing needed services for children and their custodial parents involved in the child welfare system.

Background

Child maltreatment exacts devastating human and financial tolls. Today more children are entering foster care, staying longer than federally mandated and reentering the foster care system after attempts at reunification in greater numbers than ever before. Annually nearly three million child maltreatment reports come to the attention of state authorities (DHHS, 2000). Over 750,000 children nationally reside in some form of foster care, representing a 65% increase over the past ten years. The increasing numbers of children in foster care as well as prolonged and multiple stays in the system, raise concerns about the functioning of the foster care system, the impact of foster care placements and delayed permanency planning on children and families.

In addition to the human toll, the increasing number of children in foster care has escalated federal spending to approximately \$4.5 billion in 2000, from \$200 million in the 1970s (Child Welfare Institute, 2001). These costs include child welfare services, foster care, adoption assistance and family preservation services but excludes Medicaid dollars that fund treatment for children and families. Federal funding accounts for less than half (42%) of state child welfare expenditures, with the remainder supported by state (49%) and local (9%) funding.

Not only is the total number of children in foster care increasing, but also their stays are often far longer than guidelines mandate, and a significant number of children reenter foster care after having left the system (Wells & Guo, 1999). While national findings on rates of reentry vary widely, reentry appears to be a fairly common experience in child welfare systems (Festinger, 1996). Studies in Illinois and New York in the early 1990s reported reentry rates of approximately 22% for children after their first placement in foster care, with children in foster care less than a year having the highest reentry rates (Wulczyn, 1991).

The increasing numbers of children in foster care have a profound impact on the well-being of children and the child welfare system. Overwhelmed state systems across the country are dealing with escalating and complex caseloads that often lead to caseworker burn out and diminishing quality of services. One national survey documenting the impact of stressed child welfare systems reported that, "services were limited and generally involved managing rather than treating families" (Klee, Kronstadt & Zlotnick, 1997). In Florida, the immediate fallout from increasing numbers of foster care children includes grossly overcrowded foster homes and escalating caseloads for child welfare workers. In Hillsborough County alone there were at least 15 documented cases of children sleeping in Department of Children and Families (DCF) offices while awaiting placement (Wexler, 2001).

Why Child Maltreatment Numbers are Increasing

Two interrelated factors are largely responsible for the explosive growth in foster care placements and child welfare recidivism: increased reporting of abuse and neglect, and the use of crack cocaine and other substances (Magura & Laudet, 1996). The National Center on Child Abuse and Neglect (Westat, 1993) identified substance abuse as a contributing factor in more than three-quarters of child maltreatment cases reported to state agencies. Evidence also suggests that when placed, children from substance-

abusing families are less likely to be returned home or freed for adoption than are children placed for other problems unrelated to substances (Magura & Laudet, 1996; Kip, Haynes, Becker et al., *submitted for publication*). The situation is aggravated when the profound emotional, behavioral and medical needs of these children are coupled with the serious problems of their parents (Klee et al., 1997). The Adoption and Safe Families Act of 1997 (ASFA, Public Law 105-89), the most recently enacted federal child welfare statute, focuses on children languishing in the system and targets their length of stay in foster care. The statute expands adoption support and promotion as well as family reunification services. However, despite these efforts, mounting evidence suggests that many state child welfare systems are overwhelmed by the extent and complexity of family needs and are inadequately prepared to address them (Dolce, 2001; Benedict & Zuravin, Somerfield, & Brandt, 1996).

Characteristics of the Florida Foster Care System

Consistent with national trends, Florida's rates of foster care placement have increased significantly over the past decade. According to Brown, Lipien, Trinidad and Yampolskaya (2001), the total number of children in Florida utilizing foster care during the 1990s increased 35%, from 16,334 children in fiscal year (FY) 1991 to 22,066 children in FY 2000. In Florida, entry into foster care is significantly associated with race, ethnicity, and age. State data show that in FY 2000, out of the total number of alleged victims of maltreatment, Hispanic children were 1.64 times more likely to enter foster care and African American children were 1.65 times more likely to enter foster care than Caucasian children. Additionally, children under the age of 4 were 1.86 times more likely to enter foster care than children who were 4 years or older. There were no significant differences between males and females in the likelihood of entering foster care.

Although the percentage of children in Florida who were returned to a parent, legal guardian, or relative increased slightly over the past decade, the total number of children entering foster care increased dramatically, and the proportion of children who were transferred to adoption decreased. In FY 2000, the estimated median length of stay statewide for a child entering foster care was 14.1 months. However, the estimated median length of stay varied widely across Florida health care districts ranging from a low of 6.6 months to a high of 23.9 months. Age appeared to be a factor in disposition, with very young children (ages 0-3) being twice as likely to remain in foster care than children ages 4-8 or 9-12 (Brown et al., 2001).

Between FY 1991 and FY 2000, Florida's rate of reentry into foster care increased by 14%. Hispanic children were significantly more likely to reenter foster care than children from other ethnic backgrounds, and children between the ages of 9 and 12 were also more likely to reenter. The proportion of Florida's children reunified within 12 months (45%) was much lower than the national standard of 76% (Brown et al., 2001). Recent data show that in fiscal year (FY) 1999-2000, over 70,000 cases of documented child maltreatment were identified by the DCF's Office of Family Safety, and more than 22,000 children utilized foster care. Of these 22,000+ children, 60% began their foster care in a previous fiscal year. In calendar year 1999, there were 8,893 children with a report of maltreatment who were placed into foster care.

Child Well-being and Foster Care

There is wide agreement that lengthy stays and frequent moves in foster care are detrimental to healthy child development (Bilaver, Jaudes, Koepke, & Goerge, 1999; Clausen, Landsverk, Granger, Chadwick & Litrownik, 1998; Troutman & Ryan, 2000). Repeated moves and interruptions to the caregiver/child attachment are detrimental to any child and may compound the adverse consequences of abuse or neglect (Davis, Landsverk, Newton & Granger, 1996). The younger the child and the more uncertain the period of separation, the more problematic the situation is for both child and parent (American Academy of Pediatrics, 1993; Dozier, Stovall, Albus, & Bates, 2001).

The range and difficulty of problems in the population of foster children is well documented and includes high rates of emotional, behavioral and developmental problems as well as medical conditions and educational needs (Kortenkamp & Ehrle, 2002; Rosenfeld, Pilowsky, Fine, Thorpe, & et al., 1997; Halfon, Mendonca, & Berkowitz, 1995; Harman, Childs, & Kelleher, 2000; Klee et al., 1997). In a recent comparison group study of children in low-income, single-parent households, children in the child welfare system were more likely to have emotional and behavioral problems, less engagement in school, and higher rates of limiting physical, learning or mental health conditions compared to children in the single parent group who were not involved with the child welfare system (Kortenkamp & Ehrle, 2002).

Children who grow up in foster care have been described as exhibiting behaviors associated with school failure, teen pregnancy, unemployment, criminal activity, incarceration and homelessness in later life (Bilaver et al., 1999; Clausen et al., 1998). In a recent study, foster care placement was found to be one of only two childhood variables that independently predicted adult homelessness (Bassuk, Buckner, Weinreb, Browne, et al., 1997). Unpublished findings from the same study indicate that a range of negative adult outcomes is associated with foster care placement. For example, compared to homeless mothers who were not in foster care as children, homeless mothers who had experienced foster care were significantly less likely to have completed high school, had lower incomes, and had increased rates of major depression and post traumatic stress disorder. Perhaps most disturbing was a finding that homeless mothers who had been in foster care were seven times more likely to have had their own children placed in out of home care, suggesting an intergenerational cycle of foster care placement (unpublished data, The Worcester Family Research Project, 1997; Klee, et al., 1997).

In addition to this range of individual problems associated with foster care, there has been growing concern about the quality and outcomes of both child welfare and behavioral health services provided to this vulnerable population and the risk for additional abuse of children in the foster care placement itself (Kuenhle, Becker, & Lynn, 2002). A 1994 study in Baltimore found that foster families had three times as many maltreatment reports as non-foster families (Benedict, Zuravin, Brandt & Abbey, 1994). A follow-up report by the same researchers found that physical abuse was the most reported subtype in foster families, while neglect was the most reported subtype in non-foster families. Sexual abuse was significantly more likely to occur in foster care than in the care of custodial parents. In addition, abuse while in foster care was associated with

exacerbation of existing problems as well as the development of new problems, especially for victims of child sexual abuse (Benedict et al., 1996).

In this country the majority of maltreatment cases are attributed to parental neglect. In 1997, 56% of open foster care cases were for neglect, compared to 25% for physical abuse, 13% for sexual abuse, 12% for “other abuse,” and 6% for psychological abuse (U. S. Department of Health and Human Services, 1999). The category of neglect, where children’s basic needs have not been met, is often hard to differentiate from the effects of poverty. The large number of cases involving neglect may include poor families whose neglectful behavior is related to inadequate resources rather than intentional mistreatment of the child (Pelton, 1994). Across all categories of maltreatment, families with incomes under \$15,000 are far more likely to be involved in the child welfare system than families earning \$30,000 or more (Courtney, 1997; Lee & Goerge, 1999). Poverty, rather than the type of maltreatment, is the strongest predictor nationally of children being removed from their homes (Lindsey, 1991a; 1991b).

Use of Behavioral Health Services by Children in Foster Care

Previous researchers have investigated the use of behavioral health services by children in foster care and stressed the importance of understanding the extent of services provided and the expenditures for those services (Blumberg, Landsverk, Ellis-MacLeod, Ganger, & Culver, 1996). Although the reported need for mental health services in the foster care population ranges widely from 30 to 80%, all studies located by the authors show a significant increased use of mental health services by children in foster care (Schneiderman, Connors, Fribourg, Greis & Gonzales, 1998). For example, Farmer, Burns, Chapman, Philips, Angold, & Costello (2001) found that after controlling for gender and illness severity, children in foster care were 5 times more likely to use specialty mental health services. Takayama and colleagues found that 25% of foster children in Washington State used mental health services versus only 3% of AFDC kids (Takayama, Bergman, & Connell, 1994) and in a California study, the 4% of youth in foster care accounted for 41% of all users of mental health services (Halfon, Berkowitz, & Klee, 1992). These studies consistently show a significant association between mental health problems and the number of foster care placements.

Harman et al. (2000) compared the mental health service use by children in foster care to mental health services used by AFDC children and children with disabilities. Study findings showed that, compared with children on AFDC, children in foster care were 3-10 times more likely to have a mental health problem. They were also more likely to be diagnosed with anxiety disorder, conduct disorder and oppositional disorder. Compared to children with disabilities, children in foster care were more likely to have a psychiatric hospitalization.

Children and the Need for Child Welfare Research

Although, as stated above, there is wide agreement that lengthy stays and frequent moves in foster care are detrimental to healthy child development, until recently child welfare research has largely focused on child abuse reporting, child fatalities, child maltreatment predictors, child welfare recidivism and exit from foster care. Much less

attention has been given to predictors of successful parent-child reunification and behavioral health service needs of children and families involved in the child welfare system (Jones, 1998). This lack of attention to family reunification success and support for behavioral services to children and families may be reflected in the high recurrence figures for maltreating families and extended length of time children spend in out-of-home placements. The research literature has documented the complex needs of children and families in the child welfare system and identified common barriers to accessing necessary mental health services, however, the link between the provision of specialized services and child welfare outcomes has been less studied (Berson & Armstrong, 2000; Berson, Roggenbaum & Vargo, 2001). We suggest that a comprehensive program of research is warranted to better understand the child welfare system and support future child welfare policy and practice.

At this point, information regarding predictors of successful reunification is needed to inform the development of effective child welfare interventions targeted towards safely reuniting foster care children with reduced length of stay (and consequently, reduced public costs), and improving parent and child relations and family functioning. Data regarding the behavioral health services needed and used by children in the child welfare system are also essential to advance the development of a coordinated system of care for children and families involved in the child welfare system. Hence, we proposed and conducted the two studies presented in this report. These two studies are first steps in a larger research agenda designed to examine important aspects of foster care and the child welfare system in Florida.

Research Design

The goals of the present investigation were to (1) identify the relevant predictors of successful parent-child reunification after an occurrence of documented child maltreatment and foster care placement, (2) examine the use and cost of behavioral health services for children in Florida's foster care system, and (3) explore the association among parent-child reunification and the pattern and cost of behavioral health services used. To accomplish these goals, two separate studies were conducted. The first study identified predictors of successful parent-child reunification, and the second study examined behavioral health service use patterns and cost of care for children in Florida's foster care system.

Research Questions

The following initial questions directed the current studies:

1. What are the predictors of successful reunification of foster care children with their custodial parents?
2. What are important child characteristics associated with successful reunification?
3. What are important adult characteristics associated with successful reunification?

4. What are important environmental and contextual characteristics associated with successful reunification?
5. What are the types and costs of behavioral health services used by children in foster care?
6. How do the behavioral health service use and cost patterns for Medicaid-enrolled children in foster compare to the service use and cost patterns for children not in foster care.
7. How do behavioral health service use and cost patterns for reunified children compare with service use and cost patterns for children who are not subsequently reunified within 12 months?
8. What are the behavioral health service use and cost patterns in families 6 months prior to foster care placement? How do these patterns compare with service use and cost patterns during foster care placement? Are the patterns different during the first 6 months after reunification?

Methods

For these studies, foster care was defined as any out-of-home placement (e.g., licensed foster care, shelter care) for a child who was removed from the care of his/her legal custodian(s) for a minimum of 30 days because of maltreatment.

Study I. Predictors of Successful Reunification After Child Maltreatment and Placement in the Florida Foster Care System

The predictor study population included Florida Medicaid-enrolled children with a report of maltreatment, who were placed into and exited foster care between July 1998 and June 2001, and their custodial parent. After IRB approval children in foster care placements were identified from DCF's Office of Family Safety Client Information System (OFS-CIS) files.

We employed a two-phase matching strategy to identify our ultimate study cohort of foster care children and custodial parents (see **Appendix B**). In the first phase, we used social security numbers to match children in the OFS-CIS file to the Medicaid eligibility file. From the original sample of 10,010 children that met the aforementioned inclusion criteria, 8,751 (87%) children were found in the Medicaid eligibility data set.

In the second phase, we matched foster care children to their custodial parents within the Medicaid data system. Because our ability to match children to parents was hindered by the unavailability of a single identifier that would reliably link a parent to a child, we matched on several variables: Medicaid family ID, defined as the first seven numbers of the Medicaid recipient's ID, and demographic information, including last name, address, city, zip code.

We used several decision rules in our matching to ensure that we eliminated questionable matches. A minimum of 15 years difference in age was required between parents and children in order to be classified as a possible match. The minimum criteria for a successful match were *identical* last name and Medicaid family identifier (ID) for both the child and parent. Other successful matches came from a combination of variables used for matching, as shown in **Table 1**.

Table 1. Match results from an algorithm used to define a successful parent-child match in the Medicaid data system for the study on predictors of parent-child reunification, in descending order of match confidence.					
Number (%) of Successful Matches (n=650)	Matching Criteria				
	City	Zip Code	Last Name	Family ID	Address
117 (18%)	Match	Match	Match	Match	Match
1 (0%)	No	Match	Match	Match	Match
1 (0%)	Match	No	Match	Match	Match
104 (16%)	Match	Match	No	Match	Match
63 (10%)	Match	Match	Match	No	Match
53 (8%)	Match	Match	Match	Match	No
2 (0%)	Match	No	Match	No	Match
5 (1%)	No	Match	Match	Match	No
108 (17%)	Match	No	Match	Match	No
196 (30%)*	No	No	Match	Match	No

* After manual review of dubious matches, 7 children with a “successful” parent match on only last name and family ID were removed from the study population.

After determining successful matches based on the matching algorithm, manual review was performed on matches where (a) the age of the parent was greater than 59 and (b) the match success was based on only last name and family ID. If the manual review provided evidence that the match was unlikely (i.e., parent and child were listed as living in different districts; parent and child had an extremely common last name such as Jones), then the match was thrown out.

Only one parent per child was kept as a successful match in the study. A score of match confidence was given to each parent-child match based on the number and relative importance of matching variables. In the event that a child matched to more than one parent, the match with the greater score was chosen. If the score of match confidence was the same for both the male and female matches, the female match was chosen. No child matched to greater than one person of the same gender with the same score of match confidence. Based on the matching algorithm, a total of 650 children and 431 parents were selected for the study population. The disparity in the number of parents compared to children was due to the matching of more than one child per parent. Our study sample of 650 children with a matched parent represented 7% of the total number of foster care children identified in the Medicaid data system. The most likely reason for the small number of matches was that the parents of children in foster care are for the most part not enrolled in Medicaid.

Statewide Medicaid claims and OFS-CIS data from the time period the children were placed in foster care were used to identify significant predictors of successful reunification. For the purpose of analysis, successful reunification was defined as a

parent-child reunification that occurred within 12 months of foster care placement that was unaccompanied by a documented recurrence of foster care placement in the 6 months following reunification. Children who did not meet the above definition of successful reunification were classified as non-successes. With the dichotomous definition of a successful reunification, logistic regression analysis using SAS was performed to identify independent predictors (child and adult) of successful reunification. The linear logistic model used by SAS has the form shown in **Figure 1**, supposing that x is a vector of explanatory variables and $p = \Pr(Y=1|x)$ is the response probability to be modeled (SAS OnlineDoc, V8, The Logistic Procedure. Retrieved November 26, 2002, from <http://v8doc.sas.com/sashtml/>):

Figure 1. SAS Linear Logistic Model

$$\text{logit}(p) \equiv \log[p/(1-p)] = \alpha + \beta'x$$

The response variable in the logistic model was successful reunification of foster care children to their custodial parents. Independent predictor variables included in the model were the following: child gender, child race, child-parent race match, child age category, DCF residence district of child, child Medicaid eligibility status, current reason for foster care services, number of times child was removed from home in study period, parent age, parent gender, parent race, number of children removed from parent's custody, and parent mental health diagnosis.

Study II. Medicaid Service Use and Cost of Care for Children in the Florida Foster Care System

The service use study population included Florida Medicaid-enrolled children with a report of maltreatment, who were placed into foster care during calendar year 1999, and had continuous eligibility in Medicaid from the time 6 months prior to their foster care placement to 6 months after their foster care placement ($n=1,362$). This sample represented 16% of the 8,751 foster care children identified in the Medicaid data system between 1998 and 2001. In order to answer our research questions and examine variation before during and after foster care placement the study population was purposefully restricted to children with continuous Medicaid eligibility during the study time period.

The original proposal suggested a comparison of service use and cost for both children and their parents. However, after limiting the sample to the eligibility criteria specified above, the number of child-parent matches eligible for inclusion was insufficient to provide meaningful analyses.

The desired comparison population was children placed in relative foster care placements during the same time period as our study sample of children placed in foster care. However, identification of this population was impossible given that we had no feasible way to identify children in different types of foster care. Thus, a random sample

of children was selected from non-foster care children continuously enrolled in Medicaid from July 1, 1998 through June 30, 2001 as a comparison population (n=1,400).

Several analyses of service use and cost were conducted for the study and comparison samples. We compared service use and cost measures for children who were successfully reunified with their custodial parents to children who were not successfully reunified. Also, an analysis of service use and cost before, during and after foster care placement was performed on the study population. As in the predictors study, successful reunification was defined as a parent-child reunification that occurred within 12 months of foster care placement that was unaccompanied by a documented recurrence of foster care placement in the 6 months following reunification. Lastly, an analysis of service use and cost was performed on children in the study population who had a diagnosis of serious mental illness (SMI), which was defined as an ICD-9-CM diagnosis code of 295 (schizophrenias/psychoses) or 296 (major affective disorders) on any Medicaid claim from July 1, 1998 through June 30, 2001. Categories of services used to compare use and cost rates in these studies are described in **Table 2**. As appropriate, chi-square, t-test and ANOVA procedures were used to assess the statistical significance of differences between the results for the study and comparison groups.

Category Description	Catcaid Codes* Used to Define Service Category
Outpatient behavioral health service use	<50.00; not including 01.00, 02.00, 03.00
Inpatient behavioral health service use	01.00, 02.00, 03.00
Individual or family counseling	08.00
Intensive outpatient treatment	04.50
Day treatment/ partial hospitalization	12.00
Home-based services	05.25
Case management services	13.00
Total Behavioral Health	<50.00

*For a complete list of Catcaid codes and their descriptions, refer to **Appendix A**.

Study I Findings: Predictors of Successful Family Reunification

Demographics

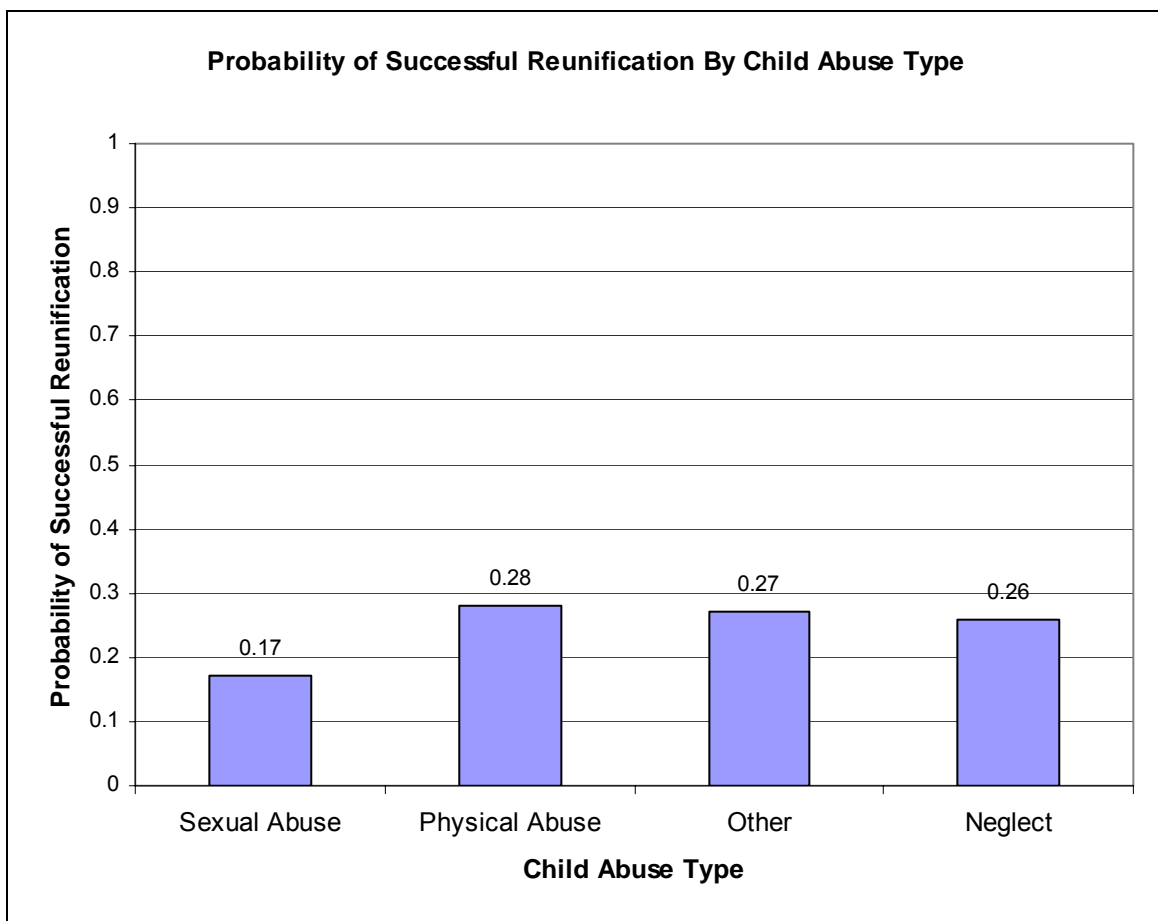
The 650 children in our matched foster care sample were more likely to be white (62%), and between 6 and 12 years of age. Eighty-seven (14%) foster care children were from 0-5 years old, 361 (56%) were 6-12, and 202 (31%) were 13-18 years of age. Slightly more than half were female (51%) and they resided in every district of the state. **Table 3** below displays child demographic characteristics for the study population.

Table 3. Demographic Characteristics of Foster Care Children (n=650)		
Child Demographic Characteristic	Number	Percent
Gender		
Female	333	51%
Male	317	49%
Race		
Non-White	244	38%
White	405	62%
Matched Race		
Non-Matched	61	9%
Matched	589	91%
Age Group (Mean age = 10)		
0-5 (Mean age = 3)	87	13%
6-12 (Mean age = 9)	361	56%
13-18 (Mean age = 14)	202	31%
Medicaid Eligibility Status		
IV-E	568	87%
Other	82	13%
District		
1 (Pensacola)	23	4%
2 (Tallahassee)	27	4%
3 (Gainesville)	33	5%
4 (Jacksonville)	36	6%
5 (St. Petersburg)	55	8%
6 (Tampa)	97	15%
7 (Orlando)	92	14%
8 (Ft. Myers)	21	3%
9 (Palm Beach)	25	4%
10 (Ft. Lauderdale)	27	4%
11 (Miami)	72	11%
12 (Daytona Beach)	15	2%
13 (Ocala)	65	10%
14 (Lakeland)	30	5%
15 (Port St. Lucie)	32	5%

Probability of Successful Reunification by Maltreatment Type

Data in this study reveal that 410 (63%) children were removed from their home due to neglect, 122 (19%) for physical abuse, 47 (7%) were removed for sexual abuse and 71 (20%) were removed for other types of maltreatment (e.g. threatened harm, endangerment). Our results are in keeping with previous research and show that children placed in foster care due to sexual abuse are least likely to be successfully reunified (**Figure 2**). However, the association between type of abuse and successful reunification in this study did not reach statistical significance.

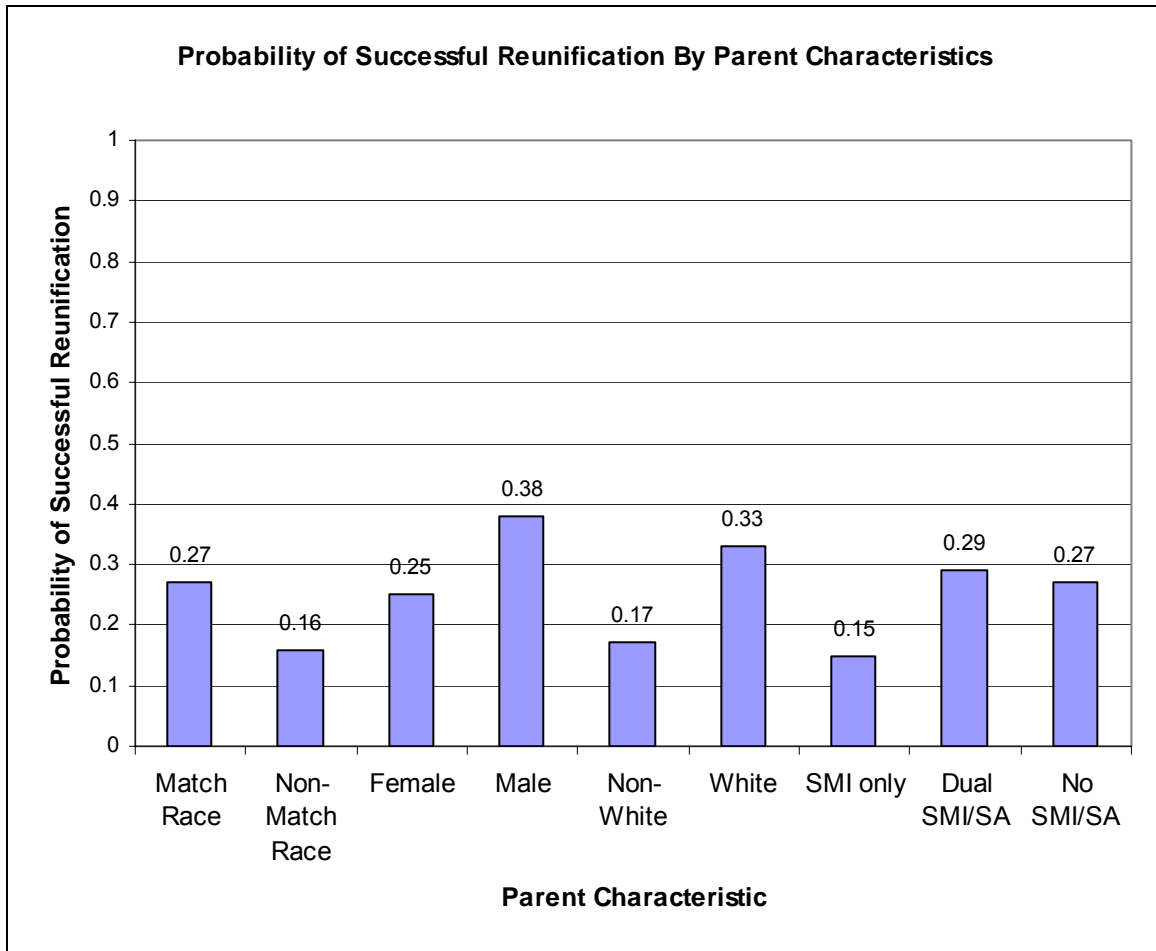
Figure 2



Probability of Successful Reunification by Parent Characteristics

Figure 3 presents the probability of successful reunification by parent characteristic. Parents who had a SMI diagnosis were less likely to be successfully reunified. Also, parents who were white were almost twice as likely to be reunified with their children than non-white parents. In this sample male parents had the highest probability of achieving successful reunification. Although the associations between parent characteristics and successful reunification were not statistically significant, the differences in the probability of reunification are important and suggest parents who are female, parents who are non-white, parents who have a diagnosis of SMI and parents who have a child of a different race may be at increased risk for failure in their attempts to reunify with their child.

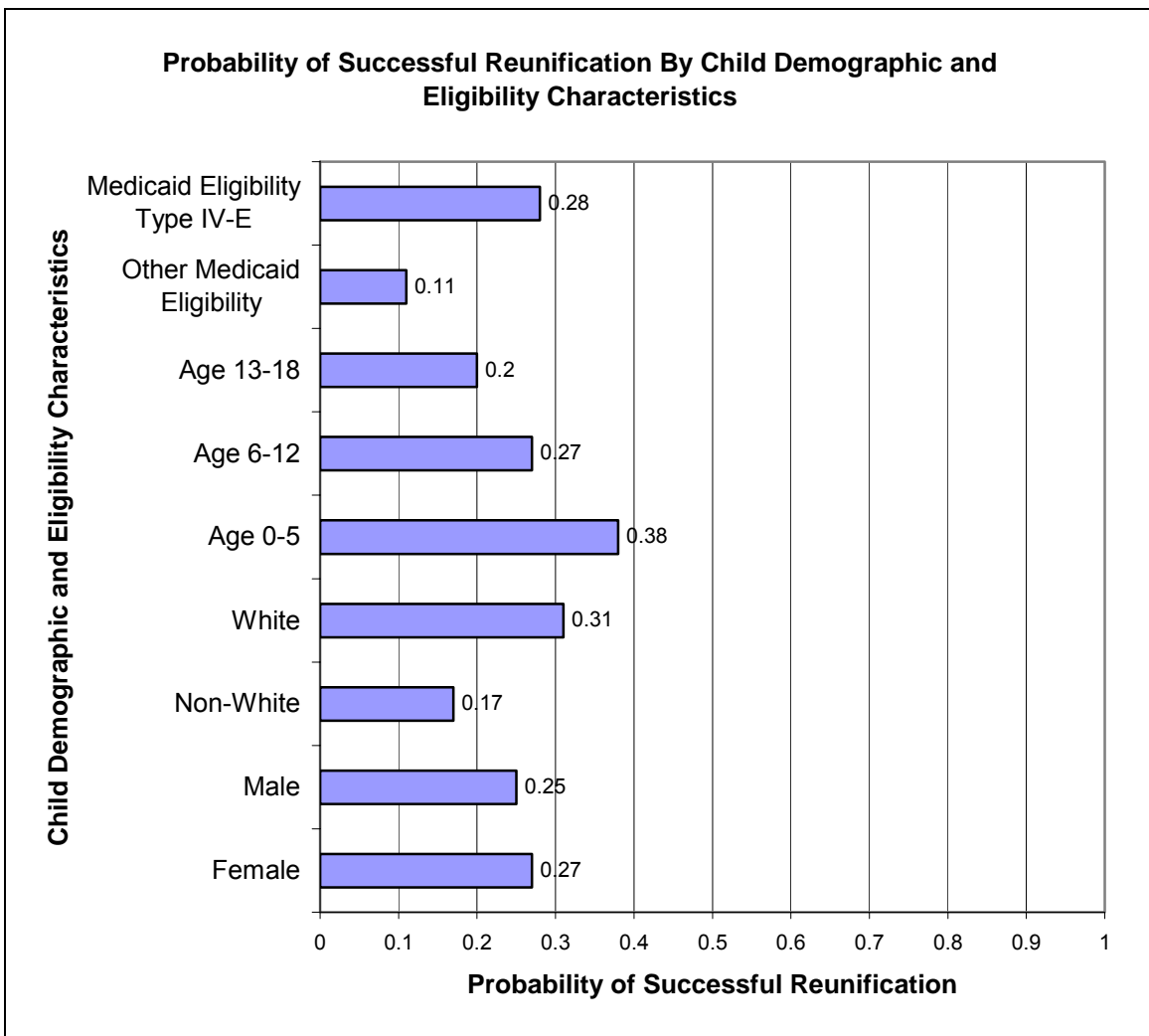
Figure 3



Probability of Successful Reunification by Child Demographic and Eligibility Characteristics

In keeping with other research findings the probability of successful reunification for foster care children in this study decreased with age from a high of 38% for children aged 0-5 years to 20% of children 13-18 years. Children with Medicaid eligibility type IV-E, which is eligibility based on placement in the foster care system, were more likely to be reunified successfully than children eligible for Medicaid for reasons other than foster care. Also, white children were more likely to be reunified, and girls had a 2% greater probability of successful reunification (see **Figure 4**).

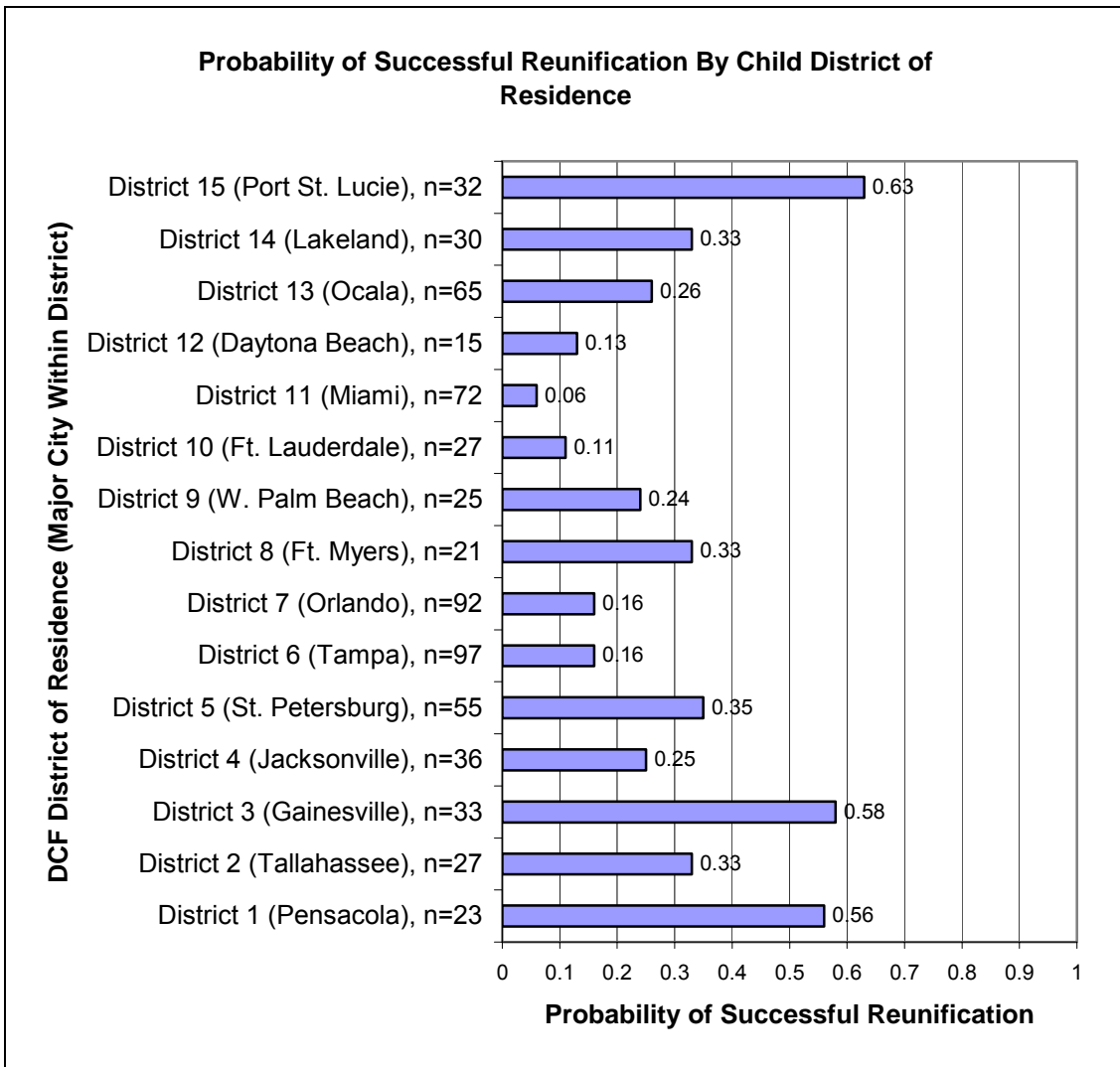
Figure 4



Probability of Successful Reunification by Child District of Residence

By far, the strongest predictor of successful reunification in this study population was the child's district of residence. **Figure 5** contrasts the probability of successful reunification by the child's district of residence and shows large, district level variability in the probability of successful reunification. Probabilities range from a low of 6% for District 11 (Miami) to 63% for District 15 (Port St. Lucie). The reason for the tenfold difference between districts is not known. This wide observed variability in successful reunification rates bears further investigation and will be the focus of subsequent studies. Possible contributing factors to the variability include differing demographic characteristics, dependency court characteristics, rates of poverty, single parenthood, and the quality and design of child welfare services provided. These results should be interpreted with caution due to the small numbers of children in each district.

Figure 5



Multivariate Analysis

Relevant predictors of successful parent-child reunification analyzed in this study included child gender, child race, child-parent race match, child age category, DCF residence district of child, child Medicaid eligibility status, current reason for foster care services, number of times child was removed from home during the study period, parent age, parent gender, parent race, number of children removed from parent's custody, and parent mental health diagnosis. Results of the logistic regression analysis are presented in **Tables 4 and 5**. Among the predictors of successful reunification examined here only the child's district of residence and eligibility status proved statistically significant. Controlling for other factors, the rate of successful reunification varied widely by district. For example, when compared to foster care children in Miami, children in District 1 (Pensacola), District 3 (Gainesville) and District 15 (Port St. Lucie) were significantly more likely to achieve successful reunification. When compared to children in Miami, children in District 1 were 20 times more likely (odds ratio [OR]=20.93, $p<0.0001$) to be successfully reunified during the study period. Similarly children in District 3 were 21 times more likely (OR=21.34, $p<0.0001$) and children in District 15 were 19 times more likely than children in Miami to be successfully reunified.

Children who were enrolled in Medicaid before their foster care placement were more than three times less likely to be successfully reunified [OR]=3.67, $p=0.002$) than children who became eligible for Medicaid benefits because she/he was placed in foster care (see **Table 5**). The reason for this difference by Medicaid eligibility status is not clear and is beyond the scope of the current study. It is possible that children enrolled in Medicaid before foster care placement were more likely to be poorer or to come from a household in which a person was disabled than the children enrolled in Medicaid as a consequence of foster care placement. Previous research suggests that poverty and economic deprivation may be the greatest risk for successful reunification (Jones, 1998). Unfortunately, information on economic status was not available in the data used for this study.

Predictor Variable	Values	Odds Ratio	95% CI	Wald χ^2	P-Value
<i>Child Gender</i>	Female vs. Male	1.21	(0.80, 1.81)	0.81	0.37
<i>Child Race</i>	Non-White vs. White	0.51	(0.16, 1.61)	1.33	0.25
<i>Child/Parent Race Match</i>	Match vs. Non-Match	1.15	(0.35, 3.83)	0.05	0.82
<i>Child Age Category</i>	0-5 vs. 13-18	1.80	(0.88, 3.66)	2.60	0.11
	6-12 vs. 13-18	1.43	(0.87, 2.36)	1.99	0.16
<i>Reason for FC Services for Child</i>	Sexual Abuse vs. Neglect	0.65	(0.26, 1.62)	0.86	0.35
	Physical Abuse vs. Neglect	1.21	(0.71, 2.07)	0.48	0.49
	Other vs. Neglect	1.11	(0.56, 2.20)	0.10	0.75
<i>Number of FC Placements</i>	[Continuous]	2.44	(0.89, 6.69)	3.01	0.08
<i>Adult Age</i>	[Continuous]	.99	(0.96, 1.03)	0.20	0.65
<i>Adult Gender</i>	Female vs. Male	.56	(0.30, 1.03)	3.47	0.06
<i>Adult Race</i>	Non-White vs. White	1.41	(0.44, 4.51)	0.34	0.56
<i>Number of Children in FC</i>	[Continuous]	1.18	(0.99, 1.40)	3.40	0.07
<i>Adult MH/SA Diagnosis</i>	Dual SMI/SA vs. None	2.07	(0.91, 4.67)	3.08	0.08
	SMI only vs. None	0.57	(0.26, 1.23)	2.08	0.15

Predictor Variable	Values	Odds Ratio	95% CI	Wald χ^2	P-Value
<i>Child District*</i>	1 vs. 11	20.93	(4.94, 88.72)	17.03	<0.0001
	2 vs. 11	6.15	(1.53, 24.72)	6.54	0.01
	3 vs. 11	21.34	(5.56, 81.86)	19.91	<0.0001
	4 vs. 11	6.35	(1.65, 24.47)	7.22	0.01
	5 vs. 11	6.60	(1.86, 23.51)	8.49	0.004
	6 vs. 11	2.65	(0.78, 9.03)	2.44	0.12
	7 vs. 11	2.47	(0.72, 8.55)	2.05	0.15
	8 vs. 11	7.98	(1.82, 34.96)	7.59	0.01
	9 vs. 11	4.75	(1.13, 19.95)	4.54	0.03
	10 vs. 11	2.35	(0.46, 11.97)	1.06	0.30
	12 vs. 11	2.18	(0.34, 14.19)	.66	0.42
	13 vs. 11	5.63	(1.53, 18.82)	6.87	0.01
	14 vs. 11	8.96	(2.17, 37.06)	9.16	0.003
	15 vs. 11	19.19	(5.03, 73.28)	18.68	<0.0001
	<i>Child Medicaid Eligibility</i>	Eligibility Type IV-E** vs. Other Eligibility	3.67	(1.64, 8.21)	9.99

*For a list of Florida counties by Department of Children and Families district, see **Appendix C**.

**Eligibility type IV-E means a child became eligible for Medicaid benefits *because* he/she was put into foster care.

Study II Findings: Behavioral Health Service Use and Cost for Children in Foster Care

The analysis in this study focused on the behavioral health (BH) service use and costs associated with foster care placement. Comparisons of BH service use and cost were made between study sample subsets based on the following definitions:

1. By foster care status (foster care vs. non-foster care children)
2. By time period (before, during and after foster care placement)
3. By reunification status (successfully reunified vs. non-successfully reunified foster care children)
4. By reunification and serious mental illness (SMI) diagnosis status (successfully reunified foster children with a diagnosis of SMI vs. non-successfully reunified foster care children with a diagnosis of SMI)

Comparison of Foster Care and Non-Foster Care Children

Demographic Characteristics

Table 6 shows that the children in both samples were more likely to be non-white. Children in the foster care sample were younger than the comparison sample and both groups were roughly half male and female. Forty-three percent of foster care children were between the ages of 0 and 5, while only 22% of the non-foster care children were in this age group. The data reveal that more foster care children carried a diagnosis of serious mental illness (9% versus 3%) and 2% of the foster care children were diagnosed with both serious mental illness and substance abuse. Review of the residence district of both groups shows that the children in both samples came from every district in the state (see **Table 6**).

Table 6. Comparison of Demographic Characteristics of Foster Care (FC) Children and Non-FC Children in Medicaid				
	Foster Care Children (n=1,362)		Non-Foster Care Children in Medicaid (n=1,400)	
<i>Age**</i>				
0-5	581	43%	313	22%
6-12	506	37%	628	45%
13-18	275	20%	459	33%
<i>Race**</i>				
White	597	44%	304	22%
Non-White	761	56%	1,096	78%
<i>Gender</i>				
Male	674	50%	704	50%
Female	687	50%	696	50%
<i>District**</i>				
1	35	3%	65	5%
2	52	4%	92	7%
3	116	9%	74	5%
4	65	5%	78	6%
5	105	8%	88	6%
6	183	13%	128	9%
7	250	18%	156	11%
8	56	4%	58	4%
9	20	1%	56	4%
10	75	6%	87	6%
11	115	8%	319	23%
12	40	3%	42	3%
13	142	10%	59	4%
14	59	4%	47	3%
15	49	4%	51	4%
<i>Mental Health Diagnosis**</i>				
None	1,211	89%	1,352	97%
SMI Diagnosis Only	124	9%	44	3%
Dual SMI/SA Diagnosis	27	2%	4	0%
** p < .01				

Overall Service Use in Medicaid

The proportion of children in both groups that used any type of Medicaid reimbursed service, including physical health services, was high for every age category (see **Table 7**). Over 90% of children in both groups used at least one type of physical or behavioral health service. We included physical health services here to provide an overall picture of Medicaid service use in this population. The penetration rate for any health service use was similar for both study groups. However, children in foster care were twice as likely as non-foster care children to use behavioral health services (see **Table 9**).

Table 7. Proportion of Foster Care (FC) Children versus Non-FC Children Using Any Physical or Behavioral Health Services in Medicaid by Age Group		
	Service Users (%)	N
<i>FC Children</i>		
Aged 0-5	558 (96%)	581
Aged 6-12	477 (94%)	506
Aged 13-18	260 (95%)	275
<i>Total</i>	<i>1,295 (95%)</i>	<i>1,362</i>
<i>Non-FC Children</i>		
Aged 0-5	286 (91%)	313
Aged 6-12	589 (94%)	628
Aged 13-18	404 (88%)	459
<i>Total</i>	<i>1,279 (91%)</i>	<i>1,400</i>

Behavioral Health Diagnosis

Table 8 presents the distribution of behavioral health diagnosis by age group and foster care status. As would be expected, the likelihood of receiving a behavioral health diagnosis increased with age and foster care placement. Children under the age of 5 years in both groups were infrequently diagnosed with mental health conditions. Eleven percent of children aged 6-12 years and 22% of children 13-18 years of age residing in foster care had a behavioral health diagnosis.

Table 8. Distribution of Behavioral Health Diagnosis by Age Group for Foster Care (FC) Children versus Non-FC Children in Medicaid**						
	FC Children (n=1,362)			Non-FC Children in Medicaid (n=1,400)		
	0-5 (n=581)	6-12 (n=506)	13-18 (n=275)	0-5 (n=313)	6-12 (n=628)	13-18 (n=459)
No SMI/SA Diagnosis	99%	89%	68%	100%	98%	93%
SMI Diagnosis Only	1%	11%	22%	0%	2%	6%
Dual SMI/SA Diagnosis	0%	0%	10%	0%	0%	1%

** p < .01

Behavioral Health Service Use and Cost by Category of Service

Not surprisingly, the children in the foster care group used more of every type of behavioral health service studied in this analysis. As shown in **Table 9**, 59% percent of children in foster care compared to 30% of the non-foster care children used at least one category of service. The most frequently used service in both groups was outpatient services, and the use of home-based service was lowest. In both groups only 4 children were provided home-based services. Only 22% of children in foster care and 5% of non-foster care children received case management services. Thirty-four percent of children in foster care compared to 12% of non-foster care children received individual or family counseling. Given the documented need for family counseling in maltreating families, these data suggest that foster care families' needs may be underserved (see **Table 9**).

Table 10 presents units of service along with their associated cost and per person monthly expenditures. The cost data in **Table 10** represent the total amount reimbursed by Medicaid to behavioral health providers for the service units reported in the table.

The pattern of costs reflects the pattern of use and shows that the greatest per person per month (PPPM) costs for both the foster care and non-foster care children were for outpatient treatment followed by inpatient hospitalizations.

	FC Children (n=1,362)		Non-FC Children in Medicaid (n=1,400)	
Outpatient behavioral health service use**	808	59%	415	30%
Inpatient behavioral health service use**	69	5%	16	1%
Individual or family counseling**	457	34%	165	12%
Intensive outpatient treatment**	156	11%	72	5%
Day treatment/ partial hospitalization**	146	11%	21	2%
Home-based services	4	0%	4	0%
Case management services**	305	22%	73	5%
Total Behavioral Health**	809	59%	415	30%

** p < .01

	FC Children (n=1,362)			Non-FC Children in Medicaid (n=1,400)		
	<i>Units</i>	<i>Cost</i>	<i>Cost Per Person Per Month</i>	<i>Units</i>	<i>Cost</i>	<i>Cost Per Person Per Month</i>
Outpatient behavioral health service use**	216,157	\$4,617,933.86	\$152.03	53,209	\$1,077,690.66	\$21.09
Inpatient behavioral health service use**	2,263	\$1,028,500.78	\$34.03	496	\$241,901.47	\$4.73
Individual or family counseling**	5,859	\$207,640.41	\$6.76	2,484	\$79,476.05	\$1.56
Intensive outpatient treatment*	2,164	\$119,854.42	\$4.09	978	\$69,724.75	\$1.36
Day treatment/ partial hospitalization**	11,900	\$466,655.56	\$15.60	3,064	\$121,160.76	\$2.37
Home-based services	5	\$259.36	\$0.01	5	\$267.85	\$0.01
Case management services	109,904	\$989,374.61	\$33.25	19,174	\$178,449.75	\$3.49
Total Behavioral Health**	218,420	\$5,646,434.64	\$210.47	53,705	\$1,319,592.13	\$25.82

* p < .05 for Cost PPPM
 ** p < .01 for Cost PPPM

Comparison of Behavioral Health Service Use and Cost Before, During, and After Foster Care

Behavioral Health Service Use and Cost by Category of Service

The simple penetration rate for children enrolled in Medicaid using behavioral health care services was 14% higher during foster care placement than 6 months prior to placement, and the penetration rate was 8% lower after reunification than during placement. The pattern of use and costs for behavioral health services was significantly different before during and after foster care placement, suggesting that children are less likely to receive these services after returning to their parents (see **Tables 11 & 12**).

Table 11. Proportion of Foster Care Children Using Behavioral Health Services in Medicaid by Category of Service: Before, During and After Foster Care Services (n=1,362)						
	Before Foster Care		During Foster Care		After Foster Care	
Outpatient behavioral health service use (a,b,c)	474	35%	671	49%	563	41%
Inpatient behavioral health service use (b)	36	2.6%	34	2.5%	22	1.6%
Individual or family counseling (a,b)	214	16%	309	23%	269	20%
Intensive outpatient treatment (a,c)	52	4%	93	7%	57	4%
Day treatment/ partial hospitalization (b,c)	77	6%	101	7%	45	3%
Home-based services	3	0%	1	0%	0	0%
Case management services (a)	175	13%	246	18%	202	15%
Total Behavioral Health (a,b,c)	476	35%	671	49%	565	41%
(a) Significant difference between before and during placement (p < .01)						
(b) Significant difference between before and after placement (p < .01)						
(c) Significant difference between during and after placement (p < .01)						

Table 12. ANOVA Results for Comparison of Service Use and Cost per Person per Month Before, During and After Foster Care by Category of Service (n=1,362)			
Before Foster Care	<i>Units</i>	<i>Cost</i>	<i>Cost/Person/Month</i>
Outpatient behavioral health service use**	49,148	\$960,973.54	\$116.30
Inpatient behavioral health service use	1,018	\$433,779.17	\$52.50
Individual or family counseling**	1,200	\$33,766.70	\$4.09
Intensive outpatient treatment	453	\$26,131.92	\$3.16
Day treatment/ partial hospitalization**	2,874	\$112,382.26	\$13.60
Home-based services	4	\$207.00	\$0.03
Case management services	26,956	\$234,802.25	\$28.42
Total Behavioral Health**	50,166	\$1,394,752.71	\$168.80
During Foster Care	<i>Units</i>	<i>Cost</i>	<i>Cost/Person/Month</i>
Outpatient behavioral health service use**	115,116	\$2,583,046.69	\$194.22
Inpatient behavioral health service use	873	\$405,895.00	\$26.05
Individual or family counseling**	2,933	\$104,560.51	\$7.13
Intensive outpatient treatment	1,140	\$66,266.40	\$5.54
Day treatment/ partial hospitalization**	6,885	\$270,345.46	\$21.53
Home-based services	1	\$52.36	\$0.00
Case management services	53,983	\$484,525.85	\$38.01
Total Behavioral Health**	115,989	\$2,988,941.69	\$220.27
After Foster Care	<i>Units</i>	<i>Cost</i>	<i>Cost/Person/Month</i>
Outpatient behavioral health service use**	51,893	\$1,073,913.63	\$129.97
Inpatient behavioral health service use	372	\$188,826.61	\$22.85
Individual or family counseling**	1,726	\$69,313.20	\$8.39
Intensive outpatient treatment	571	\$27,456.10	\$3.32
Day treatment/ partial hospitalization**	2,141	\$83,927.84	\$10.16
Home-based services	0	\$0.00	\$0.00
Case management services	28,965	\$270,046.51	\$32.68
Total Behavioral Health**	52,265	\$1,262,740.24	\$152.82
** Significant difference in Cost PPPM between before, during and/or after placement (p < .01)			

Comparison of Successfully Reunified vs. Non-Successfully Reunified Foster Care Children

Demographic Characteristics

Tables 13 & 14 present demographic information for foster care children and reveals that the group of children aged 6-12 was the most likely group to achieve successful reunification. However, their reunification rate of 30% is still very low. In the study sample the boys and non-white children were more likely than girls and white children to be reunified; however, these observed differences were quite small. Successful reunification was significantly related to age, race and the child's district of residence.

Table 13. Proportion of Successful Reunification of Foster Care Children by Demographic Characteristic (n=1,362)					
	Successfully Reunified		Non-Successfully Reunified		Total
<i>Age</i>					
0-5	113	19%	468	81%	581
6-12	152	30%	354	70%	506
13-18	55	20%	220	80%	275
<i>Race</i>					
White	110	18%	487	82%	597
Non-White	210	28%	551	72%	761
<i>Gender</i>					
Male	160	24%	514	76%	674
Female	160	23%	527	77%	687

Table 14. Comparison of Demographic Characteristics of Foster Care Children by Reunification Status					
	Successfully Reunified (n=320)		Non-Successfully Reunified (n=1,042)		
<i>Age**</i>					
0-5	113	35%	468	45%	
6-12	152	48%	354	34%	
13-18	55	17%	220	21%	
<i>Race**</i>					
White	110	34%	487	47%	
Non-White	210	66%	551	53%	
<i>Gender</i>					
Male	160	50%	514	49%	
Female	160	50%	527	51%	
<i>District**</i>					
1	23	7%	12	1%	
2	20	6%	32	3%	
3	40	13%	76	7%	
4	16	5%	49	5%	
5	30	9%	75	7%	
6	17	5%	166	16%	
7	58	18%	192	18%	
8	9	3%	47	5%	
9	4	1%	16	2%	
10	8	3%	67	6%	
11	3	1%	112	11%	
12	5	2%	35	3%	
13	53	17%	89	9%	
14	17	5%	42	4%	
15	17	5%	32	3%	
<i>Mental Health Diagnosis</i>					
None	284	89%	927	89%	
SMI Diagnosis Only	30	9%	94	9%	
Dual SMI/SA Diagnosis	6	2%	21	2%	
** p < .01					

Behavioral Health Service Use and Cost by Category of Service

Review of **Tables 15 and 16** reveals that children who were successfully reunified did not consistently receive more behavioral health services than children who were not reunified. Children who were successfully reunified did receive 3%-4% more individual or family counseling and case management services; however, children not successfully reunified received slightly more of every other category of service. This may reflect greater need for services for children who were not successfully reunified, or it may be due to other factors beyond the scope of this study. In general the cost and utilization of services for both groups appears low given the known need for behavioral health services in the foster care population (Scheiderman et al.,1998).

Table 15. Proportion of Foster Care Children Using Behavioral Health Services in Medicaid by Reunification Status and Category of Service

	Successfully Reunified (n=320)		Non-Successfully Reunified (n=1,042)	
Outpatient behavioral health service use	181	57%	627	60%
Inpatient behavioral health service use	11	3%	58	6%
Individual or family counseling	118	37%	339	33%
Intensive outpatient treatment	30	9%	126	12%
Day treatment/ partial hospitalization	28	9%	118	11%
Home-based services	0	0%	4	0%
Case management services	80	25%	225	22%
Total Behavioral Health	181	57%	628	60%

Note: None of the differences were statistically significant.

Table 16. Comparison of Service Use and Cost per Person per Month By Reunification Status and Category of Service (n=1,362)

	Successfully Reunified (n=320)			Non-Successfully Reunified (n=1,042)		
	<i>Units</i>	<i>Cost</i>	<i>Cost Per Person Per Month</i>	<i>Units</i>	<i>Cost</i>	<i>Cost Per Person Per Month</i>
Outpatient behavioral health service use**	43,019	\$694,343.11	\$114.84	173,138	\$3,923,590.75	\$163.45
Inpatient behavioral health service use**	153	\$81,515.63	\$12.07	2,110	\$946,985.15	\$40.77
Individual or family counseling	987	\$35,884.30	\$6.04	4,872	\$171,756.11	\$6.99
Intensive outpatient treatment	361	\$18,174.00	\$2.81	1,803	\$101,680.42	\$4.48
Day treatment/ partial hospitalization*	1,581	\$62,865.26	\$9.77	10,319	\$403,790.30	\$17.39
Home-based services	0	\$0.00	\$0.00	5	\$259.36	\$0.01
Case management services	26,327	\$232,216.51	\$38.70	83,577	\$757,158.10	\$31.58
Total Behavioral Health**	43,172	\$775,858.74	\$126.91	175,248	\$4,870,575.90	\$204.22

* p < .05 for Cost PPPM
 ** p < .01 for Cost PPPM

Comparison of Successfully Reunified vs. Non-Successfully Reunified Foster Care Children With a Diagnosis of Serious Mental Illness (SMI)

Behavioral Service Use and Cost by Category of Service

The proportion of children with an SMI diagnosis in the Medicaid claims data (11%) may under represent the actual proportion of children who have serious mental health problems. In this data set, for children who had an SMI diagnosis, there were no significant differences in pattern of service use between those successfully reunified and those non-successfully reunified except for day treatment, which may be a function of the small number of persons using this service (see **Table 17**). Review of **Table 18** shows that children who were not successfully reunified used significantly more services at greater PPPM cost than those who were successfully reunified. For example, expenditures for outpatient behavioral health services for children who were not successfully reunified were twice as high as expenditures for children successfully reunified, and inpatient services expenditures were three times as high. As suggested earlier, this likely reflects their greater need for services. Unfortunately, the study data set does not provide us with indications of illness severity, which could possibly explain these findings.

Table 17. Proportion of Foster Care Children with Serious Mental Illness (SMI) Using Behavioral Health Services in Medicaid by Reunification Status and Category of Service				
	Successfully Reunified, with SMI Diagnosis (n=36)		Non-Successfully Reunified, with SMI Diagnosis (n=115)	
Outpatient behavioral health service use	36	100%	112	97%
Inpatient behavioral health service use	9	25%	44	38%
Individual or family counseling	29	81%	96	83%
Intensive outpatient treatment	13	36%	46	40%
Day treatment/ partial hospitalization**	7	19%	56	49%
Home-based services	0	0%	0	0%
Case management services	24	67%	82	71%
Total Behavioral Health	36	100%	113	98%

** p < .01

Table 18. Comparison of Service Use and Cost per Person per Month of Foster Care Children with Serious Mental Illness (SMI) by Reunification Status and Category of Service						
	Successfully Reunified, with SMI Diagnosis (n=36)			Non-Successfully Reunified, with SMI Diagnosis (n=115)		
	<i>Units</i>	<i>Cost</i>	<i>Cost Per Person Per Month</i>	<i>Units</i>	<i>Cost</i>	<i>Cost Per Person Per Month</i>
Outpatient behavioral health service use**	14,584	\$233,384.91	\$338.64	73,899	\$1,675,196.45	\$618.68
Inpatient behavioral health service use*	151	\$81,354.70	\$107.11	1,844	\$801,778.37	\$322.23
Individual or family counseling	327	\$11,143.16	\$17.19	1,829	\$62,068.10	\$22.26
Intensive outpatient treatment	98	\$2,034.38	\$2.90	559	\$13,548.52	\$5.25
Day treatment/ partial hospitalization*	560	\$22,552.50	\$28.67	5,310	\$208,339.18	\$78.46
Home-based services	0	\$0.00	\$0.00	0	\$0.00	\$0.00
Case management services	9,993	\$87,668.75	\$125.67	44,350	\$401,631.00	\$149.44
Total Behavioral Health**	14,735	\$314,739.61	\$445.75	75,743	\$2,476,974.82	\$940.91
* p < .05 for Cost PPPM						
** p < .01 for Cost PPPM						

Study Limitations

While study findings regarding the predictors of successful reunification are enlightening, they cannot be generalized to all children in foster care because of study sample restrictions discussed earlier. The current analysis regarding the predictors of successful reunification excluded children who could not be matched to parents. Thus, families in the predictor study may have more residential stability than the unmatched families involved in the foster care system. This residential stability could increase their chances for successful reunification.

Other limitations come from the use of Medicaid claims data and the fact that OFS-CIS data indicates the type of maltreatment experienced but lacks valid and reliable measures of maltreatment severity. Limitations inherent in the use of administrative data stem from the fact that record keeping is imperfect, data contain coding errors and may be incomplete, and lags occur in the data entry process. These factors may partially explain why we were only able to identify 87% of the foster care children in the Medicaid eligibility file. Additionally, information on diagnosis must be viewed with caution because the true prevalence of SMI and SA are many times underreported in administrative data. Similarly, we may be underreporting the actual use of behavioral health services because our analysis does not include services received that were not billed to Medicaid. Those facts should not affect comparisons between foster care and non-foster care children as the underreporting likely affects both groups equally.

A limitation of the service use and cost study is that the non-foster care Medicaid enrolled comparison group may differ systematically from the foster care group. As pointed out earlier, comparing children in KinCare or therapeutic foster care to those in other foster care placements would be ideal because, in such a study design, differences in behavioral health services use could be studied with respect to the differences in the type of out-of-home placement. By using non-foster care children enrolled in Medicaid as the comparison group, we have included children in the study who may have very different health situations (e.g., developmental disabilities, severe physical disabilities) than children in foster care. Being unable to identify children in different types of foster care placements has been a common problem for other researchers, and these researchers have also used a comparison group of non-foster care children enrolled in Medicaid (Harman et al., 2000; Takayama et al., 1994; Halfon et al., 1992). Lastly, the cost of behavioral health services reported in this study does not include out-of-pocket costs or private pay services, and hence, true behavioral health service costs are underestimated.

Discussion of Findings and Policy Implications

The study findings show that successful family reunification varies widely by geographic area within Florida and is much lower than the national standard of 76%. In this investigation the strongest predictors of successful reunification were geographic area (health district) and Medicaid eligibility type. When compared to families who were not Medicaid enrolled prior to their children's foster care placements, families that were Medicaid enrolled before their children's foster care placements were less likely to achieve successful reunification. It is possible that enrolled children were poorer than children not enrolled in Medicaid prior to foster care placement. If children enrolled in

Medicaid before foster care placement are poorer, then these findings are consistent with previous studies that have shown a negative association between poverty and successful family reunification. They underscore the importance of providing concrete services to families to obtain needed resources (e.g. food, clothing and adequate housing) to reduce the damaging consequences of inadequate income.

Behavioral health service use findings from this study are similar to findings from previous research. Our data show that children in foster care had a higher rate of mental disorders, they used more behavioral health services than Medicaid-enrolled children not in foster care, and their Medicaid behavioral health services expenditures PPPM were eight times higher than the behavioral health expenditures PPPM for children not in foster care. These findings were expected because children with more emotional and behavioral problems are more likely to need and receive behavioral health services. Despite the higher rate of behavioral health services use, there may actually be underutilization of these services in the study population relative to the need, based on the estimated need for mental health services reported among children who experience maltreatment and foster care placement in previous research. Study data also revealed that rates of behavioral health service use increased after foster care placement and then declined after family reunification. Additional research is needed to examine and explain the changes in service use before, during and after foster care placement.

There are several possible explanations for the fluctuating pattern of service use. Foster care parents may have different help-seeking behaviors than custodial parents (e.g., feel less stigma associated with mental health problems). Foster care parents may be directed by child welfare or individually motivated to seek needed behavioral health service for their foster care children, and they may have fewer transportation problems than custodial parents. Additionally, barriers such as fear of DCF/child protective services experienced by custodial parents accessing behavioral health services before foster care placement may continue after reunification. Common barriers to accessing needed behavioral health services for child welfare clients include client noncompliance with recommended treatment, lack of adequate financial or emotional support to access and benefit from services, client relocation, and problems experienced during treatment due to the severity of clients' mental illnesses or severity of past abuses (Berson, Roggenbaum & Vargo, 2001).

The higher health services use among foster care children in this study has implications for the relationship between managed care, access to care, and quality of care for the foster care population. Increasingly, Florida (and other states) is expanding managed care in its Medicaid program to include behavioral health services. A similar study in Pennsylvania (Harman et al., 2000) concluded that behavioral managed care organizations should be paid a capitation rate that reflects the need for and use of mental health services by foster care children. If Florida's capitation rate is too low, children in foster care may not have access to sufficient, high quality behavioral health care because the incentives for managed care organizations may conflict with the needs of foster care children.

Access to effective behavioral health services is an important part of meeting the complex needs of children and families involved in the child welfare system. Findings from this study and future research could be used to develop child welfare policies and support services that could more effectively meet the needs of the high-risk children and

adults involved in the child welfare system. Improving both short and long-term outcomes for children in foster care will require adequate human and financial resources, cooperative efforts of child health, behavioral health and social welfare professionals and reimbursement mechanisms that are adequate to cover needed services. Ideally future child welfare policies would reflect the system of care principles and the values of a system of care that were articulated almost two decades ago by Stroul and Friedman (1986).

Future Research

Given the known, long-term, negative consequences of child maltreatment and extensive retrospective and longitudinal research showing that individuals who experienced child maltreatment and foster care placement in childhood continue to experience difficulties into adulthood, it is essential to both assure the provision of needed behavioral health services and better understand the role of child welfare services in accessing those needed services for the children and parents involved in the child welfare system. Additional research is needed to determine the processes and barriers that might explain the low rate of successful reunification and wide variability in reunification rates currently observed in the state of Florida. Research will also be conducted to better understand the observed pattern of behavioral health service use and identify important factors that explain the great variability in child welfare outcomes. We will continue ongoing research to support evidenced-based child welfare practice. Our ultimate goal is to advance child welfare policy in a direction that supports a system of care and adequate funding to meet the needs of families involved in the child welfare system.

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Appendix A.

CATCAID DOCUMENTATION

Background

The Policy and Services Research Data Center's (PSRDC) catcaids were originally developed in an attempt to identify and categorize mental health services provided by the Florida Agency for Health Care Administration (AHCA) through Medicaid. Prior to 2002, catcaids were named catcodes. The decision to change the name came in response to the acquisition of Medicare claims data, and the subsequent need to identify and categorize Medicare mental health services. It was decided to rename the Medicaid catcodes, "catcaids" and to name the new Medicare catcodes, "catcares".

In evaluating the Medicaid claims service utilization data, the PSRDC recognized the need to create logical groupings of services in order to describe broad service delivery patterns to AHCA. The development of mental health catcaids has been an ongoing process that began in 1996. Other catcaids were also created to categorize services in the Managed Care Encounter data, which were not applicable to services in the Medicaid claims data.

The existence of thousands of procedure codes used in claims billing necessitated the aggregation of procedure codes into large groups of services. Because procedure codes did not exist on every claim, other variables had to be employed in developing the categorization scheme. The variables that were used in the Medicaid catcaid scheme included the following: procedure code, diagnosis code, record type, claim form, appropriations code, treatment provider type, treatment provider specialty, pay to provider type and age.

The mental health catcaids began as several large, inclusive groups that were defined as integer codes and later were split into more detailed categories that were defined as integer + decimal codes. A list of the mental health catcaids, the label, a description of the category and the source variables used to construct the category (current as of 01/09/2002) is included in **Table A1**. Many services were separated into distinct categories based on where they were received, i.e. as an inpatient in a hospital, as an outpatient at a hospital, in an office/clinic or in a Community Mental Health Center. Then they were further divided into procedures performed at the different locations.

In 1999, the need to develop physical health catcaids in addition to the existing mental health catcaids became apparent. The physical health catcaids were developed as broad categories of services based on the groupings of procedure codes in the American Medical Association's (AMA) Common Procedural Terminology (CPT) manual. The medical record type claims (which record data collected on the HCFA 1500 form) used the three levels of codes in the Health Care Financing Administration Common Procedure Coding System (HCPCS). Level I included CPT codes, level II included other national HCPCS codes, and Level III included codes reserved for assignment by the local

authority. The institutional record type claims (which record data collected on the HCFA 1450 form, a.k.a. UB92 form) used ICD-9-CM procedure code, but this variable was not recorded on approximately 80% of the claims. Because of the incompleteness of the procedure code variable, the institutional claims were broadly categorized based on the claim form variable. A list of the physical health catcaids, the label, a description of the category and the source variables used to construct the category (current as of 01/09/2002) is included in **Table A2**.

Steps in Mental Health Catcaid Assignment

Step 1 (All Mental Health Catcaids 01.00 – 20.50)

Understanding the hierarchical algorithm used to assign the catcaids is very important for interpreting the results of categorical analyses using the catcaids. The first step in catcaid assignment is to select claims that are either medical or institutional record type, non-capitation claims. For the analyses performed on Medicaid claims data by the PSRDC, only these record types are examined. The pharmacy and capitation claims are not currently included in PSRDC analyses using catcaids.

Step 2 (All Mental Health Catcaids 01.00 – 20.50)

The next step is to select and “bookmark” all of the mental health claims. A claim is selected as a mental health claim if *any one* of the following variables suggests it is a mental health service: procedure code, primary or secondary diagnosis code, appropriations code, treatment provider type, treatment provider specialty, pay to provider type and claim form. If a claim is selected as a mental health service based on any of the above variables, then it continues through the hierarchical algorithm (using if-then-else statements) to assign its mental health catcaid.

Step 3 (Catcaids 01.00 – 03.50)

Next, the mental health claims (institutional and medical) are broadly categorized into substance abuse claims (X=03.), child (age < 21 years) claims (X=02.) and adult claims (X=01.), in that order. For instance, the substance abuse claims are selected, including both children and adults, and then the remaining claims are separated by age. Then, if certain coding conditions are met, the broadly categorized claims are assigned into inpatient hospital bed days (X.00), ancillary inpatient hospital services (X.05) and hospice/respice services (X.20). By this step, all inpatient and some medical record type claims have been assigned to catcaids 01.00 through 03.50, if the claim was not yet assigned a catcaid, it continues through the remaining catcaid assignment algorithm.

Step 4 (Catcaids 04.00 – 18.00)

The remaining mental health catcaid assignment only applies to the medical record type claims. Catcaids 04.00 through 18.00 are well-defined categories assigned to the mental

health claims if specific criteria regarding their source variables are met. For a list of source variables used to assign these catcaids, refer to **Table A1**.

Step 5 (Catcaids 20.00 – 20.50)

The final step involves collecting the remaining mental health claims into the “catch-all” categories 20.00 through 20.50. Catcaid 20.00 is assigned to claims with general mental procedures that are not categorized above. Catcaids 20.10 through 20.50 are categories that describe the claims that were selected as mental health claims by meeting some criterion other than a known, mental health procedure code. These claims most likely have a mental health diagnosis; however, they may have been selected based on any of the following variables: primary or secondary diagnosis code, appropriations code, treatment provider type, treatment provider specialty or pay to provider type.

Steps in Physical Health Catcaid Assignment

Step 1 (All Physical Health Catcaids 51.00 – 99.99)

All non-capitation, institutional and medical record type claims, which were not selected as mental health claims and subsequently assigned a mental health catcaid, are then run through an algorithm for assigning a physical health catcaid. The physical health catcaids are based on claim forms and groupings of procedure codes within the AMA’s CPT manual.

Step 2 (Catcaids 63.00 – 66.00)

First, all physical health inpatient claims, institutional care claims, outpatient claims, and hospice claims are assigned a catcaid based on claim form.

Step 3 (Catcaids 51.00 – 62.00)

Next, the medical record type claims with known procedure codes are run through the remaining physical health catcaid algorithm.

Step 4 (Catcaids 98.00 – 99.00)

Next, the claims with national codes temporarily defined to a service while awaiting reassignment in the CPT manual are categorized into catcaid 98.00. And finally, all other physical health services with unknown or missing procedure codes will be coded as 99.99. Claims that end up in this catcaid should be examined every new project year to search for new codes that should be included in the algorithm.

Table A1. Mental Health Catcaids

CATCAID	LABEL	DESCRIPTION OF CATEGORY	SOURCE VARIABLE(S)
01.00	Adult Inpatient Care	Bed days and ICD-9-CM procedures in a hospital for an adult, non-substance abuse, institutional claims only	Record type, age, claim form
01.10*	Adult Residential	Managed care services received in a residential facility for an adult, non-substance abuse, PMHP/HMO	
01.20	Adult Hospice/Respite	Hospice/Respite services received for an adult, non-substance abuse, institutional and medical claims	Record type, age, claim form, procedure code
01.50	Adult ancillary inpatient services	Ancillary services received while admitted in a hospital for an adult, non-substance abuse, medical claims only	Record type, age, procedure code
02.00	Child Inpatient Care	Bed days and ICD-9-CM procedures in a hospital for a child, non-substance abuse, institutional claims only	Record type, age, claim form
02.10*	Child Residential	Managed care services received in a residential facility for a child, non-substance abuse, PMHP/HMO	
02.20	Child Hospice/Respite	Hospice/Respite services received for a child, non-substance abuse, institutional and medical claims	Record type, age, claim form, procedure code
02.50	Child ancillary inpatient services	Ancillary services received while admitted in a hospital for a child, non-substance abuse, medical claims only	Record type, age, procedure code
03.00	Substance Abuse Inpatient Care	Bed days and ICD-9-CM procedures in a hospital for substance abuse, institutional claims only	Record type, diagnosis code, claim form
03.10*	Substance Abuse Residential	Managed care services received in a residential	

facility for substance abuse, PMHP/HMO

03.20	Substance Abuse Hospice/Respite	Hospice/Respite services received for substance abuse, institutional and medical claims	Record type, diagnosis code, claim form, procedure code
03.50	Substance Abuse ancillary inpatient services	Ancillary services received while admitted in a hospital for substance abuse, medical claims only	Record type, diagnosis code, procedure code
04.00	Emergency MH Treatment	Acute MH care received in the emergency room	Record type, procedure code and treatment provider specialty
04.50	Hospital Outpatient MH Services	Outpatient mental health services provided in a hospital setting	Record type, claim form, appropriations code
05.00	Physician Services – clinic or outpatient	Periodic office visits, treatment/management of mental health problem received in a clinic or as an outpatient in a physician’s office	Record type, procedure code
05.25	Home-based or prolonged physician’s services	Home-based or prolonged physician’s services, not defined by location of service, formerly 14.00	Record type, procedure code
05.50	CMH: Physician Services	Periodic office visits, treatment/management of mental health problem as defined by the Florida CMH manual	Record type, procedure code
06.00	CMH: Treatment Planning & Review	Treatment Planning & Review of care as defined by the Florida CMH manual (treatment plan developed jointly between patient and treatment team)	Record type, procedure code
07.00	Evaluation and Testing Services	Evaluation and Testing services	Record type, procedure code, appropriations code
07.50	CMH: Evaluation and Testing Services	Evaluation and Testing services as defined by the Florida CMH manual	Record type, procedure code
08.00	Counseling, Therapy, & Treatment Services	Ongoing Counseling, Therapy, & Treatment services	Record type, procedure code
09.00**	Counseling, Therapy, & Treatment Services by	Ongoing Counseling, Therapy, & Treatment services provided by a Behavioral Health	

10.00	Behavioral Health Specialist Rehabilitative Services	Specialist (has been incorporated into 08.00) Living skills training, as defined by the Florida CMH manual	Record type, procedure code
11.00	CMH: Children's Behavioral Health	Children's behavioral health services as defined by the Florida CMH manual	Record type, procedure code
11.50	CMH: Behavioral Health Overlay for Department of Juvenile Justice Residential Facilities	Specific program provided in for behavioral health in residential facilities as defined by the Florida CMH manual	Record type, procedure code
12.00	CMH: Day Treatment Services	Intense services (Partial Hospitalization) as defined by the Florida CMH manual	Record type, procedure code
13.00	Targeted Case Management	General (traditional) and Intensive (surrogate family member) management as defined by the Florida Targeted Case Management manual, section 1-2	Record type, procedure code
14.00**	Physician's services not listed above	Home-based or prolonged physician's services, not defined by location of service, incorporated into 05.25	Record type, procedure code
14.10*	HMO/FHP Employment Services	F-codes, services provided under managed care that are not provided by Medicaid	
14.20*	HMO/FHP Drop-In Centers	F-codes, services provided under managed care that are not provided by Medicaid	
14.30*	HMO/FHP Housing Services	F-codes, services provided under managed care that are not provided by Medicaid	
14.50*	Clinical On-site services	F-codes, services provided under managed care that are not provided by Medicaid	
14.90*	HMO/FHP Other Special Services	F-codes, services provided under managed care that are not provided by Medicaid	
15.00**	Other Assessment	Incorporated into 07.00	
16.00	Therapeutic Foster Care I & II	Foster care services	Record type, procedure code
17.00**	EPSDT Screening	Incorporated into 20.00	

18.00	MH Drug Injection	Drug injection to treat mental health problem	Record type, procedure code
18.10*	Pharmacy-related revenue codes	Managed Care revenue codes	
20.00	Other MH – does not fit into above categories	General mental health procedure codes, Electric Shock Therapy or other claims with mental health criterion other than procedure code met	Record type, procedure code
20.10	Lab/Pathology with MH diagnosis	Lab/Pathology service with mental health criterion other than procedure code met	Record type, procedure code
20.20	Speech/Language Therapy with MH diagnosis	Speech/Language Therapy service with mental health criterion other than procedure code met	Record type, procedure code, treatment provider specialty
20.30	Occupational Therapy with MH diagnosis	Occupational Therapy service with mental health criterion other than procedure code met	Record type, procedure code, treatment provider specialty
20.40	Physical Therapy with MH diagnosis	Physical Therapy service with mental health criterion other than procedure code met	Record type, procedure code, treatment provider specialty
20.50	MH Ambulance Services	Ambulance services with mental health criterion other than procedure code met	Record type, treatment provider type

*Code is specific to the Managed Care Encounter (PMHP/HMO) data and not used in the Statewide Medicaid Claims data

**Code is obsolete

Table A2. Physical Health Catcaids

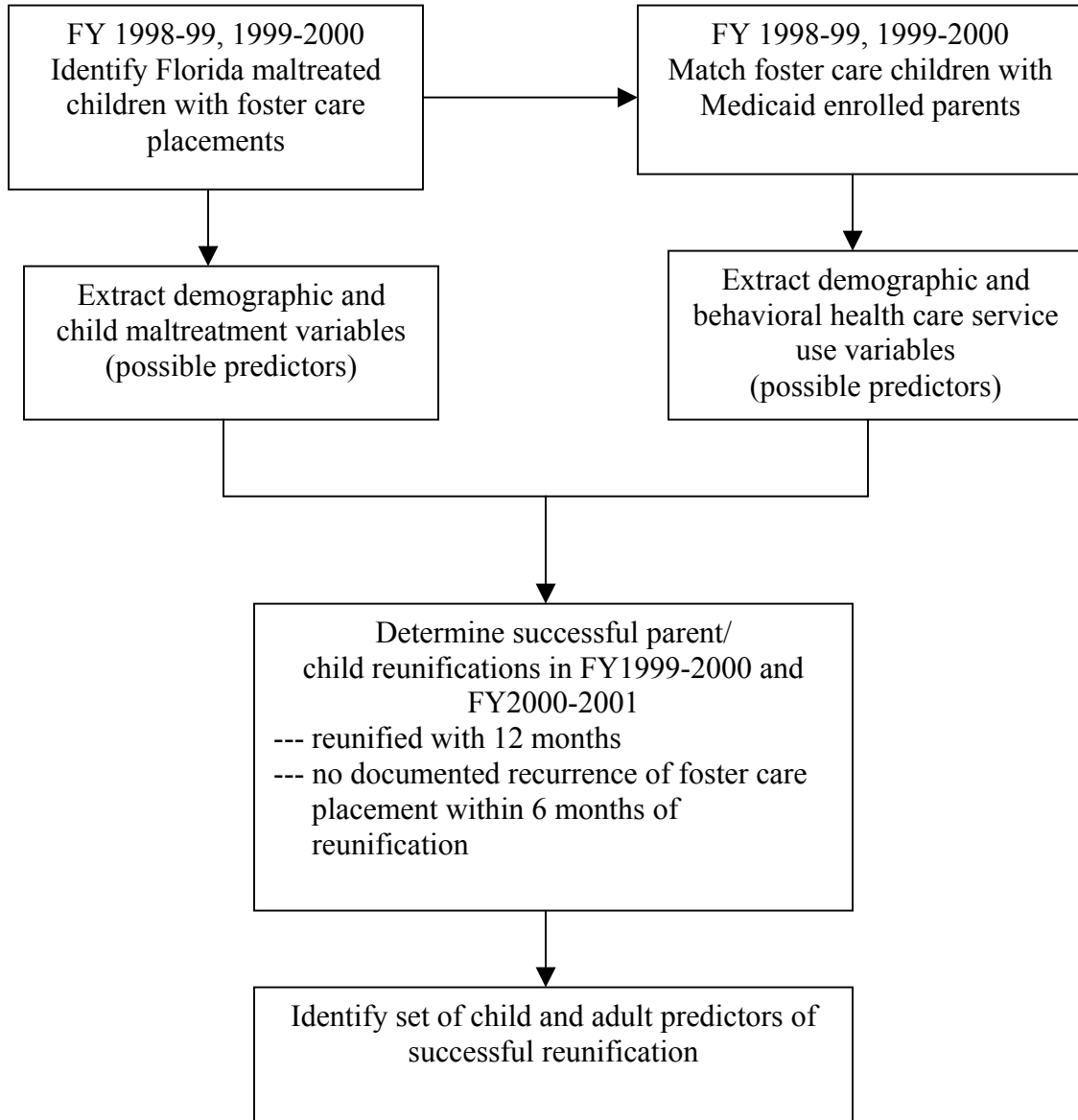
CATCAID	LABEL	DESCRIPTION OF CATEGORY	SOURCE VARIABLE(S)
51.01	Office or Other Outpatient Evaluation and Management Services	Office visits, evaluation and management services	Record type, claim form, procedure code
51.02	Hospital Observation/Inpatient Evaluation and Management Services	Hospital visits, inpatient evaluation and management services	Record type, claim form, procedure code
51.03	Consultation Evaluation and Management	Consultation with other providers for evaluation and management of care	Record type, claim form, procedure code
51.04	Emergency/Critical/Intensive Care Evaluation and Management Services	Acute care evaluation and management services	Record type, claim form, procedure code
51.05	Nursing Facility, Custodial Care, Home, or Prolonged Care Evaluation and Management Services	Long-term care evaluation and management services	Record type, claim form, procedure code
51.06	Case Management or Care Plan Evaluation and Management	Case management, care plan oversight or supervisory evaluation and management	Record type, claim form, procedure code
51.07	Preventive Medicine Evaluation and Management Services	Preventive evaluation and management services (i.e. history and physical)	Record type, claim form, procedure code
51.08	Newborn Care Evaluation and Management Services	Evaluation and management services for newborn care	Record type, claim form, procedure code
51.09	Family Planning Evaluation and Management Services	Evaluation and management services for family planning services	Record type, claim form, procedure code
51.99	Special/Other Evaluation and Management Services	Disability, other screening evaluation and management services	Record type, claim form, procedure code
52.00	Anesthesia	All anesthesia services	Record type, claim form, procedure code
53.00	Surgery	All surgical services	Record type, claim form, procedure code
54.01	Diagnostic Radiology	Diagnostic radiology, imaging, ultrasound	Record type, claim form, procedure code

		services	
54.02	Radiology Oncology	Radiology treatment of cancers/diseases	Record type, claim form, procedure code
55.01	Pathology/Laboratory Testing/Assays	Laboratory and Pathology panels, drug tests and assays	Record type, claim form, procedure code
55.02	Pathology	Microbiology, clinical pathology	Record type, claim form, procedure code
55.03	Pathology/Laboratory Transfusion Medicine	Services related to blood/serum transfusion	Record type, claim form, procedure code
55.99	Other Pathology/Laboratory Procedures	Other pathology/laboratory procedures	Record type, claim form, procedure code
56.01	Immunizations and Therapeutic/Diagnostic Infusions/Injections	Immunizations and Therapeutic/Diagnostic Infusions/Injections	Record type, claim form, procedure code
56.02	Tests/Medical Procedures	Tests/Medical Procedures	Record type, claim form, procedure code
56.03	Physical/Rehabilitation/Nutrition/Osteopathic/Chiropractic Medicine	Physical/Rehabilitation/Nutrition/Osteopathic/Chiropractic Medicine	Record type, claim form, procedure code
56.04	Medical Supplies/Devices	Medical Supplies/Devices	Record type, claim form, procedure code
56.05	Vision Procedures	Vision Procedures	Record type, claim form, procedure code
56.06	Hearing Procedures	Hearing Procedures	Record type, claim form, procedure code
56.99	Other Medical Services	Other medical procedures	Record type, claim form, procedure code
57.01	Early Intervention/Antepartum Care	Early intervention, support services for pregnant women	Record type, claim form, procedure code
57.02	Developmental Disability Waiver	Services provided under the Medicaid Developmental Disability Waiver	Record type, claim form, procedure code
57.03	Assisted Living/Community/Home Support Services	Activities of daily living, community and home support services	Record type, claim form, procedure code
57.04	Aged/Disabled Waiver Services	Physical health services provided under the Medicaid aged/disabled Waiver	Record type, claim form, procedure code
57.05	Care for Medically Complex or Chronically Mentally Ill Child	Living assistance and other services for chronically ill/complex cases	Record type, claim form, procedure code
58.00	Dental Procedures	Dental procedures	Record type, claim form, procedure code

59.00	Pharmacy Procedures	Physical health pharmacy procedures	Record type, claim form, procedure code
60.00	Physical/Occupational/Speech Therapy	PT, OT, and Speech therapy for physical health claims	Record type, claim form, procedure code
61.00	Transportation Services	All transportation services for physical health claims	Record type, claim form, procedure code
62.00	AIDS Waiver Services	Services provided under Medicaid AIDS Waiver	Record type, claim form, procedure code
63.00	Inpatient Claims	Inpatient physical health claims	Record type, claim form
64.00	Institutional Care Claims	Home Health or SNF physical health claims	Record type, claim form
65.00	Outpatient Claims	Outpatient physical health claims	Record type, claim form
66.00	Hospice Care Claims	Hospice physical health claims	Record type, claim form
98.00	Temporary National Codes Awaiting Reassignment in CPT	Several G-codes, all Q-codes, and all S-codes awaiting CPT code assignment by AMA	Record type, claim form, procedure code
99.99	Other/Unknown Services	“Catch-all” for the rest of the physical health claims	Record type, claim form

Appendix B.

Sampling Frame



Appendix C.

Florida Counties by Department of Children and Families (DCF) District	
District	Counties Included
1	Escambia, Okaloosa, Santa Rosa, Walton
2	Bay, Calhoun, Gulf, Holmes, Jackson, Washington, Franklin, Gadsden, Jefferson, Leon, Liberty, Madison, Taylor, Wakulla
3	Alachua, Bradford, Columbia, Dixie, Gilchrist, Hamilton, Lafayette, Levy, Putnam, Suwannee, Union
4	Baker, Clay, Duval, Nassau, St. Johns
5	Pasco, Pinellas
6	Hillsborough, Manatee
7	Orange, Osceola, Seminole, Brevard
8	DeSoto, Sarasota, Charlotte, Collier, Glades, Hendry, Lee
9	Palm Beach
10	Broward
11	Miami-Dade, Monroe
12	Flagler, Volusia
13	Citrus, Hernando, Lake, Marion, Sumter
14	Hardee, Highlands, Polk
15	Indian River, Martin, Okeechobee, St. Lucie