NORTH CAROLINA TITLE IV-E WAIVER DEMONSTRATION

TERMINATION REPORT

Submitted to:

Children's Services Section
Division of Social Services
N.C. Department of Health and Human Services
Raleigh, North Carolina

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1. Introduction

North Carolina was one of the first states to implement a Title IV-E Waiver demonstration. In 1996, the Division of Social Services of North Carolina's Department of Health and Human Services (NC-DSS) was granted a waiver of federal regulations in the use of Title IV-E dollars to demonstrate how changes in policy and practice that could reduce:

(1) entries to out-of-home care among children who experienced abuse or neglect or who were deemed dependent;

(2) lengths of stay among children for whom out-of-home care was the most appropriate response; and

(3) re-entry to out-of-home care among children formerly in out-of-home care.

The North Carolina demonstration period began in July 1997 and ended in June 2002. Nineteen counties participated in this phase of the demonstration. The evaluation report submitted in November 2002 concluded: (1) Waiver counties exhibited a consistent and persistent pattern indicating a reduced probability of out-of-home placement in contrast to minimal changes for children in comparison or other counties in North Carolina and (2) even as Waiver counties were shifting toward serving fewer, but more troubled children in out-of-home care, the length of stay for this population of children did not increase. In fact, it continued to decrease. Based upon these findings, NC-DSS received authorization to extend the demonstration for 5 years and to expand to a total of 38 Waiver counties.

The expanded demonstration began in July 2004. It authorized counties to continue using federal Title IV-E foster care funds to develop and implement strategies for reducing the overall costs of placement in out-of-home care while enhancing permanency for children in the child welfare system without jeopardizing the safety and well-being of children and families. Additionally, the terms and conditions of the Waiver demonstration specified that the 38 demonstration counties could use Title IV-E to address the needs of families and children who otherwise could not be served from those resources. An important characteristic of the Title IV-E Waiver demonstration in North Carolina is that the approach being followed by each county operating under the Waiver is somewhat unique. It entails changes in policy and practice undertaken in each county to achieve the improvements in outcomes outlined above. The particular cases being targeted, the changes in practice being pursued, and the breadth of

changes in policy and practice vary from county to county. To some extent, therefore, participation in the Waiver entails an agency-wide commitment, i.e. system reform, to changes that may lead to these results.

Although not every demonstration county was cost neutral in every quarter of the demonstration period, the demonstration, as a whole, remained cost neutral until 2007. As 2007 progressed more and more counties violated the cost neutrality provision of the Waiver and it became apparent that the demonstration was in danger of slipping into non-cost neutrality. In May 2007, due to concerns about maintaining cost neutrality, North Carolina DSS, in conjunction with the Children's Bureau, terminated North Carolina's Waiver demonstration retroactive to December 2006. Thus, Waiver counties stopped Waiver expenditures 30 months into the expanded demonstration phase. This termination report summarizes changes in practice and services that resulted from the demonstration, provides an assessment of the impact of the Waiver on outcomes as of the termination date and examines trends in cost neutrality to determine 'what went wrong.'

The quasi-experimental evaluation design assesses whether there are differential changes in outcomes and available services over time between the Waiver counties and 34 comparison counties. Details of the design are provided in Evaluation of the Expanded Title IV-E Waiver Demonstration in North Carolina, October 2004. The data used for this report contains information on the experiences of children through September 2007.

2.0 PROCESS EVALUATION

The foundation of the process evaluation measurement strategy is the 38 logic models submitted by individual Waiver counties. The logic models identified changes in service availability, and service utilization, to be implemented as part of the Waiver demonstration in each county. Changes in service utilization were evaluated using two web-based surveys, administered in 2005 and 2006. In addition, a baseline for service utilization was obtained through analysis of case records in the summer of 2005. While the early termination of the demonstration precludes a final analysis of service utilization, in particular further child level analysis of case records, preliminary analysis in the North Carolina Title IV-E Waiver Demonstration Ten-Quarter Report, June 2007, indicated wide variation across demonstration counties in the types of services utilized by families and children in these local communities.

Changes in service availability are evaluated using data submitted by demonstration counties in quarterly reports from 2005 thru 2006. Preliminary results (again discussed in the Ten Quarter Report), indicated variation in the *amount or level* of services provided and possible county groups were explored. For this termination report, the evaluation team refined these analyses. These results are described in the sections below.

2.1 Exploring Service Availability

Quarterly reports, submitted by the demonstration counties, measured changes in service availability that resulted from demonstration activity. Counties characterized new or enhanced services by whether a specific child or family received a service on a one-time or limited basis versus services established for county-wide groups of clients. The counties also provided estimates of the number of clients benefiting from services provided for county-wide groups.

Three dimensions are explored as possible models of service development in the Waiver counties. The first dimension, p*opulation focus,* addresses whether a county provided services through county-wide, system reform efforts, or through child-specific targeted spending opportunities. For this dimension, three county groups are identified: county-wide, child-specific, and both county-wide and child-specific. Twenty-two counties implemented primarily county-wide services and activities approaching the Waiver as a system reform effort. A child-specific targeted funding approach alone was pursued by two counties. An additional 11 counties implemented county-wide services, as well as, child-specific targeted funding.

The *service focus*, the second dimension of service development, summarizes the types of services provided as part of the Waiver demonstration. Counties are grouped by the primary type of new or enhanced services developed as part of the demonstration. There are three groups of services implemented throughout the demonstration counties: services addressing basic needs, child welfare services and treatment services. Basic needs services provided necessities of life such as transportation, child care, rent, utility payment or emergency housing. Child welfare services included areas such as respite care or legal services. Finally, treatment services consist of counseling and other treatments for mental health, substance abuse, domestic violence and sexual abuse. Five counties focused on providing basic needs services; 15 counties on child welfare services; 6 on treatment services. There were three counties that reported no activity. The remaining 9 counties provided a combination of services in two of the three areas.

The final service dimension considered is *level of service.* Level of service is defined as the ratio of service episodes to the total number of children with an initial report of abuse/neglect or placement during the demonstration period. The service ratio ranges from .7 episodes to 148 episodes per 100 children served. Counties are divided into three service level groups based upon a combined total county-wide and child-specific service episode score. Seven counties in the top quintile of the total ratio distribution comprise the high level of service group (37 to 148 episodes per 100 children); the mid-level service group is the24 counties in the 20th to the 80th percentiles of the service ratio distribution (3 to 25 episodes); the lowest level of service group contains 4 counties that did not actively participate in the demonstration, as well as, 3 additional counties that participated at a very minimal level. Table 2.1 summarizes the level of service ratio by population and service focus for the top two activity groups.

Table 2.1. Level of Service Ratio (# Service Episodes per 100 Children) by Population and Service Focus

	County Wide Services			Child Specific Services		
Waiver Counties	Basic Needs	Treatment	Child Welfare	Basic Needs	Treatment	Child Welfare
High level service (n=7)						
Range	0 - 36	0 - 76	15 - 66	0 - 9	0 - 7	0 - 18
Mean	11.4	15.9	35.3	5.0	1.9	4.0
Mid level service (n=24)						
Range	0 - 7	0 - 13	0 - 23	0 - 8	0 - 4	0 - 4
Mean	1.3	2.3	5.0	1.7	0.5	0.5

While Table 2.1 illustrates differences in the level and type of services implemented, some similarities can also be observed. Patterns of county-wide service implementation are similar for the top two activity groups. In both groups service activity is greatest for child welfare services, followed by treatment services then services addressing basic needs. In contrast basic needs services dominate the child-specific services provided with a ratio of five service episodes per 100 children in the high level group and 1.7 service episodes per 100 children in the mid-level group. Even though basic needs services account for the smallest segment of services among high service counties implementing county-wide efforts, the ratio of service incidence is over twice that among the child-specific group, perhaps, indicating a greater service penetration rate in this model.

Exhibits 2.2 and 2.3 summarize activity in individual counties in the top two groups. As illustrated in these figures, the majority of counties in both the high and mid level groups focused on services provided county-wide. In the high level group Yancey focused solely on enhancing county-wide services. While focusing on county-wide efforts, Buncombe, Chatham, Durham, New Hanover, and Union supplemented these services with some child-specific activity. Only Dare County focused the same amount of service in both areas. In the mid level group counties that were focused primarily on the county-wide population included: Alexander, Brunswick, Burke, Cabarrus, Cleveland, Cumberland, Davie, Harnett, Lincoln, Mecklenburg, Orange, Person, Wake, and Yadkin. However, some counties did focus on both populations. In the mid level group counties included Alamance, Caldwell, Currituck, Davidson, Forsyth, Guilford, Rockingham, and Transylvania. However, Haywood County focused the majority of their efforts on child specific services.

Exhibit 2.2. High Level Counties – Population Focus

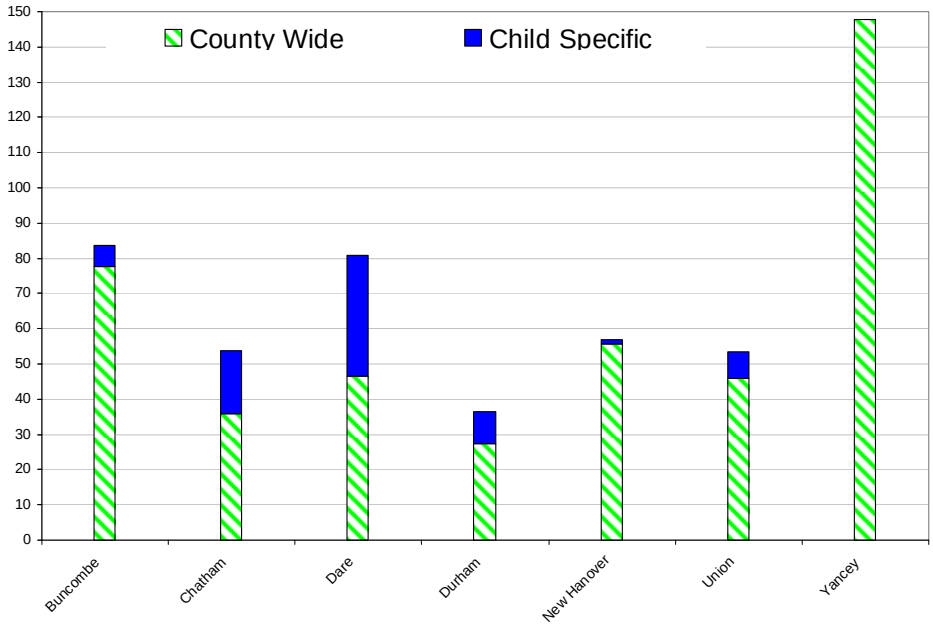
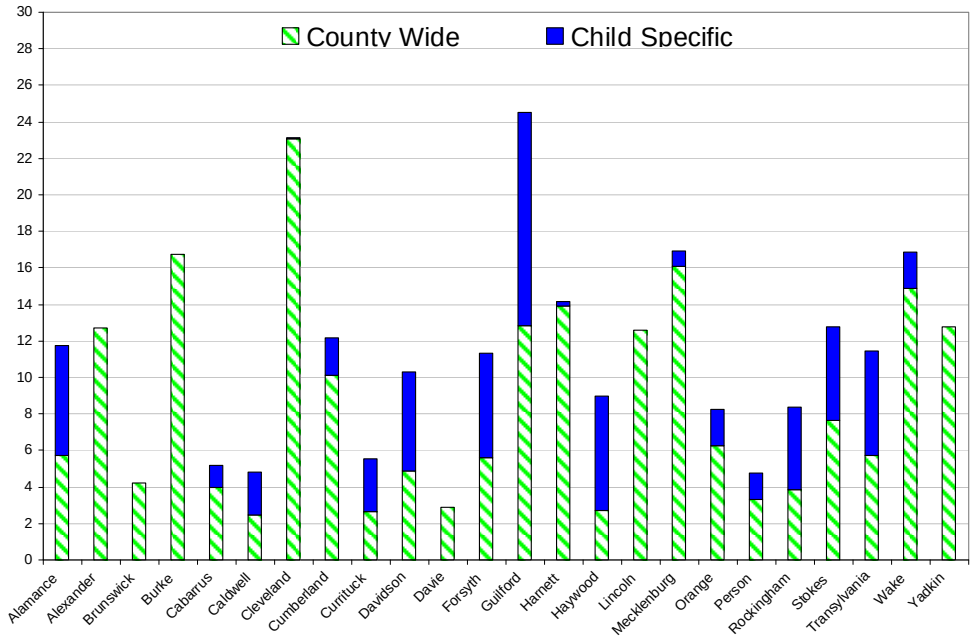


Exhibit 2.3 Mid Level Counties – Population



On the final dimension – service focus – the three broad service categories are defined in more detail below.

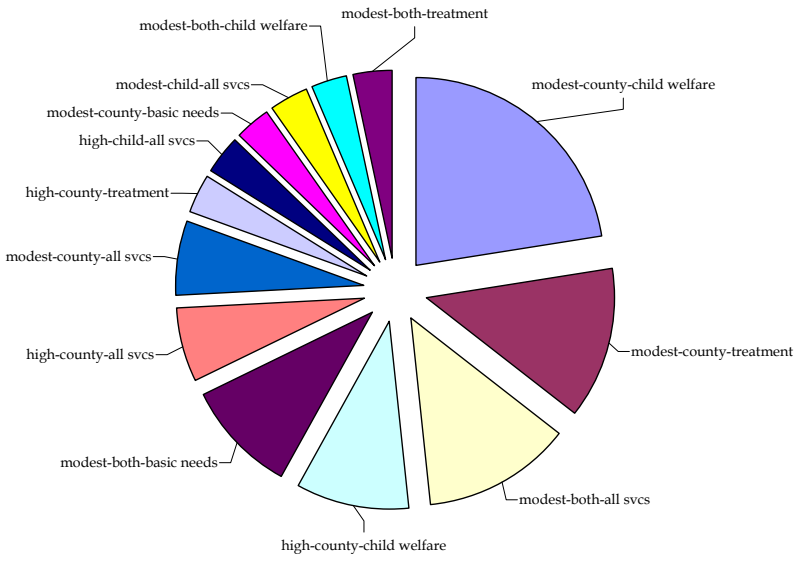
- Basic Needs Services: Assistance with transportation, Child care, Credit counseling, Homemaker or home management services, Household needs – food, furniture, utility bills, clothing, Housing maintain, improve or emergency (rent), Job services including assistance with finding a job.
- Treatment Services: Acute health care (equipment, medicine), Counseling and treatment for sex offenders, Dental care, Domestic/partner violence, Education support for adult family members, Education support for children, Family counseling, Mental health services, Parent coaching, Parenting classes, Psychiatric evaluation, Sexual abuse victims, Substance abuse treatment.
- Child Welfare Services: Adoption preparation, Aftercare (post -custody) support services, Airfare (and/or Travel), Assisted Guardianship, Child and Family Team Meeting, Child specific recruit for adoptive/foster parents, Foster parent services, Home study, Independent living skills for youth, Intensive Family Preservation, Intensive reunification services, Intensive visitation, Legal guardianship services, Legal services,

Mediation, Preventative services, Respite care, Social Worker, Specific placement with relatives, Visitation.

2.2 Models of Waiver Implementation

As suggested in the previous section, there were diverse patterns of service across the three dimensions, for counties actively engaged in North Carolina's waiver demonstration initiative. This is illustrated by the eleven different grouping illustrated in Exhibit 2.4 below.

Exhibit 2.4 Waiver Implementation - Level of Service, Population Focus, Type of Service



However, despite the diversity of implementation, some common patterns or models of service availability do emerge. These are summarized in Exhibit 2.5 below. Tables in Appendix A provide detailed data about specific services in individual counties as provided by the demonstration counties.

Exhibit 2.5 Waiver Counties – Focus on Population and Service

Waiver Counties	Population Focus	Service Focus
High-level Activity		
Buncombe	county wide	child welfare
Chatham	county wide	basic needs, treatment, child welfare
Dare	county wide and child specific	basic needs, treatment, child welfare
Durham	county wide	child welfare
New Hanover	county wide	child welfare
Union	county wide	basic needs, child welfare
Yancey	county wide	treatment
Mid-level Activity		
Stokes	county wide and child specific	basic needs, treatment, child welfare
Davidson	county wide and child specific	basic needs
Forsyth	county wide and child specific	basic needs
Transylvania	county wide and child specific	basic needs
Alamance	county wide and child specific	basic needs, treatment
Currituck	county wide and child specific	child welfare
Guilford	county wide and child specific	basic needs, child welfare
Caldwell	county wide and child specific	treatment
Rockingham	county wide and child specific	basic needs, treatment
Haywood	child specific	basic needs, treatment
Cumberland	county wide	basic needs
Alexander	county wide	child welfare
Brunswick	county wide	child welfare
Burke	county wide	child welfare
Cleveland	county wide	child welfare
Harnett	county wide	child welfare
Person	county wide	child welfare
Wake	county wide	child welfare
Cabarrus	county wide	treatment
Davie	county wide	treatment
Orange	county wide	treatment
Yadkin	county wide	treatment
Lincoln	county wide	treatment, child welfare
Mecklenburg	county wide	treatment, child welfare

The seven counties with high levels of service (ratio of services per 100 children), focused primarily on the county-wide population. Services provided county-wide tended towards child welfare services such as child and family team meetings (7 counties), assisted guardianship (5 counties), and legal services (5 counties). However, services provided to specific, targeted children tended towards basic needs services such as housing and emergency rent (7 counties), utility bills (7 counties), and child care (5 counties).

Compared to the above group, the 21 counties with modest levels of service were more diverse in population focus and yet similar in patterns of service type. Fourteen counties focused on the county-wide population, while nine counties focused on both county-wide and child-specific populations, and one county focused primarily on child specific services. , Predominant county-wide services again tended toward child welfare services such as assisted guardianship (8 counties), child and family team meetings (8 counties), and legal services (7 counties). Predominant services to specific, targeted children again tended toward basic needs services such as assistance with transportation (12 counties), child care (11 counties), household needs of furniture (12 counties), utility bills (15 counties), maintaining housing and emergency rent (15 counties).

In summary, while there was a great deal of diversity across counties in how they utilized the opportunities provided by the waiver, to change the delivery of services to child and families in the community, there were several models of waiver implementation that can be identified. Specifically, the majority of demonstration counties focused on child welfare services provided county-wide such as child and family team meetings and legal services. Where counties also provided specific, targeted services to children, however, these targeted services tended towards meeting basic needs such as housing and emergency rent, household needs, utility bills, and child care.

2.3 Use of Child-Specific Targeted Funding

During the first two and a half years of the demonstration 2,587 children in 28 counties benefited from child-specific targeted funding. Counties reported on the quarterly report the specific types of services made available to these children and, also, reported the outcome that they hoped to change through these services. The evaluation team was able to link 90% of these children to records in the administrative data files used to track outcomes. Seventy-six percent were younger than 7 years old; 17% were between 7 and 12 years of age; and the remaining 7% were between 13 and 17 years old. The group was equally divided between male and female. Almost half (47%) of the children receiving targeted funding were black and 41% were white. Seven counties (Guilford, Cumberland, Buncombe, Forsyth, Union and Wake) accounted for 64% of the targeted funding cases. The top six expenditures for targeted spending were: housing (622 children), household utilities (461 children), child care (248 children), furniture (197 children), legal expenses (169 children) and transportation (165 children).

Using data from the quarterly reports, it was possible to determine which outcome counties were hoping to impact through the use of child-specific targeted funding. Child-specific funding was used most often in an effort to avoid out-of-home placement. Fifty-five percent of children (1,416 children) benefited from child-specific targeted funding to prevent a placement. Reducing length of stay was the second most frequently cited reason for using targeted funding; 738 children (29%) were in this group. Child-specific funding was used to try to stabilize placement for 301 children (12%), to prevent repeat maltreatment for 232 children (9%) and to prevent reentry for 119 children (5%). There were 32 children who benefited from child-specific funding but no outcome was specified. In a few instances targeted funding was used to influence multiple outcomes for the same child so percentages will not add up to 100%.

Using child-specific unique ID numbers, the evaluation team linked the quarterly report data from the counties to the child abuse and neglect data files and the placement data files used to track outcomes. Ninety percent of the children in the child-specific data files (2,339 children) were identified in the outcome data files. Because counties focused on different outcomes depending on the circumstances of the child and family, the child-specific sample was divided into two groups based upon the hoped for outcome change. The first group, the prevention group, had 1,611 children. Children in this group received services that were designed to prevent placement and/or repeat maltreatment for children not in out-of-home placement. There were 1,050 children in the second group, the placement group. Child-specific services provided to this group of children sought to reduce length of stay, stabilize placements and/or reduce reentry to out-of-home placement. A small group of children (106) received child-specific services targeting both sets of outcomes and are, thus, included in both groups.

This first analysis examines the relationship of targeted services on the placement outcomes. Among the 1,050 children in this group 931 were linked to placement data. To insure that we linked the targeted services to the appropriate outcome spell, we restricted the analyses to children with only one placement spell. This resulted in deleting 119 children that had more than one spell from the analysis group. Additionally, we deleted an additional 36 children whose did not fall within the Waiver period (January 2005 – December 2006) resulting in 776 children in our analysis. We then implemented a case cohort design for the purpose of comparison. We selected a population random sample of 854 children (110% of the size of the flexible funding group) from the placement data. The sample children met the same criteria as

the targeted spending group (i.e., had to have one spell only which fell within the Waiver period). As the children who received flexible funding were also in the placement data, there was the possibility that they would end up in the random sample. This was the case for 25 children who are included in both groups.

Exhibit 2.6 presents a comparison of the children who received child-specific targeted services with the random sample of children. Children in the child-specific group are slightly younger than those in the random sample, with 55% age five or younger at entry into placement, compared with 49% of the children in the random sample. A slightly larger proportion of children in the targeted spending group were initially placed with a relative (26% vs. 23%). Children in the targeted spending group are almost four times less likely than those in the random sample to have a first placement spell of less than six months (4% vs. 15%). While the two groups are similar in the proportion of children with lengths of stay of two or more years (33% and 35%), a larger proportion of children in the targeted spending group have a first spell between one and two years in length (43% vs. 31%). Children in the targeted spending group also had less stability in their first spell, with 78% having two or more placements compared with 71% of children in the random sample. Termination reason tended toward significance (p = .054), with a larger proportion of targeted spending children than children in the random sample reunifying with their parents or primary caretaker (42% vs. 38%).

Exhibit 2.6 Comparison of Children in Placement Receiving Child-Specific Targeted Services With a Random Sample of Children in Placement

	Children Receiving Targeted Services (n=776)	Random Sample (n=854)
Age at Entry*		
0-1	.28	.26
2-5	.27	.23
6-11	.25	.26
12-20	.20	.25
Gender		
Male	.51	.50
Female	.49	.50
Race		
White	.45	.45
Black	.42	.40
Other	.14	.15

Initial Placement*		
Home of parents	.02	.04
Relative	.26	.23
Foster care	.49	.48
Group home	.04	.06
Hospital	.05	.04
Emergency shelter	.03	.04
Other non-missing	.11	.12
Length of First Spell*		
< 6 months	.04	.15
6 months - < 1 year	.20	.19
1 year - < 2 years	.43	.31
2+ years	.33	.35
Number of Placements in First Spell*		
0	.01	.03
1	.21	.26
2	.25	.22
3	.20	.16
4+	.33	.33
Termination Reason (if applicable)		
Reunification	.42	.38
Guardianship/Custody to relative/ other court-approved caretaker	.29	.28
Adoption	.22	.22
Other exit	.07	.12

* Significant at $p < .05$

However, these analyses are presented as exploratory only. Clearly, children receiving targeted services were substantially different, from the cohort of all child welfare cases during the same period. For some characteristics, these differences are, or approach, statistical significance. These findings, however, also illustrate the selection bias inherent when studying a specific subpopulation of cases. These may be children and families that are more difficult to serve, prior to the intervention, and outcomes influenced accordingly. A similar challenge has been observed when studying families receiving Intensive Family Preservation Services, (Kirk and Griffin, 2004). The selection bias must be controlled for by a more complex selection, of an appropriate comparison group, than was possible in the remaining evaluation study period.

Given the problems of comparison sample selection, we only provide basic descriptives for the prevention group of targeted funding children. We were able to link 1,332 (83%) to the administrative data files. Seventy-three percent of these children were younger than 7 years old;

20% were between 7 and 12. Almost half (49%) were black and 39% white. Only 24% of these children entered out of home placement with 76% avoiding placement at this time.

3.0 IMPACT OF WAIVER ON OUTCOMES

Although the demonstration terminated early, it is possible that interventions implemented in its early years, impacted on outcomes for children in the demonstration counties. The 10-Quarter Report examined the impact through December 2006. In these analyses we extend the follow-up for the outcome analysis through June 2007, however, we only report results in this section if they are different than those in the earlier report. Additionally, we consider the impact of targeted child-specific services and the relationship of the three service components to outcome changes within the demonstration group.

Exhibit 3.1 describes how each outcome was measured and the sources of data used to measure it. The outcomes of interest in this report concern the experiences of children from the end of the previous demonstration in sfy0102 through the end of the current shortened demonstration period, December 31, 2006. Each outcome was measured using data from the Services Information System of the NC-DSS. (For a detailed description of each outcome indicator, see Analysis Plan for the Evaluation of North Carolina's Title IV-E Waiver Demonstration, June 2006.)

Exhibit 3.1 Child Outcomes with Indicator and Data Source

Outcome	Indicator	Study Population
Reduce reliance on out-of-home care in responding to children experiencing maltreatment	Probability of entering out-of-home care after a first abuse or neglect report	Cohorts of children for whom an initial report of maltreatment has been received
Reduce rate of repeat maltreatment following an initial maltreatment report	Cumulative probability of a second maltreatment incident within 6 months of initial maltreatment	Cohorts of children who experienced first reported incident of maltreatment
Increase stability of placement while in out-of-home care	Number of placements by days in placement	Cohorts of children entering placement authority for the first time
Reduce length of stay, including time to permanency including reunification, adoption, and guardianship	Cumulative probability of exit from placement by reunification, adoption and assisted guardianship Cumulative probability of remaining in placement at 1 year; 2 years	Cohorts of children entering placement authority for the first time

Reduce the number of children who re-enter out-of-home placement after achieving permanency in a prior spell	Probability of re-entering out-of-home placement	Cohorts of children entering placement authority for the first time who subsequently exited

During the time period of this evaluation significant changes are being made to the way in which children in North Carolina are screened and processed when reports are made of abuse or neglect. The Multiple Response System (MRS) delineates two separate avenues for determining whether a child/family needs intervention for abuse or neglect. One track is the traditional forensic, investigative track, which is still used for potential abuse cases and serious neglect cases. The other track, for neglect only cases, uses a family assessment as the tool to determine the need for intervention in the form of services. In order to evaluate the impact of the Waiver, we must understand the impact of the change to a Multiple Response System. (See 10-Quarter Report for detailed explanation of MRS and its relationship to the demonstration.)

To help us control for the impact of the MRS implementation, for each county we developed an indicator for time of implementation of MRS (in the first year of implementation for the county, its value is 1, for the second year its value is 2 and so on). Thus when we look at an event such as maltreatment, we can position the date of the maltreatment with respect to the time since MRS implementation for that county began.

With the implementation of MRS, the state modified the data collected in SIS to reflect the new findings now possible in the family assessment track. The variable for decision type now has the following categories in the SIS: unsubstantiated, abuse, neglect, abuse and neglect, dependency, services needed, services recommended, no services needed, and services provided but no longer needed. The first five categories are the traditional categories used prior to the initiation of MRS; the last four decisions types are only applicable to cases assigned to the MRS family assessment track. We define maltreatment and, thus, repeat maltreatment using the nine categories. An incident of maltreatment is defined as a referral that results in one of these findings: abuse, neglect, abuse and neglect, dependency and services needed.

Our variable for maltreatment is different from the CFSR measure in that we include the MRS family assessment services needed category, which requires CPS to continue its involvement with the family, with the traditional forensic definition of substantiated. We are labeling our value as maltreatment to avoid a misunderstanding of the definition and to acknowledge that with the advent of MRS the population of cases substantiated has changed

significantly with neglect cases being drawn into the family assessment track. For these reasons, we will avoid the use of the word substantiated. This will also allow us to look at children who received or were recommended for services and follow their interactions with CPS after their first maltreatment decision.

Repeat maltreatment is defined as having another maltreatment within 6 months of the first maltreatment (which is within 6 months of the first report). Thus we have a potential 6 months for the first maltreatment to occur from first report and another 6 months for a second maltreatment to occur. Thus for purposes of re-maltreatment, we can only use cohorts with a minimum follow-up time of one-year. Cohorts with shorter follow-up time will be eliminated from the re-maltreatment analysis. (See 10-Quarter Report for detailed explanation of this variable.)

3.1 Analysis Methods

The outcome analysis uses two methodologies: Cox non-proportional hazards models, and Time Series Analysis of changes in caseloads. (For a detailed description of each method and the issues that it addresses, see Analysis Plan for the Evaluation of North Carolina's Title IV-E Waiver Demonstration, June 2006.) While each method addresses one or more design issues, by synthesizing findings across the different methods, we will be able to evaluate the key research questions and outcomes to be addressed in the evaluation. Each method is summarized briefly below.

In general multivariate survival analysis techniques are used to model the Waiver outcomes in a way that controls for differences in demographic characteristics of children (age, gender, race, etc.), certain agency characteristics (participation in the Waiver, maturation of county participation in multiple response system), and community characteristics (urbanicity, region). Cox non-proportional hazards models are utilized to test whether there is a differential change in outcomes in Waiver and Comparison counties for children entering the child welfare system before the Waiver and after implementation. The models also include the state fiscal year the child became at risk for the outcome of interest (i.e., year of initial entry to placement, year first report occurred, and year of exit from placement) and an interaction term of SFY by county Waiver status. The interaction term specifically tests whether the changes across the years are parallel. When the interaction term is significant we use the parameter estimates for the SFY and Waiver status main effect and the interaction term to calculate the relative risk for

the event of interest compared to the baseline year for each group. This method analyzes outcomes at the child-level.

Researchers in the child welfare field also have found the importance of examining foster care outcome using an aggregate county-level data. With regard to the latter, Wulzcyn (1996) correctly stated that "the population of foster children (i.e., the foster care caseload) at a given moment in time is made up of the children who are in foster care. In this way, individual- and aggregate-level dynamics are inseparable. As children enter or leave foster care, the size of the population is affected accordingly." An aggregate-level analysis is an approach that examines the size of the population at a given moment and the change of such aggregated size over time. We use time-series county-level data to implement this approach. In this study, a time series refers to a series of quarterly data defined by a county's number of children who entered into placement. (See Appendix D for detailed description of this methodology.)

3.2 County-Level Outcome Changes

Although the Waiver evaluation focused on the demonstration as a whole, to understand the variability intrinsic to North Carolina's implementation, Exhibit xxx presents a summary of positive outcome changes for the 38 counties that comprise the demonstration group. This exhibit summarizes the results of analyses that examined whether outcomes changed positively when comparing outcomes for children who entered placement during the shortened demonstration period (January 1, 2005 – June 30, 2007) to children entering pre-demonstration (July 1, 2002 through June 20, 2004). The counties are organized by activity level group. Around the outcomes targeted at reducing length of stay (i.e. increasing the likelihood of exit from placement within one year and increasing the likelihood of exit for children who are still in placement at the 2-year mark), over half (57%) of counties in the high-level group improved these outcomes compared to 42% and 29% of mid-level and lower-level activity groups respectively. The percentage of counties showing positive improvements around reentry (i.e. decreased reentry within 1 year of exit) was about the same in the high-level and mid-level group. Overall about one-third of the counties reduced the probability of placement. In this outcome 46% of mid-level counties reduced the likelihood that a child would enter placement after the first report of abuse or neglect compared to 29% of high-level counties and no counties in the lower-level group. Finally, 61% of the Waiver counties reduced repeat

maltreatment levels with the lower-level counties have the largest percentage (86%) of counties showing an improvement in this outcome. Specific county results are reported in Appendix C.

Exhibit 3.2 Number and Percent of Counties with Improvements in Waiver Outcomes by County Group

	Exit within 1 year	Exit after 2 years	Reentry within 1 year	Probability of Placement	Repeat Maltreatment
High-level (7 counties)	4 / 57%	4 /57%	3 /43%	2 / 29%	5 /71%
Mid-level (24 counties)	10 / 42%	8 / 33%	10 / 42%	11 /46%	12 /50%
Lower-level (7 counties)	2 / 29%	2 /50%	0 / 0%	0 / 0%	6 / 86%
Total (38 counties)	16 / 42%	14 / 37%	13 / 34%	13 / 34%	23 / 61%

Our time series analyses examined the number of children entering out-of-home placement in the Waiver and comparison counties. We used growth curve models to examine the rate of change in entries for Waiver counties stratified by the three activity groups compared to the comparison counties. We included a time-varying MRS variable, as well as, time-fixed variables for unemployment rate, percentage of minority population, region of state and size of county in these multivariate models. The results of these stratified growth-curve models are summarized below (and presented in detail in Appendix D).

- With regard to the comparison between Waiver Group 1 counties (i.e., bottom 20%) and the non-Waiver counties, the model does not show evidence supporting an effective intervention. None of the estimated coefficients involving Waiver variable is statistically significant. Although the three-term interaction (i.e., "Period Jan. 2005 to Jun. 2007" x "Waiver bottom-20% Counties" x "Linear change rate") is negative, meaning that the "Waiver Bottom-20%" counties on average decreased number of entries in Study Period 3 at a faster rate than the non-Waiver counties by .17 entries per quarter, the difference is not statistically significant.

- With regard to the comparison between Waiver Type 2 counties (i.e., middle 60%) and the non-Waiver counties, the model shows positive impact of Waiver Demonstration. Controlling for economic climate, MRS implementation, DSS level,

NC region, and percentage of minority population, the Waiver Type 2 counties decreased the number of entries at a rate faster than the non-Waiver counties during Study Period 3. Specifically, other things being equal, the Waiver Type 2 counties decreased the number of entries 0.36 more per quarter than the non-Waiver counties in this period, and the difference is statistically significant ($p<.05$).

- With regard to the comparison between Waiver Type 3 counties (i.e., top 20%) and the non-Waiver counties, the model shows positive impact of Waiver Demonstration. Controlling for economic climate, MRS implementation, DSS level, NC region, and percentage of minority population, the Waiver Type 3 counties decreased the number of entries at a rate faster than the non-Waiver counties during Study Period 3. Specifically, other things being equal, the Waiver Type 3 counties decreased the number of entries 1.25 more per quarter than the non-Waiver counties in this period, and the difference is statistically significant ($p<.05$).

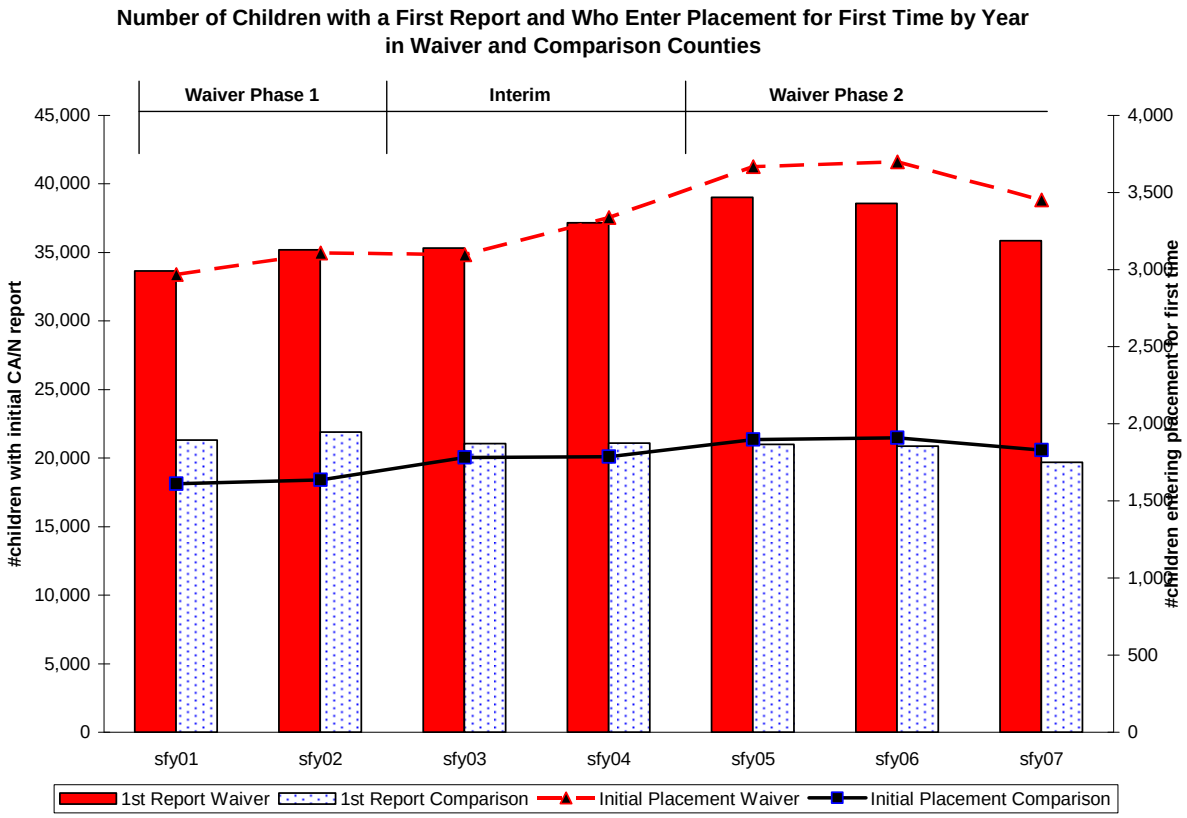
In summary the two types of county-level analysis presented in this section (one descriptive and one multivariate) arrive at similar conclusions around the probability of placement. Waiver counties decreased their usage of out-of-home placement during this time period. The next section will address the question, did the probability of placement for individual children decreased in Waiver counties as compared to the experiences of children in comparison counties. In future studies, it would be valuable to complete time-series analyses for the other outcomes.

3.3 Child-Level Outcome Changes

The North Carolina Waiver demonstration sought to improve multiple safety and placement outcomes. In this section we assess the 2.5 year Waiver demonstration's impact on child-level outcomes. We use data that tracks children who entered out of home placement for the first time or had a first report of abuse or neglect during pre-Waiver and post-Waiver time periods. Since these analyses were first reported in the 10-Quarter Report submitted to NC DSS in June 2007, we will only report here new results.

Probability of Placement As Exhibit 3.3 reveals in every year there were significantly more children entering placement for the first time in Waiver counties than in Comparison counties. This exhibit also shows that the number of children with a first report of abuse and neglect was much larger in Waiver counties than in Comparison counties. This result was reported in the 10-quarter report and remains unchanged with the addition of sfy0607.

Exhibit 3.3



Additionally, Exhibit 3.3 illustrates that there were differential patterns of change across the years, as well as, between the Waiver and Comparison counties. In general there was an increase in both the numbers of children with a first report and initially entering placement in Waiver counties from sfy01 through sfy05. In sfy06 these numbers began to decline slightly with a larger decline seen in sfy07, the last year of the truncated Waiver demonstration. Whereas, in the comparison counties the increase in the number of children with first child abuse and neglect reports increased slightly in sfy02 then decline slightly but steadily each subsequent year until sfy07. As the numbers of children entering placement increased year to year in Waiver and comparison counties, the rate of placement fluctuated slightly across this period of time. In both Waiver and comparison counties approximately four to five percent of children with a first report were subsequently placed within 6 months of the report. However, the populations of children in Waiver and comparison counties with a first report (i.e. at risk of placement) differed by age and race. Therefore, to determine if there were significant

differences in the placement rates from year to year, we conducted Cox Proportional Hazards models and tested to see whether the differences were related to Waiver implementation.

Exhibit 3.4

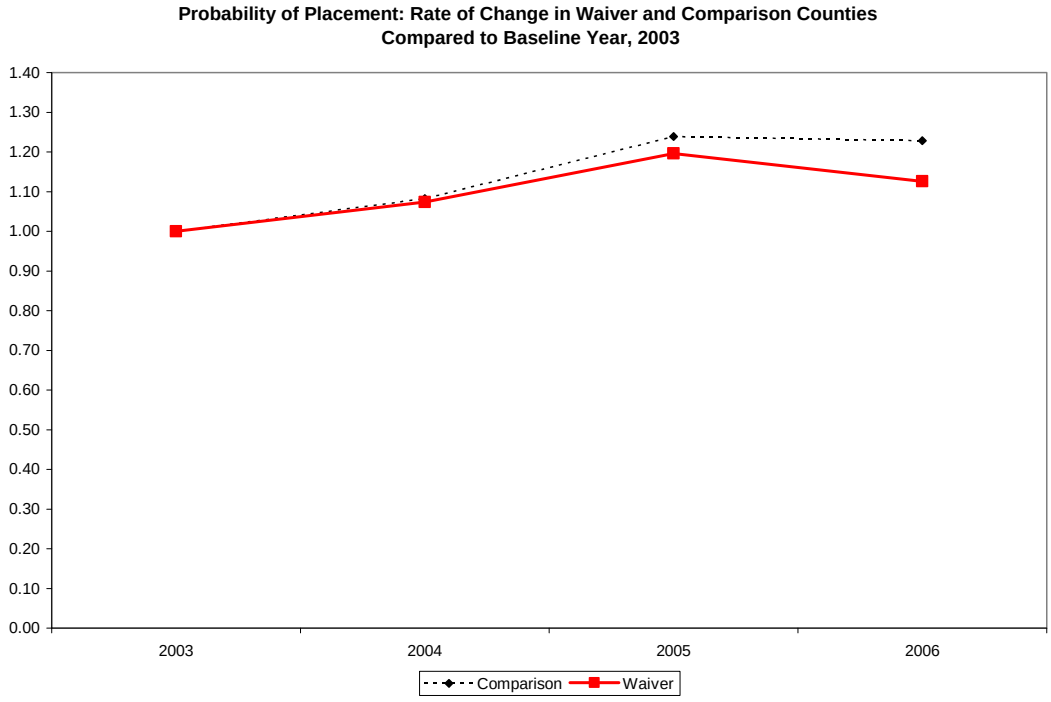
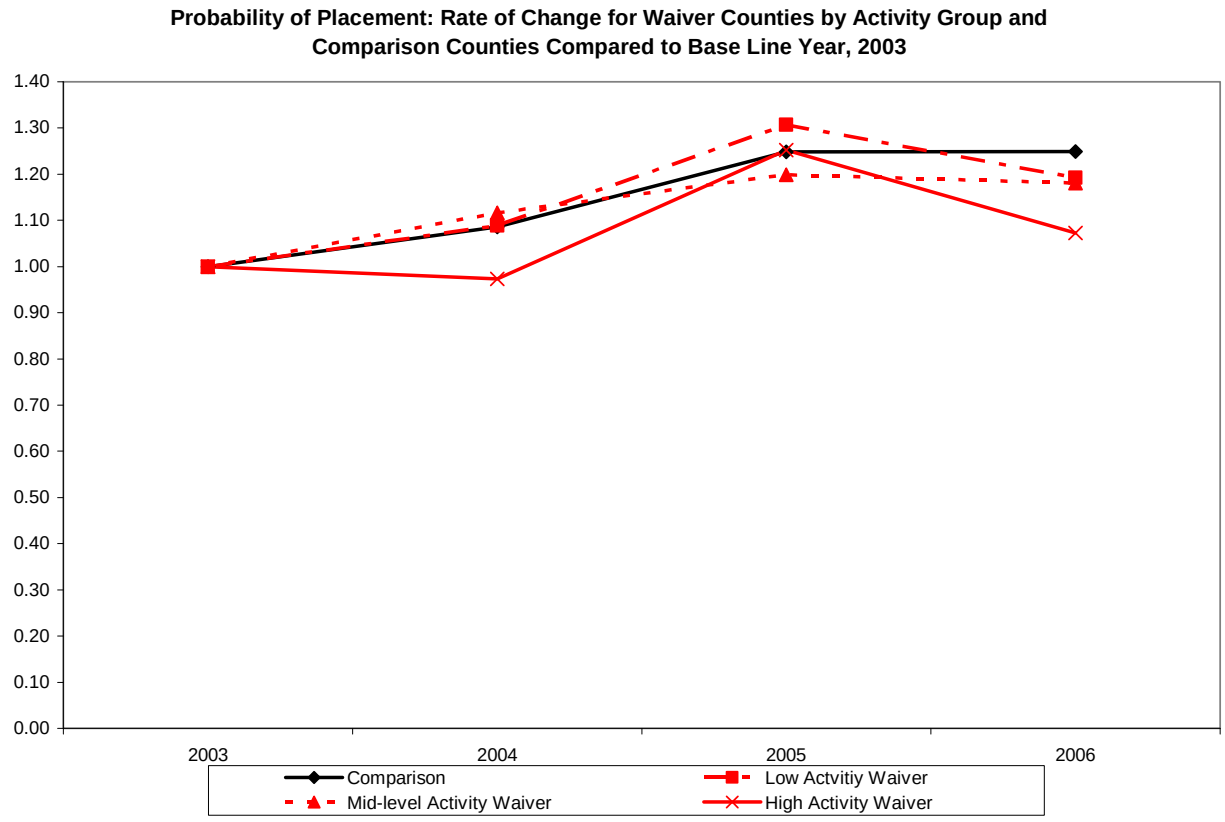


Exhibit 3.4 plots the risk of placement for all years compared to the rate of placement in the base year, sfy03. In sfy04 the relative risk was approximately 1.1 in both Waiver and comparison counties. This means that children in these counties were about 10% more likely to be placed in sfy04 than in sfy03. Increasing lines means that the rate of placement is going up., whereas, decreasing means that children are less likely to be placed than in sfy03.

The rate of change from sfy03 to sfy04 was about the same for Waiver and Comparison counties. Between sfy04 and sfy05 there was a slightly larger increase in placement rates in comparison counties than in Waiver counties. However, between sfy05 and sfy06, the beginning of phase two of the Waiver, the placement rate for children in Waiver counties decreased while it remained about the same in Comparison counties.

Exhibit 3.5



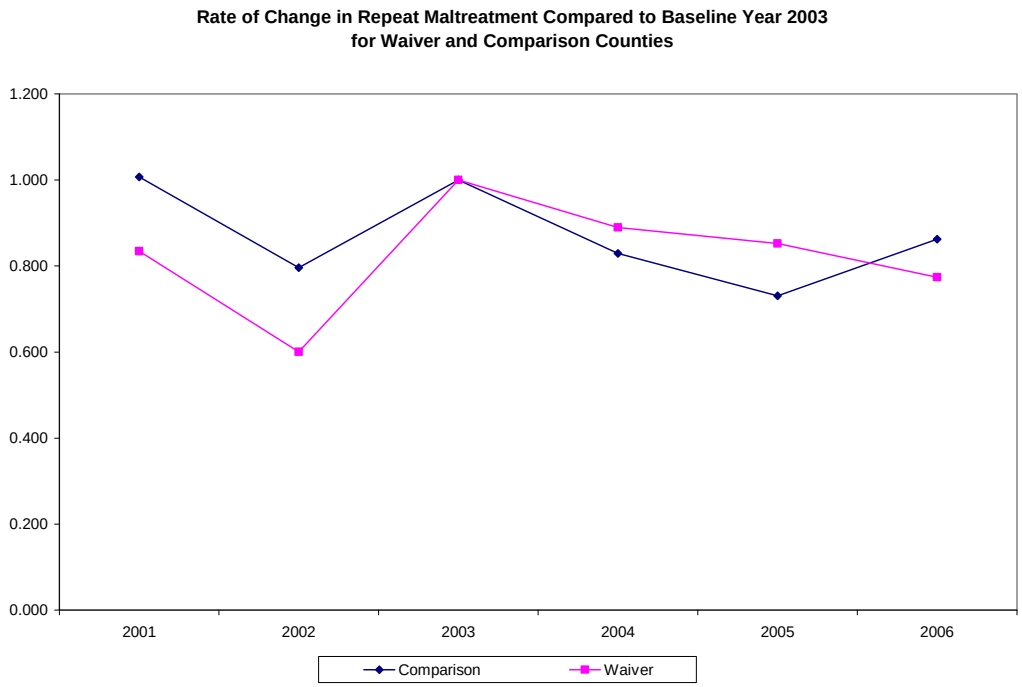
More in-depth analysis of the placement rates using the Waiver activity groups and the comparison counties (Exhibit 3.5) reveals that there were differential placement rate changes within the Waiver group. Placement rates increased the least for children in the high activity counties in all years, except sfy05.

The child-level analyses reinforce the results seen in the county-level time series and descriptive analyses. These analyses all suggest that the Waiver resulted in fewer children entering out-of-home placement. Given the increase in the numbers of children reported for abuse or neglect during this period in Waiver counties, it is very likely that without the Waiver there would have been even more children entering placement during this time frame in these counties.

Repeat Maltreatment. In the 10-Quarter report we reported that the repeat maltreatment rate was four to five percent in both the Waiver and comparison counties. Furthermore, we

determined that there was no difference in the change rates for repeat maltreatment between Waiver and comparison counties for sfy01 through sfy05.

Exhibit 3.6



For this report we are able to extend our analyses to include an additional year, sfy06 (i.e. the second year of the extended Waiver demonstration in NC). As evident from Exhibit 3.6 the rate of repeat maltreatment in the comparison counties increased slightly, although it was still less than repeat maltreatment rate in the base year. In the Waiver counties the rate of repeat maltreatment continued to decline for children with a first report in sfy06. These analyses suggest that NC Waiver counties were able to maintain safety for children while decreasing the probability of placement, as shown in the previous analyses.

Length of Stay. Waiver and comparison counties show similar trends across two of the length of stay measures summarized in Exhibit 3.7. Median length of stay is longer for children in Waiver versus those in comparison counties. In both groups of counties there was a trend towards longer length of stay as indicated by increasing medians in most years. Additionally, the percentage of children exiting placement within 1 year declined in both counties over these years. The trends for children who remained in placement at least two years was, however,

different. In Waiver counties the percentage of children with these long stays who exited by year 3 remained around 40% over these three years. In comparison county the percentage of children still in placement after two years but exiting by year three actually decreased to 33%. While providing an overall picture of outcome trends, these descriptive analyses do not tell the whole story. To determine whether there are differential changes in outcomes between Waiver and comparison counties, it is necessary to take into account other factors related to this outcome, such as changing characteristics of children entering placement and county characteristics such as MRS implementation status and size of county. The multivariate analyses described below accomplish this.

Exhibit 3.7 Summary Placement Outcomes for Children Initially Entering Placement in Waiver and Comparison Counties (entire population)

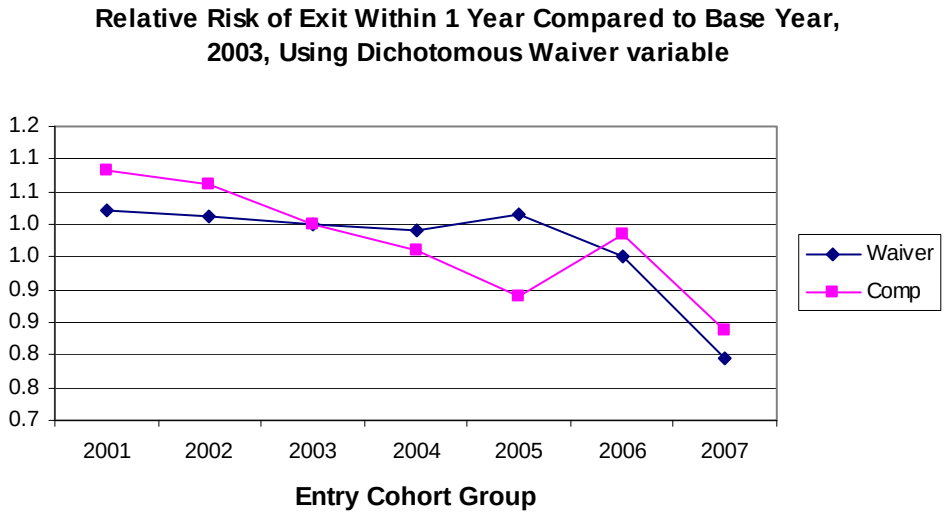
	Waiver					**Comparison**				
	SFY 0203	SFY 0304	SFY 0405	SFY 0506	SFY 0607	SFY 0203	SFY 0304	SFY 0405	SFY 0506	SFY 0607
Number of Initial Entries	3,098	3,337	3,668	3,703	3452	1,780	1,788	1,899	1,909	1830
Median days in placement	449	476	459	498	na	339	342	377	371	na
%children within cohort who exited within 1 year	40%	41%	40%	38%	31%	52%	49%	47%	49%	43%
%children within cohort still in placement at 2 years who exited by 3 years	42%	40%	41%	na		43%	41%	33%	na	
Reentry rate for children in cohort	4%	5%	5%	4%	7%	5%	7%	8%	6%	5%

The first placement outcome that we consider is the likelihood of exiting out-of-home placement within one year of initial entry. Cox proportional hazards models were used to determine if there are differential changes for children who entered child welfare placement authority controlling for demographics (gender, age, race), county size, entry into placement relative to MRS implementation, Waiver status, or year of entry into placement (state fiscal years 2001-2007). An interaction term of fiscal year by Waiver status was included to test the overall Waiver effect on this outcome. In the first analysis, Waiver status was defined as a dichotomous variable with two categories, Waiver and Comparison counties. After running the

overall effect model, we then tested for these two characteristics of Waiver implementation, population focus and activity level. The Waiver variable in the activity level model was a "three-level" variable which provides a more refined distinction between the Waiver counties. It uses quarters of activity and total activity level, as well as some cost data, to distinguish between Waiver counties that did a lot and those that did not do as much. Resulting categories identified high activity counties (the top 20% of Waiver counties on this variable), mid-level activity (the middle 60% of counties), and the lowest activity level (bottom 20%). Finally, we ran models that included the focus of Waiver implementation categorized as population focus, child-specific focus and combined. The results are presented below.

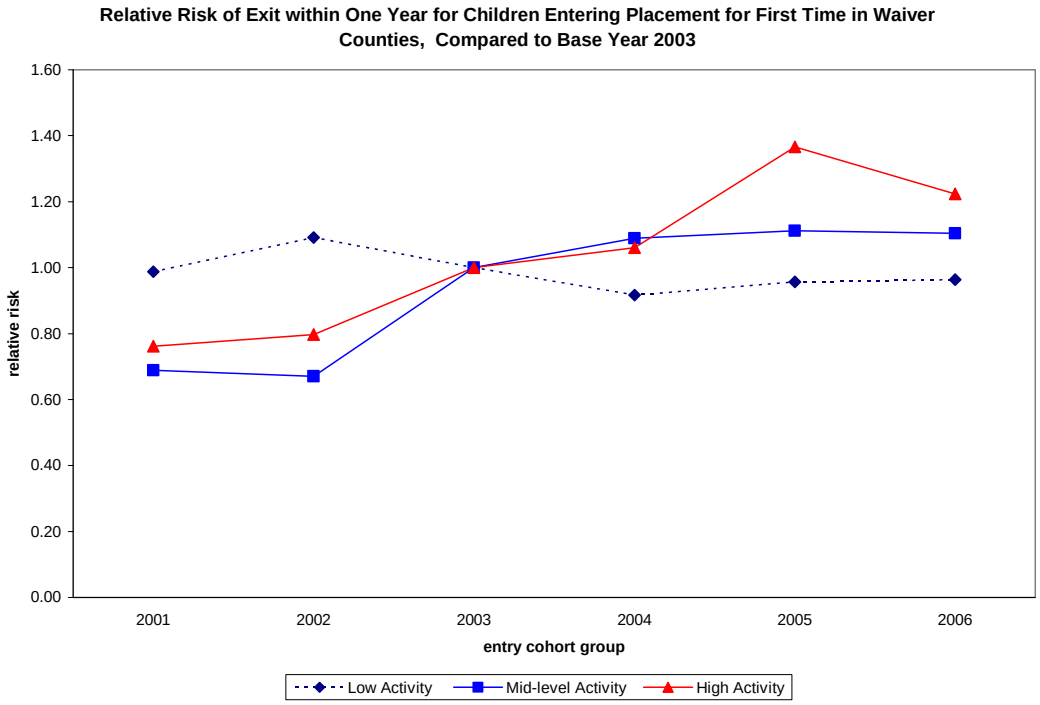
Using the main effects and interaction term parameter estimates from the models (presented in Appendix E), we calculated the relative risk of exiting placement within one year for children in each entry cohort group compared to children in the base year group, 2003). Exhibit 3.8 presents these results. Comparing sfy05 to the baseline year, the rate of exit within 1 year remained relatively unchanged in Waiver counties while it decreased in the comparison counties. Children entering placement in sfy06 were less likely to exit within 1 year in the Waiver counties but more likely in the comparison counties. The sfy07 numbers show decreased exit in both groups of counties but should be considered preliminary due to the small amount of follow-up time available for the children in this group.

Exhibit 3.8



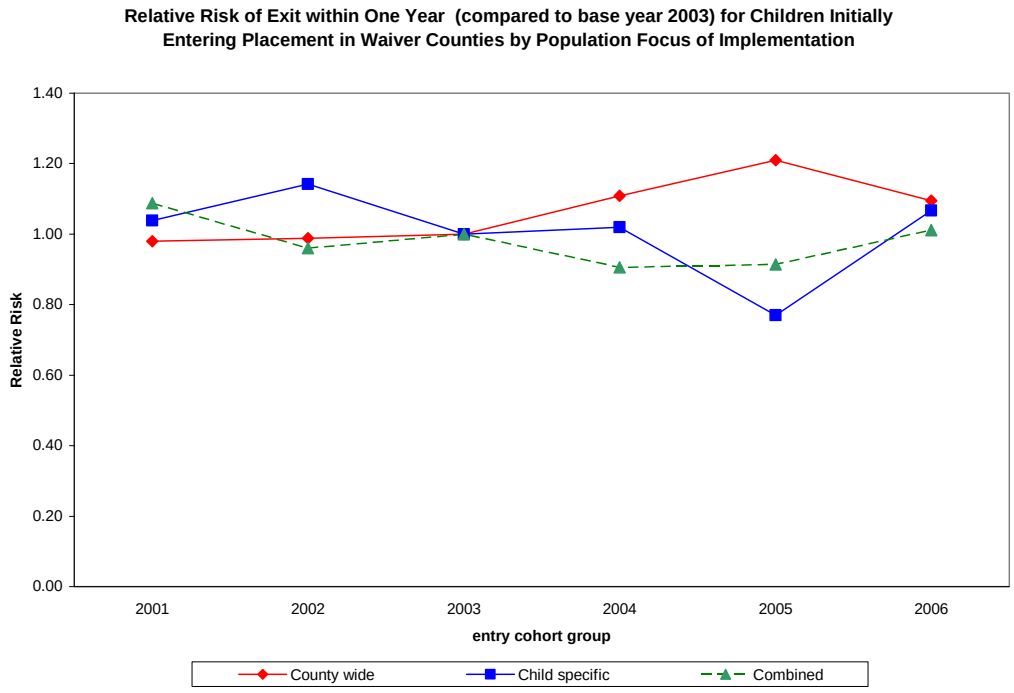
To better understand the length of stay outcome changes within the group of 38 Waiver counties, we fit a model to examine the differences between the three groups of Waiver counties (high activity, mid-level activity, low activity). Exhibit 3.9 summarizes these results. Children entering placement in high activity counties in sfy05 had about a 40% increased chance of exiting placement within one year compared to the baseline group of children entering in sfy03 in this same group of counties. Children from mid-level activity counties entering in 2fy05 were about 11% more likely to exit than those entering in the baseline year. The rate of exit within 1 year remained about the same in low level Waiver counties. In sfy06 the rate of exit within one year decreased for children in the high activity counties but still remained higher than the rate of exit in the baseline year; in mid-level and low activity counties the rate of exit remained about the same.

Exhibit 3.9



Finally, we examined the differences in length of stay outcomes for Waiver counties by whether the county focused on a child-specific targeted funding intervention or implemented county-wide. Children in counties implementing county-wide demonstration showed more improvement in this length of stay outcome (exit within 1 year) than did children in counties that primarily used child-specific targeted funding or did a combination of both (Exhibit 3.10). Children entering in sfy05 in counties focusing on countywide system reform were about 20% more likely to exit within 1 year than children in the base year; in sfy06 rate of exit within one year decreased slightly but remained about 10% higher than the exit rates for children in the base year. In the two counties focusing *primarily* on child-specific efforts the rate of exit within 1 year decreased for the sfy05 cohort group but then increased resulting in a 7% higher exit rate for the sfy06 group. For children in counties that did both countywide and child-specific targeted services (11 counties) the rate of exit remained about the same.

Exhibit 3.10



Results of the Cox proportional hazards models predicting exit from placement after two years for children entering placement authority between 2001 and 2006 are presented in Appendix E. In the model with the dichotomous Waiver variable, children in Waiver counties are significantly more likely than those in comparison counties to exit placement after two years but there were no differential changes over the years between Waiver and comparison counties. In the model with the three-level activity variable, there are no significant differences when comparing those in the top 20% of Waiver counties to those in the middle 60%, bottom 20%, and comparison counties across the years. Likewise there were no differential changes in exit from placement after two years by population focus of the Waiver.

Reentry within one year. Results of the Cox proportional hazards models predicting reentry within one year for children entering placement authority between 2001 and 2006 are presented in Appendix E. There were no significant changes in reentry rates by year or Waiver category. These results are similar to those presented in the 10 quarter report.

4. COST ANALYSIS

This section explores the costs associated with the Waiver demonstration as well as a few of the factors associated with it moving away from cost neutrality. First, the costs—both for licensed care and program administration—are analyzed to explore how the cost of care for Title IV-E eligible children in Waiver demonstration and comparison counties changed over time. Second, the expenditures for Waiver and comparison counties are reviewed for cost neutrality. This review is different from the analysis of changes in the costs of care for Title IV-E eligible children since, under the Waiver demonstration, Title IV-E dollars can be spent for non-Title IV-E eligible children. Third, the differences in cost experiences for demonstration and comparison counties are reviewed to identify reasons cost grew faster in Wavier than in comparison counties. Fourth, the costs associated with the reinvestment strategy implemented as part of the Waiver demonstration is reviewed. This strategy was designed to make funds available to counties participating in the Waiver so that services that were not presently funded could be provided to children and their families to reduce the rate of initial entry into foster care, to reduce the length of stay in foster care, and to reduce the rate of reentry into foster care.

4.1 Costs for Title IV-E Eligible Children

The cost of administering Title IV-E programs for children in foster care can be divided between the cost of out of home care and the cost for administration of the program. Cost for

administration includes salaries for social workers. Out of home care costs are a function of the number of children entering placement, the length of time a child remains in care, and the restrictiveness of care. [1] The first two factors relate to the size of the caseload. The third factor represents the average cost of licensed care. The smaller the number of children entering placement, and the shorter the length of time each child remains in care, the lower will be the number of children in care. The lower the number of children in licensed care, generally the lower too will be the cost for out of home maintenance.

By the same token, the smaller the number of children in restrictive care, the lower will be the cost of maintenance. The cost of one-month's care in a group home can exceed $5,000. In December 2006, the cost of care with a foster family ranged between $390 and $490 per month, depending on the age of the child. The family foster care payment for children from birth through age five is $390. For children between six and twelve, the family foster care payment is $440 per month. For children thirteen and older, the family foster care payment is $490. There is no maintenance cost for placing a child with an unlicensed relative in kinship care. To the extent a county social service agency can place a child in less-restrictive care, they can significantly reduce their maintenance costs.

When the Waiver was extended and expanded, a number of counties asked to participate. Several of these counties had been members of the comparison group for the first phase of the Waiver. For the second phase of the Waiver, the demonstration group contained most of the large counties in the state. During the first phase of the Waiver, the demonstration and comparison groups had a roughly the same number of children in licensed care. Due to the inclusion of most of the larger counties in demonstration group in the second phase of the Waiver, it was not possible to identify a comparison group of counties containing a comparable number of children. The role of the comparison group was to examine or project the cost changes for the Title IV-E eligible caseload if the Waiver had not been granted. As a result, it was not necessary to match the two groups on the basis of size.

The difference in the size of the caseload for demonstration and comparison counties is illustrated in Exhibit 4.1 that tracks the number of Title IV-E eligible children in licensed care over time. As the figure indicates, there were about twice as many children in licensed care in demonstration counties than there were in comparison counties during the base period for the

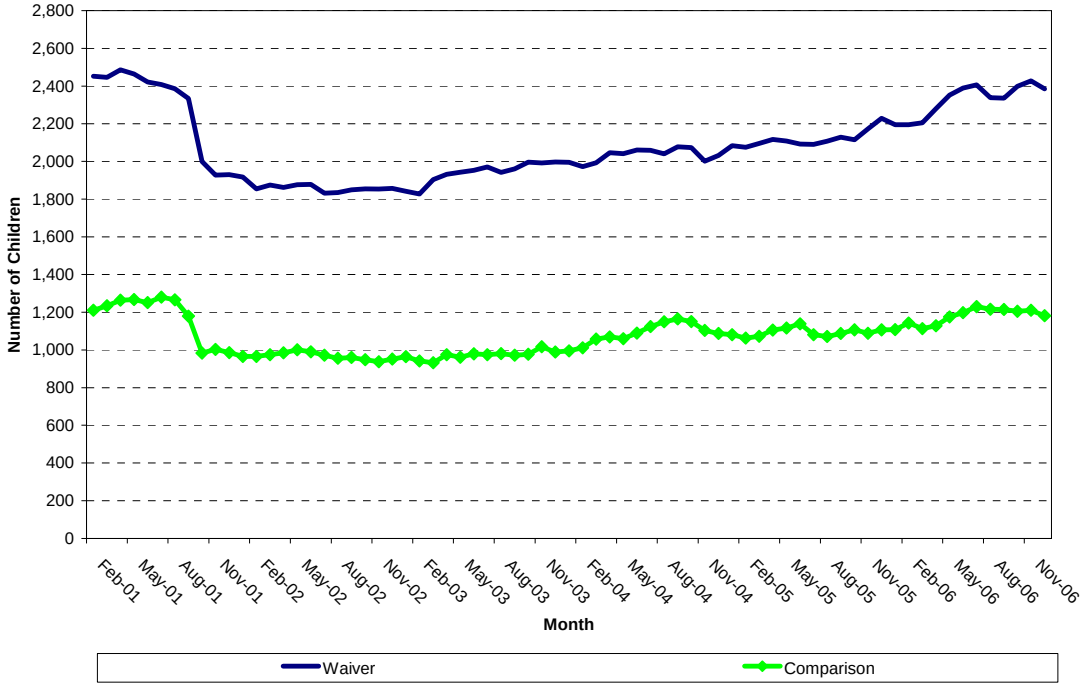
[1] The number of children entering care includes those entering placement for the first time as well as those re-entering placement.

Waiver evaluation—from July 2002 through June 2003. The exhibit shows that there have been similar patterns of change in the size of the caseload for the two groups of counties. In February 2001, there were 2,452 children in licensed care in Waiver counties, compared with 1,211 children in comparison counties. From February 2001 through February 2002, the licensed care caseload for Waiver and comparison counties fell. By April 2002, there were only 1,862 children in licensed care in Waiver counties and 985 children in comparison counties.[2] After the start of the base period for the Waiver in July 2002, the number of children in licensed care in demonstration counties was 1,831 compared to 972 in comparison counties.

[2] The caseload figures and the maintenance costs shown in this subsection of the report are based on extracts from the Child Placement and Payment System (CPPS) through February 2007. It also includes information maintained in a spreadsheet database at the N.C. Department of Health and Human Services' Controller's Office. That spreadsheet database is used to track the administrative cost portion of licensed care for child placement agencies receiving IV-E maximization payments and for Child Caring Institutions (CCI). As the result of an audit, the portion of out of home maintenance costs attributable to administration of the facility is reimbursed at a 50% rate in federal Title IV-E dollars instead of the standard Federal Medical Assistance Payment (FMAP) rate.

Also, since payment information can be updated over time, the caseload figures provided in this exhibit may not match exactly those shown in earlier or subsequent reports. The figures contained in this report reflect information currently available in CPPS and from the controller's office. The information in that file changes from day to day due to additions, revisions, or other modifications. Subsequent extracts from CPPS may yield slight differences in the number of children in licensed care and the total cost for care. These differences are due to routine corrections being made to the payment files. The figures are reported for the payment month, which is the month after the service is delivered. The reason for using the payment month instead of the service month is to mirror the information contained in reports submitted by the Division of Social Services that tracks costs by payment month.

Exhibit 4.1: The Number of Children In IV-E Licensed Care in Waiver and Comparison Counties



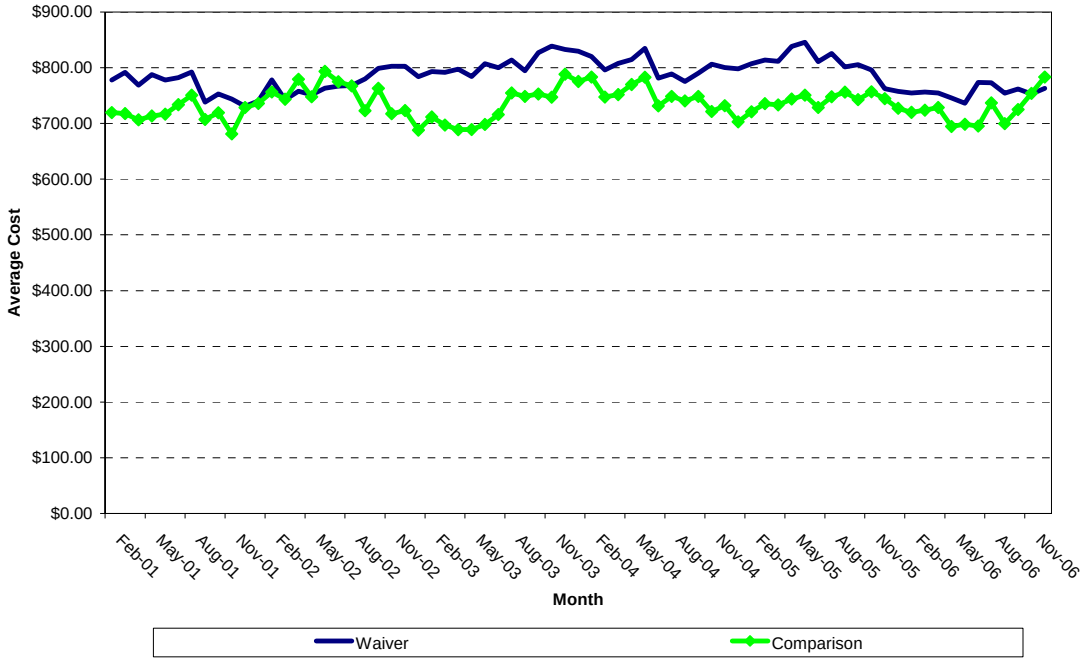
During the base period, the number of children in licensed care in Waiver counties grew by 122 to 1,953. Over the same time period, the number of children in licensed care in comparison counties grew by seven, to 979. For the twelve-month period between the end of the base period and the start of phase two of the Waiver, the licensed care caseloads in demonstration and comparison counties grew by approximately the same number: they increased by 107 in the demonstration group to 2,060 and by 111 in the comparison group to 1,090. Even though the Waiver demonstration officially began in July 2004, counties did not begin Waiver activities until January 2005. During that six-month period of no activity, the licensed care caseload grew by 24 children in the demonstration group, to 2,084 in January 2005, but decreased by three children in the comparison group, to 1,081. Even though the changes in the number of children over the twelve-month time period between the end of the base period and the start of Waiver was approximately equal in number, the rate of change in the comparison group was more than twice as great as that for the demonstration group: 11.3% for the comparison counties compared to 5.4% for the Waiver group.

From the start of demonstration activities in January 2005 through December 2006, the caseload in the Waiver counties has grown at a higher rate than that for the comparison counties. Between January 2005 and January 2006, the number of children in licensed care in

Waiver counties increased by 111 to 2,195, an increase of 5.3%. Over the same time period, the number of children in licensed care in comparison counties grew by 28, to 1,108, an increase of 2.52%, less than half the rate of increase for Waiver counties. From January 2006 through December 2006, the number of children in licensed care in Waiver counties increased by 8.6% or 190 children—to 2,385. At the same time, the licensed care caseload in comparison counties grew by 6.88%--to 1,182, an increase of 74 children.

Exhibit 4.2 illustrates the average federal share of Title IV-E cost for a child in licensed care from Waiver and comparison counties. As the figure indicates, the average costs follow a similar track over time and that the average maintenance cost in Waiver counties was generally higher than the average for comparison counties. As the exhibit indicates, the average licensed care cost in Waiver counties was $777.96 in February 2001, $58.29 higher than the average cost for comparison counties. At the start of the phase two base year in July 2002, there was less than $12 difference between the average cost in Waiver counties ($767.02) and comparison counties ($775.21). By the end of the base year, the average cost in Waiver counties had raised by slightly more than $40 to $807.20, while the average cost in comparison counties had fallen by slightly more than $76 to $698.26. The average federal maintenance costs include payments of administrative expenses claimed by child placement agencies after June 2004. Prior to that month, those costs were treated as maintenance costs.

Figure 4.2: Average Monthly Federal Maintenance Costs for Children from Waiver and Comparison Counties

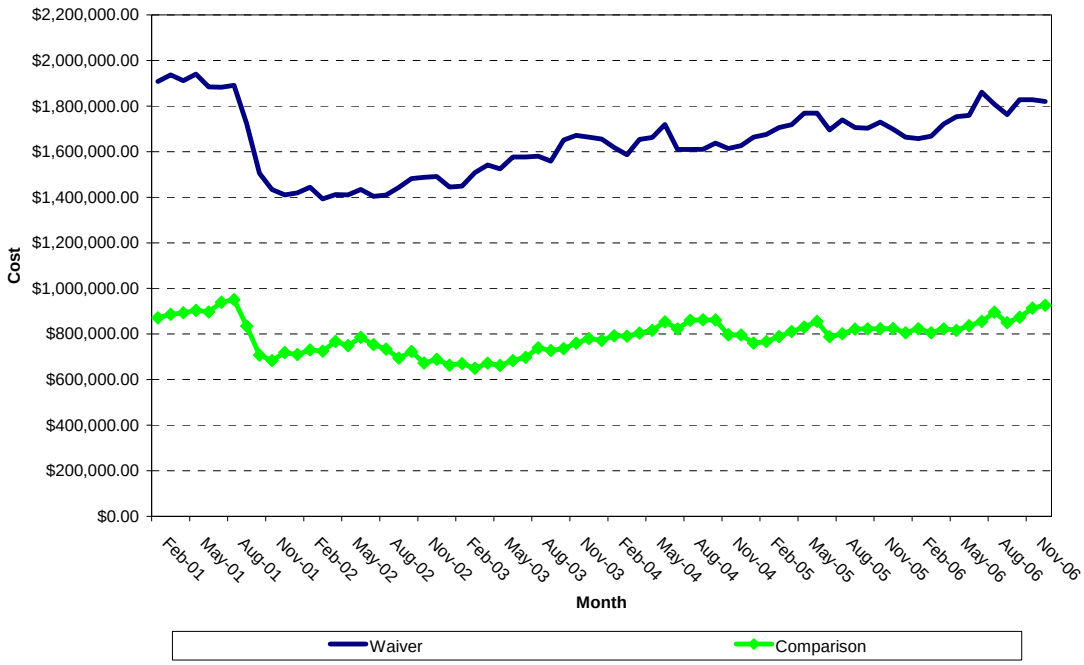


By the start of active Waiver activities in January 2005, the average federal share of maintenance cost for Title IV-E eligible children in Waiver counties was about $95 higher in Waiver counties than in comparison counties--$798.27 to $703.11. As the exhibit illustrates, the average cost for licensed care increased for both groups of counties through 2005 before falling near the end of the year. By January 2006, the average cost of licensed care in Waiver counties had fallen to $757.71 while the average cost for comparison counties was $727.15, a difference of $30.56. Throughout 2006, the average cost of care rose and fell for both groups of counties. In December 2006, as the exhibit indicates, the average federal share of licensed care cost for children in Waiver counties was $763.20. In the comparison group, the average federal share of maintenance cost for IV-E eligible children had jumped to $783.35, an increase of $83.87 from September 2006. The rapid increase for the comparison group may be due to a number of factors. During that same four month period, the number of children in licensed care in comparison counties fell from 1,215 to 1,182, a decrease of 33 children. If most of these children were five or younger and lived in family foster homes, their exit could partially account for an

increase in average costs among the remaining children.[3] The average cost also would grow if there was an increase in the number of children placed in expensive, restrictive care.

As Exhibit 4.3 indicates, the total monthly federal expenditure for IV-E eligible children in licensed care follows the same pattern as the number of children in licensed care. This also corresponds to the similarities shown for the average cost of licensed care for the two groups of counties. The average cost is calculated by dividing the total federal Title IV-E expenditure for licensed care by the number of IV-E eligible children in licensed care. Multiplying the number of children in care by the average cost of care will yield the total expenditure. As the exhibit illustrates, the total federal expenditures for IV-E eligible children in licensed care in Waiver counties was about twice that for children in comparison counties. The total federal maintenance expenses include payments of administrative costs claimed by child placement agencies after June 2004. Prior to that month, those costs were included as maintenance costs.

Exhibit 4.3: Total Federal Maintenance Costs for IV-E Eligible Children from Waiver and Comparison Counties



In February 2001, the total monthly federal share of maintenance cost for IV-E eligible children in Waiver counties was $1,907,559.76, compared with $871,515.42 for comparison counties. By January 2002, the monthly federal share for Waiver counties had fallen by close to

[3] In December 2006, family foster homes were reimbursed $390 per month for children younger than six.

$500,000--$1,419,357.29—while the monthly federal share for the comparison counties had fallen by more than $160,000 to $710,053.91. At the beginning of the base period for phase two of the Waiver—July 2002—the federal Title IV-E share of maintenance cost for demonstration counties was $1,404,405.79, slightly less than twice the federal share of maintenance costs in comparison counties ($753,505.58). At the end of the base year, the federal share in Waiver counties had increased by more than $172,000 to $1,576,467.51. During the same twelve-month time period, the federal share of IV-E maintenance cost in comparison counties had fallen by close to $70,000 to $683,592.47.

A year later, on July 2004, at the start of the phase two Waiver time frame, the federal share of IV-E maintenance cost had increased more than $33,000 to $1,609,315.87. In comparison counties, the federal share of maintenance cost had increased by more than $138,000—a 20% increase—to $822,113.16. By the time demonstration activities commenced in January 2005, the federal share of maintenance costs in Waiver counties had increased by more than $54,000 to $1,663,586.60 while the costs in comparison counties had fallen by more than $62,000 to $760,056.80. For that six month period, the federal share of monthly maintenance costs had increased more than 3.3% in Waiver counties but fell by more than 7.5% in comparison counties.

At the start of the second year of Waiver activities in January 2006, the monthly cost of reimbursement for demonstration counties was almost unchanged, rising slightly to $1,663,172.70. Among the comparison group, the federal share of monthly maintenance costs had increase by 5.5% to 805,683.36. By the end of 2006, the federal share of monthly maintenance costs in Waiver counties had increase by 9.4% to $1,820,222.60. In comparison counties, the federal share of monthly maintenance costs had jumped by 14.9% to $925,921.47.

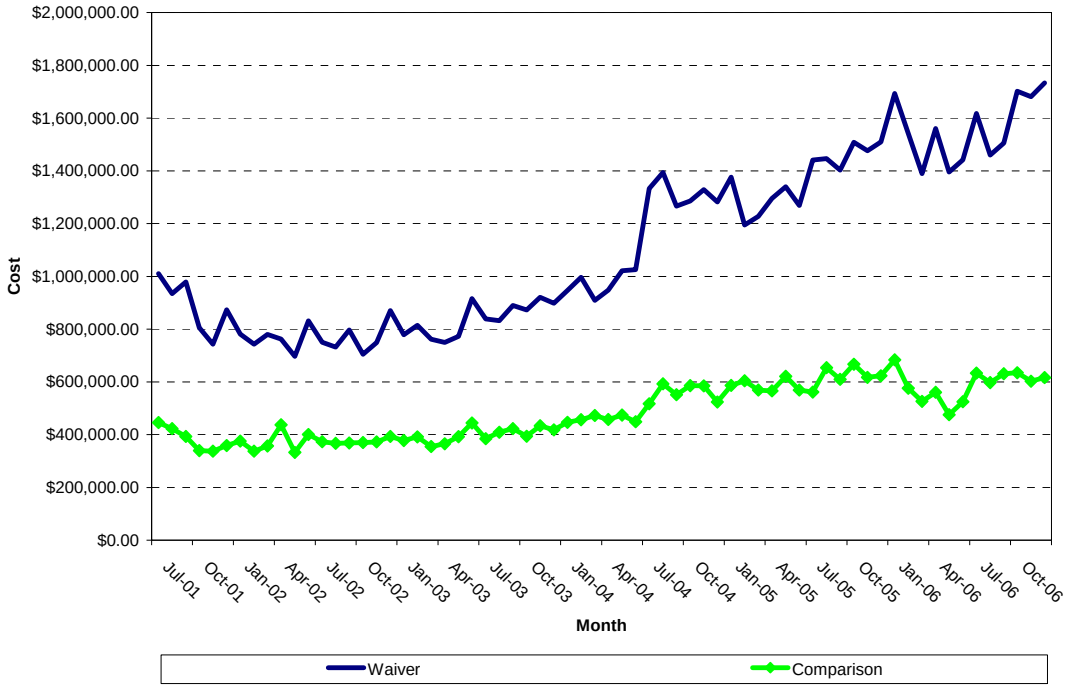
4.2 Administrative Costs

Administrative costs in demonstration and comparison counties have followed a similar path as that for maintenance costs. The administrative costs for Waiver counties are generally double that for comparison counties. Exhibit 4-4 shows the federal share of administrative costs for Title IV-E eligible children in Waiver and comparison counties. It excludes the cost of services provided as part of the Waiver demonstration.[4] The purpose of the exhibit is to

[4] The costs presented in Exhibit 4.4 track expenditures for Title IV-E application codes 302, 320 (IV-E Optional), 355 (IV-E Foster Care), and 431 (IV-E Eligibility determination). The costs also include expenditures for administrative expenditures by child placement agencies (CPAs). As noted in the second footnote in this section, during the base period CPA administrative costs were treated as maintenance expenditures and were reimbursed at the FMAP rate. As the result of the audit, they are reimbursed as an administrative expenditure at a 50% federal

illustrate the administrative cost experience of the two groups of counties. As the exhibit indicates, monthly administrative costs in Waiver counties were more than two times higher than those for comparison counties in July 2001, $1,010,203.49 compared with $446,178.65. By the start of the base period for phase two of the Waiver in July 2002, combined administrative costs for Waiver counties had fallen to $750,052.19. The federal share of administrative costs for comparison counties also declined. In July 2002 they were $373,465.61.[5]

Exhibit 4.4: Federal Administrative Costs for IV-E Eligible Children in Waiver and Comparison Counties



By the end of the base period for phase two of the Waiver in June 2003, monthly administrative costs had increased at a similar rate for both groups of counties. Over the twelve-

share. The costs presented in Exhibit 4.4 do not include costs associated with application codes 60 (Waiver reinvestment for IV-E eligible children), 61 (Waiver reinvestment for children who are not eligible for IV-E services), 76 (Waiver flexible spending for IV-E eligible children), and 77 (Waiver flexible spending for children who are not eligible for IV-E services). Expenditures for application codes 60, 61, 76, and 77 will be presented later in this section.

[5] The analysis on administrative costs is drawn from extracts from the DSS 1571 report. Data from these reports which are submitted to the DHHS Controller's office are archived and stored on a state administrative computer system. This analysis is based on extracts of these computer files. These files do not permit analysis of the costs of services provided to individual children. Costs are aggregated by service codes to major Title IV-E related activities.

month period, administrative costs for Waiver counties had increased 22.05% to $915,443.24 while costs for counties in the comparison group increased by 19.07% to $444,694.19. In the year between the end of the base period and the start of the Waiver, administrative costs for both groups of counties continued to climb. By June 2004, the federal share of administrative costs for the Waiver counties had climbed more than 22% to $1,025,296.51. Administrative costs for the comparison group climbed by 16.68% to $449,099.09.

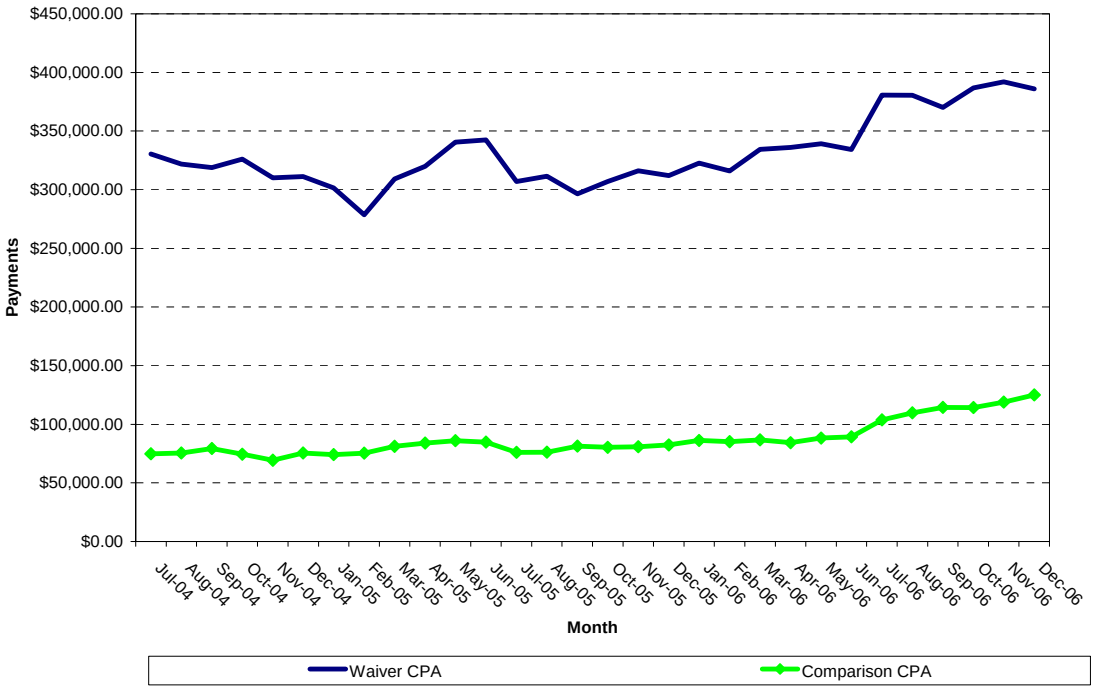
In July 2004, payments of administrative costs of child placement agencies (CPAs) were included as an administrative expense in cost neutrality calculations. Prior to that time, these costs had been treated as a maintenance cost. In July 2004 alone, administrative cost in waiver counties increased by $308,110.74. If the $330,527.70 in CPA expenditures had not been included, administrative costs in waiver counties would have fallen by about $22,000. In comparison counties, administrative costs would have fallen by slightly more than $7,000 if the $74,833 in CPA costs had not been included. Because of the inclusion of these CPA expenditures, administrative costs continued to rise. Between June 2004 and December 2004, administrative costs in waiver counties grew by $256,455.04, slightly more than 24%, to $1,281,751.55. In comparison counties, administrative expenditures grew by $74,887.82 to $523,986.91, slightly less than 17%.

During the first year following the commencement of Waiver activities in January 2005, the rate of increase in growth for both groups slowed. Between January and December 2005, administrative costs for the Waiver group grew by 9.74% to $1,509,628.31. Administrative costs for the comparison group grew at a slightly lower rate—6.26%--to $623,367.78. During the second calendar year of the demonstration, as the exhibit indicates, administrative costs for the Waiver group climbed at a moderately high rate—13.21% to $1,733,315.68—while administrative costs for the comparison group fell by about 1% to $616,729.16.

The exhibit suggests that the inclusion of CPA costs had a dramatic impact on administrative costs. Costs for Waiver and comparison counties have continued to change at different rates. The federal share of administrative costs for Waiver counties grew from around $1 million per month to close to $1.6 million per month before the demonstration ended in December 2006. In comparison counties, administrative costs grew from around $440,000 per month to around $600,000 before the demonstration ended.

Exhibit 4.5 illustrates the federal share of CPA expenditures each month in waiver and comparison counties. As the figure indicates, the federal share of CPA payments in waiver counties are more than three times those in comparison counties. In December 2004, the federal share of CPA payments in waiver counties was $301,539.19 compared to $75,583.94 in comparison counties. The payments rose slightly over the next twelve months. By December 2005, the federal share of CPA payments in waiver counties was $312,118.47 compared to $82,470.78. By the end of the demonstration in December 2006, the federal share of CPA payments in waiver counties had grown to $386,086.43 and to $125,030.09 in comparison counties. Even though these are treated as administrative expenses for cost neutrality analysis, they are included as maintenance expenditures in Exhibits 4.2 and 4.3 which were presented earlier. If these costs hand not been reflected in those figures, there would have been a drop in the average costs and total monthly costs since June 2004. Prior to that month, CPA payments were treated as maintenance costs.

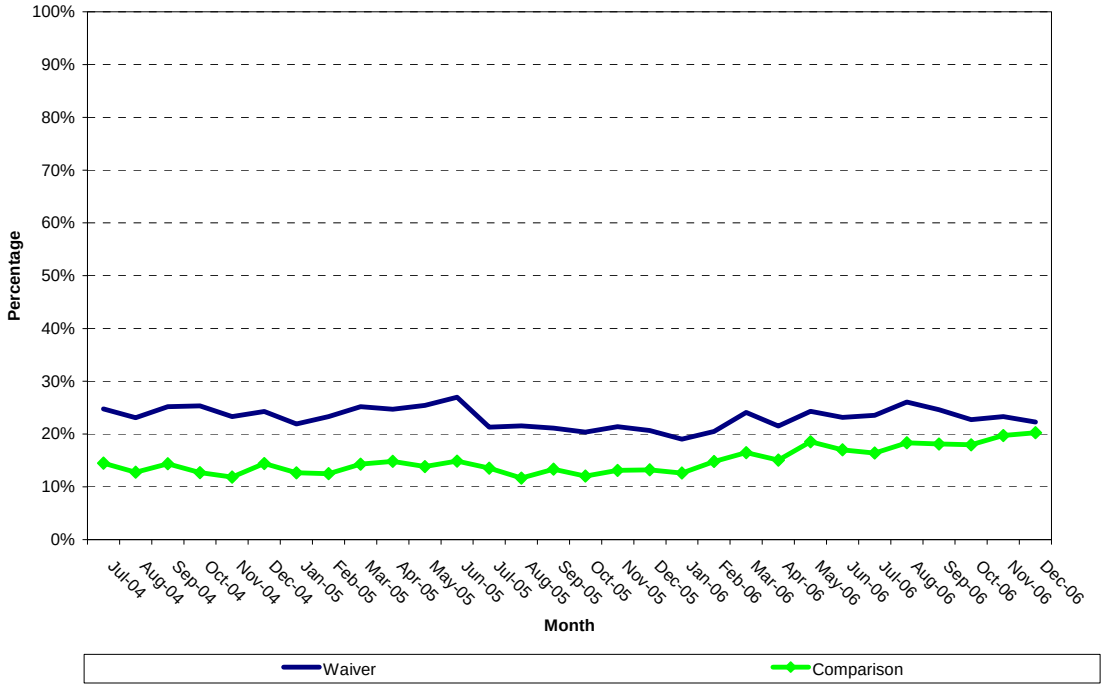
Exhibit 4.5: Payments to Child Placing Agencies for Waiver and Comparison Counties



CPA payments accounted for a higher percentage of administrative expenditures in waiver counties than in comparison counties. As Exhibit 4.6 illustrates, CPA payments accounted for 25% of federal administrative expenditures in waiver counties in July 2004 and only 14% in comparison counties. By December 2004, the percentage of administrative

expenditures that were due to CPA payments had fallen slightly in waiver counties to 22% while they remained steady at 14% of comparison administrative expenditures. By December 2005, CPA payments accounted for 21% of federal administrative expenditures in waiver counties and only 13% of administrative expenditures in comparison counties. By March 2006, CPA payments accounted for 16% of administrative expenditures in comparison counties. The percentage due to CPA payments grew to 19% in comparison counties by May 2006. In December 2006, the share of administrative expenditures associated with CPA payments was 22% in waiver counties and 20% in the comparison county group.

Exhibit 4.6: CPA Payments as a Percentage of Total Administrative Cost



4.3 Cost Neutrality

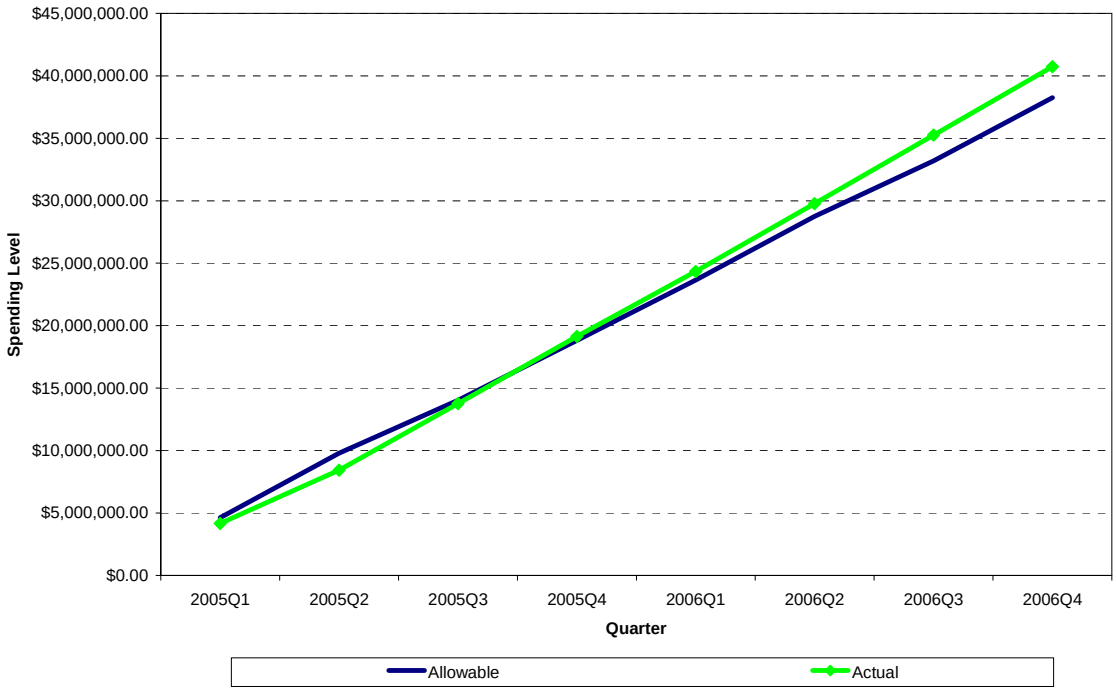
Cost neutrality is determined for administrative and maintenance costs by analyzing the rate of change in costs across the group of comparison counties and applying that rate to the Waiver group. According to the terms and conditions of the Waiver, the rate of change is determined by dividing the costs for the comparison counties during a particular time frame by the costs of a similar time frame during the base period—July 2002 through June 2003. The cost neutrality analysis in this subsection of the report is based on the analysis of administrative data files used to track maintenance and administrative expenditures and not on quarterly reports

generated by the North Carolina Division of Social Services (NC DSS). [6] Cost neutrality is based on the rate of change in spending from the base period in demonstration and comparison counties. The rate of change of spending for demonstration counties is assumed to have followed the rate of change for comparison counties if not for the Waiver. If the demonstration counties spend at a lower rate than the comparison counties, the experiment is classified as being cost neutral. If the demonstration counties spend at a higher rate than the comparison group, the project is not cost neutral.

Exhibit 4.7 illustrates the cost neutrality status of licensed care payments in demonstration counties. Reimbursement of administrative costs to child placement agencies is not included in these calculations. If the line for actual cumulative spending falls below the line for allowable cumulative spending, the demonstration is cost neutral. If the line for actual spending

[6] The information used to compile cost neutrality reports used by NC DSS is drawn from monthly summaries generated by the administrative computer system used by CPPS. The state has a short time frame following the end of each calendar to provide reports to the U.S. Department of Health and Human Services on spending. The information summaries used to compile the cost neutrality reports are based on point in time information, usually at the first of the month, and are drawn from routine financial reports generated by the administrative computer system. They do not contain information on changes in payments that may be made after the initial report. Frequently changes are made shortly after initial payments to licensed care providers are generated. Changes also may be made in payments several months after the care had been provided. As a result, the information summaries may not precisely indicate the actual cost neutrality status. The quarterly reports generated by NC DSS and distributed to counties did not contain CPA payments.

Exhibit 4.7: The Cost Neutrality Status of Maintenance Expenditures

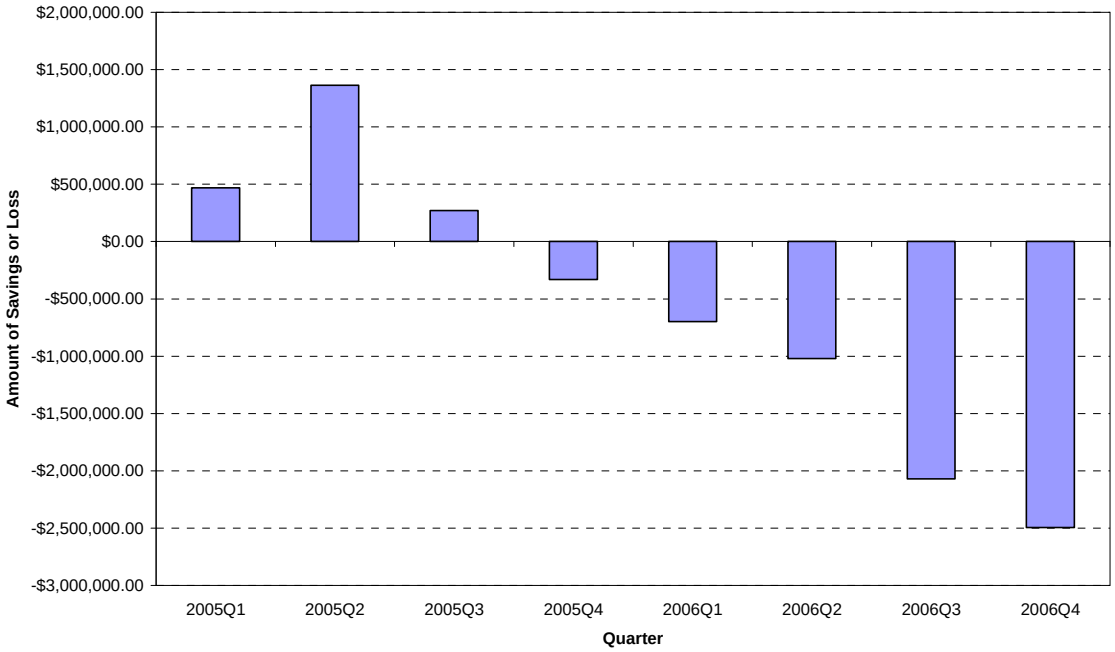


exceeds the line for allowable spending, the maintenance expenditures are not cost neutral. The distance between the two lines is the amount of cost neutrality. As the exhibit illustrates, during the first two quarters of calendar year 2005, maintenance expenditures were cost neutral.[7] Between the third and fourth quarter of the demonstration, actual expenditures crossed the allowable expenditure line. Since the fourth calendar quarter of 2005, maintenance expenditures have not been cost neutral. The difference between actual and allowable expenditures has been growing each quarter.

The amount of savings or loss—the difference between the allowable and actual expenditures—is illustrated in Exhibit 4.8. The exhibit shows the amount of cost neutrality savings or loss by calendar quarter. The exhibit shows that maintenance expenditures in Waiver demonstration counties were cost neutral during the first three calendar quarters of 2005. At the end of March 2005, the expenditures in Waiver counties were around $469,000 below what they were expected to be, based on the rate of growth in costs in comparison counties. By the end of June 2006, Waiver counties had about $1.3 million maintenance savings.

[7] Under the terms and conditions of the Waiver, the demonstration officially began in July 2004. For several reasons, Waiver activities in most Waiver counties did not begin until January 2005.

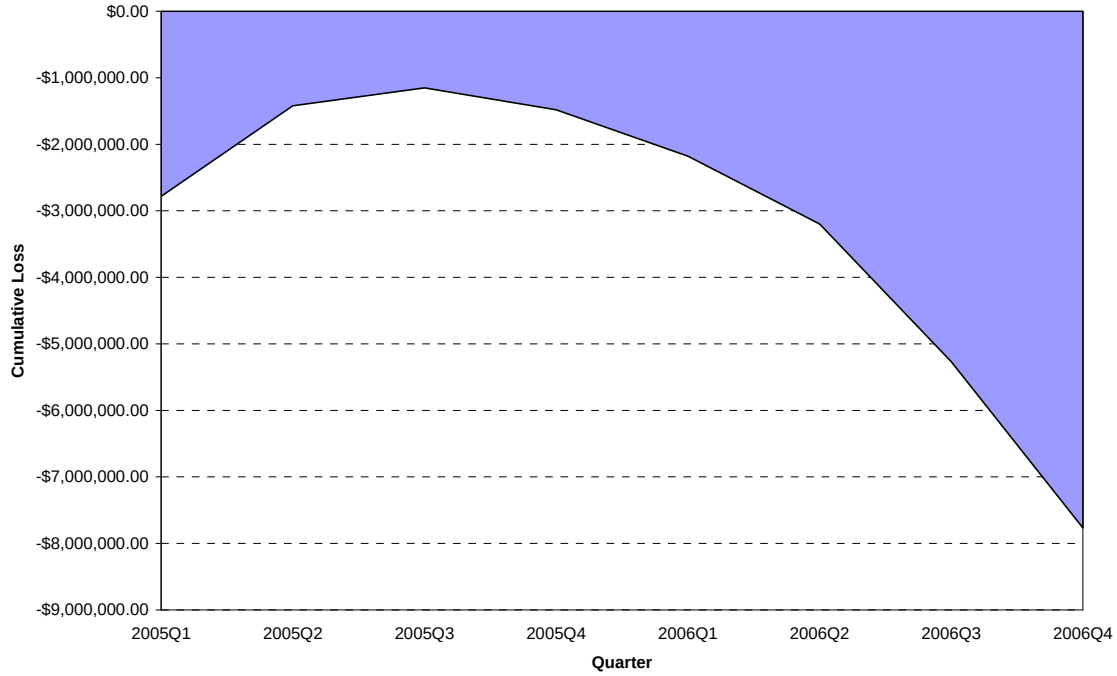
Exhibit 4.8: The Difference in Cost Neutrality for Maintenance Expenditures in Waiver Counties



By the end of the third quarter, the cumulative savings had fallen to just above $270,000 in Waiver counties. At the end of the fourth quarter, cumulative spending for maintenance cost exceeded allowable expenditures by more than $331,000. As the exhibit shows, the difference between actual and allowable spending continued to grow through the end of 2006.

One aspect of the second phase of the Waiver is that it is a continuation of the first Waiver demonstration. As a result, a number of cost neutrality issues continued from the first Waiver. At the end of the first Waiver, actual cumulative maintenance expenditures were $3,252,813.60 above the allowable amount. That means that the second phase of the Waiver would have to generate more than $3.25 million in cumulative maintenance expenditures savings before cost neutrality could be achieved for licensed care. Exhibit 4.9 tracks the cumulative loss in maintenance expenditures continuing from the end of the first Waiver demonstration. As the shaded areas of the exhibit indicates, even with the $469,000 in cumulative savings in maintenance costs at the end of the first quarter of 2005, the actual cumulative maintenance expenditures were still more than $2.7 million greater than the allowable amount.

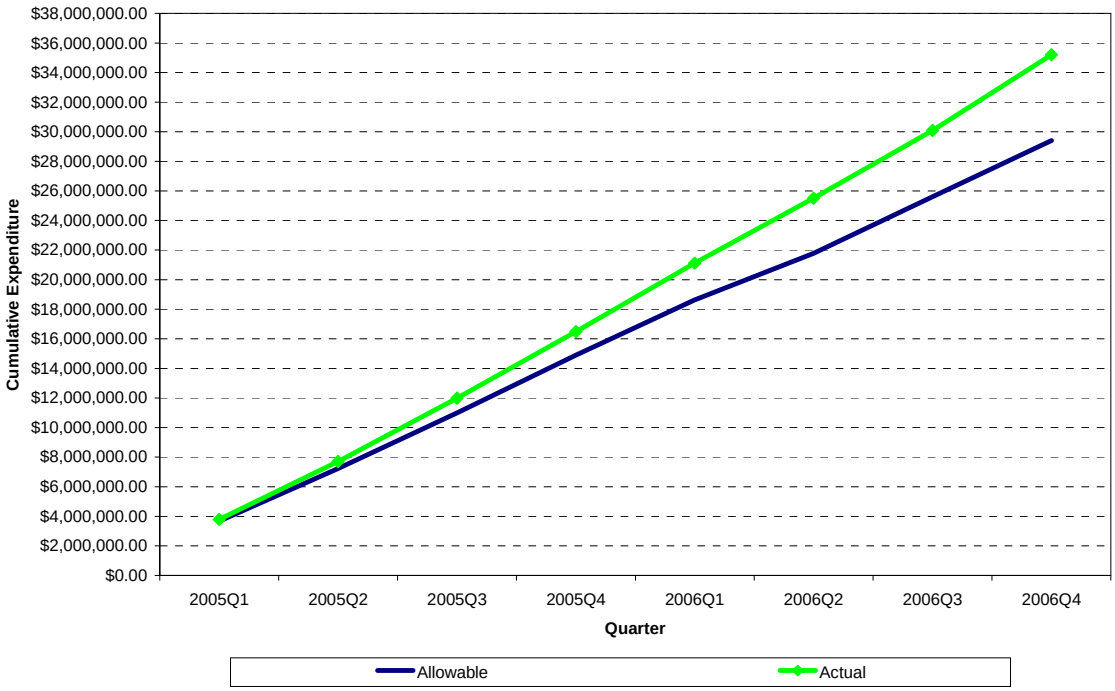
Exhibit 4.9: Cumulative Maintenace Cost Neutrality



As the exhibit indicates, the distance between cumulative actual and allowable expenditures continued to decline through the third quarter of 2005. This reflects the savings seen in Exhibit 4.8 above. As actual expenditures began to exceed allowable levels, the size of the cost neutrality deficit began to grow as the shaded area in Exhibit 4.9 indicates. The cost neutrality deficit grew from $1.5 million in the third calendar quarter of 2005 to $1.48 million in the fourth quarter. The deficit continued to grow and by the end of calendar year 2006 it exceeded $7.7 million for cumulative maintenance costs.

Exhibit 4.10 tracks the cost neutrality of administrative costs during the second phase of the Waiver. As the exhibit shows, allowable administrative expenditures exceeded actual administrative costs for calendar year 2005. At the end of the first quarter of 2005, the difference between actual and allowable spending was slightly more than $125,000. That amount continued to grow. The exhibit shows that actual administrative costs exceeded allowable levels by more than $2.4 million. The gap between actual and allowable continued to grow through the end of 2006.

Exhibit 4.10: Cumualtive Acutal and Allowable Administrative Costs for Waiver Counties



The size of the quarterly loss is shown in Exhibit 4.11. As the chart indicates, actual administrative expenditures exceeded allowable for every quarter of the waiver. In the first quarter, cumulative allowable costs exceeded actual costs by more than $125,000. The cost neutrality saving grew to more than $467,000 by the end of the second quarter. It exceeded $1 million by the end of the third quarter, and grew to more than $1.5 million in the last calendar quarter of 2005. In the first calendar quarter of 2006, the exhibit shows that actual costs exceeded allowable costs by more than $2.4 million. The difference grew to more than $3.7 million at the end of the second calendar quarter. By the end of 2006, the federal share of actual Title IV-E administrative costs exceeded the allowable level by $5.8 million.

Exhibit 4.11: Administrative Expenditure Savings or Loss for Waiver Counties by Calendar Quarter

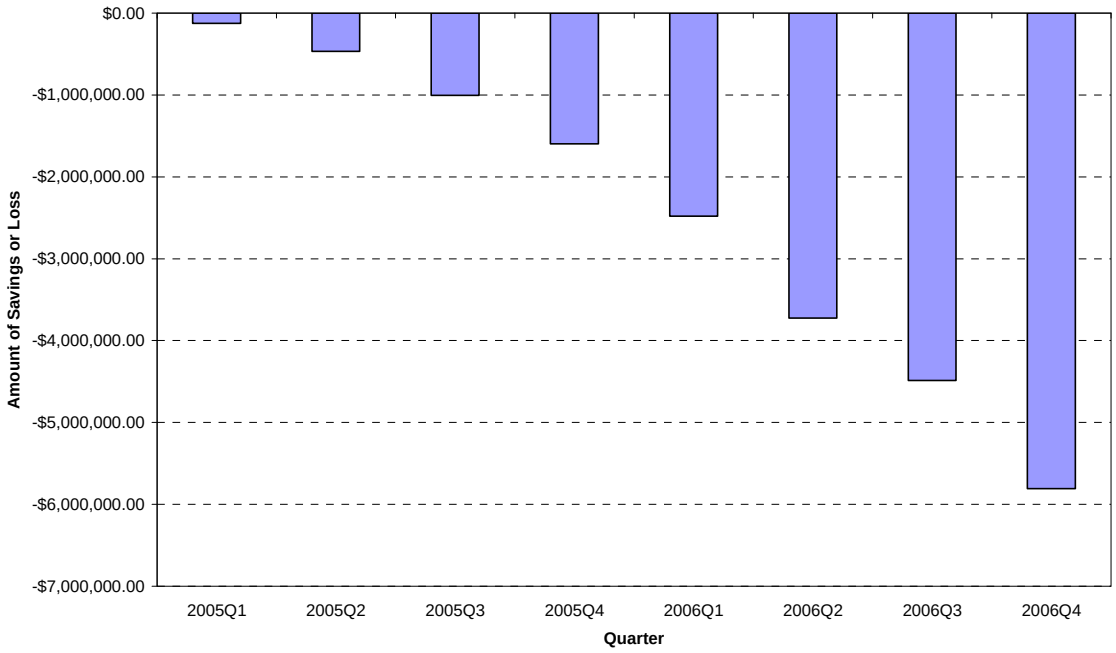
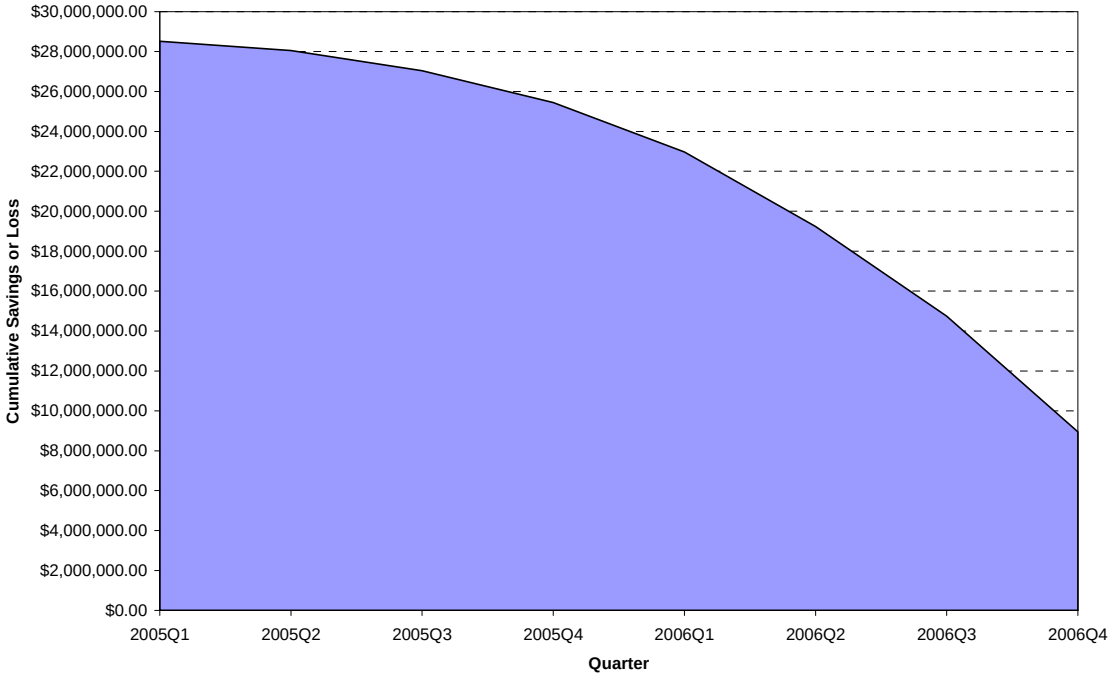


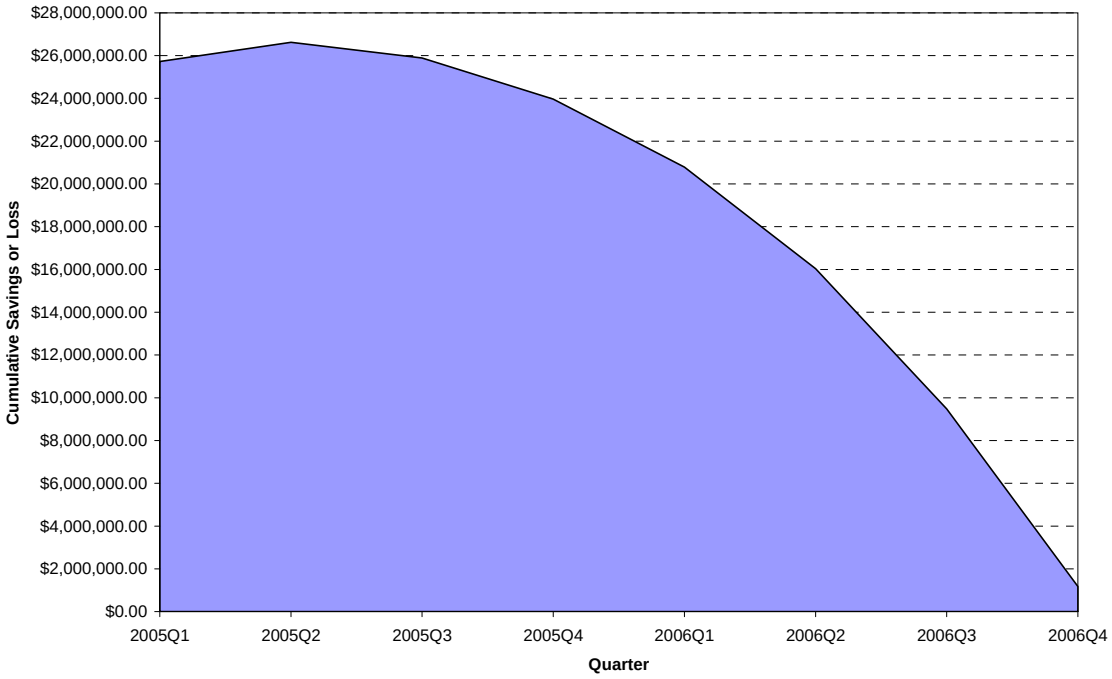
Exhibit 4.12 tracks cumulative administrative savings. Just as there was a carry over from the first phase of the Waiver in maintenance costs, there also was a carry over for administrative costs. At the end of the first phase, cumulative administrative costs were $28,639,433.91 below allowable—a positive balance. These savings resulted in the first phase of the Waiver being cost neutral. As the exhibit indicates, cumulative administrative cost savings fell to $28.5 million at the end of the first calendar quarter of 2005. Cumulative savings continued to fall throughout 2005, falling to near $25.4 million at the end of 2005. The exhibit illustrates how cumulative savings continue to decline as actual exceeded allowable administrative costs at the end of the first quarter of 2006. Cumulative savings continued to fall through 2006, dropping to $8.9 million at the end of the demonstration.

Exhibit 4.12: Cumulative Admin Savings for Waiver Counties



The substantial savings in administrative costs during the first phase of the Waiver resulted in the second phase of the Waiver remaining cost neutral through the end of calendar year 2006 when the demonstration ended. The cost neutrality status for both expenditure streams is shown in Exhibit 4.13. Cost neutrality for the demonstration is determined by calculating the difference between actual and allowable maintenance and administrative expenditures, and summing the savings or loss from each funding stream. Even though the second phase of the Waiver began with a deficit of more than $3.2 million in maintenance costs, the Waiver was cost neutral due to the more than $28 million in savings in administrative expenditures. This cumulative cost neutrality is illustrated in the exhibit. At the end of the first calendar quarter of 2005, the Waiver demonstration as a whole had a cost neutrality of $25.7 million. The amount of cumulative savings grew slightly to $26.6 million in the second quarter. This slight growth was due to the savings in maintenance costs in the second quarter of 2005. At the end of the third quarter, cumulative savings had declined to $25.8 million. It continued to fall reaching $23.9 million at the end of 2005. As the exhibit indicates, the cumulative cost neutrality savings continued to decline through 2006, falling from around $20.7 million at the end of the first quarter to $1.7 million at the end of the demonstration.

Exhibit 4.13: Cumulative Cost Neutrality for Waiver Counties



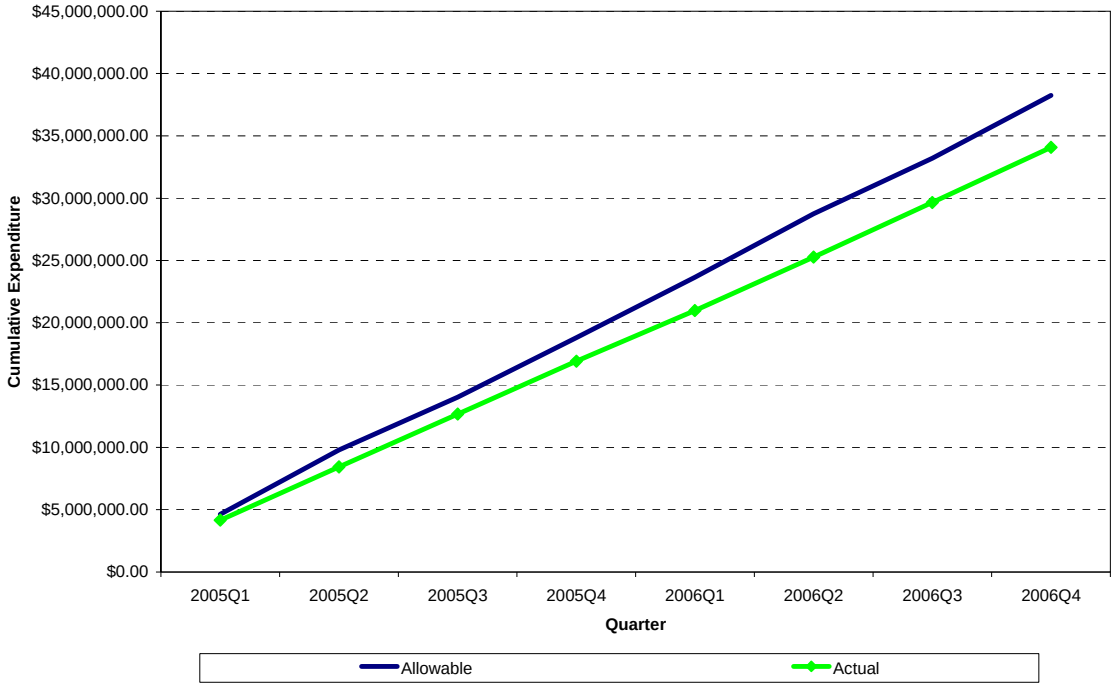
There are likely several reasons that actual maintenance costs in Waiver counties exceed allowable ones. One reason that maintenance costs in Waiver counties has increased is the use of Title IV-E funds to cover the standard board cost of children who are not IV-E eligible and whose licensed care costs had been covered by state and local funds. The primary reason for using IV-E funds to cover these maintenance costs is to free up local dollars that can be used or reinvested in providing services for other children. If not for the Waiver, these services would not be available due to funding constraints and limitations.[8] The expenditures using reinvestment dollars are split evenly between Title IV-E and county funds. These dollars can be used to obtain services for both children who are eligible for Title IV-E services as well as children who do not meet IV-E eligibility criteria.[9]

Exhibit 4.14 projects what maintenance expenditures would be if Title IV-E funds were not being used to cover the cost of licensed care for children who are not IV-E eligible. In this exhibit, maintenance expenditures without costs for non-IV-E eligible children were calculated by taking the amount shown for maintenance costs in state cost neutrality reports and

[8] Reinvestment spending will be discussed later in this section.
[9] As part of the Waiver, counties can also use a mixture of Title IV-E, state, and local funds "flexibly." This flexible spending, which is tracked through financial application codes 76 (for Title IV-E eligible children) and 77 (for children who are not eligible for Title IV-E services) will be discussed later in this section.

subtracting the amount spent for licensed care costs for these children. The amount spent for licensed care for non-IV-E eligible children was determined using extracts from CPPS.[10] As the exhibit shows, actual maintenance expenditures would be below allowable costs for all of 2005 and 2006. The difference between actual and allowable grows throughout the entire demonstration.

Exhibit 4.14: Projected Maintenace Costs for Waiver Counties if Payments for Children Who Are Not IV-E Eligible are Excluded



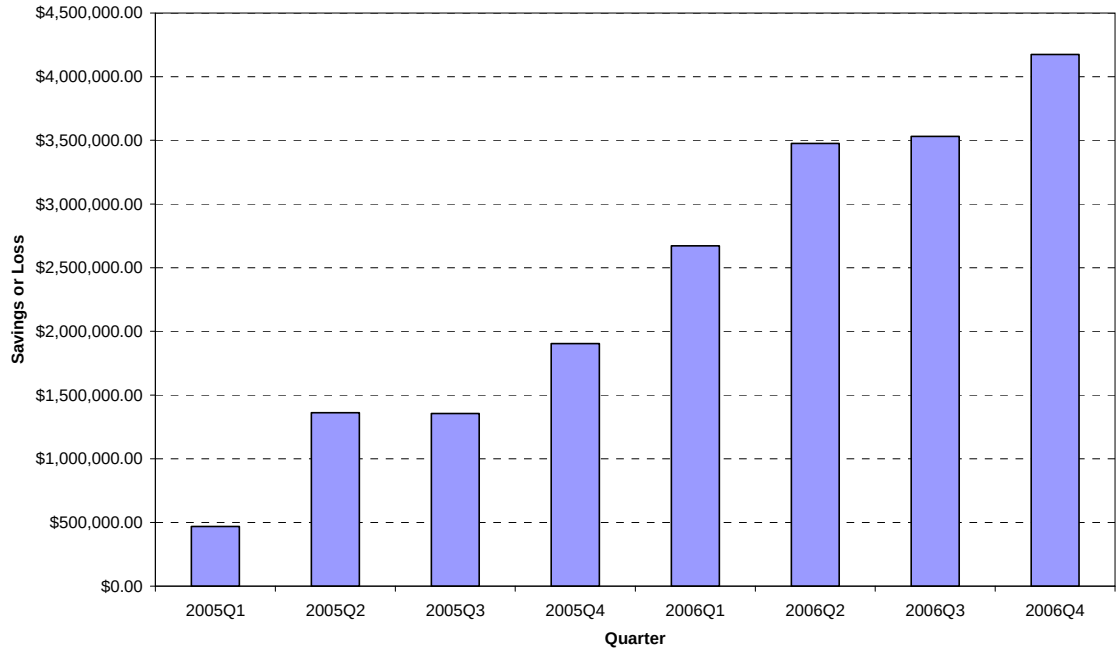
The non-IV-E eligible children whose standard board maintenance costs had been split 50%-50% between state and local funds were converted to IV-E at the FMAP rate in order to free up funds that could be used to draw down flexible of reinvestment funds. Counties were able to use these funds to pursue strategies related to the goals of the waiver.

The amount of savings in maintenance costs is illustrated in Exhibit 4.15. As the exhibit indicates, the savings for the first quarter would have been $469,188.10 if all other expenses remained the same. The projected savings would have more than doubled in the second quarter to $1.36 million. According to the exhibit, the projected maintenance savings would have been about the same ($1.3 million), and would have increased to $1.9 million by the end of 2005. The

[10] Licensed care payments associated with the Waiver demonstration for non-IV-E eligible children are identified though the funding code of FPWI or FPWO.

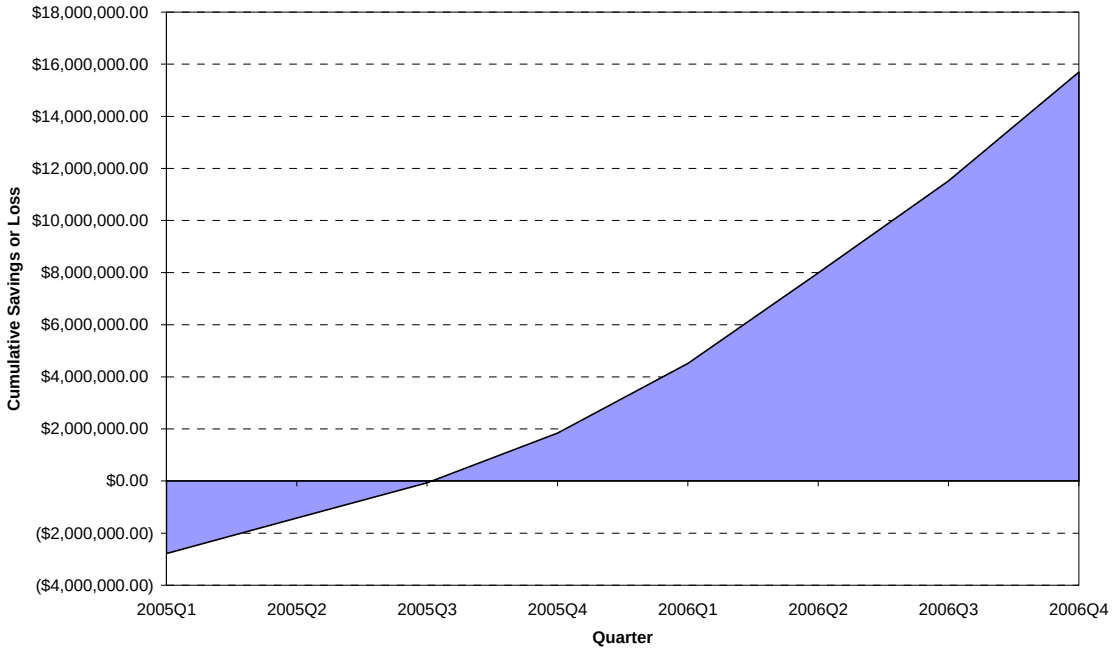
projected savings in maintenance costs would have grown to $2.67 million by the end of the first quarter of 2006 and reached $4.1 million by the end of 2006.

Exhibit 4.15: Projected Quarterly Savings in Maintenance Costs for Waiver Counties If Funds Had Not Be Used to Cover Licensed Care for Non-IV-E Eligible Children



Projected cumulative maintenance costs savings are illustrated in Exhibit 4.16. As the figure indicates, the cumulative projected maintenance cost deficit if the out of home care expenditures for non-IV-E eligible children had not been switched to IV-E is $2.7 million at the end of the first quarter of 2005. One reason for the deficit is due to the carry-over negative balance of $3.25 million from the first phase of the waiver. That amount falls to $1.4 million by the end of the second quarter. By the end of the third quarter of 2005, the projected maintenance cost deficit falls to only $64,767.75. At the end of 2005, the cumulative maintenance cost savings are projected to reach $1.8 million. After the first quarter of 2006, the projected savings are $4.5 million. The amount of savings at the end of December 2006 was projected to be $15.69 million.

Exhibit 4.16: Projected Cumulative Savings in Maintenance Costs by Quarter for Waiver Counties If Funds Had Not Be Used to Cover Licensed Care for Non-IV-E Eligible Children



There are several problems with projecting the saving that would have occurred if maintenance expenditures for non-IV-E eligible children had not switched to IV-E. First, this is only a projection or scenario. There is no guarantee that the costs would have stayed the same and the projected savings would have been realized. Second, and more importantly, the projection assumes that all the other costs, particularly other maintenance costs, would not have changed. That is probably not the case. A primary reason for switching the children to IV-E was to make local dollars available to draw down reinvestment or flexible funds to pursue strategies to meet the goals of the waiver.

If these children had not been converted, local funds would not have been available to develop local tactics to meet goals of the demonstration. As a result, it is likely that the number of children entering care would have increased. At the same time, a number of children were able to leave care as the results of services received through the waiver would likely have remained in care. Because of this, both maintenance and administrative costs would likely have increased if the non-IV-E children had not been converted, since counties would not have been able to draw down reinvestment or flexible funds. And without those funds, a large part of the waiver would have been missing.

One factor that could be related to the increased rate of growth in maintenance costs for Waiver demonstration counties over comparison counties is the variation in the types of licensed facilities they use. Exhibit 4.17 illustrates the percentage of children in licensed care in Waiver demonstration counties by facility type. As the exhibit indicates, slightly more the 50% of the children in Waiver counties from January 2002 through December 2006 were placed in facilities identified as family foster home. [11] In January 2002, about 10% of the children in licensed care in Waiver counties were in facilities classified as offering mental health or therapeutic services. The exhibit indicates that by July 2004, that percentage of children in this type of facility had doubled. By December 2006, almost three in ten children in licensed care were placed in mental health or therapeutic facilities, according to the exhibit.

Exhibit 4.18 illustrates the percentage of IV-E eligible children in licensed care in comparison counties by facility type. As the exhibit indicates about 60% of the children in licensed care in comparison counties are placed in facilities identified as family foster homes. That is about 10% higher than for Waiver counties. In January 2002 the exhibit indicates that about 12% of the children in licensed care were placed in mental health or therapeutic facilities, several percentage points higher than Waiver counties. By July 2004, the percentage of children in licensed care from comparison counties that were living in facilities with identification numbers associated with institutions offering mental health or therapeutic service appears to have increased to 20%. By December 2006, the percentage of children in this type of facility had grown to near 30%.

[11] The type of facility was determined by examining the first character of the facilities identification number. Facilities codes assigned with an "A" are generally assigned to family foster homes. Facilities whose identification codes begin with a "B" are generally child caring institutions. Facilities beginning with a "C" are adoptive foster homes. Facilities with identification numbers beginning with an "F" are grouped into an 'other' category. Facilities beginning with an "H" or an "R" are generally therapeutic mental health institution or therapeutic foster home. Facilities with an identification number beginning with an "S" are generally located out of state. Facilities with identification codes beginning with other letters or payment records without a facility code are classified as 'not indicated.' Some therapeutic foster homes have both therapeutic and regular foster home beds. These facilities generally have a single facility identification number associated with a therapeutic or mental health facility. As a result, this may produce imprecise results in the analysis. Subsequent analysis of payments to these institutions indicate that facilities associated with a mental health or therapeutic identification number generally receive a much higher rate of reimbursement than those paid to family foster homes.

Exhibit 4.17: The Percentage of IV-E Eligible Children in Licensed Care in Waiver Counties by Facility Type

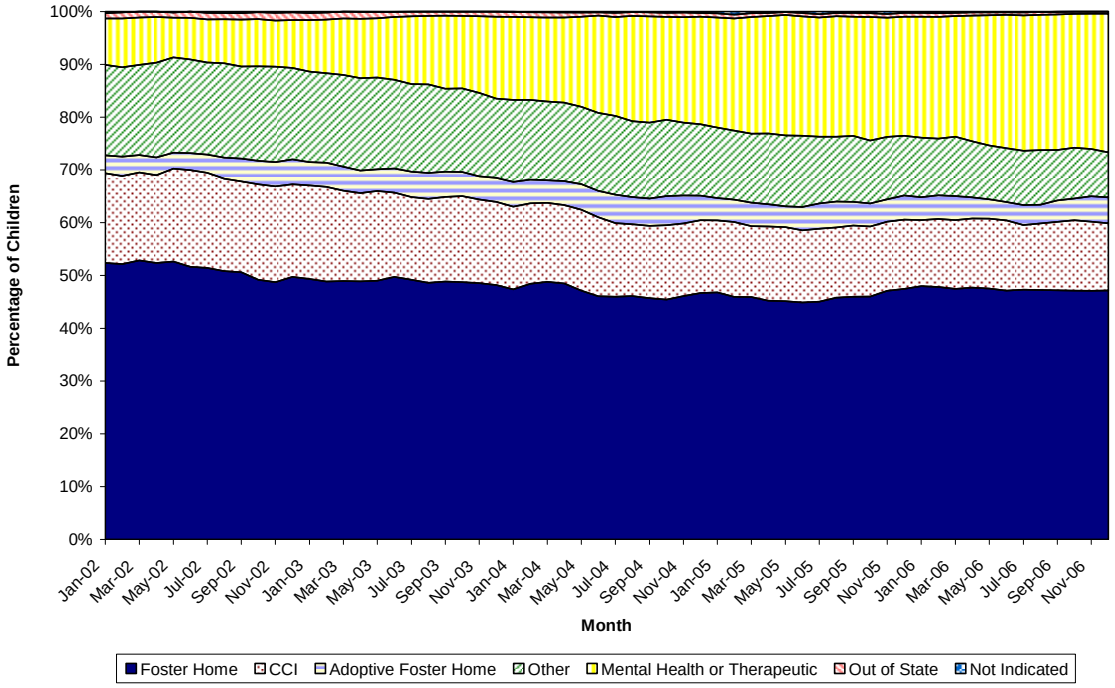
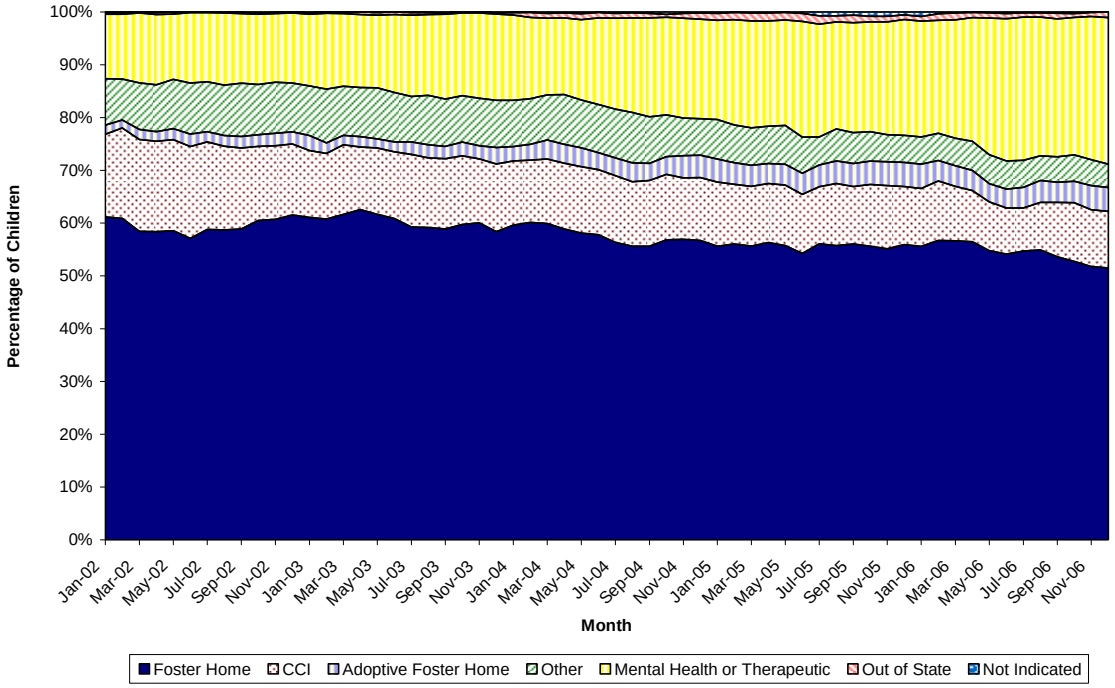


Exhibit 4.18: The Percentage of IV-E Eligible Children in Licensed Care in Comparison Counties by Facility Type



Even though comparison counties appear to have had a slightly higher percentage of children in mental health or therapeutic facilities, this occurred during the base period. By the end of 2006, both the comparison counties and Waiver counties had about 30% of their children in licensed care placed in a facility of this type. According to Exhibit 4-14, a higher proportion of the growth in the percentage of children in facilities of this type in Waiver counties occurred after the end of the base period. As a result, the increased utilization of these facilities with the higher cost of care could influence the rate of growth in maintenance cost for Waiver counties.

Also, the higher percentage of children in facilities identified as family foster homes in comparison counties could tend to hold the rate of growth in cost down. The maximum reimbursement from federal, state, and local funds for these facilities generally ranges between $390 and $490, depending on the age of the child. The percentage of children in facilities of this type appears to remain stable across both groups of counties. Comparison counties appear to have about 10% more of the children in licensed care residing in facilities of this type than Waiver counties do. The higher utilization of family foster homes by comparison counties also indicates that a lower percentage of children live in more restrictive facilities than in Waiver counties. The linkage between the utilization of family foster homes and the rate at which maintenance costs increase is not clear. Many of these facilities are associated with payments to CPAs. It is through the higher utilization of facilities of this type that waiver counties have a higher percentage of federal administrative expenditures being used for CPA costs.

The NC demonstration provided two mechanisms, reinvestment spending and flexible spending, for counties to use Title IV-E resources for services and children not usually covered through Title IV-E. Not all of the counties exploited the reinvestment funds. Since the start of phase two of the Waiver, no county has pulled down more than $58,000 in Title IV-E funds for reinvestment spending. Eighteen counties have yet to use any reinvestment funds. A total of slightly more than $318,456 in federal IV-E funds have been used in reinvestment spending since the start of phase two of the Waiver. A more popular funding stream that is available through the Waiver is flexible funding. A total of close to $3,160,000 in federal IV-E funds have been used for flexible spending since the start of phase two of the Waiver. Reinvestment and flexible spending patterns for individual counties are summarized in Appendix F.

5.0 Conclusions

Beginning with the first months of phase one of the demonstration in North Carolina and through the phase two demonstration to date, North Carolina has consistently articulated the same theory of change for its demonstration. All Waiver counties seek to change the five Waiver outcomes but they do so in ways that are particular to the needs of the client population in each county. It is clear from the process data that about two thirds of the Waiver counties have actively pursued some type of reform effort through the vehicle of the Waiver demonstration. Although there are some commonalities in practice changes and service enhancements that have been made as a result of the demonstration, the differences observed across the 38 Waiver counties are widespread.

Over the Waiver years there were changes in outcomes in both Waiver and comparison counties. In some areas, the outcome changes are consistent across Waiver and Comparison counties. Although the rate of placement into out of home care increased in both Waiver and comparison counties during the first year of the extended Waiver, the rate of increase was smaller in Waiver counties than in comparison counties in subsequent years. In the second year of the demonstration the rate of placement decreased in Waiver counties but remained stable in comparison counties. One difference to note, however, is that in recent years the number of referrals for abuse and neglect has increased in Waiver counties but remained consistent in Comparison counties. Even within this context, overall, the Waiver demonstration reduced the likelihood of placement.

The North Carolina Waiver demonstration was suspended halfway through the second phase of the extended period. The suspension was requested because it became apparent that, if allowed to continue, the waiver would no longer be cost neutral. There are a number of reasons that the waiver began to lose cost neutrality. The primary reason is that waiver counties were spending at a higher rate than comparison counties. To provide that with no additional information as the reason why the waiver was not cost neutral would be very simplistic. There are a number of reasons that the demonstration group had a higher rate of spending that the comparison group.

One reason that the demonstration group had a higher rate of spending is that it contained the largest counties in the state. At the beginning of the second phase of the waiver, in order to change outcomes positively for the maximum number of children, a decision was

made to permit any county that wanted to participate in the waver to become a member of the demonstration group so long as they agreed to participate, identified one or more activities that they wanted to pursue to reach the goals of the demonstration, and submit a logic model. As a result, even through there were 61 counties that did not participate in the demonstration, those counties that did not participate did not in retrospect provide an adequate pool from which to choose a comparison group. One problem with the non-waiver counties is that most were small and rural. Their population was not growing at a high rate, or at least at the high rate of many of the large counties in the state. The smaller, rural counties also lacked some of the resources available to large urban counties. For example, urban counties are more likely to have therapeutic foster homes than rural counties. Child caring institutions are more likely to locate facilities in an around large urban counties than in rural areas. As a result, the options for child placement are likely to be different in urban counties than in rural counties.

Analysis of the expenditures between waiver and comparison counties revealed a number of differences. The waiver counties had about twice as many children in care as did comparison counties. Monthly maintenance costs were about twice as high in waiver counties. When looking at average costs, the waiver and comparison groups were similar. One area where there were differences involved administrative costs. Administrative costs in waiver counties—after payments to CPAs were included—grew at a much higher rate than those in comparison counties. Also, in examining administrative costs, waiver counties devoted a higher share of administrative expenditures to CPAs than did comparison counties.

A reason for the difference in the percentage of administrative costs devoted to CPAs could be due to the higher percentage of children in licensed care in waiver counties who are placed in settings other than foster homes. Comparison counties placed a higher percentage of children in foster homes than waiver counties. The licensed care facilities in waiver counties tended to have higher costs.

The issue of CPA costs also may have caused problems. In planning for the second phase of the waiver, NC DSS staff met and discussed financial reporting issues with NC DHHS staff that handle payments and financial reporting. The requirement to break out administrative costs for CPAs came after those meetings and discussions. CPA payments were tracked on a spreadsheet and were not readily available through existing reporting systems. Breaking out CPA costs did not begin until the second phase of the waiver in July 2004. At the same time, the

standard board rate for foster care also increased. That increase in the board rate tended to mask the impact of removing CPA administrative costs from overall maintenance costs. No one realized the impact of administrative CPA payments on the waiver. The impact of these payments on cost neutrality was not understood until the waiver had reached a point that cost neutrality could not be obtained.

Another issue affecting cost neutrality was the use of Title IV-E dollars to cover the standard board licensed care cost of children in the state's custody who are not otherwise eligible for IV-E services. One purpose of these expenditures is to free up local funds that can then be reinvested to pull down additional IV-E dollars. These reinvestment funds can be used to provide services to both IV-E eligible children as well children who are not eligible for IV-E services. Had the non-IV-E eligible children not been converted, the demonstration may have been able to maintain cost neutrality though the planned 20 quarter period. Yet, if the children had not been converted, funds would not have been available to pursue waiver strategies.

APPENDIX A: RESULTS FROM SURVEY, "SECOND ANNUAL SURVEY: SERVICES IN NC FOR CHILD WELFARE CLIENTS"

As part of the Title IV-E Waiver evaluation in North Carolina, a web-based survey collected information on service needs, unmet service needs and service availability for public child welfare agency clients. Child welfare agency directors and staff from 76 out of 100 NC counties completed a survey that explored need and availability questions for 23 service categories typically used by child welfare clients. These service categories included: post-custody support services, child care, credit counseling, services related to domestic violence, education support for children, education support for family members, independent living skills for youth, intensive family preservation, housing support, mental health services, parenting classes, respite care, services for victims of sexual abuse, counseling and treatment for sexual offenders, substance abuse treatment, assistance with transportation, homemaker or home management services, help with basic household needs, legal services, job services, acute health care, dental care, and child and family team meetings. Additionally respondents were asked about the number and type of foster homes providing care to children served in out-of-home placement by the agency.

The second annual survey was implemented over a 3-month period between November 2, 2006 and January 31, 2007. The first invitation to participate in the survey was sent to 138 respondents (agency directors and staff) from 100 NC counties. Three weeks later respondents received a reminder email about the survey. This was followed in early to mid December by telephone calls placed to agency directors and staff that had not yet completed the survey. The last reminder email was sent out to all respondents that had not yet completed the survey in early January. Respondents of the second annual survey were asked to provide services information for clients served by the agency within the "past six months." Seventy-eight (78) respondents from 76 counties completed the survey. The majority of respondents (84.2%) were child welfare directors, assistant directors, or program managers; Title IV-E Waiver demonstration coordinators accounted for 6.6% of respondents; frontline staff/child welfare workers
(2.6%) and staff filling other agency roles (6.6%) comprised the rest of the respondents.

Service Needs

Respondents were asked to estimate the percentage of child welfare clients that needed each of 23 specific services. In Waiver counties, the majority of services (14) were identified as needed for 0-25% of child welfare clients. These included Household needs, Job services, Credit counseling, Independent living, Home management, Dental care, Intensive family preservation, Education support for family, Legal services, Sex abuse services, Respite care, Aftercare, Acute health care, and Sex offender services. The majority of services (12) in Other counties were needed for 26-75% of child welfare clients, including Mental health, Substance abuse, Parenting classes, Domestic violence, Child and family team meetings, Transportation, Child care, Housing, Education support for child, Household needs, Job services, and Intensive family preservation (Table 1).

Table 1. Number and Percentage (%) of Counties Reporting Service Need

	Waiver			Other			Total		
Service	**0-25 %**	**26-75 %**	**76 – 100 %**	**0-25 %**	**26-75 %**	**76 – 100 %**	**0-25 %**	**26-75 %**	**76 – 100 %**
Mental Health	1 (3)	23 (74)	7 (23)	3 (8)	20 (56)	13 (36)	4 (6)	43 (64)	20 (30)
Substance abuse services	2 (6)	22 (69)	7 (22)	7 (19)	21 (58)	8 (22)	9 (13)	43 (64)	15 (22)
Parenting classes	4 (13)	23 (74)	4 (13)	5 (14)	24 (67)	7 (19)	9 (13)	47 (70)	11 (16)
Domestic violence	4 (13)	23 (74)	4 (13)	12 (33)	20 (56)	4 (11)	16 (24)	43 (64)	8 (12)
Child Family Team Meeting	5 (17)	14 (47)	11 (37)	11 (31)	19 (53)	6 (17)	16 (24)	33 (50)	17 (26)
Transportation	8 (26)	18 (58)	5 (16)	7 (19)	23 (64)	6 (17)	15 (22)	41 (61)	11 (16)
Child care	9 (29)	20 (65)	2 (7)	8 (23)	23 (66)	4 (11)	17 (26)	43 (65)	6 (9)
	Waiver			**Other**			**Total**		
	0-25 %	**26-75 %**	**76 – 100 %**		**0-25 %**	**26-75 %**	**76 – 100 %**		**0-25%**
Housing	13 (42)	16 (52)	2 (7)	11 (31)	20 (56)	5 (14)	24 (36)	36 (54)	7 (10)
Education support - child	14 (45)	16 (52)	1 (3)	13 (36)	20 (56)	3 (8)	27 (40)	36 (54)	4 (6)
Household needs	18 (58)	13 (42)	0	16 (44)	19 (53)	1 (3)	34 (51)	32 (48)	1 (2)
Job services	19 (61)	11 (36)	1 (3)	15 (43)	18 (51)	2 (6)	34 (52)	29 (44)	3 (5)

Credit counseling	20 (65)	10 (32)	1 (3)	25 (70)	10 (28)	1 (3)	45 (67)	20 (30)	2 (3)
Independent living	22 (71)	8 (26)	1 (3)	21 (58)	11 (31)	4 (11)	43 (64)	19 (28)	5 (8)
Home management	22 (71)	8 (26)	1 (3)	21 (59)	15 (42)	0	43 (64)	23 (34)	1 (2)
Dental care	22 (71)	8 (26)	1 (3)	22 (61)	13 (36)	1 (3)	44 (66)	21 (31)	2 (3)
Intensive family preservation	22 (71)	9 (29)	0	21 (21)	12 (34)	2 (6)	43 (65)	21 (32)	2 (3)
Education support - family	22 (71)	9 (29)	0	23 (64)	13 (36)	0	45 (67)	22 (33)	
Legal services	23 (74)	7 (23)	1 (3)	17 (47)	14 (39)	5 (14)	40 (60)	21 (31)	6 (9)
Sex abuse services	25 (81)	5 (16)	1 (3)	24 69)	12 (33)	0	41 (73)	17 (25)	1 (2)
Respite	25 (83)	5 (17)	0	26 (72)	10 (28)	0	51 (77)	15 (23)	
Aftercare	27 (87)	3 (10)	1 (3)	23 (66)	10 (29)	2 (6)	50 (76)	13 (20)	3 (5)
Acute health care	27 (87)	3 (10)	1 (3)	26 (72)	10 (28)	0	53 (79)	13 (19)	1 (2)
Sex Offender services	27 (87)	3 (10)	1 (3)	27 (75)	9 (25)	0	54 (81)	12 (18)	1 (2)

There were differences in need across counties for Household needs, Job services, and Intensive family preservation. The majority of Waiver counties reported these services as needed for 0-25% of child welfare clients, whereas the majority of Other counties needed these services for 26-75% of clients. The pockets of intense need (75-100%) of Waiver and Other counties were for the most part similar. Waiver and Other counties identified Mental health, Substance abuse services, Parenting classes, Child and family team meetings, Transportation and Housing as high need among clients (Table 1).

Service Availability

Respondents were asked to indicate the level of service availability in their county for child welfare clients. The majority of both Waiver and Other counties reported that services were available for "some" of their child welfare clients (Table 2). A higher number of services (10) were available to "all" clients in Other counties compared to Wavier counties (5). In Other counties, 20 out of the 23 services were reported as "no clients needed service" by at least one county. In contrast, only 5 out of the 23 services in Waiver counties were reported as "no clients needed service" by at least one county- indicating more service needs in Waiver counties.

Table 2. Number and Percentage (%) of Counties Reporting Service Availability

SERVICE	NO Clients Needed Service		Service NOT Available in our County		Not Available in our County but Available in another County		Service was Available to SOME		Service was Available to ALL	
	Waiver	Other	Waiver	Other	Waiver	Other	Wavier	Other	Waiver	Other
Mental health		1 (3)					21 (66)	25 (66)	11 (34)	10 (26)
Respite		4 (11)	3 (9)	6(16)	2 (6)	2 (5)	24 (75)	13 (34)	3 (9)	11 (29)
Substance abuse services		1 (3)		2 (5)	1 (3)	5 (13)	19 (59)	19 (50)	12 (38)	14 (37)
Parenting classes	1 (3)		1 (3)	2 (5)	2 (5)		16 (50)	12 (32)	5 (47)	19 (50)
Child care						1 (3)	19 (59)	17 (45)	13 (41)	18 (47)
Domestic violence		1 (3)	1 (3)	2 (5)	2 (5)		18 (56)	12 (32)	13 (41)	19 (50)
Transportation		1 (3)		2 (5)			26 (81)	19 (50)	6 (19)	14 (37)
Housing		1 (3)	1 (3)	2 (5)	1 (3)	1 (3)	28 (88)	27 (71)	2 (6)	5 (13)
Education support - child		1(3)	1 (3)	2 (5)			14 (44)	11 (29)	17 (53)	22 (58)
Job services		1 (3)		1 (3)			19 (59)	18(47)	13 (41)	16 (42)

SERVICE	NO Clients Needed Service		Service NOT Available in our County		Not Available in our County but Available in another County		Service was Available to SOME		Service was Available to ALL	
	Waiver	Other	Waiver	Other	Waiver	Other	Wavier	Other	Waiver	Other
Dental care		1 (3)		3 (8)	1 (3)	5 (13)	24 (75)	18 (47)	7 (21)	9 (24)
Home management		4 (11)	5 (16)	9 (24)			17 (53)	13 (34)	9 (28)	10 (26)
Household needs		1 (3)		4 (11)			28 (88)	26 (68)	4 (13)	5 (13)
Intensive family preservation	1 (3)	2 (5)	1 (3)	3(8)		3 (8)	25 (78)	14 (37)	5 (16)	13 (34)
Independent living		4 (11)		3 (8)			10 (31)	12 (32)	22 (69)	17 (45)
Credit	3 (9)	5	1 (3)	5		4	13	8 (21)	15	12

counseling		(13)		(13)		(11)	(41)		(47)	(32)
Education support – family	1(3)	3 (8)	1 (3)	2 (5)			19 (60)	8 (21)	11 (34)	23 (61)
Sex abuse services		1(3)		2 (5)	1 (3)	5 (13)	15 (47)	15 (40)	16 (50)	13 (34)
Legal services		2 (5)	1 (3)	4 (11)	1 (3)	7 (18)	25 (78)	17 (45)	5 (16)	6 (16)
Aftercare		6 (16)	2 (6)	2 (5)	1 (3)		12 (38)	14 (37)	17 (53)	14 (37)
Sex Offender services		4 (11)	4 (13)	8 (21)	6 (19)	8 (21)	15 (47)	12 (32)	6 (19)	4 (11)
Acute health care	1 (3)	6 (16)		2 (5)	1 (3)	3 (8)	19 (59)	14 (37)	11 (34)	11 (29)
Child and Family Team Meeting		2 (5)		1 (3)	1 (3)		6 (19)	10 (26)	25 (78)	23 (61)

The top three services not available in both Waiver and Other counties were reported as Respite care, Home management, and Sex offender services. Although some services were not available in respective counties in both groups, some were available in nearby counties.

Unmet Service Needs

The survey asked respondents to estimate the percentage of clients who needed a particular service but were not able to obtain it. The majority of Waiver and Other counties identified the percentage of clients who were served by their agency who needed a service and were unable to obtain it to be within 0-25%. The top three unmet services reported by Waiver counties were Child care, Credit counseling, and Aftercare. Like Waiver counties, Other counties reported Credit counseling and Aftercare in their top three, but also included Household needs (Table 3).

Table 3. Number and Percentage (%) of Counties Reporting Unmet Service Needs

	Waiver			Other			Total		
	0-25 %	26-75 %	76 – 100 %	0-25 %	26-75 %	76 – 100 %	0-25 %	26-75 %	76 – 100 %
Mental Health	16 (59)	11 (41)		19 (68)	9 (32)		35 (65)	20 (36)	
Substance abuse services	15 (65)	8 (35)		21 (9)	9 (30)		36 (68)	17 (32)	
Parenting classes	20 (80)	(5) (20)		22 (79)	6 (21)		42 (79)	11 (21)	
Domestic violence	18 (72)	7 (28)		24 (86)	4 (14)		42 (72)	11 (21)	

Child Family Team Meeting	18 (88)	4 (18)		24 (89)	2 (7)	1 (4)	42 (86)	6 (12)	1 (2)
Transportation	18 (69)	8 (31)		19 (70)	8 (30)		37 (70)	16 (30)	
Child care	23 (82)	5 (18)		22 (73)	7 (23)	1 (3)	45 78)	12 (21)	1 (2)
Housing	15 (56)	12 (44)		21 (72)	6 (21)	2 (7)	36 (64)	18 (32)	2 (4)
Education support - child	20 (83)	4 (17)		24 (86))	4 (14)		44 (85)	8 (11)	
Household needs	20 (77)	6 (23)		25 (83)	2 (17)		45 (80)	11 (20)	
Job services	20 (80)	5 (20)		21 (5)	5 (19)	1 (4)	41 (79)	10 (19)	1 (2)
Credit counseling	25 (100)			25 (89)	3 (11)		50 (94)	3 (6)	
Independent living	20 (87)	3 (13)		22 (82)	5 (19)		42 (84)	8 (16)	
Home management	18 (75)	6 (25)		20 (69)	6 (21)	3 (10)	38 (72)	12 (23)	3 (6)
Dental care	17 (65)	9 (35)		20 (71)	6 (21)	2 (7)	37 (69)	15 (28)	2 (4)
Intensive family preservation	17 (65)	9 (35)		21 (72)	6 (21)	2 (7)	38 (69)	15 (27)	2 (4)
Education support - family	21 (88)	2 (11)	1 (4)	24 (89)	3 (11)		45 (88)	5 (10)	1 (2)
Legal services	14 (58)	10 (42)		23 (77)	4 (13)	3 (10)	37 (69)	14 (26)	3 (6)
	Waiver			**Other**			**Total**		
	0-25 %	**26-75 %**	**76 – 100 %**	**0-25 %**	**26-75 %**	**76 – 100 %**	**0-25 %**	**26-75 %**	**76 – 100 %**
Sex abuse services	21 (88)	3 (13)		20 (71)	7 (25)	1 (4)	41 (79)	10 (19)	1 (2)
Respite	22 (79)	6 (21)		22 (76)	5 (17)	2 (7)	44 (77)	11 (19)	2 (4)
Aftercare	25 (100)			25 (83)	4 (13)	1 (3)	50 (91)	4 (7)	1 (2)
Acute health care	18 (75)	6 (25)		28 (93)	1 (3)	1 (3)	46 (85)	7 (13)	1 (2)
Sex Offender services	14 (56)	8 (32)	3 (12)	20 (69)	2 (7)	7 (24)	34 (63)	10 (19)	10 (19)

Only 4 counties reported intense unmet service need for 76-100% of their child welfare clients as opposed to 27 in Other counties. Waiver counties reported these services to be Education support and Aftercare. Other counties reported these services to be Child and family

team meetings, Child care, Housing, Job services, Home management, Dental care, Intensive family preservation, Legal services, Sex abuse services, Respite, Aftercare, Acute health care, and Sex offender services.

Foster Home Availability

The number of public agency foster homes in a county ranges from 0 to 600 (Table 4). Among counties participating in the Title IV-E Waiver demonstration there were on average 72 public foster homes in a county; all other counties reported an average of 21 foster homes. However, since each group of counties consists of large, medium and small counties there are wide ranges in the number of homes in counties in each group. The smallest number of public agency foster homes reported for Waiver counties was 3, the largest number 600. For other counties the number of public agency foster homes ranges from 0 to 90 in all other counties... Similarly there are vast differences in the numbers of private agency foster homes reported ranging from an average of 45 private agency foster homes in Waiver counties to an average of 8 for all other counties.

Table 4. Average Number of Foster Homes and Children in Out-of-Home Placement

	Number of children in placement authority in the county				Number of public agency foster homes in the county				Number of private agency foster homes in the county			
	N	Mean	Median	Range	N	Mean	Median	Range	N	Mean	Median	Range
All counties	67	139	76	1-1200	67	46	25	0-600	43	24	3	0-430
Waiver	32	206	128	16-1184	32	72	39	3-600	19	45	12	0-430
Other	35	77	60	0-241	35	21	16	0-90	24	8	2	0-40
Level 1	27	57	34	0-541	27	15	11	0-127	24	6	2	0-48
Level 2	30	118	112	21-241	30	37	32	0-90	15	15	12	0-40
Level 3	10	421	299	54-1200	10	155	108	30-600	4	165	115	0-430

Almost half (46%) of the survey respondents were from medium (Level 2) counties, 40% were from small (Level 1) counties and 14% were from large (Level 3) counties. Level 1 counties reported on average 15 public agency foster homes and 6 private agency foster homes; medium

counties reported an average of 37 public agency foster homes and 15 private agency foster homes; in large counties there were on average 155 public agency foster homes and 165 private agency foster homes.

The number of children currently under placement authority of specific counties ranges form 1 to over 1,000 (Table 4). Waiver counties report a larger number of children placed in both public and private foster homes than do Other counties. Both county groups on average place more children in public foster homes than private foster homes. The majority of children in small, medium, and large counties are placed in public foster homes. Large counties consisted of a larger number of children in public foster homes (average of 135) and private foster homes (average of 114) than small and medium counties.

Table 5. Average Number of Children Placed in Public and Private Foster Homes by County Groups

	Mean # and Range of children placed in public agency FHs	Mean # and Range of children placed in private agency FHs
Waiver	68 (3-217)	44 (0-400)
Other	29 (0-400)	11 (0-53)
Level 1	17 (0-170)	8 (0-100)
Level 2	49 (1-121)	18 (0-53)
Level 3	135 (1-203)	114 (3-397)

APPENDIX B: COUNTY-LEVEL IMPLEMENTATION

Exhibit B.1 High-Level Activity Group: County Wide Services*

	County wide services	Buncombe	Chatham	Dare	Durham	New Hanover	Union	Yancey
Basic Needs	Assistance with transportation	1		2			6	83
	Child care	43	21	21				35
	Credit counseling						360	
	Homemaker or home management services							
	Household needs - food							
	Household needs - furniture			3			8	
	Household needs - utility bills							
	Household needs clothing			1				
	Housing maintain, improve or emergency (rent)	44	36	9			135	3
	Job services including assistance with finding a job							
Child Welfare	Adoption preparation		2					
	Aftercare (post -custody) support services	3	7					8
	Airfare (and/or Travel)			2			1	
	Assisted Guardianship	6	5	9	53	66		
	Child and Family Team Meeting	1656	13	11	470	1015	481	86
	Child specific recruit for adoptive/foster parents	26		5				6
	Foster parent services					30		
	Home study							
	Independent living skills for youth				1			7
	Intensive Family Preservation			51	42	208		
	Intensive reunification services					204		
	Intensive visitation	56	15					
	Legal guardianship services							
	Legal services	107	37	35		179	3	
	Mediation	13				27		
	Preventative services							
	Respite care	368		1				15
	Social Worker							
	Specific placement with relatives services		23					
	Visitation							
Treatment	Acute health care (equipment, medicine)	4		1				
	Counseling and treatment for sex offenders							
	Dental care							
	Domestic/partner violence counseling, healthcare, other							10
	Education support for adult family members			3				
	Education support for children	5	14	2			1	110
	Family counseling							
	Mental health services	135	2	20			19	101
	Parent coaching							
	Parenting classes	170	1	3	88			
	Psychiatric evaluation							
	Sexual abuse victims Counseling, health care, other	3						35
	Substance abuse treatment counseling,other		5	11			2	3

* Number of services reported.

Exhibit B.2 High-Level Activity Group: Child Specific Services*

	Child Specific Services	Buncombe	Chatham	Dare	Durham	New Hanover	Union
Basic Needs	Assistance with transportation	5	1	2	3		1
	Child care	50	12	17	26	1	
	Credit counseling						
	Homemaker or home management services						
	Household needs - food		1	1	5		
	Household needs - furniture		3	3	12	5	2
	Household needs - utility bills	4	21	4	55	4	56
	Household needs clothing		2	4	32		
	Housing maintain, improve or emergency (rent)	19	19	5	68	26	74
Child Welfare	Job services including assistance with finding a job						
	Adoption preparation						
	Aftercare (post -custody) support services						
	Airfare (and/or Travel)	1	1	1	8	5	4
	Assisted Guardianship	7		2			
	Child and Family Team Meeting		15				
	Child specific recruit for adoptive/foster parents						
	Foster parent services						4
	Home study						
	Independent living skills for youth						
	Intensive Family Preservation			37			
	Intensive reunification services						
	Intensive visitation						
	Legal guardianship services						
	Legal services	41		35	1		6
	Mediation						
	Preventative services			1			
	Respite care	3					
	Social Worker						
	Specific placement with relatives services		12		8		
	Visitation		13				
Treatment	Acute health care (equipment, medicine)	1		1	1		
	Counseling and treatment for sex offenders			2			
	Dental care						
	Domestic/partner violence counseling, healthcare, other						
	Education support for adult family members	3	19	4			
	Education support for children			1			1
	Family counseling			4			2
	Mental health services	3	2	11		1	
	Parent coaching						
	Parenting classes		1	3			6
	Psychiatric evaluation	64					11
	Sexual abuse victims Counseling, health care, other						
	Substance abuse treatment counseling,other		2	3			2

* Number of services reported.

Exhibit B.3. Mid-Level Activity Group: County Wide Services

	County Wide Waiver Service	Alamance	Alexander	Brunswick	Burke	Cabarrus	Caldwell	Cleveland	Cumberland	Currituck	Davidson	Davie	Forsyth	Guilford	Harnett	Haywood	Lincoln	Mecklenburg	Orange	Person	Rockingham	Stokes	Transylvania	Wake	Yadkin
Basic Needs	Assistance with transportation	15			1	8	1		23		11		11						3	1	1				
	Child care	13				11	1		68				19	1	2	4				1			1		
	Credit counseling																								
	Homemaker/Home mgmt services																								
	Household needs - food																								
	Household needs - furniture	17									17		7												
	Household needs - utility bills						9		183		1		14							1					
	Household needs clothing										19														
	Housing maintain, improve, emer rent	19				6	13		178		33		114	11		7				7		13	23	10	
	Job services/assistance finding job																								
Child Welfare	Adoption preparation																							8	
	Aftercare post-custody support								8					4	20			53							
	Airfare (and/or Travel)	3																							
	Assisted Guardianship			2										2	9		10	226	7	8		2			
	Child and Family Team Meeting		71	53	203					10					179		32	493						331	
	Child spec recruit of adop/FPs	5			64		3							1			2	4						30	
	Foster parent services				30																	7			
	Home study																7								
	Independent living skills for youth								2				21					1		2					
	Intensive Family Preservation													620					25	2					
	Intensive reunification services																								
	Intensive visitation							56																	
	Legal guardianship services																								
	Legal services	3				1			60		11			3	25							2			
	Mediation																	70							
	Preventative services																								
	Respite care	5											1				1					4			
	Social Worker							214																	
	Specific placement w/relatives								2																
	Visitation																								
Treatment	Acute healthcare equipment, medicine	2																							
	Counseling, treatment sex offenders																								
	Dental care																								
	Domestic violence counseling, health								10								1					9			
	Education support adult family																								
	Education support for children	1	4						60				5												
	Family counseling												3								20			12	
	Mental health services								20	1		15	27			8	48		1			13			24
	Parent coaching	20											1												
	Parenting classes	1							40				2			3	14	836	50		11			35	
	Psychiatric evaluation	11																							
	Sex abuse victims counseling,		2														2								
	Substance abuse treatment					97	5		43		2					2	10				7				41

* Number of services reported.

Exhibit B.4 Mid-Level Activity Group: Child Specific Services

	Child Specific Services	Alamance	Cabarrus	Caldwell	Cleveland	Cumberland	Currituck	Davidson	Forsyth	Guilford	Harnett	Haywood	Mecklenburg	Orange	Person	Rockingham	Stokes	Transylvania	Wake
Basic Needs	Assistance with transportation	14	3			18		3	15	39		1	7	2	3		2		2
	Child care	14	11			16			17	16		5	19	1	1			1	2
	Credit counseling																		
	Homemaker/Home mgmt services																		
	Household needs - food					7		2		20		3	6	1					1
	Household needs - furniture	12	1			10		11	31	32	1	1	7	10		4			30
	Household needs - utility bills	6	2	4		35		1	54	131		3	4	3	3	10	1	4	13
	Household needs clothing					10		8		18			11						22
	Housing maintain, improve, emer	17	6	19		24		29	63	124		6	6	3	1	7	9	19	55
	Job services/assistance finding job												1						
Child Welfare	Adoption preparation	1								9			2			2			1
	Aftercare post-custody support								2										
	Airfare (and/or Travel)	3	6	1					3	4		1				2			
	Assisted Guardianship																		
	Child and Family Team Meeting						8												
	Child spec recruit of adop/FPs																		
	Foster parent services		1					1		18			6						
	Home study																		
	Independent living skills for youth																		
	Intensive Family Preservation									4									
	Intensive reunification services							3		3			4						
	Intensive visitation																		
	Legal guardianship services																		
	Legal services	3	3	3		3		15		37		1		1			3		1
	Mediation																		
	Preventative services									80									
	Respite care	3								4									
	Social Worker																		
	Specific placement w/relatives			3		2		12		27	3		5	2		6	4		1
	Visitation																		
Treatment	Acute healthcare equipment,	6	1			8		3	1	13		4	9						
	Counseling, treatment sex offenders																		
	Dental care																		
	Domestic violence counseling,			1				1				3	1			1	10		
	Education support adult family					1								2					
	Education support for children					2			6	1			1						
	Family counseling								7	1		8	2			6			
	Mental health services	1	2			2		5		1			2						
	Parent coaching	22																	1
	Parenting classes	2				1			9	1		4							
	Psychiatric evaluation	10					2		24	2		6		2			2		
	Sex abuse victims counseling,																		
	Substance abuse treatment		2	2	1	4	2	1	3			9			1	8	2		

* Number of services reported.

APPENDIX C: IMPROVEMENT IN WAIVER OUTCOMES BY COUNTY

	Exit within 1 year	Exit after 2 years	Reentry within 1 yr	Prob. of placement	Repeat Maltreatment
Top-Level Activity Group					
100 Yancey					√
11 Buncombe	√		√		√
19 Chatham	√	√		√	
28 Dare	√	√*	√	√	√
32 Durham		√			√
65 New Hanover		√			√
90 Union	√		√		
Mid-level Activity Group					
1 Alamance	√		√		√*
10 Brunswick			√	√***	
12 Burke		√			
13 Cabarrus		√			√**
14 Caldwell			√		
2 Alexander	√	na	na		√
23 Cleveland			√	√	√*
26 Cumberland	√		√	√	
27 Currituck	√	na	na		
29 Davidson				√	
30 Davie		√			^
34 Forsyth			√	√	√
41 Guilford				√	√*
43 Harnett	√**	√		√*	
44 Haywood		√**	√		√**
55 Lincoln	√				
60 Mecklenburg	√*			√	√**
68 Orange		√	√		√
73 Person	√*	√			√
79 Rockingham		√	√		
85 Stokes		na			√
88 Transylvania	√			√	√
92 Wake			√	√	
99 Yadkin	√*	na		√	
Lower Level Activity Group					
25 Craven	√	√			√
70 Pasquotank		na	na		√
77 Richmond			na		
83 Scotland		na			√
84 Stanly			na		√
87 Swain	√	na	na		√
96 Wayne		√			√

√ = Outcome improving in post-Waiver period;* p < .05, ** p < .01, *** p < .001; Na = Coefficients did not converge; Constant or linearly dependent covariates; No cases available

APPENDIX D: PAPER ON COUNTY-LEVEL ENTRY TO OUT OF HOME PLACEMENT: TIME SERIES ANALYSIS

Does the NC Waiver Intervention Affect the Number of Children Entering Placement?
-- An Investigation of Aggregate-Level Caseload Dynamics

Shenyang Guo
November 17, 2007

This report presents results of a study investigating the change of number of entries into placement using time-series data and a growth curve approach. The study was based on quarterly time-series data of 72counties (i.e., 38 Waiver counties and 34 Comparison counties) between the first quarter of 1998 and the second quarter of 2007, that is, an investigation of a total of 38 quarters. The study aims to answer the following questions: does the North Carolina's Title IV-E Waiver Demonstration project impact the number of children entering placement? Do the Waiver counties follow a different change trajectory than the comparison counties in number of children entering placement? Does the Waiver intervention show any positive impact on reducing the number of entries in certain periods?

Methods

The importance of examining caseload dynamics using an aggregate-level approach

Child welfare researchers have widely employed survival analysis, in conjunction with a cohort approach, to analyze foster care outcome. Such method is an individual-level investigation, and has been proven efficient and effective to answering research questions pertaining to issues of children's well-being and safety. Researchers in the child welfare field have also found the importance of examining foster care outcome using an aggregate-level approach. With regard to the latter, Wulzcyn (1996) correctly stated that "the population of foster children (i.e., the foster care caseload) at a given moment in time is made up of the children who are in foster care. In this way, individual- and aggregate-level dynamics are inseparable. As children enter or leave foster care, the size of the population is affected accordingly." An aggregate-level analysis is an approach that examines the size of the population at a given moment and the change of such aggregated size over time.

An aggregate-level analysis is especially needed in the current evaluation of the Title IV-E Waiver Demonstration, because the Waiver Demonstration program is a county-level intervention, and as such, each county has its own right choosing to participate or not to participate in the intervention. Given the difficulty to conduct randomized clinical trials in the current context, an aggregate-level approach will offer unique information with regard to the effectiveness of Waiver intervention. Thus, we hypothesize that a successful intervention should ultimately show change in the aggregated size of a given outcome at the county level.

Analytic Methods

In this study, a time series refers to a series of quarterly data of an outcome at the county level. The time series of interest for this study is the quarterly data of a county's number of children who entered into placement, which were generated by using the NC child welfare administrative database. To study the change rate, we employed a linear time variable (i.e., quarter), in addition to two dichotomous variables aiming to investigate piecewise change rate. Based on the implementation of the Waiver Demonstration Project in North Carolina, we divided the whole study window into three periods: (1) January 1998 to June 2002, which is the period North Carolina implemented its original demonstration project; (2) July 2002 to December 2004, which is the interim continuation period that North Carolina implemented its first Waiver project; and (3) January 2005 to June 2007, which is the demonstration period for current Waiver intervention. In this study, we used the second period (i.e., July 2002 to December 2004) as a reference group.

Thirty-eight Counties participating in the Waiver Demonstration and thirty-four comparison counties were comprised of the study sample. Based on activities of Waiver counties' implementation and costs, we divided the Waiver counties into three types: the counties in the bottom 20% of reported Waiver activity (i.e. low-level implementation counties), counties in the middle 60% of reported Waiver activity (i.e. the middle-level implementation counties), and the high-level implementation counties that fall into the top 20% of reported Waiver activity. The time-series modeling was stratified on a basis of the above grouping. Within each stratum we compared the Waiver counties with the 34 non-Waiver counties.

In order to control for covariates influencing change of number of entries into placement, we also incorporated other time series data, known as independent time series, into analysis, including: quarterly unemployment rate that is used to measure or control for a county's economic climate, and a time-varying measure of whether a county implemented the Multiple Response System (MRS) at a given quarter (MRS=1, if MRS was implemented in the given quarter, and MRS=0 otherwise). In addition, we used three time-fixed variables in the analysis: (1) a three-point measure of DSS level (Level = 1 if DSS level is small, Level = 2 if medium, and Level =3 if large), (2) an eight-category measure of region, and (3) percentage of minority population in the county in 2005.

As a first step, we examined change trajectories of number of entries among study counties using line graphics (known as "spaghetti plots"). This is a descriptive method, but is an important approach to model building and gaining guidance for interpreting results of the multivariate analysis. Four curve-smoothing techniques were considered and compared in order to remove random fluctuations in the spaghetti plots. They are: simple moving averages, weighted moving averages, exponentially weighted moving averages, and locally weighted regression using a tricube kernel (or *lowess*). A description of these methods and the rationale for choosing a smoothing method for this study are presented in the appendix. We finally chose the *lowess* method for curve smoothing.

We next analyzed the change of the outcome time-series using a multivariate model. A statistical problem encountered in the analysis was autocorrelation. Because each county's observation on the outcome variable at a given quarter is correlated to the same measure at previous and future quarters, a regression model assuming independent-observations cannot be used. We considered several multivariate approaches to correcting for the serial

autocorrelation. One is the autoregressive regression model, which assumes that the error term is an autoregressive process of a given order *AR(p)*, and estimates regression coefficients using a maximum likelihood approach. The more advanced method dealing with the same issue is the random-effects model (also known as the hierarchical linear modeling, HLM, or growth curve analysis) that corrects for autocorrelation by including random effects at the county level. We chose the random-effects model (hereafter is referred to as *growth-curve model*), because of its popularity among researchers analyzing longitudinal data and its robustness in correcting for autocorrelation (Raudenbush and Bryk 2002; Diggle, Liang, and Zeger 1994; Lindsey 1993).

Our growth-curve analysis is comprised of two hierarchical models. At Level 1, each county's change on the outcome series is represented by an individual growth trajectory based on a unique set of predictors (i.e., mean at baseline, linear change rate, and time-varying covariates). These individual growth parameters then become a set of outcome variables in a Level 2 model that are regressed on time-fixed county characteristics.

As most multivariate analysis, results of a growth curve modeling are sensitive to the observed variables included in the model, though the model includes random effects for each county to represent a lump sum of unobserved heterogeneities.

Findings:

Figure 1 presents the spaghetti plots by program. A few observations may be obtained by an eyeballing of the change trajectories. First, as the figure shows, a few Waiver Type 2 (i.e., middle 60%) and Waiver Type 3 (i.e. Top 20%) counties had a high level of number of entries at all time points than the rest of counties. These counties are basically large in terms of population size. Another clear trend is that the change for most counties is curvilinear, which underscores the importance of a piecewise investigation of the change rate. And finally, no clear pattern can be discerned in terms of direction of change (upward or downward) between Waiver and comparison counties.

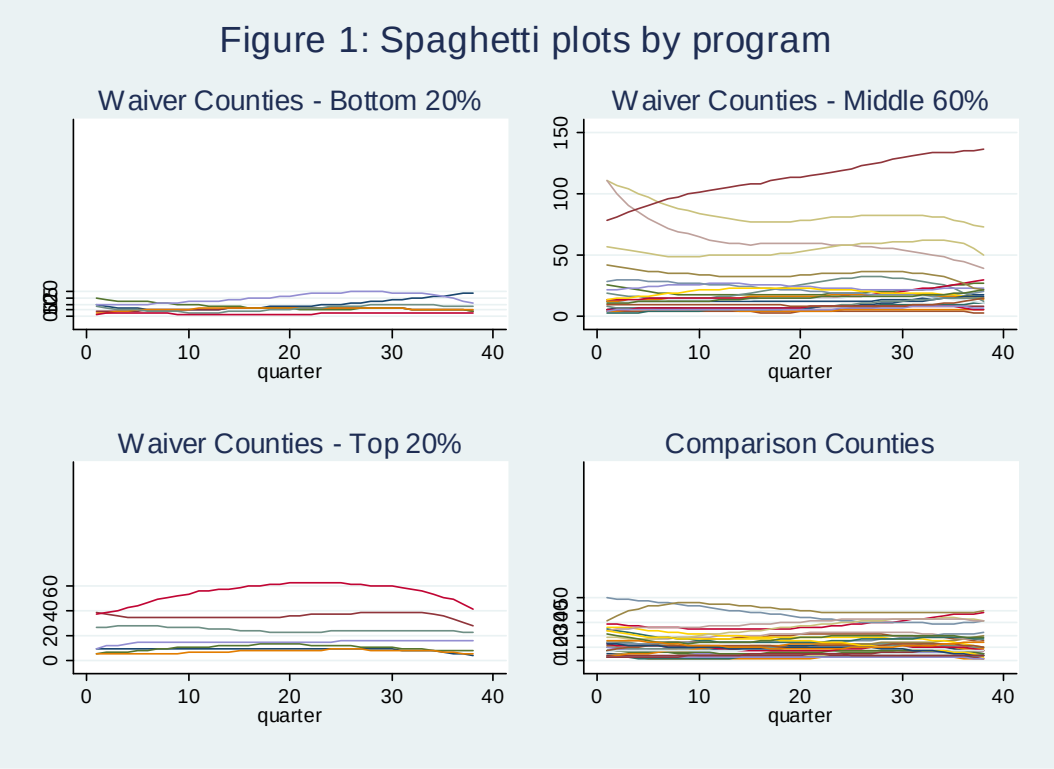


Figure 2 presents mean profile by program. It's clear that both Waiver Groups 2 and 3 counties on average had a higher level of entries than the comparison counties. The mean trajectories convey an important message: counties who chose to participate in the Waiver Demonstration intervention are self-selected - those who had a high level of entries are more likely to participate. Another clear pattern is that all Waiver Groups had a steeper decrease during the third period (i.e., the demonstration period) shortly after Quarter 30 than the comparison group. The key questions then become: Whether or not the Waiver intervention helps to reduce the number of entries? After controlling for other time-varying and time-fixed characteristics, is the mean change trajectory of the Waiver counties different than that of the non-waiver counties to a statistically significant degree? These questions are best answered by the growth-curve analysis.

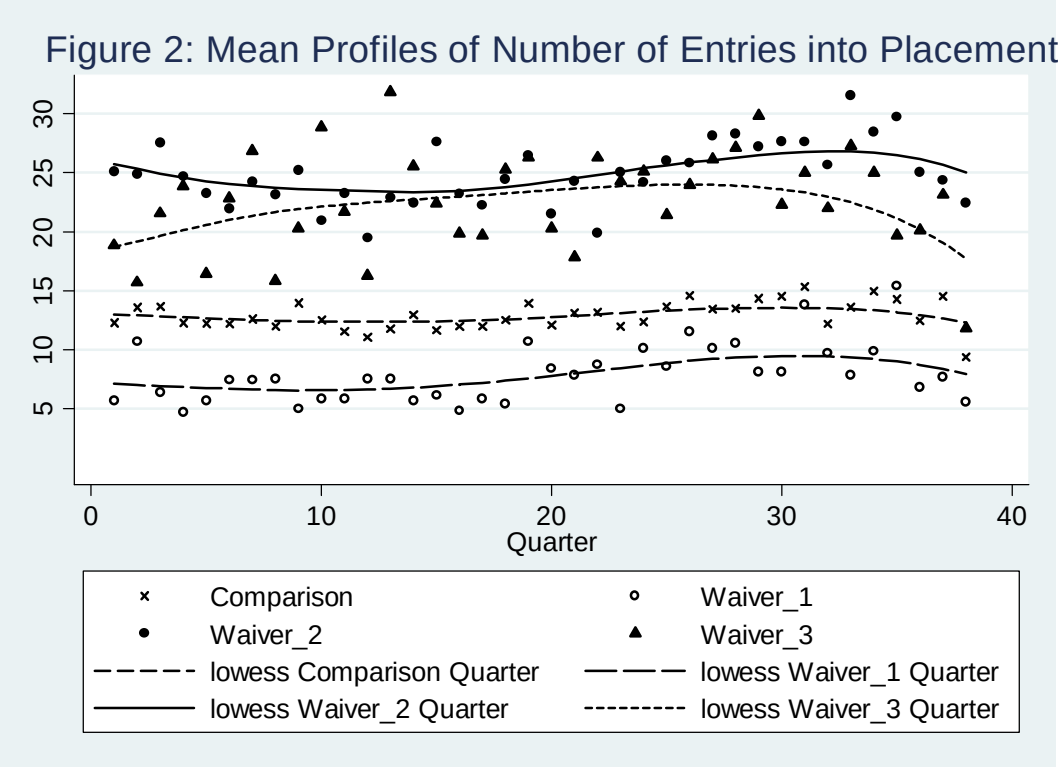


Table 1 presents results of the stratified growth-curve models. Main findings are summarized below:

- With regard to the comparison between Waiver Group 1 counties (i.e., bottom 20%) and the non-Waiver counties, the model does not show evidence supporting an effective intervention. None of the estimated coefficients involving Waiver variable is statistically significant. Although the three-term interaction (i.e., "Period Jan. 2005 to Jun. 2007" x "Waiver bottom-20% Counties" x "Linear change rate") is negative, meaning that the "Waiver Bottom-20%" counties on average decreased number of entries in Study Period 3 at a faster rate than the non-Waiver counties by .17 entries per quarter, the difference is not statistically significant.
- With regard to the comparison between Waiver Type 2 counties (i.e., middle 60%) and the non-Waiver counties, the model shows positive impact of Waiver Demonstration. Controlling for economic climate, MRS implementation, DSS level, NC region, and percentage of minority population, the Waiver Type 2 counties decreased the number of entries at a rate faster than the non-Waiver counties during Study Period 3. Specifically, other things being equal, the Waiver Type 2 counties decreased the number of entries 0.36 more per quarter than the non-Waiver counties in this period, and the difference is statistically significant ($p<.05$).
- With regard to the comparison between Waiver Type 3 counties (i.e., top 20%) and the non-Waiver counties, the model shows positive impact of Waiver Demonstration. Controlling for economic climate, MRS implementation, DSS level, NC region, and percentage of minority population, the Waiver Type 3 counties decreased the number of entries at a rate faster than the non-Waiver counties during

Study Period 3. Specifically, other things being equal, the Waiver Type 3 counties decreased the number of entries 1.25 more per quarter than the non-Waiver counties in this period, and the difference is statistically significant ($p<.05$).

Table 1: Estimated Linear Change Model by Type of Comparison

Variable and Effect	Waiver Bottom 20% Versus Non-waiver	Waiver Middle 60% Versus Non-waiver	Waiver Top 20% Versus Non-waiver
Fixed Effect			
Intercept	15.54 *	1.61	17.00 *
Linear change rate (per quarter)	-.06	-.03	-.00
Period (Jul. 2002 to Dec. 2004 is the reference)			
Jul. 1998 to Jun. 2002	-2.09 **	-1.78 *	-1.34 *
Jan. 2005 to Jun. 2007	1.17 +	1.22	.98
Program (Non-Waiver Counties)			
Waiver bottom-20% Counties	-4.60		
Waiver middle-60% Counties		8.07 *	
Waiver top-20% Counties			2.06
Unemployment rate	-.02	-.04	.01
MRS implementation (absence is the reference)			
Presence	-.46	-.87	-.71
DSS level (Level 2 is the reference)			
Level 1	-6.69 *	-4.01	-5.10
Level 3	16.34 *	38.58 **	21.61 **
NC region (Region 8 is the reference)			
Region 1	-9.39	-7.39	-10.16
Region 2	-3.91	2.13	-8.22
Region 3	4.97	12.98	3.11
Region 4	-5.54	7.26	-.75
Region 5	-3.60	3.46	-4.63
Region 6	-.55	8.09	-3.51
Region 7	-5.67	2.08	-5.81
Percentage of minority in 2005	.14	.26 *	.04
Interaction:			
"Jan. 2005 to Jun. 2007" x "Waiver bottom-20% Counties"	5.61		
"Jan. 2005 to Jun. 2007" x "Waiver bottom-20% Counties" x "Linear change rate"	-.17		
"Jan. 2005 to Jun. 2007" x "Waiver middle-60% Counties"		13.30 *	
"Jan. 2005 to Jun. 2007" x "Waiver middle-60% Counties" x "Linear change rate"		-.36 *	
"Jan. 2005 to Jun. 2007" x "Waiver top-20% Counties"			39.01 **
"Jan. 2005 to Jun. 2007" x "Waiver top-20% Counties" x "Linear change rate"			-1.25 **
Random Effect (Variance Component)			
Intercept	63.53 **	121.06 **	67.39 **
Linear time (quarter)	.06 **	.15 **	.06 **
MRS implementation	6.10 +	13.86 *	4.92
N (number of Waiver Counties, number of Non-waiver Counties)	(7, 34)	(24, 34)	(7, 34)

** p<.001, * p<.05, + p<.10, two-tailed test.
Reference group for categorical variable is shown in the parenthesis.

Conclusion

Three limitations are embedded in the aggregate-level examination of caseload dynamics. First, the analysis employed a covariance control method rather than a more rigorous analysis of causality, and therefore, is prone to extraneous factors threatening to internal validity. Still,

the method cannot reveal causal impacts of the Waiver intervention, as would have been done by a randomized clinical trial. Second, the study only employed a measure of DSS level to control for population size. A more direct control of population size, for instance, by using the number of entries per 10,000 population aged 0-18 years old for each study quarter, would show more accurate findings. Finally, the study only employed a limited number of variables as predictors and is prone to hidden selection bias.

With these limitations kept in mind, we now can conclude the main findings. The study suggests that Waiver Demonstration intervention do have impacts on reducing the number of entries for the Type 2 and 3 Waiver counties. The most important finding is that these two types of counties had a negative (i.e., downward) change rate during the third study period. Although these Waiver counties had a higher level of placement caseload than the comparison counties, they started to decrease the number of entries into placement at a faster rate than the comparison counties since January 2005.

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Wulczyn, F. (1996). "A statistical and methodological framework for analyzing the foster care experiences of children", *Social Service Review 70(2):*318-329.

Appendix D.1: Curve Smoothing Methods

In order to remove random fluctuations and thereby reveal trends in the time-series data, we tested the following techniques of curve smoothing (Fox, 2000; Pindyck & Rubinfeld, 1998; SAS, 1995). The quarterly data of number of entries into placement for all comparison counties were used in the testing.

1. *Simple moving averages* This technique weights each period (quarter for this study) equally. The method can be expressed by the following equation:

$$MA_t=(1/n) * (Y_t + Y_{t-1} + \ldots + Y_{t-n+1})$$

where Y_t is the observed value at quarter t for time series Y under smoothing, MA_t is the resultant moving-average value for quarter t, and n is the number of quarters chosen to take the average. We tested two values for n: 3 (labeled as **m3**) and 5 (labeled as **m5**). Figure A1 shows results of smoothing using this method.

2. *Weighted moving averages* This technique weights each period differently. The method can be expressed by the following equation:

$$WMA_t= [nY_t + (n-1)Y_{t-1} + (n-2) Y_{t-2} +\ldots+ 1Y_{t-n+1}]/[n+(n-1)+\ldots+3+2+1]$$

where Y_t is the observed value at quarter t for time series Y under smoothing, WMA_t is the resultant value of weighted moving average for quarter t, and n is the number of quarters chosen to take the average. We tested two values for n: 3 (labeled as **wm3**) and 5 (labeled as **wm5**). Figure A2 shows results of smoothing using this method.

3. *Exponentially weighted moving averages* This is a compact and simple approach to calculating a weighted moving average with declining weights. The method can be expressed by the following equation:

$$EWMA_t= wY_t + (1-w)EWMA_{t-1}$$

where Y_t is the observed value at quarter t for time series Y under smoothing, $EWMA_t$ is the resultant value of exponentially weighted moving average for quarter t, and w is a smoothing factor specified by users. In this study, we tested two values for w: 0.6 (labeled as **ewma6**) and 0.75 (labeled as **ewma75**). Figure A3 shows results of smoothing using this method.

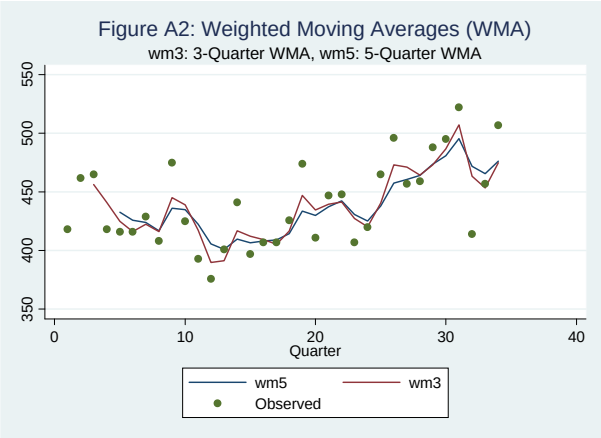
4. *Locally weighted regression using a tricube kernel (lowess)* This method constructs a smooth local linear regression with estimated β_0 and β_1 that minimizes:

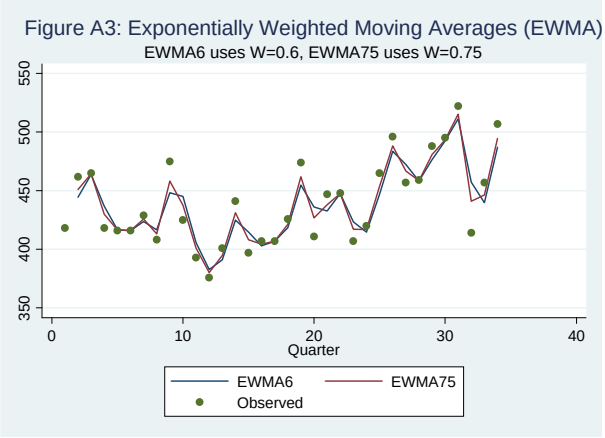
$$\sum_1^n [Y_i - \beta_0 - \beta_1(x_i - x_0)]^2 K(\frac{x_i - x_0}{h})$$

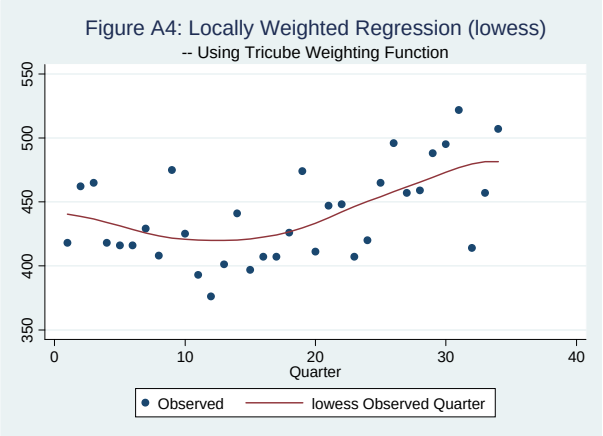
where Y_i is the smoothed value for the i^{th} observation, x_0 is a local point under smoothing, x_i is the observed value for the i^{th} observation, h is a bandwidth specified by users, $K_i=(x_i-x_0)/h$ is a *tricube* kernel function taking values depending on z where $z = (x_i-x_0)/h$:

$$K_i(\frac{x_i - x_0}{h}) = \begin{cases} (1-|z|^3)^3 \ldots\ldots\ldots for |z|<1 \\ 0 \ldots\ldots\ldots\ldots\ldots for |z|\geq 1 \end{cases}$$

Figure A4 shows results of smoothing using this method (labeled as **lowess**).

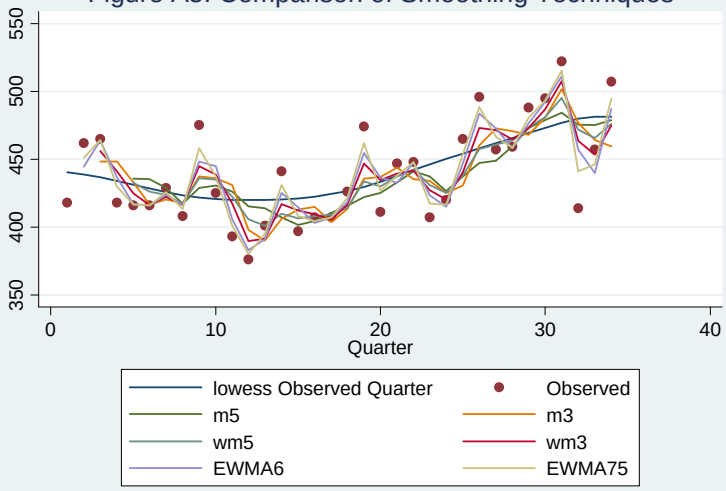






The above figures show that each of the methods smoothes a curve to some extent, with the exponentially weighted moving averages does the least, and *lowess* does the most. Figure A5 is a comparison of all four methods. In our study, we are most interested in trends of a given time series, while least concern about temporary changes. Therefore, we have chosen *lowess* as our smoothing method throughout the study.

Figure A5: Comparison of Smoothing Techniques



APPENDIX E:

Exhibit E.1. Results of Cox Proportional Hazards Model of Exit Within One Year

	Dichotomous Waiver Variable	Three-Level Waiver Variable (Waiver counties only)
Cases		
Available		
Event	14928	8982
Censored	20807	14314
Total	35735	23296
Variables **Odds Ratio (Significance)**		
Gender (reference=male)		
Female	.99 (.45)	.99 (.46)
Age (reference=0-1)		
2-5	**1.18 (.00)**	**1.18 (.00)**
6-11	**1.18 (.00)**	**1.22 (.00)**
12-14	**1.25 (.00)**	**1.31 (.00)**
15-17	**1.52 (.00)**	**1.66 (.00)**
Race (reference=White)		
Black	**.95 (.01)**	**.90 (.00)**
Hispanic	**1.20 (.00)**	**1.12 (.00)**
Other	.94 (.06)	**.88 (.01)**
Level (reference=Small)		
Medium	.99 (.62)	.96 (.26)
Large	**.76 (.00)**	**.77 (.00)**
MRS entry (reference=Pre-MRS)		
1st year	**.90 (.00)**	**.80 (.00)**
2nd year	**.87 (.00)**	**.71 (.00)**
3rd or later year	**.87 (.00)**	**.71 (.00)**
Waiver (reference=Waiver)		
Comparison		N/A
Waiver (reference=Top 20%)		
Comparison	N/A	
Bottom 20%		
Middle 60%		
Fiscal Year (reference=2001)		
2002		
2003		
2004		
2005		
2006		
2007		
Fiscal Year * Waiver[1]	***Sig.=.027^***	***Sig.=.001^***

^ Since the Fiscal Year * Waiver interaction term is significant, combined parameter estimates are calculated and presented in Exhibits 3.8 and 3.9.

Exhibit E.2 Results of Cox Proportional Hazards Model of Exit for Children still in Placement at Two Years

	Dichotomous Waiver Variable	Three-Level Waiver Variable (Waiver counties only)
Cases		
Available		
Event	3907	3012
Censored	3139	2221
Total	7046	5233
Variables **Odds Ratio (Significance)**		
Gender (reference=male)		
Female	1.02 (.62)	1.04 (.35)
Age (reference=0-1)		
2-5	**.84 (.00)**	**.85 (.00)**
6-11	**.52 (.00)**	**.50 (.00)**
12-14	**.39 (.00)**	**.36 (.00)**
15-17	**.20 (.00)**	**.18 (.00)**
Race (reference=White)		
Black	**.78 (.00)**	**.80 (.00)**
Hispanic	.94 (.35)	.96 (.62)
Other	.94 (.37)	.86 (.07)
Level (reference=Small)		
Medium	.99 (.84)	1.00 (.99)
Large	1.05 (.37)	1.00 (.96)
MRS entry (reference=Pre-MRS)		
1st year	.94 (.29)	.93 (.23)
2nd year	.92 (.27)	.97 (.70)
3rd or later year	1.08 (.55)	1.06 (.59)
Waiver (reference=Waiver)		N/A
Comparison	**.82 (.01)**	
Waiver (reference=Top 20%)		
Bottom 20%	N/A	1.15 (.51)
Middle 60%		1.03 (.75)
Fiscal Year (reference=2001)		
2002	.94 (.30)	.86 (.20)
2003	.94 (.33)	.77 (.04)
2004	.98 (.78)	1.04 (.74)
2005	.92 (.33)	1.07 (.65)
2006	.68 (.31)	1.48 (.18)

Exhibit E.3 Results of Cox Proportional Hazards Model of Reentry Within One Year

	Dichotomous Waiver Variable	Three-Level Waiver Variable
Cases		
Available		
Event	1279	704
Censored	24964	15334
Total	26243	16038
Variables **Odds Ratio (Significance)**		
Gender (reference=male)		
Female	1.04 (.52)	1.01 (.85)
Age (reference=0-1)		
2-5	.91 (.27)	.90 (.35)
6-11	.90 (.19)	.92 (.46)
12-14	**1.64 (.00)**	**1.76 (.00)**
15-17	**1.43 (.00)**	**1.70 (.00)**
Race (reference=White)		
Black	1.10 (.11)	**1.19 (.04)**
Hispanic	.93 (.49)	1.13 (.45)
Other	**.70 (.01)**	**.43 (.00)**
Level (reference=Small)		
Medium	1.05 (.60)	1.02 (.85)
Large	**.73 (<.01)**	**.67 (.00)**
MRS entry (reference=Pre-MRS)		
1st year	.89 (.25)	.99 (.99)
2nd year	**1.25 (.04)**	1.15 (.33)
3rd or later year	.92 (.55)	.92 (.62)
Waiver (reference=Waiver)		
Comparison		N/A
Waiver (reference=Top 20%)		
Bottom 20%	N/A	1.64 (.15)
Middle 60%		1.06 (.82)
Fiscal Year (reference=2001)		
2002		1.46 (.18)
2003		1.56 (.11)
2004		.96 (.89)
2005		1.26 (.44)
2006		1.27 (.49)
Fiscal Year * Waiver	***Sig=.012^***	ns

^ Since the Fiscal Year * Waiver interaction term is significant, combined parameter estimates are calculated and presented on a separate chart

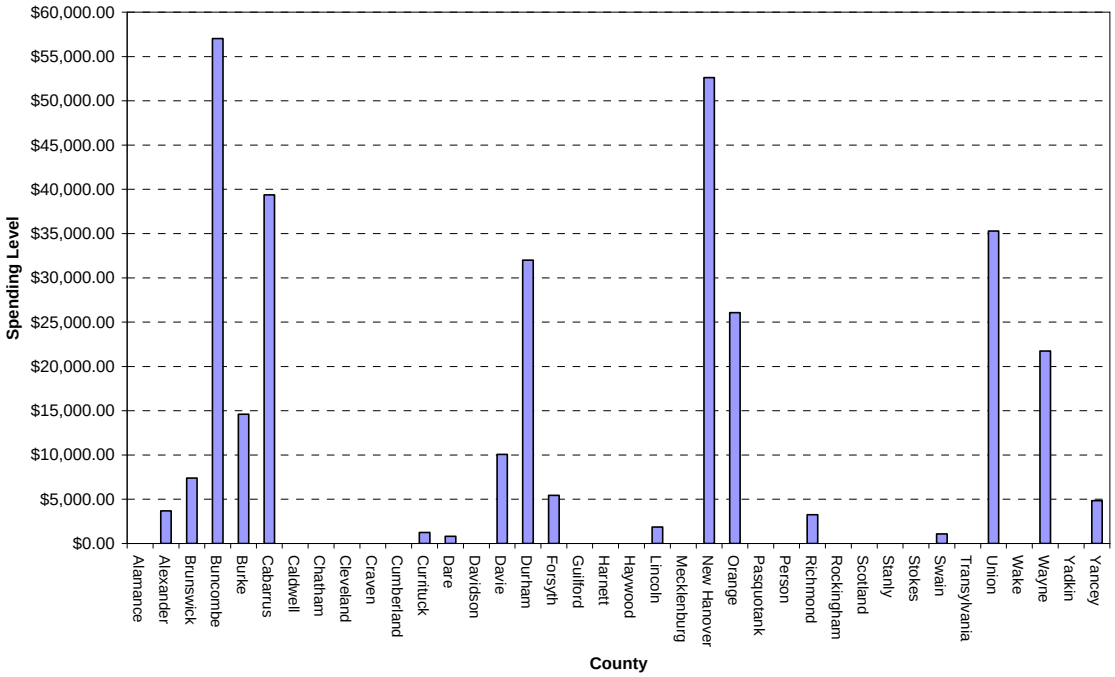
Appendix F: County Spending Patterns: Reinvestment and Flexible Spending

Reinvestment Spending. Through the use of federal Title IV-E dollars to cover the cost of the standard board rate in licensed care for children who are not IV-E eligible, local funds are freed up in Waiver counties. The Waiver counties can use these local dollars or "reinvest" to draw down new IV-E funds to provide services that address the goals of the demonstration. The services can be provided to both IV-E and non IV-E eligible children. Exhibit E.1 reports the federal share of reinvestment spending by the 38 Waiver counties.[12] As the exhibit indicates, 20 of the 38 counties did not have any reinvestment spending. According to the exhibit, Buncombe County had the highest amount of reinvestment spending at $57,022.74. New Hanover also had a large amount at $52,632.36. Three additional counties—Cabarrus, Durham, and Union—had more than $30,000 in reinvestment spending while two—Orange and Wayne—had more than $20,000 in reinvestment spending. The federal IV-E dollars used in reinvestment spending must be matched on a 50%/50% basis with local funds. An expenditure of $57,000 in federal IV-E dollars in reinvestment spending obtained services that cost $114,000. The total federal share of reinvestment spending in the second phase of the Waiver through the end in December 2006 is $318,456.

Exhibit 4.20 shows the amount of reinvestment spending on children who are eligible for Title IV-E services. As the exhibit indicates, all counties that used reinvestment funds used at least part of the funds for IV-E eligible children. The exhibit shows that Buncombe County spent more than $40,000 in federal IV-E dollars on providing the services. With a 50%/50% match rate between federal and local funds for these reinvestment dollars, which indicates that the total cost of services to these children exceeded $80,000. New Hanover County spent more than $27,000 in federal IV-E dollars on reinvestment services, while Durham County spent more than $17,000.

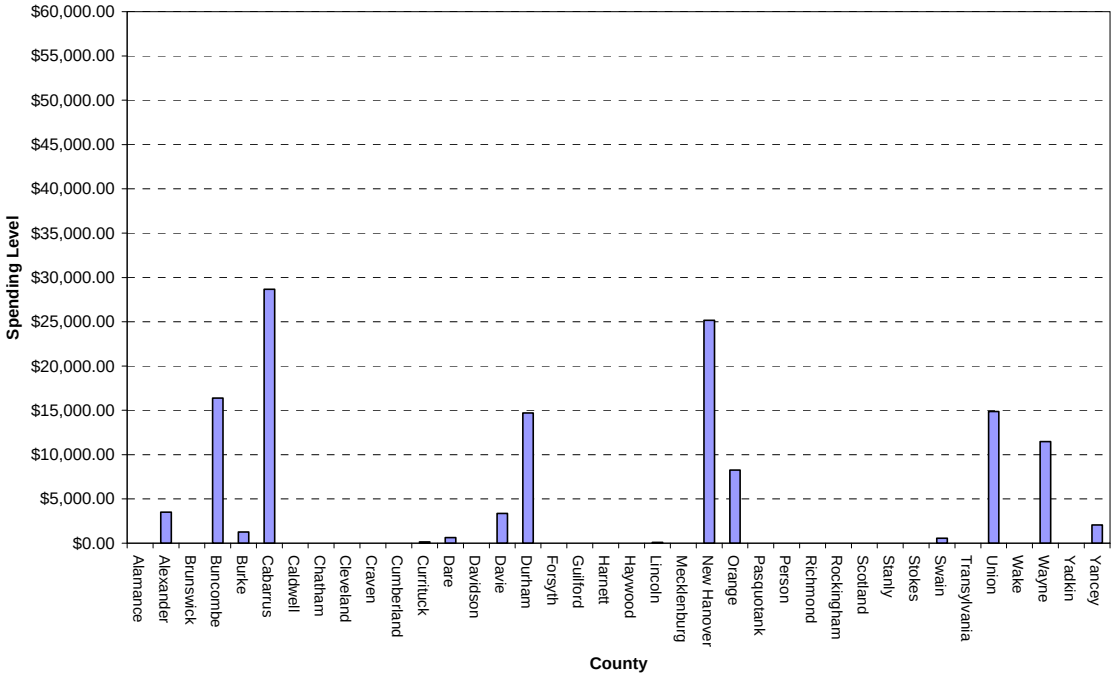
[12] This analysis of reinvestment spending is based on extracts of information from financial information systems maintained by the NC DHHS Controller's Office. Reinvestment spending is tracked in the systems through the use of application codes 60 (for IV-E eligible children) and 61 (for children who are not eligible for VI-E services).

Exhibit 4.19: Federal IV-E Share of Reinvestment Spending by Counties



Fifteen of the 18 counties that exploited reinvestment spending used those funds for services for children who were not otherwise IV-E eligible. The federal share of reinvestment spending for non-IV-E eligible children is shown in Exhibit 4.21. The federal IV-E share of spending for these children ranged from $28,675.63 in Cabarrus County to $80.54 in Lincoln County, an amount so small that it barely registers on the chart. Several of the counties—like Lincoln—spent a relatively small amount in providing services to these children. These include Currituck, which spent about $165, Dare, which spent about $636, and Swain, which spent about $569. Buncombe County's $16,387 for these children represents about 28.7% of its reinvestment spending, while Cabarrus' spending for these children represents 72% of its reinvestment expenditures.

Exhibit 4.21: Federal Share of Reinvestment Spending for Children who are Not IV-E Eligible



Flexible Spending. In addition to reinvestment spending, Waiver demonstration counties can use a mixture of federal IV-E and state and local funds in "flexible" spending. These expenditures also can be used to purchase services for children who are eligible for IV-E services as well as for children who do not meet IV-E eligibility criteria. Generally, Waiver counties can use flexible spending to provide such things as housing or utility deposits or to purchase items intended to meet one or more outcomes of the Waiver. As Exhibit 4.22 indicates, counties tend to use flexible funds substantially more than they use reinvestment funds. Since each $50 in federal IV-E flexible funds must be matched by $25 in state funds and $25 in local funds, the amount illustrated in the chart shows only half the total cost of the services obtained. Of the 38 counties in the Waiver, 31 used flexible funds. Several of the counties used such a small amount of flexible funds that they barely register on the exhibit. These include Burke ($2,095), Durham ($192), Pasquotank ($2,327), Person ($2,116), Scotland ($657), and Stanly ($2,332). Forsyth County used more flexible funds than any other county, almost twice as much as the next closest county in flexible spending, New Hanover. Buncombe County used more than three times as much in flexible spending as it did in reinvestment

funds. The total federal cost of flexible spending during phase two of the Waiver is about $3,160,000.

Exhibit 4.22: The Federal Share of Flexible Spending in Waiver Counties