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Abstract

Objective: This study assessed the effects of unified family and drug treatment courts (DTCs) on the resolution of cases involving foster care children and the resulting effects on school performance. **Method:** The first analytic step was to assess the impacts of presence of unified and DTCs in North Carolina counties on time children spent in foster care and the type of placement at exit from foster care. In the second step, the same data on foster care placements were merged with school records for youth in Grades 3–8 in public schools. The effect of children’s time in foster care and

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placement outcomes on school performance as measured by math and reading tests, grade retention, and attendance was assessed using child fixed-effects regression. **Results:** Children in counties with unified family courts experienced shorter foster care spells and higher rates of reunification with parents or primary caregivers. Shorter foster care spells translated into improved school performance measured by end-of-grade reading and math test scores. Adult DTCs were associated with lower probability of reunification with parents/primary caregivers. **Conclusion:** The shortened time in foster care implies an efficiency gain attributable to unified family courts, which translate into savings for the court system through the use of fewer resources. Children also benefit through shortened stays in temporary placements, which are related to some improved educational outcomes.

Keywords

child welfare, crime and justice (adult and juvenile), education

Introduction

During the last 20 years, specialty courts have increasingly emerged as a public policy response to complex societal issues, such as child abuse, neglect, and dependency, divorce and custody issues, domestic violence, criminal behavior related to mental illness or substance use, and driving while intoxicated. Advocates of specialty courts argue that they are a worthwhile and beneficial alternative to the traditional judicial system (Holst 2010; Rempel, Fox-Kralstein, and Cissner 2004). Specialty courts often have heterogeneous objectives and approaches; one important distinction relates to treatment. Many types of specialty courts offer therapeutic services, while others do not. Therapeutic courts aim to improve dimensions of personal health such as treating mental health or substance use problems, but not to the exclusion of increased court efficiency. For nontherapeutic specialty courts, the primary goal is to increase court efficiency, such as decreasing time to case resolution through specially trained judges and court staff. Enhanced efficiency may itself improve outcomes since judicial and other administrative delays can lead to uncertainty, stress, disruptions in routines, and even more long-standing adverse outcomes for the parties involved.

One area of law where the issues are particularly complex is child welfare and parental rights. Cases in this area may arise in either a criminal or

civil court and affect all members of a family unit. Families involved in these cases often have multiple service needs related to substance use, mental and physical health, domestic violence, housing, income, and transportation (Chambers and Potter 2008). A particularly vulnerable population to enter the courts is youth in foster care. To date, there has been little research on the role of courts in achieving the permanency and well-being of youth in foster care (Courtney and Hook 2012; Jellinek et al. 1992). Further, there is little evidence on how decisions related to case resolution, for example, time spent in foster care, affect academic performance of youth who have experienced foster care.

This study evaluated the effects of unified family and drug treatment courts (DTCs) on educational outcomes of children placed in foster care. This was done with analysis of North Carolina data on individual foster care children merged with data on school records at the pupil level. In North Carolina, when a county does not have a unified family court, juvenile and civil domestic relations cases are heard in courts of general jurisdiction. In these counties, a single domestic action involving a family may be heard by several judges. This study included all North Carolina counties, a state with 23 unified family and 39 DTCs in 2008. During this study's observational period, 1997–2008, there was appreciable growth in all court types included in this study.

This study had two main hypotheses. First, specialty courts, in particular unified family courts, will “improve” how cases involving youth in foster care are resolved. Specifically, specialty courts are hypothesized to reduce the amount of time youth spend in a temporary foster care placement, increase reunification with the primary caregiver, or increase adoption. Second, “improved” outcomes for youth in foster care will lead to improved school performance. A shorter time in foster placement, ending with, for example, reunification with a parent or adoption, is hypothesized to be associated with better school performance. Longitudinal data allowed for the assessment of child school performance before, during, and after a foster care placement. Having longitudinal data on individual children made possible the inclusion of individual child fixed effects to account for time-invariant child/family-omitted heterogeneity, which if not controlled, could lead to confounding. While previous studies have often been based on small and localized samples, this research used longitudinal data from an entire state.

Rather than considering court outcomes independent of their downstream effects, this study assessed court-specific endpoints as well as how these endpoints affect children in terms of their school outcomes. This study compared school outcomes for youth in foster care using a sample of youth

who experienced foster care with youth who experienced foster care and exited by various means. This is in contrast to previous studies, which compared the academic performance of youth in foster care with similarly aged youth from the general population. Youth in foster care tend to be from families of lower socioeconomic status (Jonson-Reid, Drake, and Kohl 2009), a risk factor for poor academic performance (Nikulina, Widom, and Czaja 2011).

The key findings from this study are counties with unified family and juvenile DTCs had reduced time to permanent placement and increased rates of reunification with parents or other primary caregivers (e.g., grandparents) relative to counties without such courts. Since unified family courts treat all eligible persons in their jurisdictions, each foster child is within the scope of these courts. Nevertheless, presence of an adult DTC made placement with parent/other primary caregiver less likely. Reduced time to placement was associated with improved educational outcomes.

Unified Family Courts

Unified family is one type of specialty court that deals with youth and families involved with the child welfare system. The major goal of unified family courts is to consolidate all issues involving a single family in one place with one management team consisting of judges and court staff. Issues within the scope of family courts include child custody, divorce, equitable division of property, and juvenile delinquency charges (Domitrovich 1998; N.C. Administrative Office of the Courts 2006). Some states include criminal cases involving family members, but the emphasis on punishment is contrary to a family courts emphasis on rehabilitation and the best interests of the children (Schepard and Bozzomo 2003). In principle, a unified family court can be more efficient than a court of general jurisdiction in eliminating judicial duplication and improving coordination among various agencies and service providers. Having specialized judges with expertise may allow unified family courts to evaluate the merits of arguments better than lay juries or unspecialized judges (Babb 1998; Tsai 2000).

A type of case frequently appearing in such courts involves placement of children in foster care. The time a child spends in temporary foster placement may adversely affect the child's health, behavioral, educational, and cognitive outcomes (Leslie et al. 2010; McGlade, Ware, and Crawford 2009; McNichol and Tash 2001; Stone 2007; Wulczyn, Smithgall, & Chen, 2009). This is one reason that court efficiency is important to child welfare. The importance of efficiency is reflected in results of a case review study of

366 young children in state custody. In that study, judicial processes resulting in delays in completion of various steps (e.g., adjudication and order of a treatment plan) increased length of time youths remained in foster care (Potter and Klein-Rothschild 2002) as did court continuances (Miller 2004). It is in the public interest to better understand the process of court decisions and the long-term impacts on children.

Adult DTC

DTCs specialize in treating persons charged with committing a crime and are also addicted to or otherwise experience problems with drugs or alcohol. The most common type of DTC is the adult DTC. The primary referral source for adult DTCs is an agent of the criminal justice system (e.g., judge, prosecutor, defense attorney). These courts represent a major initiative to reduce rates of rearrest for substance abuse and drug-related behaviors (Shaffer 2011). They were established to provide offenders with treatment options, to be used in lieu of or conjunction with the typical punitive course (Hora 2002). While effective in treating addicted offenders, strict eligibility requirements result in DTCs treating only a small portion of offenders with a substance use problem (Brown 2010). Unlike unified family courts, adult DTCs do not generally focus on children involved with social services or their families, but family DTCs and juvenile DTCs do.

Family DTCs

A type of DTC that focuses on substance abuse issues as they affect families is the family DTC. In contrast to adult DTCs, which obtain referrals from the criminal justice system, family DTCs in North Carolina obtain referrals from the civil system, specifically for cases involving abuse, neglect, or dependency. The function of these courts is to use the retaining or regaining custody of children as a carrot for successful substance use treatment.

There is evidence from prior studies that suggest that children of adults who enroll in family DTCs spend less time in foster care and experience higher rates of reunification with parents than other adults with similar substance abuse problems (Bruns et al. 2012; Green et al. 2007; Worcel et al. 2008). However, these findings were based on data from a small sample of courts. Another limitation of prior studies is their limited geographic scope. For example, using data from a single county study, Ashford (2004) reported that the children of parents who participated in a family drug court program received a permanency decision sooner and were more likely to be reunified with their

families than children of parents who either refused treatment or participated in the “treatment as usual” group. A study using data from a single city documented that children of families in a family drug court had a mean stay in foster care of 50 days less than the comparison group and were more likely to be reunified with their parents (Burrus, Making, and Finigan 2011).

Juvenile DTCs

Similar to adult and family DTCs, juvenile DTCs focus on treatment of addiction; however, juvenile drug courts focus on the addiction of the youth. These courts, as with adult DTCs, have gained popularity and there are currently more than 500 active programs across the country (McCart et al. 2012; Salvatore et al. 2010). Participants in juvenile DTCs, like adult DTCs, enter from the criminal justice system. Unique to juvenile DTCs is the emphasis on early identification and referral as well as treatment plans that address school, behavioral, and family needs in addition to treatment of the underlying substance use problem (Ives et al. 2010). Another feature of the juvenile DTC is the involvement of the family in the promotion of the participant’s treatment. Often family members, usually the mother, attend court with the youth participant, and are active in the youth’s recovery; a factor some studies have tied to the success of the participant (Salvatore et al. 2010; Waldron and Turner 2008; Williams and Change 2000).

Evaluations of these courts, to date, have focused on the reduction in criminal behavior and recidivism of the youth participants (Henggeler et al. 2006; Stein, Deberard, and Homan 2012). Meta-analytic reviews of juvenile DTCs have yielded mixed results (McCart et al. 2012). However, a recent study by Schaeffer et al. (2010) examined the reduction in risk factors of youth in both family courts and juvenile drug courts. This study found that youth receiving services through family court showed improvement in only one area—peer delinquency—while those in the juvenile drug court had increased parental supervision and significant declines in time spent with peers engaging in drug activities (Schaeffer et al. 2010). Absent from existing studies are the relationship of juvenile DTCs with education outcomes and foster care placement.

Juvenile DTCs have the potential to play a significant role in the outcomes of youths in foster care as many of the youth participants have several separate but interrelated problems, such as child welfare, special education, or juvenile justice, without having coordination between the different services provided (Linden et al. 2010).

Method

Our empirical analysis involved two sequential steps. The first step examined relationships between foster care placement outcomes, time in foster care and type of permanent placement at foster care exit, and presence of specialized courts in the county, that is, provided empirical tests of the first study hypothesis. The second step examined relationships between the placement outcomes and measures of child school performance, thus allowing us to test the second hypothesis.

Step 1: Measuring Court Efficiency: Effect of Court Implementation on Time Children Spent in Foster Care and Destination Following Foster Care Exit

Overview. Analyses were designed to examine effects of a county implementing a family court or DTC on (1) the length of time youth spend in foster care and (2) whether at exit from foster care, the child was reunified with a parent or primary caregiver or adopted. Data came from a statewide sample of foster care placements from 1997 to 2008. A more efficient court process should lead to fewer delays in hearings and a more expeditious decision-making process after initiation of judicial review.

Data. Data on foster care placements and exits came from the Client Services Data Warehouse, a data repository maintained by the North Carolina Department of Health and Human Services. The data were recorded on form 5094 of the Child Placement and Payment System and document the reason/reasons the child was placed into state custody, the child's living arrangements while in foster care, and when and how the child exited foster care (North Carolina Department of Health and Human Services 2008). Data also included child demographics and characteristics of the removal home.

Using the NC Administrative Office of the Courts website, the research team compiled information describing if and when each type of specialty court was operating in a county. Other county-year data used in this analysis came from Log into North Carolina (Linc), a web-based data portal, and other official state sources.

Sample. The first step of the analysis was to select an analytic sample. The source data included information on 71,834 child placements. Cases were omitted due to missing data on county-level health and human services expenditures ($n = 925$), termination reason ($n = 4,200$), and because the

date that the foster care placement ended preceded the placement's beginning date ($n = 47$). This resulted in 66,662 child placements. To avoid statistical complications that occur when observations are not independent, the sample was restricted to one observation per child by selecting the child's first observed placement into foster care. The final sample included 61,540 unique children.

Analysis. Ordinary least squares regression with county-fixed effects and robust standard errors was used. The equation for each outcome (Y_i) for foster care child i was:

$$Y_i = \alpha_0 + \alpha_1 SC_{kt} + \alpha_2 X_i + \alpha_3 C_{kt} + \mu_k + \mu_t + \varepsilon_i$$

The dependent variables (Y_i) were (1) the length of time a youth spent in foster care, (2) probability of reunification, and (3) probability of adoption. The omitted reference groups for reunification and adoption were the other permanent exit types. The subscripts identified the child (i), the county (k), and the year (t). The analysis included fixed effects for county (k) in which the child was placed (μ_k) and placement year (μ_t). The random error term is ε_i . There are 100 counties in North Carolina; t varied from 1 to 12 reflecting the 12 years of data included in the sample. The model also included time-varying county characteristics (C_{kt}) as explanatory variables.

Reunification and adoption were analyzed using linear probability model (LPM), which produces similar marginal probabilities as the probit or logit models that are often used for binary outcomes (Wooldridge 2001). The advantage of the LPM is that it is computationally more efficient, a key factor given the large sample size in these analyses.

Dependent Variables (Y_i). Time to exit from foster care was calculated as placement end date minus entry date divided by 365.25. Placements were right censored at 2 years; thus, values ranged from 0.0 to 2.0. Placements that did not have a termination date were excluded from the analysis. This analysis examined two ways that youth exit foster care—reunification with a parent or primary caregiver and adoption. Reunification with parent/primary caregiver and adoption are the two most common exit types constituting 42.0% and 20.4% of the exit reasons.

Explanatory Variables. The main covariates of interest were the presence of each type of specialty court in a county in the year in which the child was placed into foster care (SC_{kt}). The specialty court variables were four

nonmutually exclusive binary variables indicating presence of a specific type of specialty court including unified family court, adult DTC, family DTC, and juvenile DTC. Family DTCs involve the entire family in attempting to solve substance use/abuse of one or more adult family members. Such courts are often called *family dependency treatment courts* since the goal is to provide a safe and nurturing environment for the child by dealing with an adult's substance abuse problem (Chuang et al. 2012). Juvenile DTCs focus on the substance use/abuse of minors. Table 1 describes the coding of the remaining explanatory variables in the models.

The next group of explanatory variables (X_i) described child characteristics. Child demographic characteristics including age, gender, and race–ethnicity have been widely studied as predictors of length of stay and exit type in foster care (see Akin 2011 for a review). In general, older youth are less likely to exit to any type of permanent placement (Simmel 2012). Most, but not all studies, have found that African American youth are less likely to be reunified or adopted than White or Hispanic youth (Akin 2011). Most studies do not find that gender predicts differences in permanency; however, a few studies find that girls are more likely to exit from a permanent placement than boys (Akin 2011). Other research has suggested that youth in foster care with physical and mental health problems tend to have longer stays in foster care and are less likely to be reunified with their parents (Akin 2011; Connell et al. 2006; Courtney et al. 2001; Hora 2002; Landsverk et al. 1996; Rosenberg and Robinson 2004).

Reasons that contribute to removal from home are also predictive of how long youth spend in foster care and how they exit care (Connell et al. 2006; Shaw 2010). A study by Shaw (2010) found that youth who experienced sexual abuse or physical abuse were reunified with their parents faster than youth who experienced neglect. On the other hand, a child with behavioral problems or substance use delayed reunification. Vanderploeg et al. (2007) found that relative to a matched group of youth, those who were removed from home due to parental substance use spent more time in foster care and were more likely to be adopted.

Characteristics of the removal home may also affect how youth exit foster care. For example, several studies have found that children removed from a single-parent home were less likely to be reunified than children removed from a two-parent home (Shaw 2010). Some research suggests that youth placed in kinship care exit to reunification or adoption at a slower rate than youth in other living environments (Koh 2010).

The analysis controlled for time-varying county-level variables (C_{kt}) for several reasons. First, the environmental contexts affect family behavior

Table 1. Definitions of Explanatory Variables.

Variable	Description	Step 1.	Step 2.
		Foster Care	School Outcomes
Time-varying county characteristics			
County demographics	A series of continuous variables indicating the percentage of the population that is (a) Hispanic, (b) Black, (c) "other" race/ethnicity (non-White, non-Black, non-Hispanic), (d) percentage of children under age 17 living in poverty, (e) the rate of death by violent injury, and (f) the unemployment rate	C_{kt}	C_{kt}
Per capita health and human services expenditures	A continuous variable indicating the amount of spending on health and humans services expenditures per 1,000 people in 2008 dollars	C_{kt}	C_{kt}
Multiple response system	A binary variable indicating that the county had a multiple response system in the county	C_{kt}	C_{kt}
Specialty court	Nonmutually exclusive binary variables for unified family court, youth DTC, adult DTC, and family DTC	SC_{kt}	SC_{kt}
Child characteristics			
Age at placement	Ordinal variable ranging from 0 to 17	X_i	X_i
Child's disability	Nonmutually exclusive binary variables for emotional, mental, physical, vision/hearing, and other (reference = <i>does not have this disability</i>)	X_i	X_i
Child is a parent	<i>Child is a parent</i> = 1 (reference = <i>not parent</i>)	X_i	X_i
Family structure of the removal home	Mutually exclusive binary variables for unmarried couple and single parent (reference = <i>married couple</i>)	X_i	X_i

(continued)

Table 1. (continued)

Variable	Description	Step 1.	Step 2.
		Foster Care	School Outcomes
Free and reduced lunch program	Binary variable indicating (a) the pupil was eligible for the free and reduced price lunch program and (b) eligibility missing (reference = <i>not eligible</i>).		X_{it}
Gender	Male = 1 (reference = <i>female</i>)	X_i	
Living arrangements during placement	Binary variable for the home of parent, relative, or legal guardian. (reference = <i>did not live with parent, relative, or legal guardian</i>)	X_i	
Number of children in removal home	Binary variables for (a) two children and (b) more than two children (reference = <i>one child</i>)	X_i	
Number of living arrangements	Number of living arrangements during the year		$F4_{it}$
Proportion of school year in foster care	A covariate for the fraction of the year in foster care accounted (number of days in care divided by 365)		Fl_{it}
Race/ethnicity	Mutually exclusive variables for Black, Asian, Hispanic, and other (reference = <i>White</i>)	X_i	
Reason for entry into foster care	Mutually exclusive binary variables indicating (a) sexual abuse, (b) physical abuse, (c) parental substance use or mental health problem, (d) child's substance use or behavior, and (e) other (reference = <i>neglect</i>). If multiple reasons then priority was given as ranked above (e.g., sexual abuse had top priority)	X_i	$F2_{it}$
School year after foster care	A binary variable for the school-year after foster care ended was also included		Fl_{it}

(continued)

Table 1. (continued)

Variable	Description	Step 1. Foster Care	Step 2. School Outcomes
School year before foster care	Binary variable for the school-year before the student entered foster care		$F1_{it}$
Type of exit from foster care	Mutually exclusive binary variables for (a) reunification, (b) adopted, (c) custody or guardianship with a relative, (d) custody or guardianship with other court-approved caretaker (nonrelative); and other type of placement which included authority revocation, death of child, emancipation, interstate compact placement agreement, or transfer to another agency. (Reference = <i>did not exit from foster care during the school year</i>)		$F3_{it}$

and circumstances. For example, families living in communities with high unemployment rates may experience greater residential instability and food insecurity and therefore face additional hurdles to regaining custody (Courtney, McMurtry, and Zinn 2004; Jones 1998). Second, the main covariate of interest, counties with specialty courts, is also measured at the county level. Omitting variables that are potentially correlated with the covariate of interest and the dependent variable could bias the parameter estimates on the court variables.

One such time-varying county-level characteristic is the Multiple Response System Program (MRS) that diffused to North Carolina counties during the study's observational period. This program was designed to work in low to moderate risk child maltreatment cases by providing families a range of services designed to protect children while addressing the families' needs. A recent study found that the MRS program reduced child abuse and neglect substantiation rates and reassessment rates (Lawrence, Rosanbalm, and Dodge 2011). Such a program could influence the case mix severity of the youth who experienced out-of-home placements by preventing lower risk cases from entering—in turn this could affect length of time in foster care and exit outcomes.

Step 2: School Outcomes of Youth Spending Some Time in Foster Care

Overview. Research clearly demonstrates that youth who have experienced foster care perform more poorly in school than their peers in the general population (Pecora, Kessler, et al. 2006). However, relatively little research has examined how school performance is influenced by experiences within the foster care system—experiences that are largely determined by subjective decisions made by the court. The second empirical step examined how characteristics of placements that the court can influence, for example, length of time in care, affect school performance.

School performance of third through eighth graders was measured by end-of-grade reading and math scores, grade retention, and days absent during the school year. The study design relied on child-specific fixed effects, implying that each student served has a control for himself or herself (Allison 2009). Thus, the analysis overcame methodological limitations of previous studies that lacked information on the child's prior experiences affecting school performance (Stone 2007).

Data. Information regarding school outcomes came from the North Carolina Department of Public Instruction and includes pupil-level information on

all 3rd through 12th graders enrolled in public school. The analysis sample was limited to youth who had experienced foster care during 1997–2008. Youth leaving for private school or moving to other states were not tracked. Information on pupils, some of which is time varying, included gender, race/ethnicity, age, grade, parental education status, free/reduced lunch status, exceptionality status, and outcomes such as attendance, suspension, third through eighth grade end-of-grade math and reading scores, and grade promotion. Information from students' foster care experiences described in Step 1 were linked to their education data using information on name, birth date, social security number, age, race, and ethnicity. For youth in foster care between the ages of 8 and 14, we matched education records for 82% of cases.

All youth who were in foster care for at least one day between January 1, 1997 and December 31, 2008, and for whom education records were available for at least one school year were included in the analyses. Panel data were constructed whereby the unit of analysis was a student-year. A key aspect of the panel data is that students' school experiences are observed in years that the student was in foster care and in years that the student was not in foster care. To match the school year, a year spanned from July 1 through June 30. The number of unique students varied based on the dependent variable. The statewide standardized math and reading tests were only administered to third through eighth graders. The number of unique students was 24,277 for reading scores, 24,308 for math scores, 25,884 for grade retention, and 16,129 for attendance. Attendance data were not available prior to the 2003–2004 school year, resulting in a smaller sample than for end-of-grade scores or grade retention. Depending on the dependent variable, this corresponds to between 48,626 and 107,003 child/year observations in the analyses.

Analysis. The general estimating equation for the analysis of child school performance was:

$$S_{it} = \beta_0 + \beta_1 F1_{it} + \beta_2 F2_{it} + \beta_3 F3_{it} + \beta_4 F4_{it} + \beta_5 X_{it} + \mu_i + \mu_t + \varepsilon_{it},$$

where S_{it} was a child-year specific measure of school performance, $F1_{it}$ to $F4_{it}$ were measures of presence of the child in foster care ($F1_{it}$), reasons for entry into foster care ($F2_{it}$), type of placement at exit from foster care ($F3_{it}$), number of living arrangements during the school year ($F4_{it}$), and X_{it} measured one time-varying child characteristic—a binary variable for receipt

of free lunch. The binary variables $F1_{it}$ to $F3_{it}$ only took the value 1 in the year to which they applied. The remaining variables measured child (μ_i)- and year (μ_t)-fixed effects and a random error term (ε_{it}).

Dependent Variables (Y_{it}). The dependent variables, all measures of school performance, were standardized math and reading scores; grade retention, a binary variable set to 1 if the pupil was not promoted; and absenteeism, that is, number of days absent in the school year. Each school year, third through eighth graders took a standardized end-of-grade test in math and reading. Math and reading scores were standardized by grade and by year to make test scores comparable across grades and year. The grade retention variable indicated that a pupil was not promoted to the next grade because he or she did not sufficiently master skills or displayed inappropriate behavior.

Explanatory Variables. Three explanatory variables related to the timing of foster care. The proportion of the year in foster care ($F1_{it}$) measured the effect of being in care during the school year. However, the time immediately before entering foster care is likely to be stressful and the time immediately after foster care is associated with a transition that can be disruptive to the pupil. In a study that examined reading trajectories of third through eighth graders in Chicago Public Schools, pupils who were in foster care for the duration of schooling, who entered foster care, or who exited foster care during this time period all experienced slower growth in reading than their classmates who did not enter foster care (Wulczyn, Smithgall, and Chen 2009).

Reasons for entry into foster care ($F2_{it}$) measured why the child was removed from the home. The type of maltreatment that a youth is exposed to differentially affects educational outcomes. For example, in a sample of youth with a report of maltreatment from a small city in New York, youth who were neglected had lower math scores and grades as well as were more likely to repeat a grade than youth who were sexually abused (Eckenrode, Laird, and Doris 1993). A study from a sample in a large county in North Carolina found that youth who had substantiated reports of abuse or neglect during the school year had more school absences (Leiter and Johnsen 1997). In a sample of 195 school-age maltreated children, Kinard (2001) found that children who were frequently or chronically abused tended to have lower math and reading scores. However, the frequency or chronicity of neglect or sexual abuse was not related to these outcomes.

It is not clear what type of exit from foster care ($F3_{it}$) is best for school-age youth. A study of foster care youth from San Diego found that those who were reunified were at increased risk of dropping out of high school

relative to their nonreunified peers (Taussig, Clyman, and Landsverk 2001). Other than reunification, another type of permanent placement following foster care is adoption (Akin 2011). Limited research has focused on the educational outcomes of youth who are adopted during elementary, middle, or high school—however, given recent legislation designed to increase adoption rates (US Department of Health and Human Services 2008), better understanding its impact on youth is of public policy interest.

Disruption in the living arrangements of youth in foster care, measured in our study by the number of living arrangements during the school year ($F4_{it}$) has been associated with negative effects on academic performance. For example, in a study of former foster youth, those who experienced fewer placement changes increased the odds of completing high school (Pecora, Williams, et al. 2006).

Children in families at or below 185% of the federal poverty line are eligible for the free and reduced lunch program (Tribiano 2012). The explanatory variable for eligibility for free or reduced lunch program was included to serve a proxy for changes in family economic circumstances (Elliott 2013).

Analysis for both steps used Stata 11, xtreg command. The Step 2 analysis used option fe for fixed effect and the variance–covariance matrix clustered sandwich estimator (StataCorp 2009). We used ordinary least squares to estimate both equations. Time in foster care may be potentially endogenous to school outcomes for two reasons. First, various unobserved child-specific determinants of school outcomes may be correlated with being in foster care. However, the analysis used child fixed effects. Second, in principle, there could be feedback from the school outcome variables to time in foster care. But in practice, children are not removed from home based on their school performance.

Results

Effects of Specialty Courts on Length of Time in Foster Care and Type of Placement After Foster Care Exit

Descriptive Statistics. The mean length of time youths spent in foster care was 1.09 years (standard deviation [SD] = 0.71). The most common youth exit from foster care was reunification with parent or primary caregiver (42%) followed by adoption (20%).

Twenty-five percent of foster care placements were in counties with a unified family court (Table 2). The presence of an adult DTC in the county was slightly more common (30%). Presence of youth and family DTCs was

Table 2. Resolution of Foster Care Cases.

Explanatory Variables	Mean (SD)	Years in Foster Care	Reunified With Parent or Primary Caregiver	Adopted
Specialty court implementation				
Unified family court	24.7%	-0.080** (0.027)	0.048** (0.015)	-0.025 (0.014)
Adult DTC	29.7%	-0.002 (0.033)	-0.035** (0.013)	0.011 (0.018)
Family DTC	11.9%	0.048 (0.038)	-0.000 (0.014)	-0.008 (0.021)
Juvenile DTC	11.1%	-0.070 (0.040)	0.049* (0.021)	-0.041 (0.023)
Child characteristics (X_i)				
Child's age at placement	7.26 (5.56)	-0.011** (0.001)	0.006** (0.001)	-0.023** (0.001)
Male	49.8%	0.003 (0.006)	0.010* (0.004)	-0.008** (0.003)
Child's race/ethnicity (reference = White)				
Black	38.0%	0.055** (0.012)	-0.015 (0.009)	-0.012 (0.006)
Asian	0.4%	-0.267** (0.062)	0.235** (0.031)	-0.122** (0.036)
Hispanic	8.3%	-0.086** (0.015)	0.078** (0.011)	-0.060** (0.009)
Other	4.9%	0.127** (0.016)	-0.026* (0.011)	0.040** (0.013)
Reason for placement into foster care (reference = neglect)				
Sexual abuse	4.3%	0.125** (0.016)	-0.022 (0.014)	0.035** (0.011)
Physical abuse	8.9%	-0.011 (0.015)	0.050** (0.013)	-0.035** (0.009)
Parental substance use or mental health	37.3%	0.048 (0.013)	-0.048** (0.009)	0.026** (0.006)
Child's substance use or behavior	7.6%	-0.159** (0.034)	0.149** (0.021)	-0.030** (0.007)
Other	3.9%	-0.182** (0.027)	-0.105** (0.018)	0.110** (0.018)
Child's disability (reference = no disability)				
Emotional disability	3.5%	0.181** (0.022)	-0.041** (0.015)	0.001 (0.013)

(continued)

Table 2. (continued)

Explanatory Variables	Mean (SD)	Years in Foster Care	Reunified With Parent or Primary Caregiver	
			Adopted	
Mental disability	1.4%	0.113** (0.023)	-0.050** (0.019)	-0.013 (0.012)
Physical disability	0.9%	0.053 (0.034)	-0.048* (0.019)	0.031 (0.017)
Visual/hearing disability	0.6%	0.055 (0.035)	-0.049* (0.021)	0.015 (0.023)
Other disability	5.2%	0.073** (0.019)	-0.021 (0.014)	0.028 (0.015)
Child is a parent	1.0%	0.037 (0.031)	-0.015 (0.026)	-0.033** (0.011)
Family structure of removal home (reference = <i>married couple</i>)				
Unmarried couple	15.2%	0.041** (0.014)	-0.056** (0.010)	0.026** (0.008)
Single	56.7%	0.028** (0.011)	-0.072** (0.010)	0.019** (0.006)
Unknown	2.7%	-0.182* (0.087)	-0.213** (0.037)	0.000 (0.011)
Number of children (reference = <i>one</i>)				
Two children in removal home	28.2%	0.011 (0.010)	0.060** (0.005)	-0.029** (0.005)
More than two children in removal home	42.8%	0.036** (0.010)	0.074** (0.007)	-0.014* (0.005)
Lived in home of relative during placement	15.3%	-0.458** (0.018)	-0.080** (0.012)	-0.182** (0.010)
Constant		2.752 (1.670)	1.377 (1.206)	0.922 (0.964)
Number of children		61,540	61,540	61,540
R ²		.094	.047	.146

Note. DTC = drug treatment courts.

Robust standard errors in parentheses.

* $p < .05$. ** $p < .01$.

much less common. Thirty-seven percent of children were placed in foster care for reasons for parental substance use or mental health. Half of the children were male and nearly half of the sample was either Black or Hispanic. Few children had documented disabilities.

Results of Regression Analysis. Counties with family courts experienced a reduction in the mean number of years in foster care per placement of 0.080, equivalent to 29 days. Presence of adult, family, and juvenile DTCs in the county did not affect length of time in foster care. Having family courts in the county increased the probability that the child was reunified with a parent/primary caregiver by 0.048 on average. This increase was relative to an observational mean probability of 0.42, an 11% increase.

Adult DTC implementation in a county reduced the probability of reunification with a parent or primary caregiver by 0.035, presumably because the adult was in treatment and/or therapists judged the substance abuse problem to have been not sufficiently resolved to permit placement. Implementation of family DTCs was unrelated to time in foster care and type of permanent placement. Implementation of juvenile DTCs in the county increased the probability of reunification with a parent or primary caregiver by 0.049. Relative to the effects for unified family court implementation, the parameter estimates imply that juvenile DTC presence in a county had a slightly higher effect on the probability of parental/primary caregiver reunification.

Relative to youth who experienced neglect only, time in foster care was longer for youth who experienced sexual abuse, parent substance use, or mental health problems. Again, relative to youth who experienced neglect only, the omitted reference group, reunification with parent or primary caregiver was more likely for youth who had experienced physical abuse or who have substance use or behavior problems. Reunification was less likely for youth whose parents have substance use or mental health problems or who were placed for "other reasons." In general, the reasons for home removal related to increased probability of reunification were associated with a decreased probability of adoption. For example, youth who were physically abused were 3.5% less likely to be adopted than youth who were neglected. Presence of a child emotional or mental health disability increased time in foster care and decreased the probability of reunification. Children with a physical disability or visual or hearing disability were also less likely to be reunified. Youth who are themselves parents were less likely to be adopted.

Relative to youth who lived with a married couple at the time of removal, youth who lived with an unmarried couple or single parent spent more time in foster care, were less likely to be reunified, and were more likely to be adopted. Children from homes with more children were more likely to be reunified and less likely to be adopted than children from homes where they were the only child. Children in homes with more than two children spent more time in foster care than children in only-child homes.

School Outcomes of Youth Placed in Foster Care

Descriptive Statistics. On average, youth in the analysis sample of school outcomes spent nearly a fourth (0.23 years annually) of their time in the third through eighth grades in foster care (Table 3). They had over one living arrangement per 2-year period (0.63 per year). The mean values for time in foster care and for number of living arrangements during the school year are unconditional on being in foster care at all during the year. Adjusting for the fact that 36% of children in the analysis sample were in foster care at all during a year on average, the mean values rise substantially to 64% of a school year in foster care and to 1.75 living arrangements.

Results of Regression Analysis. Children spending time in foster care during the school year performed less well on standardized reading and math scores than children not placed in foster care during the school year and who were not admitted to or released from foster care in an adjacent (either the previous or the next) school year, the omitted reference group. Comparing a child in foster care for the entire school year with a child not in foster care at all during the year, reading scores were reduced by 2.4% of a *SD* on average by continuous presence in foster care. The corresponding reduction in math scores was 4.9%. Added to this is the effect of duration in foster care on reading and math test scores. There was no statistically significant relationship between time in foster care during the year and probability of grade retention. The number of days absent from school fell by 2.1 days comparing a child in foster care for the entire school year with a child not in foster care at all that year.

School outcomes were also adversely affected during both the school year before and the school year after the child was placed in foster care. Reading test scores fell 4.2% of a *SD* in the year before and 4.8% of a *SD* in the year after foster care placement. Scores on math tests were affected similarly. Although grade retention was unaffected during the year of foster care placement, these results imply increased rates of retention in years before and after placement, more so for the former than the latter. Relative to its observational mean, the probability of grade retention was 10% higher in the year before foster care placement.

Children were absent from school 1.49 additional days on average during the school year before placement. In the year after foster care placement, attendance was slightly better. These results imply that much of the effect of foster care placement was a consequence of the disruptions in the home associated with events leading to foster care, consideration of removal from the home by a government agency, and after foster care exit to the stresses of readjustment from the foster care stay.

Table 3. School Performance.

	Mean (SD)	Standardized Reading Score	Standardized Math Score	Grade Retention	Days Absent
Presence in foster care ($F1_{it}$)					
Proportion of year in foster care (days in care/365)	0.232 (-0.377)	-0.024* (-0.011)	-0.049** (-0.011)	0.003 (-0.003)	-2.127** (-0.333)
School year before foster care	9.60%	-0.042** (-0.007)	-0.048** (-0.007)	0.012** (-0.002)	1.485** (-0.229)
School year after foster care	7.50%	-0.037** (-0.008)	-0.027** (-0.008)	0.006** (-0.002)	-0.372 (-0.197)
Reasons for entry into foster care ($F2_{it}$; reference = did not exit foster care during year)					
Sexual abuse	2.40%	-0.049 (-0.029)	-0.024 (-0.029)	-0.004 (-0.008)	-0.628 (-0.683)
Physical abuse	2.80%	-0.046 (-0.028)	0.005 (-0.029)	0.000 (-0.008)	0.614 (-0.718)
Parental substance use or mental health	13.10%	-0.061** (-0.023)	-0.03 (-0.023)	0.009 (-0.007)	0.929 (-0.581)
Child's substance use or behavior	3.90%	-0.127** (-0.027)	-0.146** (-0.027)	0.027** (-0.008)	3.571** (-0.824)
Neglect	12.10%	-0.056* (-0.024)	-0.017 (-0.024)	0.009 (-0.007)	0.49 (-0.589)
Other	1.10%	-0.044 (-0.036)	-0.074* (-0.037)	0.005 (-0.01)	0.269 (-0.975)
Type of placement ($F3_{it}$; reference = did not exit foster care during year)					
Reunited with parent	11.80%	0.042* (-0.021)	0.001 (-0.022)	0.000 (-0.006)	-0.944 (-0.52)

(continued)

Table 3. (continued)

	Mean (SD)	Standardized Reading Score	Standardized Math Score	Grade Retention	Days Absent
Adopted	6.10%	0.028 (-0.025)	0.006 (-0.025)	0.001 (-0.007)	-0.375 (-0.532)
Custody or guardianship of nonremoval parent or relative	6.00%	0.017 (-0.023)	-0.033 (-0.023)	-0.003 (-0.006)	0.969 (-0.544)
Custody or guardianship of other court approved caretaker	1.70%	-0.014 (-0.029)	-0.041 (-0.029)	0.006 (-0.009)	0.901 (-0.831)
Other	5.00%	0.047 (-0.026)	-0.014 (-0.026)	0.004 (-0.008)	1.887* (-0.872)
Number of living arrangements during the year (F_{4i})					
Number of living arrangements during the year	0.625 (-1.03)	-0.007 (0.004)	-0.008* (-0.004)	0.003* (-0.001)	0.869** (-0.132)
Free and reduced lunch program					
Eligible for the free lunch program	74.80%	0.007 (-0.008)	0.027** (-0.008)	-0.005* (-0.002)	0.856** (-0.227)
Constant		3.015**	2.722**	-3.218**	6.685**
Observations		96,880	97,525	107,003	48,626
R^2		.029	.027	.800	.032
Number of unique students		24,227	24,308	25,884	16,129

Note. Grade- and year-fixed effects and free and reduced lunch status missing not shown. Robust standard errors in parentheses. * $p < .05$. ** $p < .01$.

The reading scores for youth placed into foster care due to parental substance use were 6.1% of a *SD*. Child substance use or behavior problems was associated with reductions in end-of-grade reading and math test scores of 12.7% and 14.6% of a *SD*, respectively, a greater probability of grade retention, and an increase in absence by 3.6 days. In general, however, few covariates for reasons for placement were statistically significant.

Being reunified with parent increased by 4.2% of a *SD* but did not affect math scores, grade retention, or attendance. During the year that youth exited foster care to being adopted or placed in custody/legal guardianship, there was no difference in pupils' educational outcomes.

The reading scores for youth placed into foster care due to parental substance use were 6.1% of a *SD*. Child substance use or behavior problems was associated with reductions in end-of-grade reading and math test scores of 12.7% and 14.6% of a *SD*, respectively, a greater probability of grade retention, and an increase in absence by 3.6 days. In general, however, few covariates for reasons for placement were statistically significant.

The number of living arrangements was only significantly and positively associated with an increase in absences, possibly because the transitions among temporary living arrangements increased absenteeism. Eligibility for the free lunch was associated with increased math scores, a slight decrease in the probability of grade retention but an increase in the number of days absent.

Discussion and Conclusion

These results support the hypothesis that unified family courts increase the efficiency of the foster care resolution process. Lengths of temporary placements were reduced by almost a month on average. Reductions in stays in temporary custody were associated with improved school performance by foster care youth, measured in this study by performance on end-of-grade tests, and absenteeism. However, our third measure, retention in grade, had no relation to reductions in foster care stays. Performance on reading tests while enrolled in school has been linked empirically to improved adult labor market outcomes in general (Caspi et al. 1998) and for foster care populations in particular (Currie and Spatz Widom 2010; Hook and Courtney 2011). High absenteeism has been associated with academic disengagement and school dropout (Rumberger 1995).

Foster care children in counties with unified family courts and juvenile DTCs had higher probabilities of being reunified with parents than were those children who experienced other types of exit from foster care. Presence of adult DTCs had the opposite direction of effect from presence of unified family courts on the probability of reunification.

Finding a permanent home for the child has long been a public policy goal. However, recent studies have documented high rates of return to foster care following what was thought to be a permanent placement (Jonson-Reid et al. 2010; Lee, Jonson-Reid, and Drake 2012). Partly for this reason, the policy goal has shifted somewhat from seeking permanency to achieving stability in child living arrangements (Waddell, MacMillan, and Pietrantonio 2004). But the finding that shorter time in temporary custody is associated with improved school outcomes is evidence that delays in permanent placement have negative effects on the child. More generally, the findings of our study indicate that the disruptions prior to and following foster care placement account for much of the negative influence of foster care placement on school performance. Thus, condensing the entire period associated with such placements is a worthy policy goal.

While unified family courts and juvenile DTCs increased the probability of reunification with parents/primary caregivers, whether this is indeed a good outcome is not clear. Taussig, Clyman, and Landsverk (2001) compared outcomes of children over a 6-year period that returned to their biological families after placement in foster care with others. Those reunited with their biological parents had more frequently been arrested, dropped out of school, earned lower grades, and exhibited behavior problems. More recent studies confirm these findings (MacMillan et al. 2009).

In this study, implementation of a specialty court of any type was not associated with a changed probability of adoption. Further, the presence of a family DTC did not affect placement outcomes. Studying family DTCs, Chuang et al. (2012) found that participation in such courts increased families' likelihood of reunification and decreased the odds that the children reentered foster care within 12 months of permanent placement. The current study did not assess reentry, and their results on reunification differ from the results reported here. There are, however, two fundamental differences in the two studies. First, Chuang et al. measured average treatment effects on the treated, while this analysis uses an intent-to-treat design. The second difference is that the treatment group in the Chuang et al. study consisted of 95 participants in one court, while the estimates derived from this study applied to all temporary placements in counties with such a court. Thus, if specialty courts employ very selective criteria in admitting participants, they may realize important gains in the participants they treat, but there may be little difference on a county-wide basis because few participants are enrolled in the programs. A second difference is that Chuang et al. used data from a single county in Florida, while this study used statewide data from North Carolina.

Adult DTCs are far more common and have been evaluated much more frequently than youth and family DTCs (Brown 2010). Since adult DTC's focus is on reducing substance use/abuse, family dependency outcome measures have not often been included as outcome measures. The evidence on DTCs' effectiveness emphasizes such endpoints as rearrest and drug-related behaviors.

Children in foster care are an educationally vulnerable population at risk of school failure (Attar-Schwartz 2009; Zetlin, Weinberg, and Kimm 2004). Even though the effects of entry into foster care on standardized math and reading scores were not large, effect sizes were roughly comparable to those reported for other relevant test score determinants (Hoxby 2000).

The present study has several strengths. First, the data came from an entire state. Almost all previous studies only analyzed data from one or a few courts. Second, using pupil-fixed effects with the longitudinal data, this analysis controlled for time-invariant child effects. Thus, this study was more likely to have identified effects of foster care placement on school outcomes rather than the effects of omitted factors correlated with foster care placement. Consideration of changes in school outcomes in the school years immediately before and after foster care placement probably increased the precision of the estimates. Third, this study was based on an intent-to-treat design. Because enrollment in specialty court programs is often limited, favorable outcomes for the individuals actually enrolled may overstate the societal outcomes of such programs. Fourth, both court outcomes and school performance for children placed in foster care were examined in a single study.

This study also has several limitations. First, only a few outcomes were assessed. Improvements in educational performance constitute only one of several potential benefits of more expeditious placement. Other outcomes, such as readmission to foster care following permanent placement and effects on child behavior, and long-run adult outcomes, for example, labor market productivity, reduced likelihood of committing crimes, and marital stability, are well worth considering. Second, the data came from a single state. States differ in how specialty courts are operated and structured. Third, the administrative data used in these analyses lack detail on some potentially important time-varying child and parent characteristics.

There are advantages and disadvantages to limiting the analysis of educational outcomes to pupils who had been placed in foster care at least once as opposed to conducting the analysis on all children in public schools, irrespective of their exposure to foster care. An advantage is that such children are likely to differ appreciably in terms of home environment from most children who are never placed. Including children who had never been

placed in foster care in the analysis sample would have greatly increased the sample size and the sample would have been predominantly children who never been placed in foster care. The main disadvantage of limiting the sample to pupils who have been placed into foster care at least once is that it precludes the ability to assess impacts specialized courts may have had on keeping children out of foster care entirely by, for example, decreasing parental substance use problems.

In sum, this study documented efficiency gains of certain types of specialized problem-solving courts. Advocates of such courts have made this point to argue for their implementation mainly on grounds that quicker resolution is better, leaves courts less congested, and perhaps also results in savings in administrative cost. Advocates have stressed that the efficiency gains are desirable in their own right without making claims that efficiency gains also may lead to improved outcomes of persons affected by more efficient judicial decision making. This study has demonstrated the efficiency gains potentially have important therapeutic benefits, such as in improving school performance. Such outcomes should be considered when legislative bodies make budget allocations for such courts.

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