



## From foster care to juvenile justice: Exploring characteristics of youth in three cities



J. J. Cutuli<sup>a,\*</sup>, Robert M. Goerge<sup>b</sup>, Claudia Coulton<sup>c</sup>, Maryanne Schretzman<sup>d</sup>, David Crampton<sup>c</sup>, Benjamin J. Charvat<sup>d</sup>, Nina Lalich<sup>c</sup>, Jessica A. Raithel<sup>d</sup>, Cristobal Gacitua<sup>b</sup>, Eun Lye Lee<sup>c</sup>

<sup>a</sup> Rutgers University—Camden, 311 North Fifth Street, Camden, NJ 08102, USA

<sup>b</sup> Chapin Hall at the University of Chicago, 1313 East 60th Street, Chicago, IL 60637, USA

<sup>c</sup> Case Western Reserve University, 10900 Euclid Avenue, Cleveland, OH 44106, USA

<sup>d</sup> Center for Innovation through Data Intelligence, Health and Human Services, New York, NY, USA

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### ABSTRACT

Children placed in foster care are at risk for becoming involved with the juvenile justice system. This study documents the rates at which children involved with foster care enter the juvenile justice system (crossover or dually involved), and the factors associated with this risk. We utilize multiple birth cohorts and prospective, longitudinal data from birth to maturity separately in three major American cities. Analyses consider integrated administrative records from multiple birth cohorts representing populations in Cook County (Chicago;  $N = 26,003$ ), Cuyahoga County (Cleveland;  $N = 10,284$ ), and New York City ( $N = 13,065$ ). Crossover rates ranged from 7 to 24%. African American males, and children who experienced congregate care were at highest risk for juvenile justice involvement. Older age at first foster care placement signaled progressively greater risk, as did more foster care spells for those first placed as infants. We discuss findings in terms of developmental theory, and as actionable intelligence to inform prevention, practice, and policy.

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A lack of comprehensive, longitudinal, cross-sector data prevents academics, policymakers' and public sector administrators' from understanding long-term outcomes for children in foster care. Children who receive child welfare services are at-risk for later delinquency and involvement with the juvenile justice system, with more than 40 years of research affirming this link (Herz, Ryan, & Bilchik, 2010; Maschi, Hatcher, Schwalbe, & Rosato, 2008). Individuals who become involved in both systems appear to have needs that are more numerous and more complex than those involved with only one system, but dually-involved youth may be less likely to receive comprehensive, coordinated care because of agency boundaries (Herz et al., 2010). There is increasing interest in understanding those on the developmental pathways from the foster care system to juvenile justice services with the dual goals of informing developmental science as well as practice and policy decision making.

In line with a developmental perspective on risk and resilience (Luthar, Crossman, & Small, 2015; Masten & Cicchetti, 2016), this study details findings on the links between child welfare and juvenile justice services, focusing on characteristics of individuals and of foster care placements. We present separate analyses of administrative data from three, large urban localities: Cook County, Illinois, Cuyahoga

County, Ohio, and New York City, New York. The analyses pursue three aims: (1) determine how many children who experience out-of-home foster care placements become involved with the juvenile justice system, (2) understand individual characteristics (gender, race/ethnicity) and foster care histories (placement type, number of spells, age of first child welfare placement) that may distinguish children in foster care who go on to become involved with juvenile justice from those who do not, and (3) test for results in three locations to suggest which associations are more or less robust in different municipal and social service contexts. These analyses involve prospective information from birth for populations of children in three major American cities.

About 254,375 children entered foster care in the United States during 2010, with approximately 408,425 children in foster placements at any given point (U.S. Department of Health and Human Services Children's Bureau's, 2011). Past studies utilizing administrative data have documented the risk for juvenile justice system involvement among children receiving child welfare services, linking records from both systems (Herz et al., 2010). Between 9 to 29% of youth involved with child welfare services also become involved with the juvenile justice system (Herz, 2010), sometimes referred to as 'crossover' or 'dually-involved' youth. By definition, 'crossover youth' refers to maltreated children who later engage in delinquent behavior, whereas 'dually-involved youth' refers to those simultaneously involved with child welfare and juvenile justice systems (Herz, 2010; Herz et al., 2010). The

\* Corresponding author.

E-mail address: [JJ.Cutuli@Rutgers.edu](mailto:JJ.Cutuli@Rutgers.edu) (J.J. Cutuli).

most common sequence is for children to first become involved with child welfare services and then later to come to the attention of the juvenile justice system, representing a subset of crossover youth (Huang, Ryan, & Herz, 2012).

Developmental theory appreciates that change is influenced by many factors both within and external to the individual that act together in complex ways to contribute to developmental pathways that describe functioning at a point in time (Blair & Raver, 2012; Masten & Cicchetti, 2016). When applied to children and youth who experience adversity, developmental theory on resilience and risk contextualizes factors with respect to how they tend to influence the attainment of competence in normative developmental tasks at different ages (Cutuli & Herbers, 2014; Masten, Cutuli, Herbers, & Reed, 2009; Thompson, 2014). The current study takes a developmental perspective on risk to test for effects of factors associated with out-of-home placements on juvenile justice involvement. Importantly, many of these factors can be influenced by social policy and practice.

Many factors contribute to the developmental pathways from child welfare involvement to later delinquency, as well as alternative developmental pathways that allow most children to avoid delinquency and other poor outcomes. Child welfare services, especially foster care, fill an important social role in the protection of children (Jonson-Reid, 2004). Because these services target children at very high levels of risk (e.g., those who experience substantiated abuse and neglect), experiencing foster care, itself, is a risk marker for an elevated level of many different sorts of accumulated risk factors. Relevant to the current study, for example, child maltreatment and experiencing inconsistent caregiving is a well-established risk factor as these experiences have a high likelihood to interfere with the normative developmental processes that establish good self-regulation and conduct, which are expected of children and youth to different degrees as they get older (Burt, Coatsworth, & Masten, 2016; Cicchetti, 2016). Experiencing child abuse and neglect has been linked with increased risk for delinquency and other conduct problems in adolescence (Jaffee, Caspi, Moffitt, & Taylor, 2004), sometimes mediated by mental health diagnoses and/or failure in other developmental domains (e.g., school failure, association with deviant peers; (Chapple, Tyler, & Bersani, 2005; Gaetana Malvaso, Delfabbro, & Day, 2015; Jaffee et al., 2004; Moffitt, 1993, 2006; VanZomeren-Dohm, Xu, Thibodeau, & Cicchetti, 2016; Yampolskaya & Chuang, 2012). Children placed in foster care appear to be at even higher levels of risk for behavior problems when compared to similar children and youth known to child welfare agencies who did not experience an out of home placement (Doyle, 2007). Nevertheless, many children who receive child welfare services go on to show resilience, functioning well in different developmental domains (Osgood, Foster, & Courtney, 2010). Understanding the factors that distinguish children who do well from those who do not represents an opportunity to better meet the needs of all.

Of particular interest are factors that can help providers and other decision-makers better target appropriate services to the most vulnerable youth, and factors related to practice that can be refined through single-agency action or cross-agency collaboration (Herz et al., 2010). Demographic factors tied to the individual, such as gender and race/ethnicity, have been consistently associated with juvenile justice involvement among children who received child welfare services. Males are much more likely to become juvenile justice involved, as are African American youth (Maschi et al., 2008; Ryan & Testa, 2005; Shook et al., 2013; Yampolskaya & Chuang, 2012). For example, 7% of all first-time juvenile offenders in Los Angeles County from 2002 and 2005 were involved with the child welfare system. By comparison, 14% of first-time arrests for African Americans were involved with child welfare (Ryan, Herz, Hernandez, & Marshall, 2007). Hispanic ethnicity has also been linked to increased risk for delinquency among children who receive child welfare services (Jonson-Reid & Barth, 2000a, 2000b).

Past work has examined factors associated with child welfare services. Children are more likely to become involved with juvenile justice

if they have their first contact with child welfare services later in childhood or in adolescence (Jonson-Reid & Barth, 2000a, 2000b; Kolivoski, Shook, Goodkind, & Kim, 2014; Shook et al., 2013; Widom, 1991; Yampolskaya & Chuang, 2012). Also well-documented is the link between multiple foster care placements and/or spells and later delinquency and juvenile justice involvement (Ryan & Testa, 2005; Shook et al., 2013; Widom, 1991; Yampolskaya & Chuang, 2012). Finally, the sort of foster care placement also appears to contribute as studies that compare kinship to non-kinship type placements frequently find lower rates of parent- or teacher-reported conduct problems for those in kinship care (Holtan, Ronning, Handegard, & Sourander, 2005; Keller et al., 2001; Rubin et al., 2008; Shore, Sim, Le Prohn, & Keller, 2002; Tarren-Sweeney & Hazell, 2006; Timmer, Sedlar, & Urquiza, 2004) though recent evidence has called this into question with some finding no difference (Font, 2014) and others noting that the effect may vary by race (Ryan, Hong, Herz, & Hernandez, 2010). Ryan, Marshall, Herz, and Hernandez (2008) document increased risk for juvenile justice involvement associated with group home or congregate care settings compared to other types of foster care. Increased risk for chronic juvenile justice involvement was also evident for children placed in congregate care among those with extensive histories of child welfare involvement, those in exclusively family-based placements were at low risk (Kolivoski et al., 2014).

We utilize a prospective, population-based, birth cohort design to test for associations between factors related to foster care placements and later juvenile justice involvement. Considering individuals who were born in a brief span of years helps ensure that the sample encountered similar policies and procedures from juvenile justice, child welfare, and other public service agencies, while helping to control for other macro-environmental effects (e.g., sudden increases in drug use or unemployment rates in a locality). Also, aligning individuals by birth year can assist in the interpretation of effects in the context of developmental risk periods, such as understanding the effects of foster care at particular ages on delinquency throughout adolescence when conduct problems become more prevalent in general (Moffitt, 1993). Prospective designs consider more information on individuals' service use patterns and developmental trajectories. Prospective information provides a window for understanding how demographic characteristics of the individuals, their situations, and experiences with varied social services influence the likelihood of positive or negative outcomes through later periods of risk. This is especially the case for analyses of integrated data from a variety of agencies that monitor and attempt to address a range of social risks. Finally, considering records that more closely approximate the population of interest minimizes the likelihood of various forms of bias that come with sample-based approaches, thereby increasing generalizability. For example, considering children who have ever been involved with the foster care system at any point in their lives, or those who have ever been involved with juvenile justice, reduces the likelihood of bias that might accompany selecting a subsample of cases.

The current study adds to the literature through considering population-based administrative records from birth through adolescence, the period of greatest developmental risk of juvenile justice involvement. In an early and important study, Widom (1991) examined 20-year juvenile justice and adult criminal charges for a large sample of individuals with a history of substantiated child abuse or neglect, but only for individuals with child welfare involvement before age 11 years. This effort produced important and valuable findings, but cannot speak to effects for children who enter the child welfare system during adolescence, leaving out youth who are at a very high level of risk (Osgood et al., 2010).

Conversely, a number of other studies have focused on children who interface with child welfare later in childhood and adolescence. Jonson-Reid and Barth (2000a, 2000b) analyzed administrative data from 10 counties in California, linking records for children with foster care involvement after age 6 to records for the California Youth

Authority (CYA) which is responsible for juvenile incarceration for the most serious offenders. All children had their first foster care involvement between 1990 and 1995, with CYA data spanning 1991 to 1996. Similarly, Yampolskaya and Chuang (2012) considered maltreated children aged 7 to 17 placed in out-of-home care statewide in Florida over 12 months, with an interest in juvenile justice detention followed for 24 months. While not ideal as most child welfare referrals occur prior to age 6, limiting cases to older children helped ensure that a larger proportion of children were old enough to be adolescent, a developmental risk period for conduct problems and delinquency.

Several other efforts have demonstrated the value of various designs. Ryan and Testa (2005) used data from Cook County, Illinois, in a birth cohort design. The study utilized juvenile justice records between 1995 and 2000 to examine factors that predicted delinquency for children involved with foster care born in 1983 and 1984. This ensured access to delinquency records across the six years from early through late adolescence. In addition, this was a prospective design that allowed them to include information on the entirety of the individuals' involvement in foster care services (age 0 through 18).

The current study builds on existing findings through considering prospective information on the population of children involved with foster care and born within a specified timeframe. The data are longitudinal in nature and extend across the periods of greatest risk for foster care placement as well as juvenile justice involvement; allowing for comprehensive analyses of influential factors among groups with different patterns of service use and outcomes. First, descriptive analyses note the number and percentage of children placed in out-of-home care that become involved with the juvenile justice system. Second, analyses describe the amount of time from foster care placement to first juvenile justice involvement for youth who cross over. Finally, analyses test for associations between juvenile justice involvement and demographic (race, gender) and foster placement characteristics (age of first foster placement, number of spells, type of placement) to differentiate foster youth who become involved with juvenile justice from those who do not. In line with past findings, we hypothesize that the following variables will be associated with an increased likelihood of involvement with juvenile justice: male gender, Black/African American race/ethnicity, older age of first placement, greater number of foster care spells, and placement in congregate care facilities.

## 1. Methods

### 1.1. Contexts and data

We completed analyses for each of three jurisdictions encompassing major urban areas: Cook County (encompassing Chicago), IL; Cuyahoga County (Cleveland), OH; and the five counties (Bronx, Kings, New York, Queens, Richmond) that make up New York City. Based on 2010 data, these counties collectively contain approximately 6% of the overall U.S.

foster care population. Analyses consider each jurisdiction separately to acknowledge differences in how social service systems operate and interface under local policies and procedures, and other contextual influences like differences in population demographics and macroeconomic factors.

We used administrative records from the respective agencies responsible for foster care and juvenile justice involvement in each locality (see Table 1). Cook and Cuyahoga Counties included records of all children born from 1990–1995 whereas New York City included records of all children born from 1994–1995. New York City's data came from fewer birth cohorts because of data quality concerns for earlier cohorts. The juvenile justice systems of both Cook and Cuyahoga Counties have jurisdiction for individuals until the age of 18. In New York State, juvenile justice typically has jurisdiction through age 15, while youth who commit crimes after their sixteenth birthday enter the adult justice system. For this reason, analyses of New York City data used only juvenile justice records until the age of 16. Administrative records contained characteristics of foster care placements (out-of-home placement history, type of placement, number of placement spells), juvenile justice involvement, and demographic variables. Data for analyses included all individuals with a foster care placement in each jurisdiction. A foster care spell was defined in consultation with each municipality as an episode of out-of-home care that included a start date and an end date. Both New York City and Cook County further defined a foster care spell as more than 7 days whereas Cuyahoga County did not have a minimum cut-off point. In Cook and Cuyahoga Counties, juvenile justice involvement refers to any juvenile court delinquency filing. For New York City, juvenile justice involvement was defined as a detention admission or a 'non-adjusted' probation intake (arrest). Per NYC policies, cases that are 'adjusted' after an arrest do not go to court and no petition is filed. Non-adjusted cases are used as a proxy for petition filing in the New York City study population.

### 1.2. Integrated data and record linkage

Data came from three distinct integrated data systems (IDS), described below. Each IDS had obtained the necessary data sharing agreements in partnership with the providing agencies and all work was overseen by the appropriate governing bodies with respect to the current analyses. Because these IDS's receive, integrate, and maintain individual-level data on an ongoing basis for many analyses apart from this one, procedures and methods vary to a degree.

#### 1.2.1. Cook County

Data came from the Integrated Database on Child and Family Programs in Illinois, maintained by Chapin Hall since the late 1980s (Goerge, Van Voorhis, & Lee, 1994). This is a data warehouse of Illinois child welfare, juvenile justice, welfare program, Medicaid, employment, and education records of individuals and families. All individuals with a

**Table 1**  
Data sources and information by site.

	Cook County, IL	Cuyahoga County, OH	New York, NY
<b>Foster care</b>			
–Agency source	Illinois Department of Children and Family Services	Cuyahoga County Department of Child and Family Services	Administration for Children's Services (ACS)
–Cohort birth years	1990 through 1995	1990 through 1995	1994 through 1995
<b>Juvenile justice</b>			
–Agency source	Juvenile Justice Division of the Cook County Clerk of the Circuit Court	Cuyahoga County Juvenile Court	ACS (Detentions) and Dept. of Probation (Non-adjusted arrests)
–Definition	Court Delinquency Filing	Court Delinquency Filing	Detention Admission or Non-adjusted Arrest
–Age of maturity	18 years	18 years	16 years
–Observation period	Jan 1, 2000 through Dec. 31, 2010	Jan 1, 2000 through Dec. 31, 2010	Jan 1, 2004, through Dec. 31, 2011
<b>Demographic Variables</b>			
–Agency source	Illinois Department of Children and Family Services	Cuyahoga County Department of Child and Family Services	Administration for Children's Services (ACS)

foster care placement prior to age 18 were matched to juvenile court records. In Illinois, the foster care agency operates statewide while the integrated database contains juvenile justice records that involve cases within Cook County only. Therefore, foster care records were considered for individuals with at least one child welfare placement in Cook County. Juvenile justice involvement was noted by any court delinquency filings between January 1, 2000, and December 31, 2010. Individuals' records were linked using probabilistic record-linkage (Automatch) after intensive custom data-cleaning, extraction, and standardization programs were employed.

### 1.2.2. Cuyahoga County

Administrative records data for children in foster care came from the County Department of Children and Family Services. Records on juvenile delinquency filings came from the County Juvenile Court. Juvenile justice involvement was noted by any court delinquency filings between January 1, 2000, and December 31, 2010. Child welfare and juvenile delinquency cases were linked for children born between 1990 and 1995 through probability matching. All foster care and juvenile delinquency events between birth and age 18 were included in the data file. Matching was done with LinkPro, a SAS macro, and further SAS programming and manual review to link the two data sources. The first pass through the data required an exact match on birth date and at least 2 other matching variables. The second pass required a match on "soundex" of the child's first name and at least 4 other matching variables.

### 1.2.3. New York City

Administrative data (birth cohorts 1994–1995) were collected from the Administration for Children's Services (ACS) and the Department of Probation (DOP); both agencies are locally administered and state supervised. Foster care and juvenile detention records were obtained from ACS and juvenile arrest records from DOP. All of the study data were de-duplicated, matched, and linked with Oracle Enterprise Data Quality (EDQ), and cross-verification was done with SAS LinkKing. Both software programs take into account phonetics, spelling distances, name rarity, other match parameters and employ probabilistic linkage along with deterministic linkage.

## 1.3. Variables and analytic approach

Data came from multiple birth-cohorts and contain all children with at least one spell of out-of-home care. Cases with any juvenile justice involvement that preceded their first out-of-home placement were excluded from analyses. The dependent variable for this study was the length of time (number of days) from youths' first placement until they have their first delinquency court petition, reach the age of maturity with respect to the juvenile justice system, or were below the age of maturity and had no petition but passed the end of the study's observation period (see Table 1). A series of multivariate hazard models (Cox regression) test predictors of juvenile justice involvement for children placed in foster care. Hazard models are appropriate for data that are censored and for a continuous time model.

The independent variables were divided into those that are fixed and those that are time varying. The fixed variables were age at first foster care placement (binned in the following manner: 0 to 1 years, 1 to 2 years, 2 to 8 years, and 9 years and older), gender, and race and ethnicity. The time varying variables were placement type (non-kinship foster care, kinship foster care, congregate care, or "Home/Out of Care" defined as not in placement or in an approved adoptive home), and number of out-of-home care spells (each spell consisted of one or more consecutive placements with no intervening gaps). Spell count was treated as a continuous variable, and all other variables were categorical. Multi-category variables were coded as dummy variables. For race/ethnicity, African American was the reference group. For type of placement, Non-Relative Foster Care was the reference group.

Hazard models allow for multiple observations per youth and for values of explanatory variables to change over time, like placement type and spell number. In these analyses, each observation for a youth represented a unique placement spell, including periods where they may have been placed in an adoptive home, or reunified with their parents. Using the hazard model, sites were able to estimate the risk of receiving a juvenile petition for a set of explanatory variables, and to obtain a baseline survival curve which shows how the probability of not receiving a juvenile petition decreases over time after a youth's first placement.

Multivariate analyses tested each factor controlling for all the other factors on the chances of juvenile justice involvement separately by site. Models were estimated separately by binned age at first foster care placement. These bins were necessary because the hazard functions had different shapes based on age at first placement and the combined models did not meet the proportional hazards assumptions required by the hazard model. By binning the age of first foster care placement, we met the required assumptions of the model used in this study.

## 1.4. Study population characteristics

The characteristics of the study populations are presented by age at first foster care placement (See Table 2). In Cook County, a total of 26,003 youth born between 1990 and 1995 had an out-of-home placement at some point between birth and either age 18 or the end of the study period. Chicago has a large number of infants placed in the child welfare system. Half of all the youth in the study population were placed before age 2 and another 20% were placed before age 3 (not included in table). The number of males and females was essentially even, over 80% of the youths were African-American, about 7% were Hispanic, and 10% White.

In Cuyahoga County, 10,284 children born between 1990 and 1995 had an out-of-home placement from 1990 through 2010. This figure does not include 404 children with juvenile justice involvement before their first out-of-home placement (excluded from analyses). About a quarter of children had their first out-of-home placement in infancy (24.5%), another 9.1% first placed between 1 and 2 years old, 49.0% first placed between 2 and 8 years old, and 17.4% had their first placement after their 9th birthday. About half were male (49.8%) and over three-quarters were Black/Non-Hispanic (76.0%), 20.0% White/Non-Hispanic, and 4.0% Hispanic.

In NYC, there were 14,195 youth born in 1994 or 1995 who had at least one foster care spell from birth to December 31, 2011, though 13,065 children and youth had an out-of-home placement without any preceding juvenile justice involvement. Approximately a third of individuals had their first out-of-home placement as infants (33.2%), while 9.2% were first placed between the ages of 1 and 2 years old, 35.7% were first placed between 2 and 8 years old, and 21.9% had their first placement at or after age 9. Approximately half were male (50.1%), 45.5% were African-American/Black, 28.7% Hispanic, 4.2% White, 4.3% 'Other', and 17.3% unknown.

## 2. Results

### 2.1. Rates of juvenile justice involvement following foster care placement

Table 2 presents rates of juvenile justice involvement for youth with at least one foster care placement across all birth cohorts by jurisdiction. Rates varied by site, with 6.6% of these youth in Cook County having juvenile justice involvement, 11.1% in New York City, and 24.3% in Cuyahoga County. Rates of dual system involvement increase when considering cohorts in which the youth reach the age of maturity before the end of the study period. See Fig. 1.

**Table 2**  
Characteristics of children who had been placed in foster care by age at first out-of-home placement.

	0 to 1 year	1 to 2 years	2 to 8 years	9 and older	Total
<b>Cook County (N = 26,003)</b>					
<b>Gender</b>					
Female	4706 (49.6%)	1819 (48.6%)	5150 (49.8%)	1282 (52.4%)	12,957 (49.8%)
Male	4774 (50.4%)	1927 (51.44%)	5182 (50.15%)	1163 (47.6%)	13,046 (50.2%)
<b>Ethnicity</b>					
Black	8245 (87.0%)	3172 (84.7%)	8417 (81.5%)	1876 (76.7%)	21,710 (83.5%)
Hispanic	431 (4.5%)	255 (6.8%)	867 (8.4%)	227 (9.3%)	1780 (6.8%)
White	804 (8.5%)	319 (8.5%)	1048 (10.1%)	342 (14.0%)	2513 (9.7%)
<b>Juvenile justice involved</b>					
Yes	390 (4.1%)	241 (6.4%)	775 (7.5%)	305 (12.5%)	1711 (6.6%)
No	9090 (95.9%)	3505 (93.6%)	9557 (92.5%)	2140 (87.5%)	24,292 (93.4%)
<b>Last living arrangement</b>					
Home/Out of Care	9227 (97.3%)	3611 (96.4%)	9516 (92.1%)	1401 (57.3%)	23,755 (91.4%)
Non-Kinship Foster Care	135 (1.4%)	80 (2.1%)	459 (4.4%)	495 (20.2%)	1169 (4.5%)
Kinship	43 (0.5%)	15 (0.4%)	162 (1.6%)	233 (9.5%)	453 (1.7%)
Congregate	75 (0.8%)	40 (1.1%)	195 (1.9%)	316 (12.9%)	626 (2.4%)
<b>Cuyahoga Co. (N = 10,284)</b>					
<b>Gender</b>					
Female	1222 (48.5%)	441 (47.0%)	2537 (50.3%)	961 (53.8%)	5161 (50.2%)
Male	1297 (51.5%)	497 (53.0%)	2504 (49.7%)	825 (46.2%)	5123 (49.8%)
<b>Ethnicity</b>					
Black	2138 (84.9%)	740 (79.0%)	3713 (73.7%)	1220 (68.3%)	7811 (76.0%)
Hispanic	51 (2.0%)	37 (3.9%)	237 (4.7%)	89 (5.0%)	414 (4.0%)
White	330 (13.1%)	161 (17.2%)	1091 (21.6%)	477 (26.7%)	2059 (20.0%)
<b>Juvenile justice involved</b>					
Yes	410 (16.3%)	223 (23.8%)	1328 (26.3%)	534 (29.9%)	2495 (24.3%)
No	2109 (83.7%)	715 (76.2%)	3713 (73.7%)	1252 (70.1%)	7789 (75.7%)
<b>Last living arrangement</b>					
Home/Out of Care	2447 (97.2%)	896 (95.7%)	4737 (94.0%)	1379 (77.0%)	9459 (92.0%)
Non-Kinship Foster Care	48 (1.9%)	26 (2.8%)	208 (4.1%)	242 (13.5%)	524 (5.1%)
Kinship	4 (0.2%)	3 (0.3%)	25 (0.5%)	55 (3.1%)	87 (0.9%)
Congregate	19 (0.8%)	11 (1.2%)	70 (1.4%)	114 (6.4%)	214 (2.1%)
<b>New York City (N = 13,065)</b>					
<b>Gender</b>					
Female	2110 (48.7%)	574 (47.9%)	2219 (47.5%)	1615 (56.4%)	6518 (49.9%)
Male	2225 (51.3%)	624 (52.1%)	2451 (52.5%)	1247 (43.6%)	6547 (50.1%)
<b>Ethnicity</b>					
African/African American	2063 (47.6%)	592 (49.4%)	2093 (44.8%)	1197 (41.8%)	5945 (45.5%)
Hispanic	1134 (26.2%)	283 (23.6%)	1380 (29.6%)	954 (33.3%)	3751 (28.7%)
Caucasian	211 (4.9%)	39 (3.3%)	169 (3.6%)	134 (4.7%)	553 (4.2%)
Other	152 (3.5%)	37 (3.1%)	174 (3.7%)	199 (7.0%)	562 (4.3%)
Unknown	775 (17.9%)	247 (20.6%)	854 (18.3%)	378 (13.2%)	2254 (17.3%)
<b>Juvenile justice involved</b>					
Yes	278 (6.4%)	126 (10.5%)	568 (12.2%)	479 (16.7%)	1451 (11.1%)
No	4057 (93.6%)	1072 (89.5%)	4102 (87.8%)	2383 (83.3%)	11,614 (88.9%)
<b>Last Living Arrangement</b>					
Home/Out of Care	4293 (99.0%)	1180 (98.5%)	4437 (95.0%)	1512 (52.8%)	11,422 (87.4%)
Non-Kinship Foster Care	16 (0.4%)	9 (0.8%)	140 (3.0%)	566 (19.8%)	731 (5.6%)
Kinship	6 (0.1%)	3 (0.3%)	45 (1.0%)	297 (10.4%)	351 (2.7%)
Congregate	19 (0.4%)	6 (0.5%)	45 (1.0%)	481 (16.8%)	551 (4.2%)
Other	1 (0.0%)	0 (0.0%)	3 (0.1%)	6 (0.2%)	10 (0.1%)

## 2.2. Timing of juvenile justice involvement relative to first out-of-home placement

We estimated a survival function displaying how the chances of juvenile justice involvement cumulate over time following entry into out-of-home care. This was done separately for each site. Not surprisingly, the chances of juvenile justice involvement increased most slowly for the children first placed as infants, with approximately 10 years elapsing before children begin to experience delinquency filings in meaningful numbers. The proportion grows over time as they approach age of maturity. In contrast, children first placed at age 9 or over begin to experience delinquency filings at a greater rate almost immediately across all three sites.

A risk gradient is evident in these data: first foster care placement later in life is incrementally associated with higher likelihood of juvenile justice involvement at any later point. In each of the three sites, children first placed in foster care as infants have the lowest rate of juvenile

justice involvement (4.1%–16.3%) compared to higher rates for children placed at 9 years of age or older (12.5%–29.9%; See Table 2).

## 2.3. Factors that predict juvenile justice involvement

Table 3 presents the results of the Cox Proportional Hazard models, estimating the effects of gender, race/ethnicity, living arrangement, and foster care spell on the risk of juvenile justice involvement in each jurisdiction. Male gender was related to higher hazard ratios for juvenile justice involvement across all age groups and all sites (**HR** range: 1.57 to 4.60). This corresponds to an increased risk of juvenile justice involvement of 57% to 360% for males versus females in each jurisdiction depending on which age group they belong. White children consistently had lower hazard ratios compared to African American children across all sites and age categories (**HR** range: 0.21–0.69). Across all sites, Hispanic ethnicity was also related to lower hazard ratios in comparison

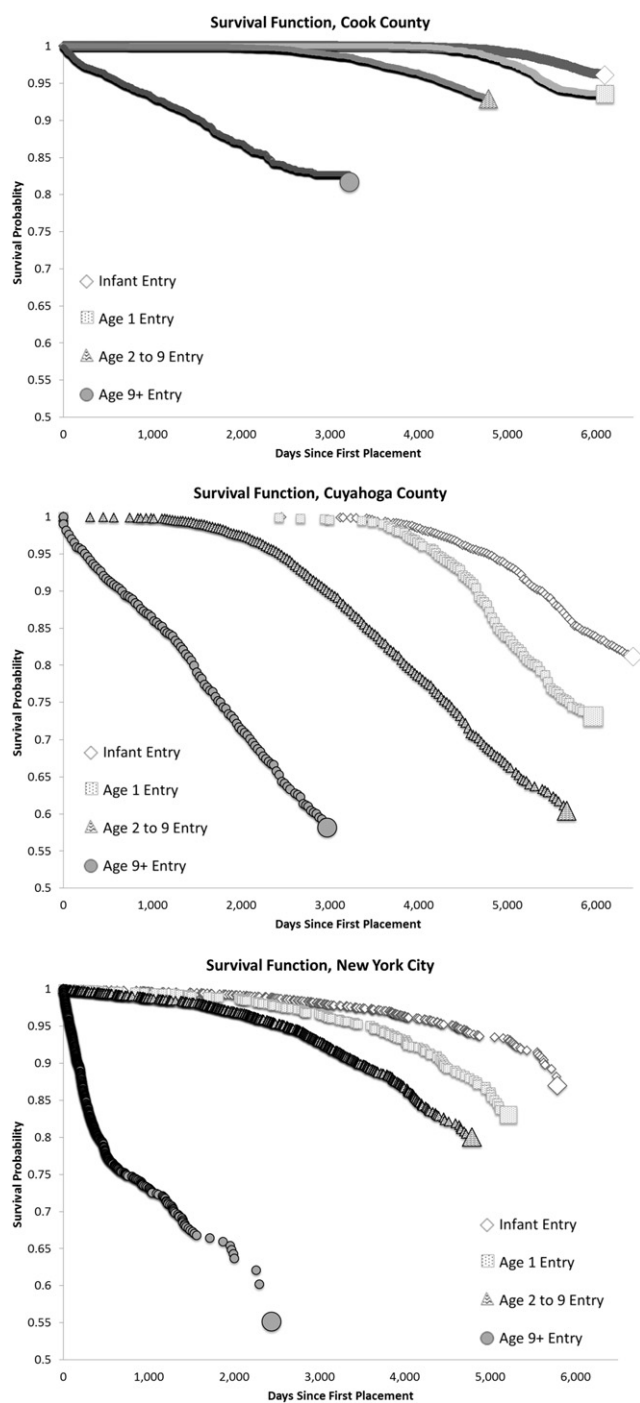


Fig. 1. Survival functions for juvenile justice involvement by site and age of first out-of-home placement.

to African American children when the first out-of-home placement was between 2 and 8 years old (HR range: 0.48–0.67).

Considering time varying covariates, the number of foster care spells had differential effects based on age at first placement and site. Each additional foster care spell was associated with an increase in the hazard ratio for juvenile justice involvement for children who were infants when they had their first out-of-home placements (HR range: 1.29–2.40; increased risk of 29% to 140%). Risk increased for later spells for all children except those aged 1 to 2 years old in Cuyahoga County and New York.

Congregate care placements were associated with the highest risk of juvenile justice involvement compared to children in non-kinship foster

care for those first placed relatively later in life. Risk was elevated for youth in congregate care who had their first out of home placement between the ages of 2 and 8 years (HR range: 2.16–3.64; increased risk 116% to 264%) or after age 9 years (HR range: 2.29–3.75; increased risk 129% to 275%). Congregate care was associated with risk less consistently among children who first entered foster care at younger ages. Among those entering as infants (0 to 1 years old), congregate care was a risk factor in Cook and Cuyahoga Counties (HRs: 2.36 and 2.48; increased risk 136% and 148%) but not in New York City (HR: 1.64; ns). Among those entering foster care as one year olds, congregate care was associated with risk in Cuyahoga County only (HR: 4.96; increased risk 396%).

Other types of placements also increased risk for juvenile justice involvement, varying by place and age of entry into foster care. In Cook and Cuyahoga Counties, youth aged 9 and over who were no longer in an out-of-home placement were at increased risk for juvenile justice involvement (HR: 1.43 and 1.50; increased risk 43% and 50%) compared to being in non-kinship foster care; in New York City, this effect was not significant. In Cuyahoga County, youth aged 9 and over placed in kinship foster care were 44% less likely (HR: 0.56,  $p = 0.05$ ) to enter juvenile justice whereas this effect was not seen in Cook County or New York City.

### 3. Discussion

Sizeable percentages of children in foster care go on to become involved in the juvenile justice system. Results are prospective and comprehensive in that they consider data on populations of children in birth cohorts in three major cities. Below we compare, contrast, and where possible, attempt to integrate the findings from each site as well as what has been found more generally in developmental science.

#### 3.1. Crossover rates

Rates of cross-over from the foster care to juvenile justice systems were substantial at each site with some variability. Between 7% and 24% of children in foster care went on to become involved with the juvenile justice system when considering data beginning at birth and extending through the ages of possible involvement with juvenile justice. Cook County had the lowest rate of cross-over (6.6%) while New York City (11.1%) and Cuyahoga County (24.3%) had higher percentages. These rates represent considerable numbers of struggling youth while also making clear that vast majority in foster care do not become involved with juvenile justice.

These rates must be considered in context. The range of cross-over rates in the current study may seem rather broad, however a similarly broad range (9 to 29%) is reported in the extant literature on cross-over and dually-involved youth (Herz, 2010). Such a broad range can be expected as rates of involvement with each system, and the cross-over between, are the product of many policy and practice factors related to these two service systems; as well as socioeconomic differences among the three counties represented in the study. For example, the sites differ in local rates of juvenile justice petitions among all youth. Considered on a per capita basis, Cuyahoga County had a high average rate of juvenile justice petitions (3.7%) from 2000 to 2010, while the rates were lower for Cook County (0.7%) and New York City (0.3%) over the same period (Hockenberry, Smith, & Kang, 2015). These differences in rates likely reflect complex difference in municipal policies and practices with respect to involving delinquent and at risk youth in a formal juvenile justice petition, differences that almost certainly contribute to the varying cross-over rates reported in the current study for youth placed in foster care.

An important consideration between sites is the difference between state definitions for the age of maturity and how this might interface with developmental increases in adolescent delinquency. In New York City individuals 16 years old and older who commit an offense enter

**Table 3**  
Hazard ratios for child and placement characteristics by age of first out-of-home placement.

	Age 0–1 year			Age 1 to 2 years		
	Cook	Cuyahoga	NYC	Cook	Cuyahoga	NYC
<i>Child characteristics</i>						
Male (vs. Female)	4.597 ***	1.985 ***	2.117 ***	4.399 ***	1.691 ***	1.622 **
Hispanic <sup>a</sup>	0.306 **	0.726	0.604 ***	0.281 **	0.641	0.449 ***
White <sup>a</sup>	0.210 ***	0.492 ***	0.361 **	0.253 ***	0.366 ***	N/A <sup>b</sup>
Other Race/Ethnicity <sup>a</sup>	–	–	0.302 *	–	–	0.329
Missing Race/Ethnicity <sup>a</sup>	–	–	0.415 ***	–	–	0.201 ***
<i>Living Arrangement<sup>c</sup></i>						
Congregate	2.364 *	2.482 *	1.641	1.552	4.959 *	N/A <sup>d</sup>
Kinship	1.064	0.387	1.610 ***	0.767	1.205	1.097
Home / Out of Care	0.537 *	0.387	0.575 **	0.516 *	0.845	0.732
<i>Foster Care Spell</i>						
Spell	1.465 **	1.287 ***	2.400 ***	1.301	1.136	1.217
Number of Events	389	409	278	240	224	126
% Censored	99.07%	96.04%	97.96%	98.60%	94.36%	97.39%

	Age 2 to 8 years			Age 9 and above		
	Cook	Cuyahoga	NYC	Cook	Cuyahoga	NYC
<i>Child characteristics</i>						
Male (vs. Female)	3.920 ***	1.951 ***	2.206 ***	3.307 ***	1.570 ***	1.609 ***
Hispanic <sup>a</sup>	0.481 ***	0.669 *	0.656 ***	0.653	0.839	0.795 *
White <sup>a</sup>	0.495 ***	0.623 ***	0.275 ***	0.465 ***	0.687 ***	0.474 *
Other Race / Ethnicity <sup>a</sup>	–	–	0.531 *	–	–	0.332 ***
Missing Race / Ethnicity <sup>a</sup>	–	–	0.304 ***	–	–	0.288 ***
<i>Living Arrangement<sup>c</sup></i>						
Congregate	3.041 ***	3.640 ***	2.162 *	3.753 ***	3.023 ***	2.292 ***
Kinship	1.438	0.903	1.252 *	0.975	0.560 *	0.938
Home / Out of Care	0.839	0.785*	1.126	1.434 *	1.496 **	0.948
<i>Foster Care Spell</i>						
Spell	1.035	1.153 **	1.590 ***	1.228	1.494 ***	1.865 ***
Number of Events	773	1328	568	302	534	479
% Censored	98.35%	93.61%	96.91%	97.24%	91.25%	93.66%

<sup>a</sup> Reference group is African American/Black.

<sup>c</sup> Reference group is Non-Kinship Foster Care.

<sup>d</sup> Zero censored cases apply.

<sup>e</sup> The confidence interval for the result includes a one, so the result should be interpreted with caution.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

the adult criminal justice system, whereas 16 and 17 year olds enter into the juvenile justice system in Cuyahoga and Cook Counties. While developmental risk for delinquency peaks before age 16, it does not reach the lower adult levels until years later (Moffitt, 1993). These differences in state law also have implications for the cross-over rates reported in the current study.

Additional analyses would be necessary to understand whether and how differences in specific policies in the justice and child welfare systems impact differences in the rates of cross-over youth. For example, formal procedures specific to child welfare involved youth entering the juvenile justice system were not in place in any of the three municipalities during the study period. However, each has taken more recent steps to better address cross-over youth: in Illinois there have been proposals to merge the state departments of children and family services and juvenile justice with the underlying belief that youth in the juvenile justice system would receive more therapeutic care if under the child welfare system auspice; in 2012 Cuyahoga County became a Crossover Youth Practice Model (CYPM) site, joining 38 communities across the U.S. in specific efforts to improve the outcomes for youth dually involved in child welfare and juvenile justice; and New York City administratively merged child welfare and juvenile justice in 2010 to allow for closer communication. Analyses of specific differences and the impact of recent changes are important, but go beyond the scope of the current study. Such analyses would need to be done cautiously due to the

multitude of differences in population demographics and social service contexts between these geographies. Nevertheless, a number of factors consistently emerged as predictors of juvenile justice involvement at each site, suggesting a level of robustness. These include both sociodemographic characteristics (e.g., race/ethnicity, gender) that may aid in the identification of higher-risk groups, as well as characteristics of foster care placement experiences that are more malleable with changes in policy and practice.

### 3.2. Child race/ethnicity

African American youth in foster care were at greater risk for later juvenile justice involvement as compared to individuals who were classified as non-Hispanic white or Hispanic, a finding that occurs repeatedly in other studies (see Herz, 2010; Herz et al., 2010). Patterns of findings for foster care placement characteristics are consistent with different pathways towards and away from juvenile justice involvement. In addition, children identified as African American or black were consistently disproportionately overrepresented among children in foster care. This finding is replicated across the United States in foster care systems (Wulczyn & Lery, 2007). These findings highlight the higher level of risk born by African American youth as well as the need to better understand the complex intersections of race, co-occurring social risk factors,

and service system functioning in the pathways from foster care to juvenile justice involvement.

Longstanding racial disparities exist both with respect to higher likelihood of African American to receive out-of-home placements (Knott & Donovan, 2010; Lu et al., 2004; Needell, Brookhart, & Lee, 2003; Rolock, Jantz, & Abner, 2015), and similar disparities regarding juvenile justice involvement (Bishop & Frazier, 1996). The reasons for these disparities are complex, though biases in decision making represented in each system appears to play a role. For example, studies find higher risk for out-of-home placement for Black/African American children even when other likely contributors are controlled for (e.g., type of maltreatment, poverty, community factors) (Knott & Donovan, 2010; Lu et al., 2004; Needell et al., 2003; Rolock et al., 2015). Considering juvenile justice involvement, multiple authors note that Black/African American youth are more likely to be detained, less likely to be referred to diversion programs, and more likely to receive longer or less therapeutic placements than white youth, even when characteristics of the offense are legally similar or less severe (Bishop & Frazier, 1996; Bridges & Sara, 1998; Fader, Megan, & Morgan, 2014; Lacey, 2013; Rodriguez, 2011; Spinney et al., 2016). The current analyses do not speak to the likelihood of racial bias, though past research suggests that future work may want to consider its role, and the role of other important individual and structural contributors, to the current finding of increased risk for African American children and youth. It is not clear if the effect of race in juvenile justice involvement is somehow different among youth in foster care, or if it reflects the contributors to racial disparity in the general population.

### 3.3. Child gender

Males in foster care were much more likely than females to become involved with the juvenile justice system. This finding is practically universal across studies that consider at-risk groups as well as children in the general population, especially during adolescence (Dishion & Patterson, 2006; Moffitt, 1993, 2006). Nevertheless, experiencing risks like child maltreatment and foster care have been linked to more severe delinquency (Jonson-Reid & Barth, 2000a). The current findings cannot say if females in foster care show lower, similar, or higher rates of other poor outcomes besides juvenile justice involvement as compared to males. Other research has shown that teenage pregnancy is linked to higher risk of delinquent behavior (Harvey & Spigner, 1995); whereas the birth of a child to a teenage mother involves no greater risk for delinquency when compared to their never pregnant peers (Hope, Wilder, & Watt, 2003). In other studies girls are more at risk for internalizing disorders such as depression and anxiety, a finding that applies among girls who experience foster care and maltreatment, and among the general population (Dunn, Gilman, Willett, Slopen, & Molnar, 2012; Salazar, Keller, & Courtney, 2011). Though foster care may be linked to other negative outcomes for girls, the current findings affirm risk for juvenile justice involvement for males.

### 3.4. Older age of first foster care placement

Children who entered foster care for the first time later in life were at much higher risk, and in a shorter amount of time, for becoming involved with juvenile justice. In each site, children who entered foster care for the first time after age 9 years were at remarkably higher risk for later juvenile justice involvement relative to children who began their first placement in infancy. A portion of these patterns can be explained through juvenile court procedures that prevent very young children from entering the juvenile justice system, and younger children with disruptive behavior problems are more likely to become involved with other systems (e.g., behavioral healthcare). However, the absolute magnitude of the risk is much greater and accelerates faster for children who had their first out-of-home placement later in life. This general pattern was evident across all three study sites.

This elevated risk may be the product of experiencing the disruptions associated with foster care placement (e.g., abuse episode, loss of or change in caregivers) during adolescence, a period of heightened risk for delinquency (Moffitt, 1993). Also, considering the nature of the administrative data, it may be that those first identified as needing foster care placement later in childhood had experienced previously unrecognized abuse or neglect for a longer duration prior to identification. They also may be more likely to have experienced certain forms of abuse that especially contribute to delinquency. Kinship and non-kinship family foster care placements may be less common for adolescents in some localities, increasing the likelihood that vulnerable youth experience other sorts of placements that represent higher risk for delinquent behavior (e.g., congregate care or other institutionalization) without adequate protective factors to compensate (e.g., adult monitoring; close relationships with a mentor or other caring adult) (Fisher & Gilliam, 2012; Leve, Fisher, & Chamberlain, 2009; Oosterman, Schuengel, Slot, Bullens, & Doreleijers, 2007). Still another possibility is that older children may be engaging in delinquency without coming to the attention of the juvenile justice system prior to their first out of home placement, but disruptive behaviors might contribute to their eventually entering into foster care. In future work data from other sources, such as schools or police, may be used as additional sources of information on delinquent behavior.

### 3.5. Number of foster care placements and spells

Children who experienced more foster care spells had a higher risk for juvenile justice involvement. This finding was consistent across sites for children who first entered foster care as infants, underscoring the importance of stability and the risk of multiple placements for the youngest children. For children who first entered foster care after infancy, the relationship between number of placement spells and juvenile justice involvement was less consistent, varying by jurisdiction and age group. The current findings should be interpreted alongside other research affirming that placement disruptions and transitions within the family system are tied to risk (Jonson-Reid & Barth, 2000b; Ryan & Testa, 2005). The current findings may rely on the importance of stability and consistency in caregiver relationships for children who experience early adversity. In other research, repeated separations and experiences of caregiver loss, as occur with multiple foster care spells, represent a challenge to young children who particularly rely on warm, sensitive, and consistent caregivers to meet a variety of needs (Sroufe, Egeland, Carlson, & Collins, 2005). Furthermore, children show fewer ill effects of early adversity if they later experience caring, quality caregiving, even if from a non-biological parent (Collishaw et al., 2007). Children with greater emotional and behavioral healthcare needs (which may be exacerbated from past experiences in caregiving relationships) may be more likely to experience placement disruptions (Fisher & Gilliam, 2012; Oosterman et al., 2007), simultaneously increasing the likelihood of experiencing other risk factors for delinquency (e.g., congregate care placements) while also indexing disruptive behavior problems. The current findings affirm that experiencing fewer placements is tied to lower risk for juvenile justice involvement, and that this is most clearly the case for children first placed in foster care as infants.

### 3.6. Type of foster care placement

Congregate or group care placements were associated with increased risk for later juvenile justice involvement, especially for children with their first placement after the age of 2 years. Congregate care settings include group foster homes or residential group treatment facilities. As such, being considered a candidate for congregate care or experiencing disrupted family-based placements may be a marker of underlying risk for delinquency and other behavioral health problems, thereby selecting for children already on pathways of risk for juvenile



justice involvement (Newton, Litrownik, & Landsverk, 2000). Group care settings also have been associated with iatrogenic effects among children and youth with regard to delinquency and disruptive behavior problems (Leve & Chamberlain, 2005), while other factors such as less contact with a supervising adult and greater time with delinquent peers have been associated with higher risk (Chamberlain, Ray, & Moore, 1996; Curtis, Alexander, & Lunghofer, 2001).

### 3.7. Limitations

The current results must be interpreted in light of a number of limitations. The use of administrative data offers many strengths that set these analyses apart, such as population-level information on youth served in each locality and longitudinal data on multiple birth cohorts covering entire lifespans as individuals progress through periods of developmental risk. However, there are some things that administrative data of these sorts cannot tell us.

The data are subject to limitations that exist for the local service systems that produce them. Data quality is rigorously checked and only high quality data were used in analyses. Data quality checks involve a multistep and multicomponent process that begins with conversations with data contributors about their confidence in the data elements generated by their agency. Descriptive statistics on each element inform the rate of missingness and the identification of any impossible values. When these rates are high for a particular time frame, that element cannot be used. This limited the number of birth-year cohorts that could be included, affecting the New York City site which only had data of sufficient quality for the 1994 and 1995 cohorts, for example. Additional information regarding best practices for integrated data systems and administrative data more generally is available elsewhere (Rothbard, 2013).

Individuals may not come to the attention of child welfare or juvenile justice systems due to the often hidden nature of experiencing maltreatment or engaging in delinquency, or because of limited resources and strict guidelines for determining whether maltreatment has occurred or whether an act of delinquency progresses to the level of petition. Also, youth born in the later cohort years of this study (i.e., 1994 & 1995) do not fully pass through the entire developmental period of greatest risk for delinquency; Potential delinquency may occur after the end of this study period is not captured. Relatedly, children and youth might move away from or into the municipalities considered in the study, or they may become involved with juvenile justice services in other locales. These limitations relate to internal validity of the study constructs and must be kept in mind, despite the aforementioned strengths.

The current study does not consider some factors that are important in predicting whether foster care-involved youth will go on to have juvenile justice involvement. Some factors were not included because the operational definitions would have been too difficult to equate comprehensively between the sites in this study, such as the type of maltreatment that the child experienced. Other factors would have been too laborious to code from administrative records (e.g., likelihood of maltreatment in unsubstantiated child welfare reports) given our preference to include data from large populations of children. Finally, a third set of factors were not included because they are not routinely collected by agencies, including a wealth of strengths and protective factors that influence developmental trajectories towards resilience, as well as detailed information on the nature of the child's experience. This is especially important considering the possibility that older children not yet in foster care might already be displaying delinquency that does not rise to the level of a juvenile justice petition, but might nonetheless contribute to parent behavior that eventuates in an out-of-home placement. Additional factors such as these might help explain the current findings of risk associated with older age of first placement.

### 3.8. Implications and summary

The results of the current study suggest a number of promising avenues for future intervention work, policy reforms, and research to increase understanding and services for children who experience foster care. Community efforts focused on preventing maltreatment and the necessity for out-of-home placements for older children likely will prevent later juvenile justice involvement for many children. In each of the three sites, youth who had their first out-of-home placement at or after age 9 were most likely to become involved with the juvenile justice system, suggesting a more severe, negative impact of first out-of-home placement at this age. Municipalities can take steps to prevent the need for initial foster care placements for older children, as well as addressing the risk for delinquency and juvenile justice involvement specifically for children who are older when first entering foster care.

Localities should evaluate services available specifically to prevent maltreatment and out-of-home placements for older children. Services for older children may be underdeveloped relative to those for younger children, as most children entering foster care are younger. Prevention efforts should engage families with youth in community settings that serve older children. Youth are more likely to be attending elementary, middle, or high school, for example, making these settings worthwhile focus for prevention programs.

Prevention efforts may take the form of supporting families with older children. Parents may have difficulty managing developmental transitions to adolescence and adolescent behaviors, for example. Prevention programs that educate and empower parents in managing youth behaviors will likely have positive effects, in addition to those that bolster parent functioning more generally. Furthermore, programs that focus on specific at-risk groups (e.g., families experiencing homelessness or with a parent experiencing an alcohol or substance use problem) can prioritize keeping families intact, when possible, to avoid later foster care placements of youths separated from the family.

Services for older children should be developmentally appropriate and can focus on positive youth development in addition to remediating problems. Unlike younger children, adolescents are better able to engage in reciprocal positive relationships with competent adults and peers. Positive relationships with other family members or mentors, for example, are powerful protective factors that help youth show resilience despite adversity (Masten & Cicchetti, 2016). Similarly, lasting peer relationships can be a source of support, while disrupting positive friendships increases the odds of later befriending delinquent peers. Prevention efforts should identify, promote, and maintain positive relationships in the lives of youth, while also valuing strengths in other important areas (e.g., academics; sports/extracurricular activities). Focusing on strengths should augment, but not replace, necessary services like mental healthcare that address manifest problems. Prevention programs specifically focusing on early indicators of delinquency and juvenile justice involvement are important for older children entering their first out-of-home placement. Multi-systemic therapy, for example, is an evidence-based approach to preventing delinquency (Swenson, Schaeffer, Henggeler, Faldowski, & Mayhew, 2010).

Public service agencies can help children at the highest levels of risk and tailor services and policies to meet their needs. They can strive to ensure that services are delivered and policies enforced in a way that is equitable to combat risk in its varied forms. A coordinated approach holds the greatest potential for reducing the number of children in foster care who go on to become involved in the juvenile justice system. This would involve greater attention to the processes of risk that tend to accompany these factors, such as trauma, and poverty-related, cultural, and other adverse contextual influences (e.g., Cutuli & Herbers, 2014). In general, the most salient risk factors from the current study are older age at first foster care placement, male sex, African American or black race, experiencing a greater number of foster care spells, and congregate or group foster care placements. Addressing these issues likely involves attention to organizational aspects of service provision,

such as effective leadership, training of workers and trauma-informed care, and, importantly, interagency collaboration, to name a few.

The findings suggest targeting individual risk factors that most robustly predict cross-over. Multiple foster care spells increased the risk, especially for children first placed as infants. Continued efforts to increase placement stability and reduce child welfare spells would likely benefit children in foster care. Some strategies might include more universal support, resources, and training for prospective foster parents utilizing trauma-informed approaches to child behavior management (e.g., Multidimensional treatment foster care) (Leve et al., 2009).

Congregate or group care placements were especially linked to increased risk for juvenile justice involvement. While the mechanisms of this risk are beyond the scope of the current findings, other work suggests that family-based treatment foster care is more effective at promoting positive outcomes when compared to residential group care placements, and the difference in effect may be attributable to a greater amount of time with a supervising adult and less time with delinquent peers (Chamberlain et al., 1996; Curtis et al., 2001). When congregate care is necessary, increasing staff-to-child ratios may encourage individual mentoring and a higher level of supervision to regulate negative interactions. Potentially, a congregate care setting with a stronger youth development focus could mitigate negative outcomes.

Other municipalities can replicate our approach to produce actionable intelligence to guide local policy and practice decision making. Integrated data systems (IDS) proved to be a relatively inexpensive and efficient tool that allowed each jurisdiction to understand patterns of child welfare service use over time, and its implications for later juvenile justice involvement. Existing IDS can be used routinely to monitor for changes in relations between important contributors to foster care–juvenile justice crossover for subsequent birth cohorts. Furthermore, additional sources of integrated data can allow for more detailed understanding of the myriad of risks (e.g., poverty-related risks that are often confounded with race), revealing additional opportunities to refine service delivery and innovate more effective programs. Finally, IDS can be used to evaluate changes in policy or the implementation of new programs. In this way, IDS hold the potential to produce iterative actionable intelligence, information that guides decision making and allows for regular feedback in the refinement of policy and practice (Manzi, 2012). Despite their utility, many communities do not possess an IDS due to any of a number of reasons (e.g., costs, legal concerns, ethical concerns, or technological or analytical expertise). We hope that the current study and those like it surface some of the utility of an IDS approach, demonstrating the benefit that repays the investment. Our mutual goal is to ensure that all youth are not only active members of society, but more importantly, valued members of society.

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