



# Dual System Youth and their Pathways: A Comparison of Incidence, Characteristics and System Experiences using Linked Administrative Data

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## Abstract

Insight into the characteristics and system experiences for youth who touch both the child welfare and juvenile justice systems has increased over the last decade. These youth are typically studied as one population and referred to as “crossover youth.” While this literature contributes valuable insight into who crossover youth are, studies are virtually silent on distinguishing characteristics and experiences across different pathways leading to dual system contact. This study reviews what is currently known about dual system youth generally (i.e., youth who have contact with both the juvenile justice and child welfare systems) and introduces a framework for consistently defining dual system youth and their pathways. The utility of the framework is then explored using linked administrative data for cohorts of youth aged 10 to 18 years old with a first petition to delinquency court in three sites: Cook County, Illinois between 2010 and 2014 ( $N = 14,170$ ); Cuyahoga County, Ohio between 2010 and 2014 ( $N = 11,441$ ); and New York City between 2013 and 2014 ( $N = 1272$ ). The findings show a high prevalence of dual system contact overall, ranging from 44.8 to 70.3%, as well as wide variation in the ways in which youth touched both systems. Specifically, non-concurrent system contact is more prevalent than concurrent system contact in all sites, and individual characteristics and system experiences vary within and across these different pathway groups. Based on study findings, implications for future research on dual system youth and for developing collaborative practices and policies across the systems are discussed.

**Keywords** Crossover youth · Dual system youth · Dually-involved youth · Child welfare and juvenile justice involvement

## Introduction

Youth crossing between the child welfare and juvenile justice systems is not a new phenomenon, yet these systems rarely work collaboratively to identify and provide these youth and their families with comprehensive services. Instead, the child welfare and juvenile justice systems typically operate in siloes, maintaining clear and distinct boundaries around their missions, populations, and services (Herz et al. 2012). The systems’ reluctance to recognize and respond to these youth arguably results in missed opportunities to prevent youth from touching both systems (Bogie and Ereth 2015) and increases the likelihood that dual system youth will fall deeper into the juvenile justice system (Tam et al. 2016). Such consequences necessitate a better understanding of how systems can collaborate to prevent and interrupt the trajectories that lead to deeper entrenchment in multiple systems.

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Building collaborative, integrated system practices requires a precise understanding of who dual system youth are and how they came to touch both systems. Over the last decade, research has documented dual system youth as a significant population and provided insight into their characteristics and system experiences, but this work has largely focused on these youth as one population typically referred to as “crossover youth.” This approach assumes all youth who touch both the child welfare and juvenile justice systems are more similar than different; however, there is reason to believe that subgroups of crossover youth exist and differ from one another (Herz and Fontaine 2013). This article explores this issue by summarizing current research on crossover youth; proposing a framework to consistently define the types of dual system youth and their pathways; producing incidence rates for dual system youth across pathways; and comparing characteristics and experiences across pathways using linked child welfare and juvenile justice administrative data from three metropolitan areas in the United States.

### The Prevalence of Dual System Contact

Previous research has employed both prospective and retrospective approaches to measure the prevalence of “crossover youth” or dual system involvement. Prospective studies have tracked samples of youth in the child welfare system over time to determine how many youth enter the juvenile justice system whereas retrospective studies captured the presence of maltreatment among youth in the juvenile justice system. Prospective studies report between 7 and 30% of youth in the child welfare system between the ages of ten and 18 eventually cross into the juvenile justice system (Cutuli et al. 2016). Accounting for individual risk to commit delinquency further specifies the likelihood of delinquency among young people in the child welfare system. Cutuli et al. (2016), for example, found that older youth had higher prevalence rates than younger youth in all three sites examined (Cuyahoga County, Cook County, and New York City). Bogie et al. (2011) tracked a birth cohort of child welfare youth for three years (from 10–13 years old until 13–16 years old) in Los Angeles County and reported an overall delinquency rate of 7%. For low risk youth, however, the delinquency rate was only 1.6% compared to 8.4% for moderate risk youth and 23.5% for high-risk youth. Both Kolivoski et al. (2014) and Ryan et al. (2007) reported different delinquency rates after distinguishing groups along a developmental continuum of offending. Similar to Bogie et al. (2011), both studies reported the percentage of youth with higher offending (i.e., chronic offenders) to be small but highest in their risk for delinquency.

Dual system involvement is noticeably higher in retrospective studies using juvenile justice system samples. In

King County, for example, 67% of these youth had some type of contact with child welfare either at the time of their arrest or earlier in their lives (Halemba and Siegel 2011), and across the state of Washington, the prevalence rate was 44% (Pickard 2014). Using data from four counties in Arizona, Halemba et al. (2004) reported only 1% of informally diverted youth had touched child welfare compared to 7% on probation supervision and 42% in placements. In Massachusetts, 39% of the detention population and 37% of the youth committed to the Department of Youth Services post-adjudication had an open case in the state’s child welfare system in 2014 (Citizens for Juvenile Justice 2015). This percentage increased to 72% when a longer timeframe (from 2000–2012) was examined. Similarly, Herz et al. (2016) found 83% of youth exiting from probation group homes and correctional placements had previous contact with the child welfare system in Los Angeles County.

### Demographic Characteristics of Crossover Youth

On average, crossover youth are 15 to 16 years old at the time of arrest. Although mixed, research often shows crossover youth committing offenses and being arrested at a younger age compared to their non-maltreated counterparts and to youth in the juvenile justice system without a maltreatment history (Halemba and Siegel 2011). African American youth are overrepresented in both the child welfare and juvenile justice systems nationwide. African American youth account for just 16% of the general population in the United States (Puzzanchera et al. 2016) but comprise 34% of juvenile arrests and 35% of all delinquency cases in juvenile court (Sickmund et al. 2017). In the child welfare system, African American youth account for 23% of youth identified by child protective services (CPS) as maltreatment victims and 24% of youth in foster care (Child Welfare Information Gateway 2016). A variety of studies conducted across the United States consistently report even higher levels of overrepresentation for African American youth in crossover populations. The amount of overrepresentation in dual system populations, for example, was more than double that in single system populations in Arizona (Halemba et al. 2004), Washington State (Pickard 2014), Los Angeles County (Herz 2016), and in counties throughout the state of Illinois (Ryan et al. 2011).

Although males are overrepresented among crossover youth, the proportion of females increases noticeably and exceeds their representation in juvenile justice only populations. Compared to the general population, females are underrepresented in juvenile justice populations: Although females typically account for 51% of the population, they only comprise 29% of all juvenile arrests and 28% of all delinquency cases in court nationwide (Sickmund et al. 2017). In the child welfare system, however, they represent

51% of child maltreatment victims and 48% of youth in foster care (Child Welfare Information Gateway 2017). Whereas a quarter of juvenile justice cases typically involve females nationwide, their representation increased to one-third to one-half in studies conducted in Arizona (Halemba et al. 2004), Los Angeles County (Ryan et al. 2007), Washington State (Pickard 2014), Massachusetts (Citizens for Juvenile Justice 2015), and Missouri (Dannerbeck-Janku et al. 2014). Higher rates for females in dual system populations are often compounded when the intersection of race and gender are considered—in other words, these rates are often driven by higher numbers of African-American females rather than Latinas or Caucasian females (Ryan et al. 2011).

Sexual orientation is overlooked when examining crossover youth. In fact, until recently, little to no prevalence estimates for lesbian, gay, bisexual, questioning, gender nonconforming, and transgender (LGBQ/GNCT) youth were available. A national study conducted with 1400 LGBQ/GNCT youth in juvenile detention facilities revealed high rates of LGBQ/GNCT representation among youth who experience both the child welfare and juvenile justice systems. Overall, 20% percent of all respondents identified as LGBQ/GNCT, but the rates differed across gender with 13.6% of boys and 39.9% of females identifying as LGBQ/GNCT (Irvine and Canfield 2017). LGBQ/GNCT youth were two times more likely to be removed from their home by a social worker compared to their heterosexual counterparts and seven times more likely to be placed in a group home or foster home. These youth were also much more likely to experience physical abuse within the home prior to their removals (Irvine and Canfield 2016).

### Psychosocial Needs

Several studies document high levels of substance abuse and mental health problems among crossover youth. Both Halemba et al. (2004) and Herz (2016) reported that over three-quarters of crossover youth had a history of substance abuse and one-half to three-quarters had a history of mental illness in four counties in Arizona and Los Angeles County, respectively. Among 718 crossover youth petitioned to delinquency court in Los Angeles County in 2015, 31% were placed in a psychiatric hospital previously, 26% were prescribed psychotropic medication, 22% experienced suicidal ideation, and 9% attempted suicide (Dierkhising et al. 2018). In studies comparing crossover youth to non-crossover youth, crossover youth consistently had higher levels of mental health issues and substance use than youth in the juvenile justice system without a child welfare case. Comparing risk assessment scores for juvenile justice-involved youth, Dannerbeck and Yan (2011) reported higher rates of mental illness and substance abuse for

crossover youth in Missouri between, and Lee and Villagrana (2015) found higher rates of substance abuse for crossover youth in a large (unnamed) metropolitan county. Furthermore, crossover youth were more likely to have parents with a history of mental health problems, substance abuse problems, and/or prior incarceration than their counterparts without child welfare histories (Dannerbeck-Janku et al. 2014).

### Educational Needs

Crossover youth also struggle at school. Studies examining educational experiences highlight the educational marginalization and disparities experienced by crossover youth (Leone and Weinberg 2012). At the time of their arrest, for example, 37% of Los Angeles County crossover youth petitioned to delinquency court in 2015 had sporadic or poor school attendance; 24% were doing poorly in school; 41% were credit deficient; 37% were receiving special education services and/or needed an assessment for services; and 93% exhibited behavior problems at school (Hirsch et al. 2018). Crossover youth are significantly more likely to display patterns of truancy, have low attendance rates, display behaviors that result in suspensions, and perform lower academically (Gallegos and White 2013).

### Child Welfare and Juvenile Justice System Experiences

Crossover youth experience a high rate of child welfare system referrals, out-of-home placements, and placement changes. In Los Angeles County, the average number of family referrals to the child welfare system was 10.3 for crossover youth in 2015 (Herz 2016). Nearly all crossover youth in Los Angeles (Dierkhising et al. 2018) and Arizona (Halemba et al. 2004) had at least one out-of-home placement, and two-thirds or more of youth in both samples were placed in a group home. The average number of placements for crossover youth was also high. Youth experienced, on average, eight placement changes in Los Angeles County and twelve changes in King County, Washington (Herz 2016; Halemba and Siegel 2011). Comparisons to non-crossover youth (i.e., child welfare involved youth only) are limited, but in at least one study in Massachusetts, the out-of-home placement rate and number of average placements was higher for crossover youth. Fifty percent of female crossover youth and 40% of male crossover youth had two or more placements compared to only 19% of all youth in child welfare care, and although the median number of placement changes systemwide in Massachusetts was three, 39% of crossover youth had six or more placements and 15% had eleven or more (Citizens for Juvenile Justice 2015).

Studies indicate that crossover youth are more likely to enter the juvenile justice system than youth without child welfare involvement. Ryan et al. (2011) found disparate arrest rates across crossover and non-crossover youth in DuPage County, Illinois, and linked the crossover bias in decision-making to the overrepresentation of African American youth in crossover populations. In comparing rates across race/ethnicity in DuPage County, Ryan et al. (2011) reported an arrest rate of 3% for youth with child welfare cases, but this rate increased to 10% for African American youth while controlling for other factors—8% for African American males; and 12% for African American females. These results were not limited to DuPage County, but were also found in counties throughout Illinois. Data collected in sites participating in the Crossover Youth Practice Model across the nation also showed that between a third and one-half of crossover youth are charged with violent offenses, and these charges are often related to assaults occurring at home, in a group home, or at school (Herz and Fontaine 2013).

After arrest, disparities in decision-making continue. Research in New York City showed higher detention rates for dual system youth than their non-child welfare counterparts because there was no person or place to release them to (Conger and Ross 2001). A study conducted in Los Angeles County, also found crossover youth were more likely to have group home placements at disposition than to receive probation supervision in the community (Ryan et al. 2007). Tam et al. (2016) reported a similar finding for first-time offenders in Los Angeles County living in out-of-home placements at the time of their arrests. At disposition, these youth were more likely to receive an out-of-home placement than youth without open child welfare cases.

## Recidivism

Crossover youth consistently have higher recidivism (i.e., reoffending) rates than their juvenile justice system only counterparts regardless of the methodological differences across studies (e.g., the timeframes for recidivism and how recidivism is measured). An analysis across several studies shows recidivism ranges from 48 to 72% compared to 30 to 60% for youth without child welfare cases/histories (Huang et al. 2012; Lee and Villagrana 2015). The length and timing of child welfare involvement appears to increase recidivism for crossover youth. Halemba and Siegel (2011) analyzed recidivism rates by child welfare history and found longer lengths of stay in child welfare doubled the recidivism rate as crossover youth with less involvement. The timing of contact also may influence the likelihood of recidivism. Both Ryan et al. (2013) and Baglivio et al. (2016) compared crossover youth with previous, but closed child welfare cases, crossover youth with concurrent

involvement in both systems, and non-crossover youth. Using data from Washington State, Ryan et al. (2013) found higher recidivism rates for youth with concurrent dual system contact (61%) compared to non-concurrent contact (51%) which was similar to the delinquency-only group (49%). In contrast, Baglivio et al. (2016) analysis of data for youth exiting from juvenile justice residential treatment centers in Florida and found higher recidivism rates for youth with non-concurrent contact (68%) compared to youth with concurrent system contact (60%).

## Young Adulthood Outcomes

A small but growing body of literature illustrates the long-term negative consequences of dual system involvement. These studies are powerful because they match administrative data across various government agencies in different, geographically large areas. The conclusion across studies is similar: Crossover youth have worse outcomes in young adulthood than youth involved in one of the two systems alone. Specifically, crossover youth were more likely to age out of the child welfare system without permanency throughout the state of California (Eastman and Putnam-Hornstein 2017). Dual system youth were also more likely to experience homelessness, adult incarceration, unemployment in Los Angeles (Culhane et al. 2011), Cuyahoga County (Coulton et al. 2015), and New York City (Center for Innovation through Data Intelligence 2015).

## A Framework for Defining Dual System Youth Experiences

Developing a framework for defining dual system youth experiences and the different ways in which they touch both systems is a vital starting point for testing the importance of dual system pathways. Both the Center for Juvenile Justice Reform's Crossover Youth Practice Model (Herz et al. 2012) and the Robert F. Kennedy Children's Action Corps, Dual Status Youth Reform Initiative (RFK 2014) offer definitions to identify different types of dual system contact, but these definitions are rarely applied in research. When studies distinguish the crossover population into subgroups, the results support their importance. As indicated earlier, Baglivio et al. (2016) and Ryan et al. (2013) found different recidivism rates for concurrently involved youth compared to non-concurrently involved youth, and in alignment with these findings, Herz and Fontaine (2013) found differences in characteristics when analyzing results across sites participating in the Crossover Youth Practice Model. The proposed framework offers consistent terminology to delineate pathways for dual system involvement based on the type and timing of contact with both systems and lays the foundation to test whether different pathways inform future

research and the development of better practices in a meaningful way.

### Defining system contact

Developing a framework for dual system pathways first requires defining system contact. System contact can vary in level or extent of system penetration, ranging from a referral or investigation to a substantiated or adjudicated case. A *referral/investigation* is when a youth is referred to a system and an investigation ensues. In the case of child welfare, an investigation is used to determine whether the youth is a victim of maltreatment. In the case of juvenile justice, an arrest (i.e., a referral) is made by law enforcement after an offense is allegedly committed, which may or may not result in further processing. Referrals/investigations may or may not be founded in their respective systems. If founded, further system intervention/processing may occur, but if unfounded, the youth and family may not receive any further contact with that particular system.

*System involvement* occurs when a referred youth receives some level of system intervention. In the case of child welfare, a referral/investigation may result in voluntary/preventative family services, a court substantiated case

for maltreatment, an open case with the child welfare system involving services at home, and/or in an out-of-home setting (e.g., foster care or congregate care). Similarly, involvement in juvenile justice may result in receiving diversion programming or an adjudication through the juvenile court. The outcome of an adjudication hearing includes dismissal (no further system involvement), community supervision under probation, and/or placement in an out-of-home setting (e.g., congregate care or correctional facility).

### Proposed terminology and definitions

Table 1 presents proposed terminology for different levels of contact across both systems while also accounting for timing of contact across systems. *Crossover youth* represents all maltreated youth who engage in delinquent acts regardless of whether they touch the child welfare and/or juvenile justice systems. *Dual system youth* refers to crossover youth who touch both the child welfare and juvenile justice systems in some way (i.e., through a system contact and/or system involvement). Since the timing of contact with each system can vary, Table 1 further differentiates these system experiences by whether they occurred

**Table 1** Types of dual system contact and related pathways for youth who experience maltreatment and engage in delinquent behavior

Proposed term	Definition	Related pathways
Crossover youth	Youth who experience maltreatment and engage in delinquent acts. These youth may or may not have an investigation and/or involvement in one or both systems.	Not applicable
Dual system youth	Crossover youth who touch (i.e., through referral/investigation and/or involvement) both the child welfare and the juvenile justice systems.	Not applicable
Dual contact youth	Dual system youth who touch both the child welfare and the juvenile justice systems and the contact across systems is non-concurrent.	Dual contact/child welfare pathway Dual contact/juvenile justice pathway
Dually-involved youth	Dual system youth who touch both the child welfare and juvenile justice systems and the contact is concurrent.	Dually-involved/child welfare pathway—no historical child welfare case Dually-involved/child welfare pathway—historical child welfare case Dually-involved/juvenile justice pathway—no historical child welfare case Dually-involved/juvenile justice pathway—historical child welfare case
Dually-adjudicated youth <sup>a</sup>	Dual system youth concurrently in the care of child welfare and under the formal supervision of the juvenile justice system	Dually-involved/child welfare pathway—no historical child welfare case Dually-involved/child welfare pathway—historical child welfare case Dually-involved/juvenile justice pathway—no historical child welfare case Dually-involved/juvenile justice pathway—historical child welfare case

<sup>a</sup>Dually-adjudicated youth represent an important group of dual system youth and all the identified pathways apply to them. Due to low numbers of youth in this category, however, this study includes them in the analyses as dually-involved youth

independently (non-concurrently) or simultaneously (concurrently). *Dual contact* includes dual system youth whose contact with both systems is non-concurrent, whereas *dually-involved youth* have contact with both systems concurrently. *Dually-adjudicated youth* is a subset of dually-involved youth who simultaneously have a founded court case in child welfare and an adjudicated case in delinquency.

Another important distinguishing feature of dual system youth is the pathway or temporal ordering with which youth touch each system (see Table 1). Dual system youth may touch both systems through two pathways. The *child welfare pathway* applies when youth have contact with the child welfare system before the juvenile justice system, and the *juvenile justice pathway* applies when youth have contact with the juvenile justice system prior to the child welfare system. Both child welfare and juvenile justice pathways operate regardless of whether contact was concurrent or non-concurrent.

Determining a youth's pathway at the point they are identified as a dual system youth can be further complicated based on multiple contacts with one or both systems. For example, youth may have multiple child welfare cases prior to and at the time of their contact with the juvenile justice system. For these youth, the simultaneous contact is often prioritized because they are considered dually-involved youth at the point of identification; however, the earlier, previous contact is arguably significant to fully understanding their experiences across systems.

## Current Study

Extant research on crossover youth documents the characteristics and general experiences of youth who touch both the child welfare and juvenile justice systems. Previous research findings consistently show that crossover youth often differ from their single system counterparts, but they do not distinguish these youth by pathways or compare their characteristics and system experiences across those pathways. Using linked administrative data from Cook County, Cuyahoga County, and New York City, the current study produces incidence rates for dual system youth overall and by pathway to determine whether dual system youth contact differs in type and in timing. Analyses then test whether the characteristics and system experiences vary significantly (1) between dual system youth compared to their single system counterparts and (2) across dual system pathways. A total of six pathways are compared in the analyses and are outlined in Table 1. The first two pathways include youth who touch both systems but not concurrently: Youth with non-concurrent contact who touch the child welfare system before the juvenile justice system (dual contact/child

welfare youth), and youth with non-concurrent contact who touch the juvenile justice system before the child welfare system (dual contact/juvenile justice youth). The next two groups are youth with concurrent system contact who touch the child welfare system before touching the juvenile justice system: Youth without a historical child welfare case (dually-involved/child welfare youth with no historical child welfare case) and youth with a historical child welfare case (dually-involved/child welfare youth with a historical case). The last two pathways are youth with concurrent system contact who touch the juvenile justice system before touching the child welfare system: Youth with no historical child welfare case (dually-involved/child welfare youth with no historical child welfare case) and youth with a historical child welfare case (dually-involved/child welfare youth with a historical case).

## Method

### Data

A cohort sample of youth who received their first juvenile delinquency court petition was used to measure the incidence and system characteristics of dual system youth across Cuyahoga County, Ohio; Cook County, Illinois, and New York City. Court petitions were used as the selection criteria because they represent formal entry into the juvenile justice system which is more consistent across sites than referral/arrest decisions. The cohort timeframe for Cook and Cuyahoga Counties was 2010 through 2014. In New York City, reliable data for this purpose were only available for 2013 and 2014. The data in New York City also differ from Cook and Cuyahoga Counties because it excludes youth who are 16 and older. Under New York law during these years, only youth under the age of 16 are adjudicated in the juvenile court; individuals who were over the age of 16 were tried as adults and were not included in this sample. Additionally, a small number of individuals under the age of 16 who committed serious crimes were tried as adults and not included in this sample. Sealed records in all three sites were also excluded from analysis. In New York City, this excluded 2,754 youth; unfortunately, the total number of sealed cases in Cook and Cuyahoga Counties is unknown. The final number of cohort youth identified was 14,170 in Cook County, 11,441 in Cuyahoga County, and 1,272 in New York City.

All three study sites are metropolitan areas with diverse populations and large child welfare and juvenile justice populations. Cook County Illinois is the third-most populous county in the United States with a population of over 5.2 million people. Just over half of the county's residents live in the city of Chicago. Among persons under the age of

18, about 23 percent of the total population, Hispanics represent the largest racial/ethnic group (36%) followed by non-Hispanic Whites (31%) and African Americans (25%). Approximately 25% of children and youth live below the poverty line. Cuyahoga County has a population of 1.3 million with approximately one-third of the residents living in the City of Cleveland. The largest racial/ethnic groups are White (64%) followed by African American (30%) and Hispanic (6%). Of all residents, 6% are under 6 years and 23% are under 18 years. Approximately 26% of children aged under 18 live in poverty. New York City is comprised of five boroughs with approximately 8.6 million residents, making New York the most populous city in the United States. About 1.8 million or 21% of the population is under the age of eighteen. The racial composition is 29% Hispanic, 32% non-Hispanic White, 22% non-Hispanic Black or African American, 14% non-Hispanic Asian, and the remaining 3% are two or more races or a different race. The child poverty rate in 2015 is approximately 29%.

Data were provided by child welfare and juvenile justice agencies in all three sites. Juvenile justice data were provided by the Cook County Juvenile Probation and Court Services and the Chicago Police Department for Cook County; the Cuyahoga County Juvenile Court for Cuyahoga; and the New York City Department of Probation and the Law Department for New York City. Child welfare data were provided by the Illinois Department of Children and Family Services for Cook County; the Cuyahoga County Division of Children and Family Services for Cuyahoga County; and the New York City Administration for Children's Services (ACS) for New York City. The child welfare data were first used to identify all youth with investigations of abuse or neglect, whether the allegation was substantiated or not, and any record of receiving child welfare services (i.e., case openings/closings and foster care placements) anytime between 1992 and 2014 in Cook and Cuyahoga Counties and anytime between 1996 to 2014 in New York City. Each of the research partners had long-standing data sharing agreements with these government agencies in place, and they secured both additional approval from their partner agencies as well as IRB approval from their respective institutions to use the data for the current study.

The first juvenile court petition cohort was linked to the child welfare data to identify dual system youth. Each of the research teams linked the administrative data source files with personally identifying information in order to secure a match between files. Once a match was made, the case was given a generic identifier and all personal identifying information was deleted. Chapin Hall at the University of Chicago used probabilistic record linkage and BigMatch software to link individual records for Cook County; the Poverty Center at Case Western University used a third-

party SAS macro, LinkPro, program used to match records for Cuyahoga County data; and the Center for Innovation through Data Intelligence (CIDI) used SAS Link King for New York City data.

After much discussion, the research team decided to define dual system youth as any youth with a first delinquency court petition who touched the child welfare system in any capacity for any amount of time. As a result, youth who only had an investigation were coded as a dual system youth even if the investigation was short-lived (e.g., an investigation was opened and closed on the same day). Although operationalizing dual system youth in this manner cast the net wide, the decision to be inclusive was based on a few reasons. First, since this study introduces a new perspective on defining dual system youth, the team felt analysis should begin from a broad starting point and further refined in future research. Secondly, the team believed including youth with investigations regardless of length was warranted because referrals to child welfare is a stable predictor of future delinquency (Smith et al. 2005). Third, using a standardized timeframe for investigations across sites was complicated by different decision-making policies and procedures across jurisdictions; thus, taking an inclusive approach to coding dual system contact for both dual contact and dually-involved youth arguably produced more reliable and valid results.

The juvenile justice and child welfare administrative data were used to identify two additional groups for comparison. The first group, *juvenile justice only youth*, comprised all the youth in the first juvenile justice petition cohort with no child welfare contact during the timeframe examined. The second group, a *child welfare only youth*, was derived by identifying a separate cohort of child welfare youth who mirrored the juvenile justice first petition cohort youth in age (i.e., born between 1992 and 2003 in Cook and Cuyahoga Counties and 1996 and 2003 in New York City) and matching them to juvenile justice administrative data to determine which youth did not have contact with the juvenile justice system. It is important to note that the utility of the child welfare only group is limited to understanding how the characteristics of dual system youth may differ from youth within the same birth cohort who did not have contact with the juvenile justice system. This method is not suitable to identify the percentage of child welfare youth who cross into the juvenile justice system overall (e.g., incidence rate) and was not used for this purpose.

## Measures

The linked administrative data provided information on demographics, child welfare experiences, and juvenile justice experiences for all groups. A description of all measures used in this study are provided below.

## Gender

All sites measured gender as female or male. The rate of females is compared to males and unknown gender (if any) in the analysis.

## Race/ethnicity

All sites combined race and ethnicity into one variable and were coded to distinguish among the following groups: African American, Caucasian, Hispanic/Latino, and Other. The rate of African American youth is compared to all other categories of race/ethnicity in the analysis.

## Age at first child welfare investigation

All sites calculated the age of youth at the time they received their first child welfare investigation referral (i.e., the first time a child welfare investigation or case was opened by child welfare). The average age at first child welfare investigation across youth is presented and compared in the analysis.

## Age at last child welfare investigation

All sites calculated the age of youth at the time of the last child welfare investigation. (i.e., the last time a child welfare investigation or case was opened by child welfare). The average age at last child welfare investigation across youth is presented and compared in the analysis.

## Length of time spent in child welfare

All sites calculated the length of time spent in child welfare as a sum of non-overlapping child welfare contact spells (i.e., investigation, cases, and placements) using the start and end dates of each spell. The average length of time in child welfare is presented and compared in the analysis.

## Child welfare investigations

All sites calculated the number of times in which a youth was the subject of an investigation by their respective child welfare agency regardless of the outcome of the investigation. In Cook and Cuyahoga Counties, all investigations were included in analysis, but in New York City, only substantiated investigations were available for analysis. The average number of investigations is presented and compared in the analysis.

## Child welfare placements

All sites identified whether youth had ever been placed in child welfare out-of-home placement as part of their

involvement with the child welfare system. Additionally, the total number of placements defined as new spells of placement and/or movements in care was calculated across sites for youth placed in out-of-home care. The rate of placement as well as the average number of placements is presented and compared in the analysis.

## Age at first juvenile justice petition

All sites calculated the age of youth at the time of their first juvenile justice petition. The average age is presented and compared in the analysis.

## Charged with a person offense

All sites coded whether youth were charged with a person or violent offense. In Cook County, these offenses included homicide, aggravated assault, aggravated battery, criminal sexual assault, robbery, simple assault, simple battery, and offenses against family and children. In Cuyahoga County, they included homicide, rape, robbery, sexual assault, sexual offense, domestic violence, menacing, simple assault and other violent charges, and in New York City, they included homicide, strangulation and related offenses, sex offenses, kidnapping, robbery, assault and related offenses, coercion, and other violent offenses. The percentage of person offenses is presented and compared to all other types of offenses in the analysis.

## Detention prior to adjudication

Cook County and Cuyahoga County data were used to code whether youth had been detained in a juvenile justice detention facility at any point after arrest and prior to their adjudicatory hearing. Due to data limitations, this measure could not be computed for New York City. The rate of being detained is presented and compared to not being detained prior to adjudication in the analysis.

## Recidivism

Recidivism was measured as having a new delinquency petition filed in court within one year of the first delinquency petition filing date in Cook and Cuyahoga Counties; unfortunately, the data are not available in New York to produce this measure. Due to data limitations, this measure does not account for/exclude youth who spent time in a correctional facility (i.e., type of placement in some cases and start and end dates of correctional placements in others). Thus, the current measure of recidivism may underestimate new offending for youth placed in correctional placements because it does not account for time in the facility. The number of youth placed in corrections at



**Table 2** Incidence of dual system youth for 1st juvenile justice petition cohort youth across sites

Group/Pathway	Cook County		Cuyahoga County <sup>a</sup>		New York City	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1 <sup>st</sup> Juvenile justice petition cohorts	<i>N</i> = 14,170		<i>N</i> = 11,441		<i>N</i> = 1272	
No dual system contact	7822	55.2%	3607	31.5%	378	29.7%
Dual system contact of any type	6348	44.8%	7834	68.5%	894	70.3%
Dual system youth by pathway	<i>N</i> = 6348		<i>N</i> = 7834		<i>N</i> = 894	
Dual contact youth—non-concurrent contact	4608	72.6%	3855	49.2%	487	53.5%
Child welfare pathway	4491	70.8%	3782	48.3%	437	48.9%
Juvenile justice pathway	117	1.8%	73	0.9%	41	4.6%
Dual-involvement youth—concurrent contact	1740	27.4%	2855	36.5%	416	46.5%
Child welfare pathway/no historical contact	604	9.5%	138	1.8%	74	8.3%
Child welfare pathway + historical contact	565	8.9%	1572	20.1%	237	26.5%
Juvenile justice pathway/no historical contact	142	2.2%	94	1.2%	35	3.9%
Juvenile justice pathway + historical contact	429	6.8%	1051	13.4%	70	7.8%

<sup>a</sup>14.4% of cases in Cuyahoga County had missing data that prevented them from being categorized

disposition for their first petition, though, was very low. In Cook County where the data were most robust on this issue, only 1% of all dual system youth in Cook County were placed in correctional placements at disposition for their first delinquency petition); thus, the inability to account for time to recidivate should not significantly impact the accuracy of the recidivism rate presented and compared across groups in this analysis.

### Analytic Plan

The current study presents both rates and means to explore the incidence rates, characteristics, and system experiences of dual system youth overall and across dual system pathways in three metropolitan areas. Chi-square tests were used to determine whether rate differences were statistically significant at the  $p < 0.05$  level for the following variables; gender, race/ethnicity, ever placed in a child welfare out-of-home placement, detention prior to adjudication, charged with a person offense, and recidivism. Additional chi-square analyses were performed for these variables across each pair of pathways (e.g., [a]–[b]; [a]–[c]; [a]–[d]; and so on), and Bonferroni posthoc tests with a corrected alpha value ( $< 0.0003$ ) were used to assess which pathways were statistically significant from one another. Analysis of variance tests were used to assess statistically significant differences for the following variables; age at first child welfare investigation, age at last child welfare investigation, number of child welfare investigations, length in child welfare, number of child welfare placements, and age at first juvenile justice petition across groups. If the overall differences are significant, Tukey-HSD post-hoc comparisons were used to identify which pathways were significantly different from one another on each variable.

### Results

Table 2 shows the incidence of dual system youth in the first juvenile justice petition cohort overall and by dual system involvement pathways. The incidence of dual system youth is high in all three sites ranging from 44.8% in Cook County to 68.5% in Cuyahoga and 70.3% in New York City. Table 2 also provides a breakdown of dual system youth across different pathways, which shows that dual contact youth—i.e., youth who touch both systems non-concurrently—are most prevalent in Cook County (72.6%) followed by New York City (53.5%) and Cuyahoga County (49.2%). Dually-involved youth, on the other hand, represent approximately one-quarter of Cook County dual system youth (27.4%), one-third of Cuyahoga County dual system youth (36.5%), and just under half of dual system youth in New York City (46.5%). When combined, the dually-involved/child welfare and juvenile justice pathway youth with historical cases are the second largest group representing 15.7% of dual system youth in Cook County, 33.5% in Cuyahoga County, and 34.3% in New York City.

### Dual System Youth Characteristics and System Experiences

Table 3 presents demographic and system experiences for dual system youth compared to youth who were only involved in the child welfare system. Dual system youth are significantly different from child welfare only youth on every characteristic in all three sites. Dual system youth in Cook County, Cuyahoga County, and New York City are less likely to be female compared to their child welfare only counterparts, but they are more likely to be African

**Table 3** Youth characteristics and child welfare system experiences—dual system youth vs. non-dual system youth in all sites

Characteristic/Experience	Cook County		Cuyahoga County		New York City	
	CW involvement only N = 221,565	All dual system youth N = 6348	CW involvement only N = 103,974	All dual system youth N = 7834	CW involvement only N = 173,928	All dual system youth N = 894
Female	50.1% <sup>a</sup>	22.0%	50.1% <sup>a</sup>	35.3%	48.7% <sup>a</sup>	25.1%
African American	60.1% <sup>a</sup>	79.4%	54.1% <sup>a</sup>	73.3%	38.7% <sup>a</sup>	71.3%
Avg. Age at 1 <sup>st</sup> CW investigation (in years)	4.9 <sup>a</sup>	5.7	4.9 <sup>a</sup>	5.6	6.7 <sup>a</sup>	8.3
Avg. Age at last CW investigation (in years)	6.6 <sup>a</sup>	9.9	8.0 <sup>a</sup>	11.5	8.1 <sup>a</sup>	11.6
Avg. number of investigations (per child) <sup>b</sup>	1.9 <sup>a</sup>	2.9	2.1 <sup>a</sup>	3.1	1.7 <sup>a</sup>	2.6
Length of time spent in CW (in months)	16.4 <sup>a</sup>	37.5	21.9 <sup>a</sup>	35.0	20.1 <sup>a</sup>	31.6
Ever placed in CW placement	15.8% <sup>a</sup>	21.6%	13.4% <sup>a</sup>	23.6%	16.0% <sup>a</sup>	31.4%
Avg. number of placements	3.6 <sup>a</sup>	5.9	2.9 <sup>a</sup>	3.8	3.7 <sup>a</sup>	4.8

<sup>a</sup>Denotes a significant difference ( $p < 0.05$ ) between child welfare only youth and all dual system youth within sites

<sup>b</sup>New York City: Only substantiated investigations were available for New York City

American, to be older at the time of their first and last child welfare investigation, to have more investigations, to have longer stays in the child welfare system, and to experience child welfare out-of-home placements. Particularly notable are the differences in African American representation, length in placement, and use of placements. According to census data for each site, African American youth in the child welfare only group are represented at twice their rate in the general population, and African American dual system youth are represented at nearly three times the general population rate. When compared to child welfare only youth, the rate of African American dual system youth increases by 32% in Cook County, 43% in Cuyahoga County, and 84% in New York City. The length of time dual system youth spent in child welfare increases by 128% compared to child welfare youth in Cook County and by approximately 60% in Cuyahoga County and New York City. Additionally, the use of out-of-home placements is nearly twice as likely for dual system youth as child welfare youth in New York City (96% increase over child welfare only youth) and Cuyahoga County (76% increase over child welfare only youth).

Table 4 shows similar findings when dual system youth are compared to youth who were only involved in the juvenile justice system. Across Cook County, Cuyahoga County, and New York City, dual system youth are more likely to be female and African American, to be detained prior to adjudication, and to have higher rates of recidivism. The percentage of females in the dual system youth group increases by 25% compared to juvenile justice only youth in Cook County, 40% in Cuyahoga County, and 60% New York City. The rate of African Americans within dual system youth also increases across all sites. In particular, the rate increases by 32% in Cook County compared to juvenile justice only youth and by 43% in Cuyahoga County and by 84% in New York City. The rate of detention prior to adjudication for dual system youth is higher by approximately a third compared to Cook County child welfare only youth and it nearly doubles for dual system youth in Cuyahoga County. Recidivism is also higher for dual system youth by 27% in Cook County and 55% in Cuyahoga County.

### A Comparison of Dual System Pathways

Tables 5–7 display the findings for youth characteristics and system experiences across dual system pathways across sites. As shown in these tables, the percentage of females ranges from 16.9 to 44.5% across dual system pathways, and a statistical comparison across pathways demonstrates that the proportion of females is significantly different across some groups. Specifically, dually-involved/child welfare and juvenile justice pathway youth with historical

**Table 4** Youth characteristics and juvenile justice system experiences—Dual system youth vs. non-dual system youth in all sites

Characteristic/ Experience	Cook County		Cuyahoga County		New York City	
	JJ involvement only <i>N</i> = 7822	All dual system youth <i>N</i> = 6348	JJ involvement only <i>N</i> = 3607	All dual system youth <i>N</i> = 7834	JJ involvement only <i>N</i> = 378	All dual system youth <i>N</i> = 894
Female	16.7% <sup>a</sup>	22.0%	27.6% <sup>a</sup>	35.3%	14.6% <sup>a</sup>	25.1%
African American	68.6% <sup>a</sup>	79.4%	51.2% <sup>a</sup>	73.3%	63.8% <sup>a</sup>	71.3%
Avg. Age at 1 <sup>st</sup> JJ petition (in years)	15.4 <sup>a</sup>	15.3	16.0 <sup>a</sup>	15.3	14.8	14.7
Most serious charge type = Person	45.6% <sup>a</sup>	48.7%	28.2% <sup>a</sup>	39.3%	63.8%	58.8%
Detained prior to adjudication <sup>b</sup>	17.9% <sup>a</sup>	24.2%	24.0% <sup>a</sup>	47.5%	N/A	N/A
Recidivism <sup>b</sup>	26.6% <sup>a</sup>	33.7%	24.1% <sup>a</sup>	37.4%	N/A	N/A

<sup>a</sup>Denotes a significant difference ( $p < 0.05$ ) between child welfare only youth and all dual system youth within sites

<sup>b</sup>New York City: Detention and recidivism data were not available for cohort youth

child welfare cases have a higher proportion of females compared to dual contact/child welfare pathway youth, and these differences are significant across all sites. In Cook County, the female rate is also high among youth in the dual contact/juvenile justice pathway (see Table 5). The overrepresentation of African Americans is extremely high in each site, with rates varying from 60.6 to 93.1% across pathways. Statistical tests reveal that African American youth rates are highest among the dually-involved/child welfare pathway with and without a historical child welfare case in Cook County and among dual contact/child welfare pathway rates in Cuyahoga County and New York City. Additionally, the rates for dually-involved/juvenile justice pathway youth with a historical child welfare case are significantly different from other groups in Cuyahoga County. In contrast, African American rates are lower for dual contact/juvenile justice pathway youth in Cook County and New York City and for dually-involved/juvenile justice pathway youth in Cook and Cuyahoga Counties (see Tables 6 and 7).

With regard to child welfare investigations, youth who are older at the time of their first and last investigations are more likely to fall into juvenile justice pathway categories while youth who are younger at the time of their first and last investigation are more likely to fall into child welfare pathway groups. For instance, juvenile justice pathway youth are, on average, approximately 15 years old at their first investigation and 16 years old at their last investigation whereas child welfare pathway youth are approximately six years old at their first investigation and between nine and 14 years old at their last investigation. Only one exception to this pattern emerges for dually-involved/child welfare youth with no historical case. These youth, on average, are older than those in other child welfare pathway groups and the difference is statistically significant in all three sites.

A comparison of out-of-home child welfare placements is consistent with the results related to child welfare involvement. While the percentages vary across pathways, ever being placed and the average number of placements is highest for youth who come in contact with the child welfare system before the juvenile justice system. Specifically, statistical comparisons show that both dually-involved/child welfare youth with and without historical child welfare cases and dually-involved/juvenile justice pathway youth with a historical child welfare case have the highest placement rates and the highest average number of placements. Placement rates and average number of placements are lower for dual contact youth in both pathways and for dually-involved/juvenile justice pathway with no historical child welfare case.

Significant differences across pathways continue for some but not all juvenile justice characteristics and experiences examined. Although the average age at first petition is between 15 to 16 years old, youth in juvenile justice pathway groups are younger at the time of their first petition than those who touched the child welfare system first. There is less of a pattern for person offenses. Between one-third to one-half of youth across most pathways are charged with person offenses, but group comparison results are mixed and did not show how person charges might align with a particular pathway. Although person charge rates are lowest for dual contact/child welfare pathway youth in Cook and Cuyahoga Counties, for example, the pathways with statistically higher rates differed across the two sites, and there are no significant differences in New York City. In Cook County, the rate is higher for dual contact/juvenile justice pathway youth, and it is higher for dually-involved youth/child welfare pathway and dually-involved/child welfare and juvenile justice pathways with historical child welfare cases in Cuyahoga County. In contrast, the findings

**Table 5** Youth characteristics and system experiences across dual system pathways in Cook County

Characteristic/Experience	(a) Dual contact: CW pathway N = 4491	(b) Dual contact: JJ pathway N = 117	(c) Dually involved: CW pathway N = 604	(d) Dually involved: CW pathway + historical CW case N = 565	(e) Dually involved: JJ pathway N = 142	(f) Dually involved: JJ pathway + historical CW case N = 429
Female	20.2% <sup>bcdf</sup>	31.6% <sup>de</sup>	21.2% <sup>f</sup>	27.3% <sup>a</sup>	16.9% <sup>bcf</sup>	33.8% <sup>ace</sup>
African American	77.8% <sup>cd</sup>	77.8% <sup>c</sup>	93.1% <sup>abdef</sup>	83.5% <sup>ace</sup>	69.0% <sup>cd</sup>	75.8% <sup>c</sup>
Child Welfare Experiences						
Avg. Age at 1 <sup>st</sup> CW investigation (in years)	5.4 <sup>bdef</sup>	15.5 <sup>acdf</sup>	5.6 <sup>bde</sup>	4.1 <sup>abcef</sup>	15.3 <sup>acdf</sup>	6.2 <sup>bcde</sup>
Avg. Age at last CW investigation (in years)	8.8 <sup>bcddef</sup>	15.6 <sup>bcde</sup>	9.7 <sup>abdef</sup>	11.9 <sup>abcef</sup>	15.4 <sup>bcde</sup>	14.5 <sup>bcde</sup>
Average number of investigations (per child)	2.5 <sup>bdef</sup>	1.3 <sup>acdf</sup>	2.9 <sup>bdef</sup>	5.8 <sup>abcef</sup>	1.2 <sup>acdf</sup>	4.6 <sup>abcde</sup>
Length of Time Spent in CW (in months)	13.0 <sup>cdff</sup>	3.5 <sup>cdff</sup>	167.7 <sup>abdef</sup>	120.7 <sup>abcef</sup>	5.7 <sup>cdff</sup>	21.7 <sup>abcde</sup>
Ever Placed in CW Placement	9.5% <sup>cddef</sup>	7.7% <sup>cdff</sup>	52.3% <sup>abdef</sup>	81.8% <sup>abcef</sup>	20.4% <sup>acdf</sup>	29.4% <sup>abcde</sup>
Avg. Number of Placements	3.4 <sup>cdff</sup>	4.7	5.5 <sup>wd</sup>	8.9 <sup>abcef</sup>	3.7 <sup>d</sup>	5.5 <sup>wd</sup>
Juvenile Justice Experiences						
Avg. Age at 1 <sup>st</sup> JJ petition (in years)	15.4 <sup>bef</sup>	14.6 <sup>bcde</sup>	15.4 <sup>bef</sup>	15.3 <sup>bef</sup>	14.9 <sup>bcde</sup>	14.8 <sup>bcde</sup>
Most Serious Charge Type = Person	47.6% <sup>b</sup>	63.3% <sup>ce</sup>	46.4% <sup>b</sup>	53.3%	55.6%	51.5%
Detained Prior to Adjudication	21.0% <sup>cddef</sup>	18.0% <sup>def</sup>	27.2% <sup>acdf</sup>	28.7% <sup>acdf</sup>	48.6% <sup>abcde</sup>	41.3% <sup>abcde</sup>
Recidivism	32.2% <sup>f</sup>	32.4%	37.3%	35.0%	31.7%	43.4% <sup>a</sup>

<sup>abcdeff</sup>Denote significant differences ( $p < 0.05$ ) between the pathways designated by the specific superscript letters within sites

**Table 6** Youth characteristics and system experiences across dual system pathways in Cuyahoga County

Characteristic/Experience	(a) Dual contact: CW pathway N = 3782	(b) Dual contact: JJ pathway N = 73	(c) Dually involved: CW pathway N = 138	(d) Dually involved: CW pathway + historical CW case N = 1572	(e) Dually involved: JJ pathway N = 94	(f) Dually involved: JJ pathway + historical CW case N = 1051
Female	30.0% <sup>df</sup>	34.3%	39.9%	44.5% <sup>a</sup>	37.2%	41.3% <sup>a</sup>
African American	74.5% <sup>c</sup>	61.6%	64.5%	73.1%	60.6% <sup>df</sup>	76.0% <sup>c</sup>
Child Welfare Experiences						
Avg. Age at 1 <sup>st</sup> CW investigation (in years)	5.8 <sup>bcddef</sup>	15.3 <sup>adff</sup>	15.0 <sup>adff</sup>	5.1 <sup>abce</sup>	15.4 <sup>adff</sup>	5.3 <sup>abce</sup>
Avg. Age at last CW investigation (in years)	8.7 <sup>bcddef</sup>	15.5 <sup>adff</sup>	15.5 <sup>adff</sup>	13.8 <sup>abce</sup>	15.6 <sup>adff</sup>	13.9 <sup>abce</sup>
Average number of investigations (per child)	2.3 <sup>bcddef</sup>	1.2 <sup>adff</sup>	1.3 <sup>adff</sup>	4.2 <sup>abce</sup>	1.3 <sup>adff</sup>	4.1 <sup>abce</sup>
Length of Time Spent in CW (in months)	20.2 <sup>df</sup>	5.5 <sup>df</sup>	19.7 <sup>df</sup>	69.2 <sup>abcef</sup>	6.0 <sup>df</sup>	52.7 <sup>abcde</sup>
Ever Placed in CW Placement	16.2% <sup>bdf</sup>	3.2% <sup>acdf</sup>	21.7% <sup>bdf</sup>	48.0% <sup>abcef</sup>	7.4% <sup>df</sup>	37.9% <sup>abcde</sup>
Avg. Number of Placements	2.4 <sup>bcddef</sup>	1.0 <sup>cddef</sup>	4.2 <sup>abde</sup>	5.2 <sup>abcef</sup>	3.4 <sup>abcd</sup>	3.9 <sup>abcd</sup>
Juvenile Justice Experiences						
Avg. Age at 1 <sup>st</sup> JJ petition (in years)	15.7 <sup>bcddef</sup>	14.5 <sup>a</sup>	15.1 <sup>a</sup>	15.0 <sup>a</sup>	15.1 <sup>a</sup>	15.0 <sup>a</sup>
Most Serious Charge Type = Person	33.3% <sup>cdff</sup>	27.5%	50.5% <sup>a</sup>	46.2% <sup>a</sup>	45.2%	44.3% <sup>a</sup>
Detained Prior to Adjudication	37.2% <sup>cddef</sup>	21.9% <sup>cddef</sup>	54.3% <sup>ab</sup>	57.4% <sup>abf</sup>	60.6% <sup>ab</sup>	62.6% <sup>abd</sup>
Recidivism	31.8% <sup>df</sup>	15.1% <sup>df</sup>	30.4% <sup>df</sup>	42.9% <sup>abc</sup>	29.8%	43.5% <sup>abc</sup>

<sup>abcdeff</sup>Denote significant differences ( $p < 0.05$ ) between the pathways designated by the specific superscript letters within sites

**Table 7** Youth characteristics and system experiences across dual system pathways in New York City<sup>§</sup>

Characteristic/Experience	(a) Dual contact: CW pathway N = 437	(b) Dual contact: JJ pathway N = 41	(c) Dually involved: CW pathway N = 74	(d) Dually involved: CW pathway + historical CW case N = 237	(e) Dually involved: JJ pathway N = 35	(f) Dually involved: JJ pathway + historical CW case N = 70
Female	19.0% <sup>d</sup>	26.8%	33.8%	32.5% <sup>a</sup>	20.0%	30.0%
African American	76.2% <sup>b</sup>	51.2% <sup>a</sup>	66.2%	70.0%	65.7%	64.3%
Child Welfare Experiences						
Avg. Age at 1 <sup>st</sup> CW investigation (in years)	7.2 <sup>b,cd</sup>	16.0 <sup>def</sup>	13.9 <sup>def</sup>	8.5 <sup>b,cd</sup>	15.3 <sup>adef</sup>	8.1 <sup>bcd</sup>
Avg. Age at last CW investigation (in years)	9.9 <sup>b,cd,ef</sup>	16.0 <sup>def</sup>	14.5 <sup>a</sup>	13.0 <sup>ab</sup>	15.4 <sup>a</sup>	12.9 <sup>ab</sup>
Average number of investigations (per child)	2.1 <sup>df</sup>	1.1 <sup>df</sup>	1.5 <sup>df</sup>	3.4 <sup>b,cd</sup>	1.1 <sup>df</sup>	3.4 <sup>b,cd</sup>
Length of Time Spent in CW (in months)	24.4 <sup>b,cd,ef</sup>	4.9 <sup>ad</sup>	14.1 <sup>df</sup>	56.7 <sup>abc,ef</sup>	5.7 <sup>ad</sup>	39.1 <sup>abc,de</sup>
Ever Placed in CW Placement	22.4% <sup>df</sup>	24.4% <sup>d</sup>	16.2% <sup>df</sup>	53.2% <sup>b,cd</sup>	17.1% <sup>d</sup>	41.4% <sup>ac</sup>
Avg. Number of Placements	3.5 <sup>d</sup>	2.9	4.0	6.6 <sup>df</sup>	4.0	2.8 <sup>d</sup>
Juvenile Justice Experiences						
Avg. Age at 1 <sup>st</sup> JJ petition (in years)	14.7	15.0	14.7	14.7	14.7	14.6
Most Serious Charge Type = Person	63.8%	61.0%	52.7%	52.7%	54.3%	55.7%
Detained Prior to Adjudication	N/A	N/A	N/A	N/A	N/A	N/A
Recidivism	N/A	N/A	N/A	N/A	N/A	N/A

<sup>abc,def</sup> Denote significant differences ( $p < 0.05$ ) between the pathways designated by the specific superscript letters within sites

<sup>§</sup>New York City: Due to legal constraints, only substantiated investigations were included and detention and recidivism data were not available for cohort youth

for detention prior to adjudication and recidivism are relatively consistent across Cook and Cuyahoga Counties. Statistical comparisons suggest that detention rates are lowest for dual contact youth compared to all other pathways, and recidivism is highest among dually-involved/juvenile justice pathway youth with a historical child welfare case and lowest for dual contact/child welfare pathway youth.

## Discussion

Despite a growing focus on dual system youth, much remains unknown. Previous studies do not distinguish crossover youth by pathways; they are often unable to make comparisons to single system youth; and they use samples that are small and/or narrow in geographical representation. This study directly addresses these gaps by introducing a framework to define dual system youth and their pathways. The framework’s viability is then explored by reporting incidence rates for dual system youth pathways and by testing whether dual system youth characteristics and system experiences significantly differ from youth who only touch one system, and whether dual system youth characteristics and system experiences significantly differ across pathways. Notably, this study uses large samples of dual system youth identified from linked administrative data from three large metropolitan areas: Cook County, Cuyahoga County, and New York City. The findings substantively inform and provide direction for future research on dual system youth and for developing effective prevention and intervention services for dual system youth and their families.

Overall, the findings for dual system youth in this study mirror those found for prevalence, characteristics, and system experiences in previous research. Similar to earlier retrospective studies using juvenile justice populations, the rates of dual system were high in each of the sites, ranging from 44.8 to 70.3%; however, the prevalence of dual system youth across pathways was unexpected. Extant research largely represents youth with concurrent contact with both the child welfare and juvenile justice systems. This often occurs because concurrent contact is the easiest to identify, especially when limited data are available in a jurisdiction. Focusing on this group, in turn, gives the impression that the majority of dual system youth are concurrently involved in the child welfare and juvenile justice systems, which contrasts with incidence rates reported in the current study. These rates indicate that dual contact or non-concurrent contact with both systems was the most prevalent group followed by youth with concurrent contact and a historical child welfare case. Similar to crossover youth research, though, study findings showed that youth were far more

likely to touch the child welfare system before the juvenile justice system.

With regard to characteristics and system experiences, dual system youth significantly differed from youth with single system contact on demographics and virtually all system experiences. The rate of females was higher within the dual system youth population compared to youth only involved in the juvenile justice system, but it was lower compared to youth only involved in the child welfare system, and the rate of African American dual system youth was higher than their counterparts in both the child welfare and juvenile justice systems. It appears that the increase in the proportion of female dual system youth may be related to involvement/system decision-making in the juvenile justice system while increases in the overrepresentation of African American dual system youth are impacted by involvement/system decision-making in both the child welfare and the juvenile justice systems (see Ryan et al. 2011).

Youth characteristics and system experiences also varied significantly across pathways. Although rates and differences across pathways varied by site, at least two patterns emerged from these comparisons. First, youth who touched child welfare first had a higher proportion of females and African American youth, were younger at their first and last referrals, had more investigation referrals, had longer lengths of stay in child welfare, and experienced more placements. The pathways reflecting this pattern included dual contact/child welfare youth, dually-involved/child welfare youth with a historical child welfare case, and dually-involved/juvenile justice youth with a historical child welfare case. Secondly, youth who touched the juvenile justice system first were less likely to have investigations, long length of stays, and experience placements. They were also more likely to be older (in adolescence) at the time of their first and last investigations. Both dual contact/juvenile justice youth and dually-involved/juvenile justice youth exhibited this pattern. Dually-involved/child welfare pathway youth with no historical case was an exception in that they shared similarities with both child welfare pathway youth (e.g., average number of investigations and length of time in child welfare) and juvenile justice pathway youth (e.g., in adolescence at the time of their first and last investigations).

This pattern of findings is powerful because it documents important differences within the dual system youth population and grounds an understanding of crossing over between systems from a developmental perspective. Smith et al. (2005), for example, found that youth with persistent maltreatment from childhood into adolescence and youth with adolescent limited maltreatment were most at risk for committing delinquency. With only one exception, youth in pathways who touch the child welfare system first appear to

do so when they are young and their involvement often continues until their adolescent years. Youth in juvenile justice pathways, on the other hand, touch the child welfare system as adolescents rather than as young children, indicating their maltreatment is either adolescent-limited or was persistent but unidentified until their juvenile justice involvement.

Research shows that youth involved in the juvenile justice system have been exposed to a range of traumatic events beyond child maltreatment. Justice-involved youth experience high rates of other traumatic events such as community violence, traumatic loss or death, sexual assault, and interpersonal victimization (Dierkhising et al. 2013). Youth who experience varied types of traumatic events are identified as polyvictims (Finkelhor et al. 2011). Research using latent class analysis and latent transition analysis reveal a subgroup of trauma-exposed youth who experience persistent polyvictimization across childhood and adolescence and these youth have the highest rates of psychopathology, including internalizing and externalizing problems, and traumatic stress symptoms (Dierkhising et al. 2018). The current study compliments and builds on this prior work by stressing the need for systems to identify those that may be at highest risk for persistent traumatization and its related psychological sequelae in order to put appropriate interventions in place.

Although the current study did not capture the number of traumas experienced by dual system youth in this study, the results highlight how system responses may exacerbate negative outcomes by contributing to and/or interacting with youths' trauma. For example, dual system youth, compared to child welfare only youth, had significant and extensive histories in the child welfare system including more out of home placements, more placement changes, more investigations, and longer stays under supervision in the child welfare system. While these system factors may be due to more persistent maltreatment at times, it is likely that system involvement may be exacerbating the relationship between maltreatment and delinquency for some dual system youth. This is particularly concerning given the impact child maltreatment already has on development (e.g., Putnam 2006). Youth who are disproportionately impacted by these system factors may have alterations in development (e.g., social-cognitive worldviews, legal socialization) in ways that could operate as "drivers" of the poor young adult outcomes associated with dual system youth (Center for Innovation through Data Intelligence 2015).

## Policy and Practice Implications

Collectively, these findings and their possible explanations speak directly to several policy and practice implications. The call for cross-system collaboration and the

implementation of integrated system practices is not new. Efforts to guide and support this work are currently underway in over 100 jurisdictions across the nation led by the Center for Juvenile Justice Reform (Herz et al. 2012) and Robert F. Kennedy Children's Action Corps National Resource Center for Juvenile Justice (RFK 2014). Both initiatives recommend specific policies to facilitate this work and offer specific guidelines for building and implementing collaborative practices (Building a Brighter Future for Youth with Dual Status 2018). The results of this study both support and augment these recommendations.

Perhaps the most compelling implication derived from this study is the need to begin building and implementing delinquency prevention programs for youth in the child welfare system. Despite a general recognition by policymakers that prevention is important, little effort is expended to address systemic factors contributing to delinquency (e.g., group home placements, placement instability) or to implement prevention programs aimed at youth in the child welfare system who are at-risk for delinquency (e.g., poor academic performance, substance abuse). Los Angeles County, for example, piloted the Delinquency Prevention Pilot Program in 2012 and 2013 and found promising results (Bogie and Ereth 2015); yet, administration turnover and a lack of commitment to delinquency prevention led to the end of the program one year later. Prevention is emphasized and recommended in the Crossover Youth Practice Model and RFK's work with jurisdictions, but the majority of the work focuses on improving systems after a youth crosses from child welfare into the juvenile justice system. One persistent obstacle to focusing further "upstream" is convincing policymakers, administrators and practitioners that delinquency prevention begins within child welfare practice. Child welfare has historically viewed delinquency outside of their purview and the primary responsibility of the juvenile justice system. Changing cultures and the willingness to collaborate across both the child welfare and juvenile justice systems is instrumental to addressing this challenge.

Another core recommendation of integrated systems change work is identifying dual system youth as early as possible by building information system crosswalks between the two systems. Currently, most jurisdictions do not have the ability to communicate across data systems and often miss opportunities to identify dual system youth. These findings support this recommendation and encourage systems to expand the identification process to include all pathways rather than simply the dually-involved, concurrent involvement, pathway. By doing so, systems must look beyond one type of dual system contact and build case planning, supervision, and services to align with the maltreatment experience and its impact on behavior regardless of when it occurred.

Within both systems, services should be grounded in trauma-informed practices and include trauma-focused interventions. For prevention in the child welfare system, the focus on reunification and permanency must include supports for the parents/guardians as well as the child, such as Parent Child Interaction Therapy (Piquero et al. 2016) and Trauma-Focused Cognitive Behavioral Therapy (Deblinger et al. 2016), both of which are evidence-based, trauma-focused therapies that have been used to reduce traumatic stress symptoms, increase parental support, reduce maltreatment, and/or prevent delinquency. Placement stability is also of utmost importance to prevention efforts in child welfare. The call for more placement options and more foster families is not new and not an easy thing to accomplish; in the meantime, however, placements can strive to become trauma-informed and recognize how trauma manifests in youth's decision-making and behavior. In other words, behaviors typically viewed as "bad behaviors" are often traumatic stress reactions that require alternative or non-traditional responses.

The juvenile justice system can better support youth success with trauma-informed practices and programming. The priority is for the justice system to identify those in need of trauma-specific or other related (e.g., substance abuse) services. Researchers advocating for trauma-informed juvenile justice systems have long called for better identification of those in need of services and trauma-focused interventions (Dierkhising and Branson 2016; Ko et al. 2008). The current study bolsters this call to action. The majority of youth in the child welfare and juvenile justice systems have been exposed to traumatic events (Dierkhising et al. 2013) and between 44.8 to 70.3%, according to the current study, have been involved both systems. Thus, the youth served in each system are often the same youth, indicating a need to consider how the missions, practices, and policies in these systems overlap.

Another important issue raised by the pattern for the juvenile justice pathway is the use of child welfare for young people exiting the juvenile justice system to the child welfare system as a place of last resort when they have no home or no safe home to return to (Cusick et al. 2009). When youth have no home to return to at the completion of their delinquency court disposition, they are often referred to child welfare. Substantiating a child welfare case for them may prove difficult for several reasons; consequently, many of these youth may face a "black hole" of options for stability housing and appropriate services, which arguably leads to poor outcomes in young adulthood. Case planning and the delivery of services across the child welfare, juvenile justice, education, and behavior health service systems must begin when the youth enters the juvenile justice system. Building collaborative and coordinated care as early as possible is instrumental to building a stable environment for these youth.

Finally, as jurisdictions move towards systematic implementation, partnerships with research and evaluation teams are imperative. Having researchers as part of the planning team contributes to the development of best practices, a data collection plan, and an overall evaluation plan. Herz and Dierkhising (2019) offer a rubric based on current best practices to help jurisdictions assess how their current practices align with best practices, how they can develop their practices, and how their cross system practices change over time. This rubric combined with the use of administrative linked data provide jurisdictions with valuable tools to better design their interventions and measure whether their efforts are effective over time. Ultimately, these types of tools combined with a growth in robust evaluation will establish promising and evidence-based programs for working with dual system youth and their families.

### Study Limitations

This study used administrative data, which has both strengths and weaknesses. These results, for example, document who is entering the child welfare and juvenile justice systems and their basic characteristics; however, the data are limited to youth who touch both systems and to characteristics and system experiences captured in administrative data. This reality does not detract from the significant contribution such data offers but is a reminder of its limited ability to answer all questions about dual system youth (e.g., prevalence of mental health and substance abuse issues, types of services received, and so on).

Although the site teams strived to use common definitions across sites, differences in data access across sites limited the ability of sites to use exactly the same parameters. This was particularly true in New York City, which was limited both in the scope of juvenile justice petitions that were available and the types of child welfare involvement that could be included. These differences in data access reflect legal barriers, including concerns about confidentiality, that are locally determined. One particular issue that impacts this study and any study using juvenile justice administrative data is sealed cases. Sealed cases in some jurisdictions cannot be used in research analyses. This was the case in New York City and as a result, 2,754 youth were not included in the study. The exclusion of youth because of sealed cases can bias the results of any study using juvenile justice data. Not all jurisdictions/states exclude sealed cases from research, and it is not always clear how many cases have been sealed and removed from the system's database.

Definitional issues also limit the generalizability of this study. Although all sites used first court petition as the marker for juvenile justice involvement, different thresholds may exist for a youth to have a court petition filed in each jurisdiction. A first court petition represents formal entry

into the juvenile justice system, but it is unknown if using different definitions for juvenile justice involvement, such as referral/arrest, would yield similar results. The same challenges exist in the child welfare system where rates of substantiation and placement differ across sites and can impact the comparability across them. As described earlier, the authors of this study decided to code youth as dual system youth if they had any investigation, even if that investigation lasted only one day, as a starting point for the questions raised in this study. This decision should be further examined in future research to determine if certain types of investigations should be included when identifying dual system youth. Similarly, in studies that use arrest/referral to the juvenile justice system as a criterion for dual system contact, should an arrest count as contact if no further action is taken? These issues and others lay the foundation for future research to both replicate and further explore the findings presented and questions raised in this study.

### Future Research

Several important questions emerge from this work and inform future work. First, this study should be replicated in other areas using linked administrative data. Future studies should examine pathways using a different juvenile justice decision point, such as referral/arrest, and child welfare threshold for contact, and they should expand the analysis to include regression models to examine the differences across pathways while controlling for key factors and to identify possible interaction effects. Secondly, although these categories of dual system youth were derived from practical experience and literature reviews, there were many similarities (as well as differences) among the categories. Verifying and further distinguishing pathways, will inform policy, practice and research with more precision and direction. To this end, future studies should use a data-driven approach such as latent class analysis or sequence analysis, to categorize youth based on their overall experiences in the systems to validate and augment the pathways in the proposed framework. Empirically deriving these groups may lead to interesting insights on distinctions not easily detected from a theoretical or practitioner perspective. Finally, to maximize the potential of pathways to inform policy, practice and research, tracking their outcomes into young adulthood will be necessary. In this study, recidivism was measured as a short-term outcome and differences were found across pathways. Long-term outcomes measured with administrative data, such as homelessness and involvement in the criminal justice and behavioral health systems, are essential in specifying the types of prevention and intervention services needed to improve dual system youth outcomes.



## Conclusion

Research findings over the past decade have established a profile of youth who touch both the child welfare and juvenile justice systems. The majority of this research focuses on “crossover youth,” which typically includes youth who touched the child welfare system first and subsequently entered the juvenile justice system. The contribution of this literature is important but also limited. It does not consistently differentiate and define the pathways by which youth touch both systems. This study addresses this gap by introducing a framework to define dual system youth and their pathways and to test whether characteristics and system experiences differ across the pathways using linked administrative data from three large metropolitan areas. Using cohorts of youth with their first juvenile justice petitions, the current study shows that 44.8 to 70.3% of youth also touched the child welfare system. The most likely type of contact is non-concurrent contact, and youth are more likely to touch the child welfare system before they touch the juvenile justice system regardless of whether the contact is non-concurrent or concurrent. Dual system youth differ from their single system counterparts with regard to the overrepresentation of African Americans, longer child welfare involvement, and poor juvenile justice outcomes as measured by higher rates of detention and recidivism. Pathway group comparisons yielded significant differences and a critical pattern of findings: Youth who touch child welfare first are more likely to have higher rates of females, higher levels of disproportionate representation of African American youth, greater involvement in the child welfare system, and worse outcomes in juvenile justice than youth who touched the juvenile justice system first. The findings of this study show that dual system youth pathways matter and highlight the need for systems’ to prioritize delinquency prevention programming and trauma informed practices at all levels of intervention. Preventing delinquency among maltreated youth is rarely a focal point of policy-makers and practitioners, which is a missed opportunity with significant short and long-term consequences for youth, families, and communities. Effective prevention of maltreatment and delinquency combined with trauma-informed practices and trauma-focused interventions hold the potential to dramatically reduce the number of dual system youth and change the trajectories of many lives in a profound and positive way.

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**Data Sharing and Declaration** The data used for this study are not publicly available. They were accessed by site research teams from the respective government agencies through signed data sharing agreements. However, the syntaxes used by the research teams from the corresponding author(s) are available upon reasonable request.

## Compliance with Ethical standards

**Conflict of Interest** The authors declare that they have no conflict of interest.

**Ethical Approval** All three research teams maintain signed data sharing agreements with the agencies providing them with data in addition to Institutional Review Approvals for the use of these data in the current study from their respective Institutional Review Boards. Additionally, this study was in compliance with the Department of Justice Privacy Certificate requirements. Documentation of these approvals are available from the corresponding author(s) upon reasonable request.

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## References

- Baglivio, M. T., Wolff, K. T., Piquero, A. R., Bilchik, S., Jackowski, K., Greenwald, M. A., & Epps, N. (2016). Maltreatment, Child Welfare, and Recidivism in a Sample of Deep-End Crossover Youth. *Journal of Youth and Adolescence*, 45(4), 625–654. <https://doi.org/10.1007/s10964-015-0407-9>.
- Bogie, A., & Ereth, J. (2015). *A profile of youth in the Los Angeles county Delinquency Prevention Pilot*. Minneapolis, MN: Children Research Center, National council on Crime and Delinquency.
- Bogie, A., Johnson, K., Ereth, J., & Scharenbrochm, C. (2011). *Assessing Risk of Future Delinquency among Children Receiving Child Protection Services*. Minneapolis, MN: Children Research Center, National council on Crime and Delinquency.
- Building a brighter future for youth with dual status (2018). Boston, MA: Robert F. Kennedy National Resource Center for Juvenile Justice. <https://jjie.org/wp-content/uploads/2019/02/Building-a-Brighter-Future-For-Youth-with-Dual-Status-A-Policy-Roadmap.pdf>.
- Center for Innovation through Data Intelligence (2015). Young Adult Outcomes of Foster Care, Justice, and Dually Involved Youth in New York City. New York City Office of the Mayor. Retrieved from: <http://www.nyc.gov/html/cidi/downloads/pdf/foster-care-justice-dually-involved-report.pdf>.
- Child Welfare Information Gateway. (2016). *Racial disproportionality and disparity in child welfare*. Washington, DC: U.S. Department of Health and Human Services, Children's Bureau.
- Child Welfare Information Gateway. (2017). *Foster care statistics 2015*. Washington, DC: U.S. Department of Health and Human Services, Children's Bureau.
- Citizens for Juvenile Justice. (2015). *Missed opportunities*. <https://static1.squarespace.com/static/58ea378e414fb5fae5ba06c7/t/59020af046c3c44b405cb544/1493306111142/MissedOpportunities2015.pdf>.
- Conger, D., & Ross, T. (2001). *Reducing the foster care bias in juvenile detention decisions: The impact of Project Confirm*. New York, NY: Administration for Children's Services.
- Coulton, C., Crampton, C., Cho, Y., and Kim S. (2015). *Effects of foster care and juvenile justice involvement on early adult outcomes: A study of Cleveland's youth*. Case Western Reserve, Center on Urban Poverty and Community Development, Jack, Joseph, and Morton Mandel School of Applied Social Sciences. Cleveland, OH: Center on Urban Poverty and Community Development, Case Western Reserve University.
- Culhane, D., Byrne, T., Metraux, S., Moreno, M., Toros, H., & Stevens, M. (2011). *Young adult outcomes of youth exiting dependent or delinquent care in Los Angeles County*. Retrieved from The Hilton Foundation website: [https://hilton-production.s3.amazonaws.com/documents/97/attachments/Hilton\\_Foundation\\_Report\\_Final.pdf?1440966405](https://hilton-production.s3.amazonaws.com/documents/97/attachments/Hilton_Foundation_Report_Final.pdf?1440966405).
- Cusick, G. R., Goerge, R. M., & Bell, K. C. (2009). *From corrections to community: The juvenile reentry experience as characterized by multiple systems involvement*. Chicago: Chapin Hall Center at the University of Chicago.
- Cutuli, J. J., Goerge, R. M., Coulton, C., Schretzman, M., Crampton, D., Charvat, B. J., & Lee, E. L. (2016). From foster care to juvenile justice: exploring characteristics of youth in three cities. *Children and Youth Services Review*, 67, 84–94. <https://doi.org/10.1016/j.childyouth.2016.06.001>.
- Dannerbeck-Janku, A., Peters, C., & Perkins, J. (2014). A comparison of female delinquents: the impact of child maltreatment histories on risk and need characteristics among a Missouri sample. *Laws*, 3(4), 780–797.
- Dannerbeck, A., & Yan, J. (2011). Missouri's crossover youth: examining the relationship between their maltreatment and their risk of violence. *OJJDP Journal of Juvenile Justice*, 1, 78–97.
- Deblinger, E. Mannarino, A. P., Runyon, M. K., Pollio, E., & Cohen, J. (2016). *Trauma-focused cognitive behavioral therapy for children in foster care: An Implementation Manual*. Substance Abuse and Mental Health Services Administration (SAMHSA) and National Child Traumatic Stress Network. <https://tfcbt.org/wp-content/uploads/2018/05/FosterCareManual-FINAL.pdf>.
- Dierkhising, C. B. & Branson, C. E. (2016). Looking forward: A research and policy agenda for creating trauma-informed juvenile justice systems. *Journal of Juvenile Justice*, 5, 14–30.
- Dierkhising, C. B., Ford, J., Branson, C., Grasso, D., & Lee, R. (2018). Developmental timing of polyvictimization: Continuity, change, and association with adverse outcomes in adolescence. *Child Abuse and Neglect*. <https://doi.org/10.1016/j.chiabu.2018.07.022>.
- Dierkhising, C. B., Herz, D. C., Hirsch, R., & Abbott, S. (2018). System backgrounds, psychosocial characteristics, and service access among dually-involved youth: a Los Angeles case study. *Youth Violence and Juvenile Justice*, 1–21. <https://doi.org/10.1177/1541204018790647>.
- Dierkhising, C. B., Ko, S. J., Woods, B., Briggs, E. C., Lee, R., & Pynoos, R. (2013). Trauma histories among justice-involved youth: findings from the National Child Traumatic Stress Network. *European Journal of Psychotraumatology*, 4, 20274. <https://doi.org/10.3402/ejpt.v4i0.20274>.
- Eastman, A. L. & Putnam-Hornstein, E. (2017). Exit outcomes for probation-supervised youth in foster care: an examination of past child protection involvement. *Child Maltreatment*, 1–10. <https://doi.org/10.1177/1077559517718956>.
- Finkelhor, D., Turner, H., Hamby, S., & Ormord, R. (2011). Polyvictimization: children's exposure to multiple types of violence, crime, and abuse. Office of Juvenile Justice and Delinquency Prevention. <https://www.ncjrs.gov/pdffiles1/ojjdp/235504.pdf>.
- Gallegos, A. H., & White, C. R. (2013). Preventing the school-justice connection for youth in foster care. *Family Court Review*, 51(3), 460–468. <https://doi.org/10.1111/fcre.12043>.
- Halemba, G. J., & Siegel, G. C. (2011). *Doorways to delinquency: Multi-system involvement of delinquent youth in King County (Seattle, WA)*. Pittsburgh, PA: National Center for Juvenile Justice.
- Halemba, G. J., Siegel, G. C., Lord, R. D., & Zawacki, S. (2004). *Arizona dual jurisdiction study: Final report*. Pittsburgh, PA: National Center for Juvenile Justice.
- Herz, D. C. (2016). *A Summary of Findings for the Los Angeles County 241.1 Multidisciplinary Team*. <http://www.juvenilejusticeresearch.com/node/9>.
- Herz, D. C., Chan, K., & Putnam-Hornstein, E. (2016). Youth contact with California Child Welfare Services. In (D. Herz & K. Chan), *Los Angeles County Juvenile Probation outcomes study, part II*. Retrieved from: <http://www.juvenilejusticeresearch.com/node/12>.
- Herz, D. C., & Dierkhising, C. B. (2019). *OJJDP dual system youth design study: Summary of findings and recommendations for pursuing a national estimate of dual system youth*. Washington, D. C.: U.S. Department of Justice, Office of Justice Programs.
- Herz, D. C., & Fontaine, A. (2013). *Final data report for the Cross-over Youth Practice Model: Aggregate report for 2010/2011 cases*. Washington, DC: Center for Juvenile Justice Reform.
- Herz, D. C., Lee, P., Lutz, L., Stewart, M., Tuell, J., & Wiig, J. (2012). *Addressing the needs of multi-system youth: Strengthening the connection between child welfare and juvenile justice*. Center for Juvenile Justice Reform and Robert F. Kennedy Children's Action Corps. [https://cjjr.georgetown.edu/wp-content/uploads/2015/03/MultiSystemYouth\\_March2012.pdf](https://cjjr.georgetown.edu/wp-content/uploads/2015/03/MultiSystemYouth_March2012.pdf).
- Hirsch, R. A., Dierkhising, C. B., & Herz, D. C. (2018). Educational risk, recidivism, and service access among youth involved in both the child welfare and juvenile justice systems. *Children and Youth Services Review*, 85. <https://doi.org/10.1016/j.childyouth.2017.12.001>.

- Huang, H., Ryan, J. P., & Herz, D. (2012). The journey of dually-involved youth: the description and prediction of rereporting and recidivism. *Children and Youth Services Review*, 34(1), 254–260.
- Irvine, A., & Canfield, A. (2016). Overrepresentation of lesbian, gay, bisexual, questioning, gender nonconforming and transgender youth within the child welfare to juvenile justice crossover population. *Journal of Gender, Social Policy & the Law*, 24(2), Article 2.
- Irvine, A. & Canfield, A. (2017). Reflections on the new national data on LGBTQ/GNCT youth in the justice system. *LGBTQ Journal at the Harvard Kennedy School*, Vol. 7.
- Ko, S. J., Ford, J. D., Kassam-Adams, N., Berkowitz, S. J., Wilson, C., & Wong, M., et al. (2008). Creating trauma-informed systems: Child welfare, education, first responders, health care, juvenile justice. *Professional Psychology: Research and Practice*, 39(4), 396–404.
- Kolivoski, K. M., Shook, J. J., Goodkind, S., & Kim, K. H. (2014). Developmental trajectories and predictors of juvenile detention, placement, and jail among youth with out-of-home child welfare placement. *Journal of the Society for Social Work and Research*, 5(2), 137–160. <http://www.jstor.org/stable/10.1086/676520>.
- Lee, S.-Y., & Villagrana, M. (2015). Differences in risk and protective factors between crossover and non-crossover youth in juvenile justice. *Children and Youth Services Review*, 58, 18–27. <https://doi.org/10.1016/j.chilyouth.2015.09.001>.
- Leone, P. & Weinberg, L. (2012). *Addressing the unmet educational needs of children and youth in the juvenile justice and child welfare systems*. Retrieved from the Center for Juvenile Justice Reform Website: [https://cjjr.georgetown.edu/wp-content/uploads/2015/03/EducationalNeedsOfChildrenandYouth\\_May2010.pdf](https://cjjr.georgetown.edu/wp-content/uploads/2015/03/EducationalNeedsOfChildrenandYouth_May2010.pdf).
- Pickard, C. (2014). *Prevalence and characteristics of multi-system youth in Washington State*. Washington State Center for Court Research. [https://www.courts.wa.gov/subsite/wscctr/docs/MultiSystemYouthInWA\\_Final.pdf](https://www.courts.wa.gov/subsite/wscctr/docs/MultiSystemYouthInWA_Final.pdf).
- Piquero, A. R., Jennings, W. G., & Diamond, B., et al. (2016). A meta-analysis update on the effects of early family/parent training programs on antisocial behavior and delinquency. *Journal of Experimental Criminology*, 123(2), 229–248.
- Putnam, F. W. (2006). The impact of trauma on child development. *Juvenile and Family Court Journal*, 57(1), 1–11.
- Puzzanchera, C., Sladky, A. and Kang, W. (2016). *Easy access to juvenile populations: 1990–2015*. <http://www.ojjdp.gov/ojstatbb/ezapop/>.
- RFK National Resource Center for Juvenile Justice (2014). *From conversation to collaboration: How child welfare and juvenile justice agencies can work together to improve outcomes for dual status youth*. <http://www.modelsforchange.net/publications/539>.
- Ryan, J., Chiu Y. L., & Williams, A. (2011). *Knowledge brief: Is there a link between child welfare and disproportionate minority contact in juvenile justice?* Chicago, IL: John D and Catherine T. MacArthur Foundation. Retrieved from the National Juvenile Justice Network website: [http://www.njjn.org/uploads/digital-library/Knowledge\\_Brief\\_Is\\_There\\_a\\_Link\\_between\\_Child\\_Welfare\\_and\\_Disproportionate\\_Minority\\_Contact\\_in\\_Juvenile\\_Justice\\_Models\\_for\\_Change\\_12.1.11.pdf](http://www.njjn.org/uploads/digital-library/Knowledge_Brief_Is_There_a_Link_between_Child_Welfare_and_Disproportionate_Minority_Contact_in_Juvenile_Justice_Models_for_Change_12.1.11.pdf).
- Ryan, J. P., Hernandez, P. M., & Herz, D. (2007). Developmental trajectories of offending for male adolescents leaving foster care. *Social Work Research*, 31(2), 83–93.
- Ryan, J. P., Herz, D., Hernandez, P. M., & Marshall, J. M. (2007). Maltreatment and delinquency: investigating child welfare bias in juvenile justice processing. *Children and Youth Services Review*, 29(8), 1035–1050. <https://doi.org/10.1016/j.chilyouth.2007.04.002>.
- Ryan, J. P., Williams, A. B., & Courtney, M. E. (2013). Adolescent Neglect, Juvenile Delinquency and the Risk of Recidivism. *Journal of Youth and Adolescence*, 42(3), 454–465. <https://doi.org/10.1007/s10964-013-9906-8>.
- Sickmund, M., Sladky, A., and Kang, W. (2017). *Easy access to juvenile court statistics: 1985–2014*. <http://www.ojjdp.gov/ojstatbb/ezajcs/>.
- Smith, C. A., Ireland, T. O., & Thornberry, T. P. (2005). Adolescent maltreatment and its impact on young adult antisocial behavior. *Child Abuse and Neglect*, 29(10), 1099–1119.
- Tam, C. C., Abrams, L. S., Freisthler, B., & Ryan, J. P. (2016). Juvenile justice sentencing: Do gender and child welfare involvement matter? *Children and Youth Services Review*, 64, 60–65. <https://doi.org/10.1016/j.chilyouth.2016.02.028>.

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