UNIVERSITY OF CALIFORNIA,
IRVINE

The Revolving Door from Place to Place:
Examining In(stability) of Physical Movements in Juvenile Probation Supervision

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Criminology, Law & Society

by

Kristine Chan

Dissertation Committee:
Associate Professor Naomi F. Sugie, Chair
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2023

DEDICATION

To

Children and young adults
who seek light in the darkness and
those who spark a flame to lead a path

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ACKNOWLEDGEMENTS

The completion of this dissertation is partly to express my gratitude for a group of individuals who shaped my identity during my early adolescence and later adulthood. In moments of my personal challenges, small acts of kindness have created a light in a dark path which eased the trauma and loss I fell deep into. At different points in my life, each person here cared for my fundamental and human needs: to be fed when hungry, to feel safe, to be cared for, and to help me seek a purpose. This in turn, their fundamental existence in my life have allowed me to rely on them and given me strength. I would not be here today without your support and humanity. There are not enough words to demonstrate my appreciation, but I often think about you and the kindness you have shown me. I want you to know that the person I am today and the people I will help in the future come from the accumulated lessons you have taught me, opportunities you have given me, and wisdom you have shared. I promise to practice human compassion the way you showed me.

Christine Eng
Dina Wright
Casey Leonard
Ruth Barajas/YouthLine SF
Claire Hebrew
Bridget Freisthler
Katharine Tellis
Denise Herz

I want to express my profound appreciation to my advisor, who guided and aided my intellectual growth in the past years. Naomi, I have learned to be a better critical thinker because of you. Your thoughtful questions and feedback have often pushed my resistance to engage in counterfactual explanations, making me a better researcher and writer. Thank you for always supporting my path and helping me grow. Thank you to Kristin and Carly for serving on my committee. It is not an understatement to say that I have always admired and will continue to admire your work. Thank you for allowing me to work with you and learn from you.

I want to thank Andi Eastman at USC Children's Data Network. I cannot thank Andi enough for supporting my analysis and helping me reach this milestone. I am indebted to you and look forward to our future projects together. Moreover, this dissertation could not have been possible without Denise, Andi, and the ongoing collaboration with colleagues at the Los Angeles Probation Department and the Los Angeles Department of Children and Family Services. Although the findings and conclusions drawn from these data are solely those of the authors and should not be considered to reflect these county or state agencies, this analysis would not be possible without their partnership, reflecting the ongoing commitment to data-driven program and policy development. At Probation, I also want to thank a collection of Probation staff that was pivotal in the data collection process for the Probation Outcomes Study in 2017. This includes all the Probation Bureaus/Units, Deputy Probation Officers, and specifically: Sandy Woods, Suzanne Lyes, and Sharon Harada. You all taught me so much about probation practice, which has shaped my professional career: Thank you!

My professional career as a researcher is in part due to the statistical training I received from Richard McCleary, whom I learned a lot from. In addition, I could not have developed a teaching career without the help of Katharine Tellis, Jane Gauthier, and Carly Dierkhising.

Last but not least, I have had the great fortune to heal from my trauma and rebuild family relationships. I am thankful for my family, who remained present in my life, and we have grown

closer and stronger together. In practice, this is the desired outcome for many system-involved youth and families. I've been lucky in my own trajectory. Thank you to my family for supporting me and encouraging me as well as extended family in Vietnam which has kept me humble. Dad, I hope you are proudly watching from above for the person I have become.

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ABSTRACT OF THE DISSERTATION

The Revolving Door from Place to Place:

Examining In(stability) of Physical Movements in Juvenile Probation Supervision

by

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Doctor of Philosophy in Criminology, Law & Society

University of California, Irvine, 2023

Associate Professor Naomi F. Sugie, Chair

Justice system contact may contribute to frequent changes in living arrangements in the lives of justice-involved youth and the families they serve, especially children with prior histories of child welfare contact. Early life events in child welfare may produce inequalities in juvenile justice experiences resulting in earlier and more frequent home removals. Experiences with justice facilities and frequent location changes may hinder family connections and impair long-term stability and youth well-being. For example, justice supervision may increase exposure to detention facilities and justice institutional placements. Yet, research has understudied the importance of physical movement changes under juvenile justice supervision. This is significant because location changes from place to place are collateral consequences of institutional justice contact.

Using a novel dataset of youth physical movements in the juvenile probation system - locations constructed from administrative data and physical case files - this dissertation tells a holistic story of 120 justice-involved youth in the Los Angeles County juvenile justice system. Probabilistic matching reveals that 69% of this sample had a previous child welfare referral in Los Angeles County. Using linked administrative data, I analyze youth experiences from arrest (i.e., the start of their probation trajectory) and progress to the analyses of their physical movement changes

over time during justice supervision. Specifically, I investigate the days until entrance to a detention facility (Chapter 1), the precarious physical movements during one year of justice supervision (Chapter 2), and the influence of out-of-home placement and subsequent delinquency trajectories (Chapter 3). This comprehensive examination of system experiences highlights the stability and instability of physical movement patterns among justice-involved youth with and without histories of child welfare contact.

This dissertation contributes to our knowledge about the potential consequences of multiple and ongoing system contact on family stability, specifically how justice contact may result in frequent physical movements in detention and out-of-home placements. Results reveal the inequity of justice facility entrances and physical movement transitions among youth with dual system contact across the child welfare and juvenile justice systems. Physical movement patterns and out-of-home placement experiences are much more transitional and unpredictable for youth with early experiences in child welfare. Dual system youth placed in residential placements are more likely to recidivate than if they were placed on home supervision. In contrast, residential placements are potential positive turning points for justice-involved youth without child welfare histories. The findings raise the question of whether out-of-home placements as a mechanism for delinquency intervention is uniformly effective for subgroup populations of justice involvement.

INTRODUCTION

Decades of research have documented the relationship between child welfare contact and entrance into the juvenile justice system (Esposti et al., 2020; Havlicek, 2010; Kolivoski et al., 2014; Topitzes et al., 2011; Unrau et al., 2008; Widom et al., 2018; Wulczyn et al., 2003). Although these systems overlap, Laub (2018, p. 5) recently noted that "this topic has yet to receive the attention it deserves". Over 90% of youth with child welfare histories will touch the child welfare system first before juvenile justice (Herz et al., 2019). This population is commonly known as "crossover youth" or "dual system youth." Once youth with dual system contact are arrested, they are at increased risk of experiencing the deeper ends of the juvenile justice system, including considerable time spent in detention facilities and probation out-of-home placements (Baidawi & Sheehan, 2020b; Gerard et al., 2019; Jonson-Reid & Barth, 2000; Ryan et al., 2008; Young et al., 2015) compared to youth without child welfare histories (Halemba & Siegel, 2011b; Kolivoski et al., 2017). This is significant because child welfare histories have contributed to inequity in the juvenile justice system, and the justice system itself may also further exacerbate inequality through system responses (Ryan et al., 2007; Tam et al., 2016). One potential consequence of justice system contact is the changes in physical movements from place to place, which may impair family stability over time. However, thus far, extant research has not emphasized this aspect of instability as a collateral consequence of justice contact.

In this dissertation, I focus on the physical movement experiences of youth under juvenile justice supervision. Using a novel dataset, I examine the immediate days after the arrest and later youth experiences with detention facilities and out-of-home placements. In three primary chapters, I investigate how the cumulative disadvantage of child welfare and parental arrest histories are associated with the timing of detention facility entry (Chapter 1), highlight the precarious physical movements patterns in justice supervision that produce instability in family life (Chapter 2), and

study how one year of justice supervision may affect youth's subsequent delinquency trajectories (Chapter 3). The combination of probation physical case file data and linked administrative data illustrate how stability and instability patterns are more likely for some youth. Among dual system youth, the inequity of justice facility entrances and transitions are much more deleterious over time. This means that physical movements and placement experiences are more transitional and unpredictable for youth with early experiences in child welfare. This dissertation contributes to our knowledge about the potential consequences of multiple and ongoing system contact on family stability, specifically how justice decisions may result in detention and probation out-of-home placements.

This introduction chapter aims to provide readers with foundational knowledge about the child welfare and juvenile justice systems. In particular, I describe how system contact may initiate a court order to remove youth from their homes and lead to an "out-of-home placement" decision. This level of intervention is a possibility in these systems, but their reason of youth removal is different. This follows with key findings on children and youth who crossover from the child welfare system to the juvenile justice system ("youth with dual system contact"). Next, I describe the study design and address the main strengths and limitations of the data sources that limit generalizability. The last section of this chapter outlines the dissertation structure and each chapter's abstract. Overall, my intention in this dissertation is to tell a progressive story, beginning from the youth's arrest to the analysis of physical movement changes during justice supervision.

System Contact and Out-of-Home Placement Options

Not all children who are abused or neglected will engage in delinquency (Baglivio et al., 2016; Cho et al., 2019; Kolivoski et al., 2014; Shook et al., 2011), but some children and youth with child welfare histories will engage in delinquency and may have official contact with the justice system. Prospective studies estimate that the percentage of maltreated children in child welfare

who “crossover” to juvenile justice ranges between 7% to 30% in the United States (Cho et al., 2019; Cutuli et al., 2016). Youth with child welfare histories will enter the delinquency court at an earlier age than their justice-involved only counterparts without child welfare histories (Alltucker et al., 2006; Herz, Eastman, Putnam-Hornstein, et al., 2021). During system contact, a range of child welfare and juvenile justice interventions may occur, including in-home monitoring/supervision, court-ordered services, and out-of-home placements. Out-of-home placement is a court-ordered intervention that removes youth from their homes and places youth in an alternative environment where they live and receive services. Across the two systems, the options for out-of-home placements differ because of their agency goals.

The child welfare system’s goals are to “promote the well-being of children by ensuring safety, achieving permanency, and strengthening families” (Children’s Bureau, 2020). When children are referred to the child welfare system for suspected child abuse or neglect, an investigation is initiated to determine whether the allegations are substantiated. If a substantiation occurs, youth and family may be monitored by a case social worker and given in-home services to ensure the children’s well-being and safety. The motivation is to keep children with their families and prioritize family reunification when possible. However, if significant safety concerns are present or the family is unwilling to care for their children, children may be removed from the home by the dependency court and placed in out-of-home care. Out-of-home placement options in child welfare ranges from least restrictive to most restrictive. The continuum includes kinship care (e.g., relative or friend), foster care (e.g., non-relative foster families), and group/congregate care (e.g., more intensive care in congregate settings, or no other options are present).

On the other hand, the juvenile justice system's goals[1] are to achieve youth rehabilitation, accountability, and public safety (National Conference of State Legislatures, 2020). Children and youth may be temporarily detained in a juvenile detention facility when they are arrested for an alleged criminal/status offense(s). If the charge(s) are petitioned and adjudicated by the delinquency court, the legal court disposition may include some type of probation home supervision and out-of-home placement options in a residential placement (e.g., community-based facility) and/or secure confinement facility (e.g., youth incarceration/ secure locked down facility). Youth placed on justice supervision are monitored by their probation officer and must adhere to probation conditions like drug testing, school attendance, and curfew. Additional arrests and revocations of court-ordered conditions may result in more frequent detentions and out-of-home placements. In some cases, probation may collaborate with the child welfare system if child abuse or neglect is suspected.

Crossing Over from Child Welfare to Juvenile Justice

Dual system contact is a common characteristic among juvenile justice populations. Between 50% (Halemba & Siegel, 2011b; Herz et al., 2019; Malvaso et al., 2019) and up to 83% (Cusick et al., 2008; Herz & Chan, 2017) of juvenile justice samples have had child welfare contact at some point in their lives. Compared to justice-involved youth without child welfare histories, youth with dual system contact are distinctively different for two noteworthy reasons. First, children and youth with histories of maltreatment encompass greater exposure to adverse family environments across their life course in complex ways, including exposure to domestic violence, parental substance use, families with criminal justice experiences, and family poverty (Baidawi & Sheehan, 2020b; Cusick et al., 2008; Dierkhising et al., 2013; Herz & Chan, 2017; Lee & Villagrana, 2015;

[1] Unlike the child welfare system, juvenile justice's goals and purposes are summarized broadly due to the range of state statue descriptions. However, juvenile justice agencies will generally provide similar services and treatment approaches to youth and families under justice supervision.

Malvaso et al., 2019). This is crucial in juvenile justice because family histories are often revealed during probation background checks. A potential consequence of child welfare bias is the increased likelihood of youth experiencing detention and probation out-of-home placements (Fader et al., 2001; Kurtz et al., 2008; Rodriguez et al., 2009; Ryan et al., 2007; Tam et al., 2016; Walker et al., 2022).

Second, the possibility that children may experience persistent episodes of being removed from the home in both systems is unique to justice-involved youth with child welfare histories. Dual system youth may enter child welfare out-of-home placements in their childhood and later experience detention and probation placements in juvenile justice. Each physical movement change requires youth and families to adapt to a change of environment that can be detrimental to family relationships and long-term stability. Studies have found that children with three or more child welfare placements are at higher risk of entering the juvenile justice system (Malvaso et al., 2016; Ryan et al., 2008; Widom & Maxfield, 2001) and have chronic delinquency trajectories (Kolivoski et al., 2014). Relatedly, youth with more child welfare investigations have more justice experiences in detention, out-of-home placements, and recidivism compared to justice-involved only youth (Herz, Eastman, Putnam-Hornstein, et al., 2021). This suggests that youth with dual system contact may have significant physical movements in and out of justice facilities during justice supervision. When more time is spent in out-of-home placements, this means less time is spent at home and in the community during childhood and adolescence. This has long-term negative consequences on children's attachment to others and bonds to social institutions (Simmons-Horton, 2021; Unrau et al., 2008).

Although our knowledge about dual system contact has significantly grown in the last decade, we still have an unclear picture of youth's placement trajectories and time spent away from home. Physical movement patterns may differ for dual system youth because aggregate data suggest that they have more out-of-home experiences than justice-involved only youth without

child welfare histories (Herz, Eastman, McCroskey, et al., 2021). In part, a holistic investigation of placement instability is challenging to investigate because of the limitations of administrative data. The reliance on cross-sectional studies, which only focus on placement instability at a single point in time, undermines the order and patterns of placement experiences. Simply put, we know little about youth's physical movements from place to place under justice supervision. Moreover, the order of movement events is essential in juvenile justice because early justice decisions affect how the case is subsequently processed which may lead to more out of home experiences and movements (Thomas et al., 2022; Zane et al., 2022). To address these gaps, I use a novel dataset that combines administrative data and physical case file data to examine the stability and instability of youth physical movements under juvenile justice supervision.

Study Context and Description of Data Sources

This dissertation uses a sample of justice-involved youth from The Los Angeles County Juvenile Probation Outcomes Study, Part II (POS2), which I co-led (Herz & Chan, 2017). The impetus for the study was partly to fulfill a Memorandum of Agreement (MOA) between the Los Angeles County Probation Department and the U.S. Department of Justice. The MOA required Probation to support a longitudinal evaluation to assess their efforts at improving juvenile justice outcomes. As a result of this longitudinal design, the study captured both prospective and retrospective data from multiple time points during probation supervision. For this dissertation, I supplement the original dataset with official child welfare data to explore how early life events in the child welfare system may shape later juvenile justice experiences. The triangulation of multiple data sources provides unique insight into the experiences of justice-involved youth and those with dual system contact under probation supervision. However, the data also has its limitations.

The study's population consists of two cohorts of justice-involved youth released from probation out-of-home placements[2] within three months between January 1, 2015, and March 31, 2015. Out-of-home placements defined here are considered residential placements and secure confinement facilities where justice-involved youth were removed from their living situations and court-ordered to a justice out-of-home placement. On average, 188 youth exited a residential placement per month, and 96 youth exited a secure confinement facility per month. Within each cohort, a stratified random sample of 60 cases was selected based on gender and race/ethnicity each month; females were oversampled to ensure appropriate gender representation (see details in Herz & Chan, 2017). As a result, a total sample of 120 youth was selected for data collection, including retrospective data and up to one year of prospective tracking from the date of placement release. The final sample comprises 58% males and 42% females. Slightly more than two-thirds of the sample was Latino (n=82, 68%), a quarter African American (n=30, 25%), and 7% other race/ethnicity (n=7 White, one other race/ethnicity). At the time of the arrest, almost all youth were living at home (Appendix A). Due to the original sampling strategy, the data has limitations. This next section discusses the limits to generalizability and then I describe the data sources and their strengths.

Data Limitations and Generalizability

The POS2 dataset contains a sample of justice-involved youth (N=120) with out-of-home placement experiences in the Los Angeles County Probation Department. For this reason, generalizability to the broader juvenile justice population is limited. Generalizability is impacted because all youth had been removed from the home and entered a justice placement, were from the same geographic region, and this is a relatively small sample. In Los Angeles County, between 16%

[2] In Los Angeles County, probation out-of-home placements are distinguished by the Welfare and Institution Code (WIC 602). Probation residential placements in Los Angeles County are referred to as "Suitable Placement" (WIC 602 SP), and secure confinement facilities are known as "Camp Community Placements" (WIC 602 CCP).

and 19% of justice-involved youth are court-ordered to be removed from home and placed in residential or secure confinement placement (LA County Probation Department, 2021). Suppose the interest is to examine out-of-home placement trajectories. In that case, one potential problem is the sampling from the dependent variable (i.e., a biased sample selection because this sample consists of youth with out-of-home placements). To partially minimize the problem of selection bias, the analysis is anchored on the "original arrest" that led youth to their eventual probation supervision rather than the placement release event in 2015. The "original arrest" may or may not be the youth's first arrest. Young people can be arrested without juvenile court involvement (e.g., the arrest did not lead to a petition or adjudication). Instead, the original arrest in this study represents a petition sustained by the juvenile court that led to eventual probation supervision.

Figure 1 provides a visual depiction of this starting period. With the original arrest as the focal point, most analysis in this dissertation focuses on the first year of the youth's probation supervision, starting with the original arrest event. This means that approximately 84% of the analysis does not include the "placement exit" event in 2015. As such, if I examine physical movement trajectories in one year time, some youth may never have experienced an out-of-home placement in the first year of probation supervision. This anchor also provides an opportunity to explore the extent to which justice systems prioritize the least restrictive option in justice placement decisions, such as: Are justice-involved youth experiencing justice facilities quickly and frequently?

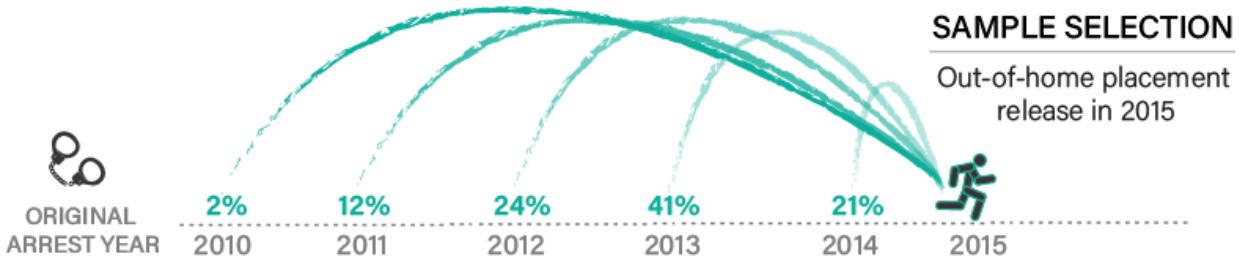

Figure 1. Original Arrest as the Focal Study Point

Generalizability may also be affected if readers consider this population a "high risk" sample because of their later out-of-home placement experience. Typically a risk assessment predicts the risk of reoffending, and in theory, the juvenile court uses this assessment to inform case planning by putting high risk individuals into more restrictive and structured settings. At the time of the study, risk scores were not administered for half of the sample which prevented this examination. This is common in other jurisdictions. Evidence suggests that juvenile risk assessments are inconsistently used in practice, especially regarding case management and placement decisions (Petkus et al., 2022). Hence, the reliability of risk assessments to categorize youth in out-of-home placements as "high risk" is questionable. If we assume that this sample is considered high risk, the results can potentially increase Type I errors. This would be an upward bias of showing more frequent interactions with the justice system than what occurs for the general juvenile justice population. Relatedly a vital consideration is whether there are compositional differences in the cohorts, which suggest earlier and longer experiences on probation are a higher risk population. Youth who remain under probation supervision for a longer observed period of time (e.g., arrest in 2010) and later released in an out-of-home placement in 2015 are potentially a higher risk group compared to those who were arrested in 2014. To test for this, the initial primary models included the original arrest year as a control variable. The results were not statistically significant (Appendix B).

Furthermore, since arrest data and probation supervision are limited to Los Angeles County, the results of the dissertation do not reflect justice processing in other jurisdictions. Across the nation, juvenile courts vary widely in how cases are processed and decisions are made (Feld, 2017). Compared to national statistics, Los Angeles County has a substantial difference in the race/ethnicity distribution of justice involvement (LA County Probation Department, 2021; OJJDP, 2021). Almost two-thirds of justice-involved youth are Latino youth (59% compared to 19% nationally), and 5% are White youth (compared to 43% nationally). For this reason, the White

sample in this study was extremely small to make any meaningful inferences about race/ethnicity. Other jurisdictions typically have double the rates of African American youth in this sample, as seen in Cook County, Cuyahoga County, and New York City (Herz et al., 2019) compared to 32% in Los Angeles County (LA County Probation Department, 2021). Although the findings in this dissertation only pertain to one jurisdiction, there are significant implications for justice-involved youth and their families because Los Angeles County has the largest juvenile justice and child welfare populations in the United States.

Whether the youth had other arrest histories outside of Los Angeles County and with the criminal justice system is unknown. However, if juvenile arrests occurred in other jurisdictions, it is unlikely that missing arrest histories will affect juvenile justice supervision in Los Angeles County (i.e., justice placement trajectories). This is because two jurisdictions cannot supervise the same youth simultaneously. Moreover, I am unable to account for delinquency cases that resulted in a transfer waiver to the adult court, which may lead to physical movements to a state correctional facility. I anticipate this is not likely since only 1% of delinquency cases in 2019 nationally resulted in a transfer to criminal court (OJJDP, 2021). Similarly, adult recidivism is beyond the scope of analysis.

Data Sources

In the POS2 dataset, a sample of 120 justice-involved youth was selected for in-depth data collection. As noted previously, this study included both retrospective and prospective tracking. Cases were tracked from the out-of-home placement release in 2015 up to one year (or earlier if the case terminated probation jurisdiction). When cases reached the end of the tracking period, the Probation Department notified the research team to begin data collection. I coordinated with the probation area offices to review the youth's physical case files on-site. On average, data collection for a single case took between 4-6 hours. Using multiple data sources, I tracked the youth and

family characteristics at specific intervals from the original arrest until the end of the tracking period. At the end of the study, we retrieved the juvenile probation administrative data from the Probation Case Management System (PCMS). For this dissertation, I also expanded the original POS2 data sources by partnering with the University of Southern California's Children's Data Network (CDN) to include child welfare data. A description of each data source follows.

Physical Case File Data

Physical case file reviews offered the opportunity to capture more in-depth information about each youth, such as mental and behavioral health needs, physical location movements, and family characteristics (e.g., history of parental arrest). I read case notes narratives from PCMS and reviewed court reports/documents in the physical juvenile case file. Justice-involved youth and family histories/information in court reports may be noted in juvenile petitions and court progress reports but not recorded in administrative data. A unique feature of this dissertation is the creation and analysis of a "movement timeline," which I constructed to track youth's physical movement changes under juvenile probation supervision. This timeline includes system-generated orders (e.g., temporary detention, out-of-home placement orders) and non-system-related events (e.g., the youth ran away and returned home). For example, a youth may run away from care without a bench warrant issued. This type of event will not appear in administrative data, but the movement timeline will capture a change in a physical location. This level of in-depth data enables a more accurate depiction of instability in the lives of young people involved in the juvenile justice system. Some youth behaviors may not lead to system-level interactions but still impact family stability. However, it should be noted that the information available in probation records is limited to what is recorded by probation and may only partially capture characteristics/events disclosed to juvenile court partners. In other words, information is subjective to the probation officer recording their interactions from their perspectives, which may include misconstrued or inaccurate information.

Juvenile Justice Administrative Data

During the original study, Probation extracted all available juvenile arrest data in Los Angeles County from PCMS up until 2016. Arrest data contains demographic information, arrest dates, offense information, and whether the arrest led to detention. For this dissertation, a new research petition was approved in 2021 to update the arrest data through mid-2021. This addition completes the juvenile arrest history for each youth in the sample until age 18. PCMS also captures all entrances and releases from detention and probation out-of-home placements. This level of data is essential to capture the duration of youth's time in probation facilities (e.g., start and end dates) and reasons for their entrances. However, placement data alone is limited to system-generated actions (e.g., an arrest that led to detention). Thus, triangulated data from the administrative-level and physical case file reviews is a novel approach to studying physical movement changes.

Child Welfare Administrative Data

In addition to probation administrative data, dual system contact experiences are essential. More than half of justice-involved youth have prior child welfare histories (Cusick et al., 2008; Halemba & Siegel, 2011b; Herz et al., 2019; Malvaso et al., 2019), yet child welfare data is often inaccessible to researchers due to the lack of system integration and data variability at the county/state level (Herz & Dierkhising, 2019). Without this consideration, the dual system youth population may appear small. For instance, Los Angeles County has historically only focused on children and youth with concurrent involvement, meaning youth who have an active child welfare case as they enter the juvenile justice system (LA County Office of Child Protection, 2021). Los Angeles County allows this "dually involved" population to be concurrently supervised by both agencies because of a unique policy in California. Assembly Bill 129 allows counties to "opt-in" for dual jurisdiction in child welfare and juvenile justice systems. Dually involved youth with concurrent involvement in both system comprise only 13% of the juvenile justice population (LA

County Office of Child Protection, 2021). The problem is that limiting only concurrent contact underlies the assumption that relatively few justice-involved youth are involved in child welfare. With this assumption, we would have a narrow strategy for delinquency intervention, focusing only on youth with active child welfare involvement. Thus, we will miss opportunities for delinquency prevention for youth with closed child welfare cases at risk of entering the juvenile justice system.

I define "dual system contact" in this dissertation as youth who touch both the child welfare and juvenile justice systems prior to or at the time of the youth's original arrest in Los Angeles County. Studying the dual system youth population is a rare and unique opportunity because most jurisdictions do not have linked data systems (Herz & Dierkhising, 2019). This analysis is only possible through partnership with the Children's Data Network (CDN). CDN used probabilistic record linkage to match the POS2 dataset to the Child Welfare Services Case Management System (CWS-CMS). After matching, the linkage found that 83 out of 120 (69%) youth in the study's sample had previous child welfare referrals in Los Angeles County. This is comparable (64%) to the dual system youth population in Los Angeles County in a recent study (Herz, Eastman, Putnam-Hornstein, et al., 2021). Child welfare data includes an indicator for dual system contact, the number of investigations, and whether the youth had ever experienced out-of-home placements in child welfare.

Although not addressed in this dissertation's analysis, youth can have different pathways to dual system contact when considering the timing (e.g., order of system contact) and level of system contact (e.g., non-concurrent or concurrent). The POS2 dataset is limited to investigating this impact due to the small sample size. I excluded 15 (13%) cases as "dual system contact" because the child welfare contact occurred after the original arrest. In Los Angeles County, this pathway is around 6% of the juvenile justice population (Herz, Eastman, Putnam-Hornstein, et al., 2021). Furthermore, some youth may be concurrently involved in the child welfare and juvenile justice system. Our sample size precludes modeling this dually involved youth population as a separate

group. Recent research suggests that youth who are dually involved are more likely to have frequent contact with the justice system (Herz, Eastman, Putnam-Hornstein, et al., 2021; Herz et al., 2019; Huang et al., 2015). If given a larger sample size, it is likely that the dually involved youth population will have more frequent movements in justice facilities than non-concurrent dual system youth, which one prior study have found (Herz & Dierkhising, 2019). In summary, the dual system sample in this study includes both youth with dual contact and dual involvement. Future research should focus on dual system pathways to explore their trajectories under justice supervision and delinquency trajectories.

Structure of the Dissertation

The structure of this dissertation is organized by three primary chapters. Each chapter begins with an abstract and works as a standalone chapter. Figure 2 provides a visual overview of each chapter's aims. When taken together, this dissertation tells a holistic story of justice-involved youth's experiences from the original arrest (i.e., the start of the probation trajectory) and progress to the analyses of their physical movement changes over time during justice supervision. Specifically, I show how instability is a feature of youth and families' lives in the juvenile justice system, especially youth with child welfare histories. My contribution to research highlights how early life events in child welfare may produce inequalities in justice placement experiences resulting in earlier and more frequent home removals. In the concluding chapter, I briefly summarize the dissertation's key findings and overarching recommendations for increasing stability in family life for justice-involved youth and their families. Overall, my dissertation emphasizes the importance of conceptualizing justice involvement as a dynamic set of decisions that can impact youth's physical movements, which has implications for family stability over time.

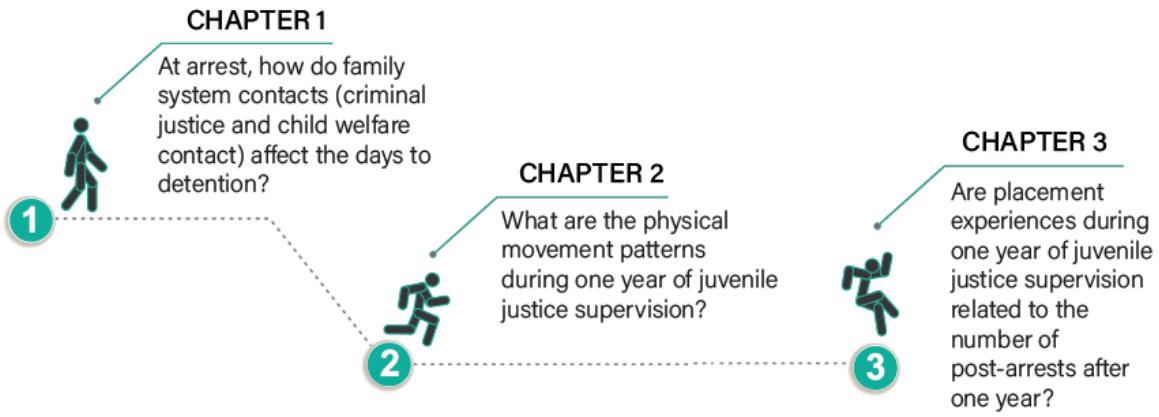

Figure 2. Visual Depiction of Chapter Aims

Chapter Abstracts

Chapter 1 Abstract, "Parental Arrest, Child Welfare, and Days to Juvenile Detention": Early detention experiences can cumulatively impact subsequent juvenile court decisions. In this way, detention has increasingly become a mechanism for punishment with consequential outcomes in juvenile justice. Yet, existing research has primarily focused on the outcome of juvenile detention and tends to overlook the timing of detention. Time is significant because quicker entry into a detention facility may be unequally distributed across youth with prior institutional contact. In particular, youth at arrest with parental histories of criminal justice contact and/or child welfare contact may enter detention faster than youth without prior institutional contact. In this chapter, I use a sample of justice-involved youth (n=120) under probation supervision to estimate the days until their first entry to a detention facility. I explore whether parental arrest histories and child welfare contact increase the timing of detention from arrest. The results show that justice-involved youth with parental arrest histories took longer to be detained than their counterparts without parental arrest histories. In contrast, when justice-involved youth have previous institutional contact (parental arrest histories and child welfare), they were detained approximately two times faster than youth without previous institutional contact. Quicker entry into a detention facility was also related to more child welfare investigations. Among this sample of justice-involved youth,

family histories of institutional contact may have compounded over time to produce disparities in quicker detention experiences.

Chapter 2 Abstract, "Physical Movement Patterns: Visualizing Location Changes In Juvenile Probation Supervision": Justice-involved youth in restrictive placement settings have produced poor outcomes in juvenile justice. Experiences in justice facilities may disrupt home stability through physical location changes and impair youth's connections with their families. Yet, more attention must be paid to the ordering and placement patterns that disrupt family stability due to justice contact. In this chapter, I contribute to the existing literature by examining trajectories of physical movement patterns and placement changes among a sample of justice-involved youth (n=120) during one year of juvenile probation supervision. Using rich physical case files and probation administrative data, I employ sequence and cluster analysis to visualize and describe five physical movement typologies during justice contact. Two typologies show that the juvenile court exercised the least restrictive care option, where most youth remained at home with their families at the time of the arrest and generally throughout their probation supervision. In contrast, three typologies show precarious physical movement patterns among females and youth with dual system contact. This study highlights the dynamic nature of physical movement patterns in and out of justice facilities during justice involvement, which may produce family instability over time in the form of frequent physical movement changes and time spent in out-of-home placements.

Chapter 3 Abstract, "The Relationship Between Out-of-Home Placement, Dual System Contact, and Recidivism": Time spent in out-of-home placements has been associated with increased recidivism rates at reentry. The "revolving door" of experiences in and out of detention facilities and out-of-home placements has significant consequences for justice-involved youth's stability and well-being. Yet, this relationship remains unclear because studies rarely consider the presence of different justice facilities that youth may face under juvenile justice supervision. Out-of-home placement may be a turning point by increasing and decreasing recidivism risk over time for

subgroups of justice populations, especially youth with child welfare histories. In this chapter, out-of-home placement, specifically residential placement, is a turning point associated with later delinquency trajectories. Justice-involved youth had fewer arrests after one year if they were placed in residential placements instead of home supervision. In contrast, dual system youth had higher recidivism rates over time in residential placements, and those with previous out-of-home placements in child welfare had fewer arrests after one year of justice supervision. Future research must examine what type of out-of-home placements are most beneficial for delinquency intervention among subgroup populations of justice-involved youth.

CHAPTER 1: PARENTAL ARREST, CHILD WELFARE, AND DAYS TO JUVENILE DETENTION

Abstract

Early detention experiences can cumulatively impact subsequent juvenile court decisions. In this way, detention has increasingly become a mechanism for punishment with consequential outcomes in juvenile justice. Yet, existing research has primarily focused on the outcome of juvenile detention and tends to overlook the timing of detention. Time is significant because quicker entry into a detention facility may be unequally distributed across youth with prior institutional contact. In particular, youth at arrest with parental histories of criminal justice contact and/or child welfare contact may enter detention faster than youth without prior institutional contact. In this chapter, I use a sample of justice-involved youth (n=120) under probation supervision to estimate the days until their first entry to a detention facility. I explore whether parental arrest histories and child welfare contact increase the timing of detention from arrest. The results show that justice-involved youth with parental arrest histories took longer to be detained than their counterparts without parental arrest histories. In contrast, when justice-involved youth have previous institutional contact (parental arrest histories and child welfare), they were detained approximately two times faster than youth without previous institutional contact. Quicker entry into a detention facility was also related to more child welfare investigations. Among this sample of justice-involved youth, family histories of institutional contact may have compounded over time to produce disparities in quicker detention experiences.

Introduction

In 2019, almost 187,000 young people in the United States experienced pre-adjudication detention in juvenile court (Hockenberry & Puzzanchera, 2021). Although detention is intended for temporary care, it has increasingly become a mechanism for punishment. Detention not only physically confines youth but has significant implications for how the case is subsequently processed in the juvenile court (Beckman & Rodriguez, 2021; Leiber & Fox, 2005; Rodriguez, 2010; Thomas et al., 2022; Zane et al., 2022). Early detention experiences can increase the likelihood of further court proceedings (Gann, 2019; Leiber & Fox, 2005; Thomas et al., 2022). For example, consistent research has found that pre-adjudication detentions were significantly more likely to be ordered formal probation supervision and out-of-home placements (Guevara et al., 2006; Thomas et al., 2022). These studies suggest that *when* detention occurs may be significant to juvenile justice pathways and lead to inequity in detention processing. Some youth are more likely to experience earlier detention because of family histories and accumulated disparities (Lederman et al., 2004; McCoy et al., 2012; Rodriguez et al., 2009).

Despite the potential cumulative impact of early detention, studies rarely address the timing. The time to detention, such as the number of days until a youth experiences detention, deserves further examination. Most studies examined detention as an outcome, regardless of when the timing of detention occurs (on day one of arrest or detention in 30 days). Time is treated as a constant, which overlooks the importance of first entry and sequencing of detention. Timing matters because the court's use of discretion at different junctures of time may differ depending on what information arises during their investigation. Timing is crucial to prevent systemic bias in detention processing and consequential justice pathways. An early study found that family status increased the odds of detention among justice-involved youth (McCoy et al., 2012), which suggests

that the perceptions of the family unit may play a role in detention decisions. However, the narrow focus on two-parent households is a shortcoming in prior research.

Instead, it is essential to broaden this literature to understand how family histories of institutional contact may influence the timing of detention processing. A disproportionate number of justice-involved youth with child welfare histories are indirectly impacted by their parent's involvement in the criminal justice system (Lederman et al., 2004; Salisbury et al., 2015; Tasca et al., 2011). Unlike other forms of institutional contact, family histories of criminal justice and child welfare contact are part of the detention screening and investigation process. On the one hand, cumulative disadvantage may be more consequential because families with prior institutional contact are perceived as "unstable" (Albonetti, 1991; Heider, 1958; Tolan, 1987) and thus, lending to the perception that youth are at high risk for delinquency and warranting immediate detention. On the other hand, early detention may be due to behavioral differences as a result of prior institutional contact (Lee & Villagrana, 2015). These overlapping systems, and yet, sometimes intergenerational experiences with institutions (Herz & Chan, 2017; Myner et al., 1998; Tasca et al., 2011), may change individual and family behaviors through past system interventions. Prior system institutional contact may increase youth exposure to the justice system and earlier detention experiences. It is unclear how prior institutional contact is related to the timing of detention.

In this chapter, I use survival analysis to investigate whether institutional contact, defined as parental arrest and child welfare histories, influences the days until detention for a sample of 120 justice-involved youth at arrest. By emphasizing the timing of detention, the results contribute to our understanding of how one or more institutional contact affects the speed of detention differently for justice-involved youth. Specifically, youth with parental arrest histories took longer to be detained compared to youth without any prior institutional contact. However, youth with parental arrest histories and prior child welfare contact had quicker entry into a detention facility.

Youth with more child welfare investigations were also detained faster, highlighting the cumulative impact of ongoing institutional interventions in the lives of youth and their families. In the following sections, I describe how the cumulative disadvantage theory helps us understand the timing of early detention experiences and how institutional contact may influence detention processing.

Cumulative Disadvantages in Detention Processing

Cumulative disadvantage may be even more pronounced in the early stages of the juvenile court decisions, given that the court's mission is founded on the principles of rehabilitation and treatment while balancing punishment (Feld, 2017). Unlike the criminal justice system, this dual emphasis gives the court discretion to act in the child's best interest based on an assessment of the youth's needs and social history. Information obtained during detention screening may be related to the timing of detention, yet time is understudied in detention studies. Although much of the extant research has found pre-adjudication detentions affect outcomes at later stages of judicial dispositions (Thomas et al., 2022), it is unclear whether justice-involved youth are detained immediately after arrest and what factors contribute to their time to detention. Early detention experiences may be influenced by markers of disadvantage that create a "temporal growth in inequalities that magnify preexisting differences between individuals and groups" (Kurlychek & Johnson, 2019, p. 293). As Zane and colleagues (2022, p. 512) noted, addressing inequality in juvenile justice requires "a focus on the accumulation of negative life events that occur outside the system".

Prior research has documented how juvenile court actors may rely on internal (e.g., personal traits) and external (e.g., social environment) attributes to make judicial decisions (Beckman & Rodriguez, 2021; Heider, 1958). Within the first 48-72 hours of an arrest, detention decisions are often made by entry-level intake officers with less educational experience (Kurtz et al., 2008). Even though legal variables like the statutory criterion and offense severity are

important for detention decisions, other extralegal factors are also salient. Indirectly, intake officers may develop casual explanations for behavioral patterns that result in judgments about the youth's home environment (Heider, 1958) and use this information to predict the risk of delinquency (Albonetti, 1991; Tolan, 1987). This evaluation can be especially detrimental during detention because justice-involved youth often have contact with other institutions that preceded their justice contact (Cusick et al., 2008; Cutuli et al., 2016; Esposti et al., 2020; Herz & Chan, 2017). Adverse childhood events will have accumulated over time as sources of pre-existing disadvantages and lead to negative consequences for certain families with markers of disadvantage. During the juvenile court's investigation, information about family histories via access to administrative data systems and/or interviews with families may arise during detention screening or pre-adjudication court reports. Therefore, a critical assessment of institutional contact is a substantial gap to prevent disparities in the detention processing of justice-involved youth with prior indirect parent exposure to the criminal justice system and direct exposure to the child welfare system.

Institutional Contact as Contributors to Cumulative Disadvantage

The court's perception of the family plays a fundamental role in detention processing. Early studies on justice-involved youth and their families have used family structure as a measure of family functioning, which suggests that single-parent households are less stable (Dejong & Jackson, 1998; Leiber & Fox, 2005; Love & Morris, 2019; McCoy et al., 2012). Since the family is thought to be the cause of delinquency, the family's moral character and worth are examined by the juvenile court (Emerson, 1969). Past studies have pointed to family histories of criminal justice contact and parental neglect as signs of delinquency risk factors (Bridges & Steen, 1998; Emerson, 1969). Recent research has shown that juvenile probation officers still rely on family disadvantage indicators like family stability and parental incarceration assessment to make court recommendations (Goldman & Rodriguez, 2022).

Detention constitutes a major disruption to youth and families' lives and, although intended to be temporary, has become a form of punishment with long-term consequences (Beger & Hoffman, 1998). When families are perceived as dysfunctional, court interventions have removed youth from delinquent or high-risk home environments (Bridges & Steen, 1998). These adverse experiences can result in cumulative disadvantages that intensify inequalities and lead to systemic bias in juvenile court decisions. Another possibility is that justice-involved youth with prior institutional contact behave differently from their justice-involved counterparts without any prior institutional contact. Justice-involved youth with persistent child welfare histories have been shown to penetrate more deeply into the juvenile justice system compared to their counterparts (Herz & Dierkhising, 2019; Kolivoski et al., 2014; Orsi et al., 2018) due to higher risk factors and less protective factors (Lee & Villagrana, 2015). Their experiences with one or more institutions may produce behavioral differences in delinquency risk leading to early contact with the justice system and quicker entry to detention.

Parental Incarceration and Arrest Histories. A growing body of research has documented the detrimental impacts of parental incarceration on children and later contact with the juvenile justice system. Children of incarcerated parents can experience multiple difficulties in internal (Miller, 2006) and external behaviors (Turney, 2021) that may lead to long-lasting maladjustment years after the parent returns (Aaron & Dallaire, 2010). Parental incarceration creates a shift in family structure, financial strain, and residential instability (Miller, 2006; Tasca et al., 2011; Turney & Goodsell, 2018), which heightens children's risk of delinquency over time (Aaron & Dallaire, 2010; Alltucker et al., 2006; Murray et al., 2012). Murray, Farrington, and Sekol's (2012) meta-analysis found that children of incarcerated parents, compared with children separated from parents for other reasons, showed a significant higher risk of delinquency among the incarceration group. Once children are placed on juvenile justice supervision, they are significantly more likely to

be re-arrested (Dannerbeck, 2005; Tasca et al., 2011), which increases their chances of early and ongoing detention experiences.

Apart from incarceration, parental arrest histories may be equally or more detrimental. Research has found that criminality is highly concentrated within generations of families (Leve & Chamberlain, 2004). If one of the biological parents has a criminal justice record, youth are more likely to enter juvenile court early (Alltucker et al., 2006) and engage in delinquency in the future (Aaron & Dallaire, 2010; Dannerbeck, 2005; Murray et al., 2012; Tasca et al., 2011). This creates a cumulative disadvantage during detention processing when family arrest histories are discovered through administrative records. A recent study found that parents' arrest histories increased the likelihood of youth detention (Walker et al., 2022). However, this research focuses almost exclusively on the probability of detention. As an outcome variable, it fails to consider that the timing of detention entry may vary by histories of institutional contact.

Dual System Contact. At the time of arrest, youth with child welfare histories are disadvantaged during detention processing. Yet, there has been less attention focused on the timing of detention. Children with more frequent contact with the child welfare system are more likely to have greater and deeper contact with the juvenile justice system (Herz et al., 2022). When children in child welfare are arrested, they are more likely to be sent to juvenile detention rather than released home to their caregivers. One study reported that youth in child welfare are 10% more likely to be detained than those without child welfare involvement (Conger & Ross, 2001), which may suggest quicker entry into detention facilities. Juvenile courts may perceive child welfare involvement as a sign of family dysfunction. If detained before the pre-adjudication hearing, the risk of adjudication increases and leads to more punitive pathways in juvenile court (Herz et al., 2010; Thomas et al., 2022; Zane et al., 2022). The consequences of detention may be more severe for youth with dual system contact, who are more likely to enter out-of-home placements than justice-involved youth without child welfare histories (Ryan et al., 2007; Tam et al., 2016). Once detained,

their prior histories of abuse, neglect, and experiences with institutionalization may exacerbate in detention (Dierkhising et al., 2013; Espinosa et al., 2019). On the other hand, dually involved youth may be more likely to be detained if their child welfare placements refuse their return back to placement (Baidawi & Sheehan, 2020a; Ryan et al., 2008). Studies have found that the dual system population have significant mental health and substance use needs in detention facilities (Lederman et al., 2004; Teplin et al., 2002). Therefore, it is critical to investigate whether dual system youth enter detention more quickly than justice-involved youth without child welfare histories because detention is likely more harmful to their well-being.

Overall, cumulative disadvantage may be more prominent for families who have prior contact with both the criminal justice and child welfare systems (Herz & Chan, 2017; Myner et al., 1998; Tasca et al., 2011). These overlapping systems may have an intergenerational impact on youth's entry into the justice system and may suggest quicker entry into detention during juvenile court evaluations. These systems do not occur in isolation. National data on parental criminal justice records reveal that these families' children comprise a large share of the child welfare population (Johnson & Waldfogel, 2002). When interacting with the justice system, youth with more than one institutional contact may be perceived as more "dysfunctional," resulting in a systemic bias in detention decisions. As a result, justice-involved youth with greater institutional contact may be at risk of earlier detention after arrest.

The Present Study

Informed by prior research on cumulative disadvantage, I aim to broaden the consideration of family attributes beyond the traditional two-parent household measure by considering family histories of institutional contact among justice-involved youth. The cumulative interactions of institutional interventions in the youth's family unit may influence juvenile court perceptions and detention decisions. Specifically, youth at original arrest with prior parental histories of criminal justice contact and child welfare histories may enter detention facilities more quickly. Using

survival analysis, the study's goal is to examine the length of time it takes from the original arrest to the first detention episode. I then estimate whether institutional contact – defined as parental incarceration, parental arrest, and child welfare – differs by the days to detention. The research questions include the following:

1. How many days does it take from the arrest to detention?
2. How do measures of institutional contact (independent and interaction) affect the days to detention?

Data and Methods

This study uses data from *The Los Angeles County Juvenile Probation Outcomes Study, Part II* (POS2), which captures the physical movement trajectories of justice-involved youth (N=120) on juvenile probation supervision in Los Angeles County. All youth in this study had at least one out-of-home placement experience sometime during their supervision trajectory which includes time in a juvenile detention facility. The level of detail in the POS2 data are well positioned to help us explore the timing of detention among justice-involved youth. Until 2019, the Probation Department operated three juvenile detention facilities (i.e., juvenile halls) in Los Angeles, Sylmar, and Downey. Juvenile detention facilities are temporary holding locations to house youth for screening risk for harm, awaiting court proceedings, or pending transfer to an out-of-home placement. For the latter, all youth entering a probation out-of-home placement in Los Angeles County must be taken to a detention facility to be processed and then physically transferred to their placement locations by the Probation Department. Therefore, all justice-involved youth in the POS2 dataset had at least one detention episode because, at minimum, they were released from a probation out-of-home placement in 2015.

Dependent Variable

The dependent variable is the time to detention which represents the number of days until each youth's first detention episode during their probation supervision trajectory. The Probation Case Management System (PCMS) contains administrative data on detention episodes, including the entrance dates, release dates, and reasons for detention. The days to detention variable was created using the entrance date of the first detention episode subtracted by the original arrest date. In this sample, youth entered a detention facility for an arrest (63%), a court violation (23%), and a bench warrant due to running away (14%).

Independent Variables

The independent variables are institutional contacts defined as parental incarceration, parental arrest, and past child welfare contact. Two data sources were used to measure institutional contacts: physical probation case file data and child welfare administrative data. First, family histories of criminal justice contact (parental incarceration and parental arrests) were obtained using probation physical case files. In this study, parental incarceration is where at least one of the youth's biological parents experienced incarceration prior to their original arrest (i.e., before their probation supervision began). Similarly, parental arrest is where at least one of the youth's biological parents had an arrest history.

Criminal justice contact was coded from physical case files during data collection in probation area offices. While case file data was not intended for research purposes, researchers have previously "mined" clinical information for quantitative research (Epstein, 2002). This is beneficial because case file information typically has in-depth information about family characteristics that are not otherwise available in administrative data. In Los Angeles County, family histories of criminal justice contact are documented in pre-adjudication court reports and detention reports. Juvenile Deputy Probation Officers (DPO) routinely collect psychosocial

information about youth and their families during probation investigation, case planning, and supervision. They may gather information through special access to arrest records and/or interviews with youth and families during supervision. Although mined data has its benefits, its limitations include the potential inconsistency of how family information is documented in court reports. For example, DPOs do not generally distinguish arrest histories and conviction records in juvenile court reports. Therefore, an indicator of family criminal convictions is not available. In this respect, it is essential to note that the measure of parental arrests will overestimate arrests that do not lead to convictions. Additionally, it is also noteworthy to point out that the measure of parental incarceration is typically self-reported by families during probation interviews. This information is recorded in probation reports which the limitations of self-report data and reliability may impact.

Second, institutional contact is also measured by youth contact with the child welfare system. Child welfare histories are captured in the Child Welfare Services Case Management System (CWS-CMS). This data includes all referrals to child protective services for child abuse and neglect in Los Angeles County since 1998. Child welfare data were probabilistically matched to the POS2 dataset. As a result of this match, a "Dual system contact" variable was created to distinguish between justice-involved youth with child welfare histories prior to their original arrest (n=83, 69%) and those without child welfare histories at the same time (n=37, "Justice-involved only youth"). The number of prior child welfare investigations were also included to measure persistent histories of child welfare involvement. Lastly, I created an interaction variable for parental arrest[3] and dual system contact to capture institutional contacts across the criminal justice and child welfare systems.

Demographics and legal offense measures were used as the control variables. Gender includes males and females. Race/ethnicity options consist of African American, Latino, and other

[3] Parental incarceration was not included in the interaction due to the limited sample size. Only 7 out of 37(19%) justice-involved youth did not have parents with a prior incarceration history.

race/ethnicity. At the time of the original arrest, the number of prior arrests is a measure of delinquency history. Legal factors include the age at the original arrest, the most serious sustained charge, and if the offense occurred at the youth's living location and school. The most serious sustained charge is a categorical variable coded as a violent, property, drug, or other offense. Additional controls specified whether the youth had a documented need for mental health treatment and alcohol/substance use issues. This information was coded from pre-adjudication or detention reports as noted by the Juvenile DPO at the time of the original arrest.

Analytical Strategy

Survival methods study the time until an event occurs (Allison, 2014). In survival analysis, the "risk set" assumes that each youth is at risk of experiencing detention at the time of the original arrest. The analysis proceeds as follows. First, descriptive statistics are presented, including survival summary statistics and Kaplan-Meier plots. A log-rank test will explore whether youth with institutional contacts have different survival distributions (i.e., different lengths of days to detention). Next, a Cox proportional hazards model estimates the relationship between institutional contacts and days to first detention. The Cox model is a nonparametric model that estimates the hazard (or risk) of experiencing detention and assumes that the proportional hazards assumption is met. This suggests that the ratio of hazards between two individuals at a given time is constant (Kleinbaum & Klein, 2016). Simply put, the Cox model identifies the factors related to youth who may enter detention quicker upon the original arrest. Results are presented as hazard ratios (HR), where a value under 1.00 indicates a longer time of entering detention, and a value over 1.00 indicates a shorter or faster time to detention. Robust standard errors adjusted for potential heteroskedasticity.

In total, three Cox models[4] estimate the timing of detention in relation to one or more institutional contact. A goodness-of-fit and Schoenfield residual tests found that these models have not violated the proportional hazards assumption. Model 1 examines whether parental arrest and child welfare histories influence the days to detention. Model 2 examines each variable's main effects with an interaction variable for institutional contact across the criminal justice and child welfare systems. Model 3 investigates whether greater child welfare involvement, in the form of child welfare investigations, is related to the days to detention. All analyses were conducted in Stata, and graphics were produced in R using survival, survminer, and ggplot2 packages.

Results

Table 1 provides descriptive statistics for the full sample and by dual system contact (justice-involved youth with child welfare histories). The average day to detention is 170.41 days (SD = 210.33), ranging from day 1 of arrest to 1,262 days after the arrest. Among the sample, histories of institutional contacts are common. Approximately one-third (31%) of the justice-involved youth's parents had experienced incarceration, and a half (51%) had an arrest history. More than two-thirds of youth (69%) had dual system contact prior to the original arrest. In the gender distribution, there are slightly more males than females (58% and 42%). The sample comprised 68% Latino, 25% African American, and 7% of other race/ethnicity.

At the original arrest, three-quarters of justice-involved youth (73%) had no prior arrest histories, which indicates their original arrest was their first official contact with law enforcement. On average, youth in the sample were 15.05 years old (SD = 1.20). Almost half of the youth were

[4] I also conducted two sets of sensitivity analyses. Due to their small sample size for the "other" race/ethnicity, I re-estimated the Cox model without this group which shows race was not statistically significant in the days to detention. The magnitude and direction of the coefficients were similar to the Cox model. Second, I assessed the Weibull distribution for model fit. There was a change in the direction of the parental incarceration variable (decreasing time to detention instead of increasing time to detention), but the variable remains statistically insignificant at p>.05.

arrested for a property offense (43%) and violent offense (38%), with smaller percentages for other offenses (12%) or drug-related offenses (8%). About one-fifth of the arrests occurred at the youth's living location (19%), and 27% took place on school grounds. Regarding mental and behavioral health, 55% had documented mental health needs, and 87% used alcohol or substances. Overall, descriptive statistics were similar between the full sample and youth with dual system contact, except for one area. Consistent with prior research (Herz et al., 2019), there were more females than males in the dual system contact sample (52% and 48%) than the full sample (42% and 58%).

Table 1. Descriptive Statistics for Full Sample and by Dual System Contact

	Full Sample (n=120)		Dual Contact Youth (n=83)	
	Mean/%	SD	Mean/%	SD
Dependent variable				
Days to detention	170.41	210.33	146.59	168.92
Independent variables				
Parental incarceration	31%		36%	
Parental arrest	51%		55%	
Dual system contact	69%		100%	
Demographics and controls				
Gender				
Male	58%		48%	
Female	42%		52%	
Race/Ethnicity				
African American	25%		24%	
Latino	68%		70%	
Other	7%		6%	
Number of prior arrests	0.36	0.67	0.36	0.67
Age at time of arrest	15.05	1.20	14.97	1.25
Most serious charge				
Violent offense	38%		34%	
Property offense	43%		49%	
Drug offense	8%		7%	
Other offense	12%		10%	
Arrest occurred at living location	19%		17%	
Arrest occurred on school grounds	27%		28%	
Mental health need	55%		60%	
Alcohol/Substance use	87%		89%	

Next, survival summary statistics can be examined by plotting the sample's survival curve. The survival probability uses the survivor function, which defines the probability that the individual *i* will survive after time *j* (Singer et al., 2003). Using the survival probability, the Kaplan-Meier plots the days until the first detention episode. It represents the probability of entering a detention facility by a given time point or the "speed" of detention from the original arrest. The plot in Figure 3 shows a sharp decline in survival time following the immediate timing of the arrest. Only 63% of the sample "survived" day one of the arrest without spending time in a detention facility. On the other hand, 37% of youth were detained at the time of the arrest and transferred to a juvenile detention facility. The dotted line represents the median survival time of 91 days or three months after the original arrest.

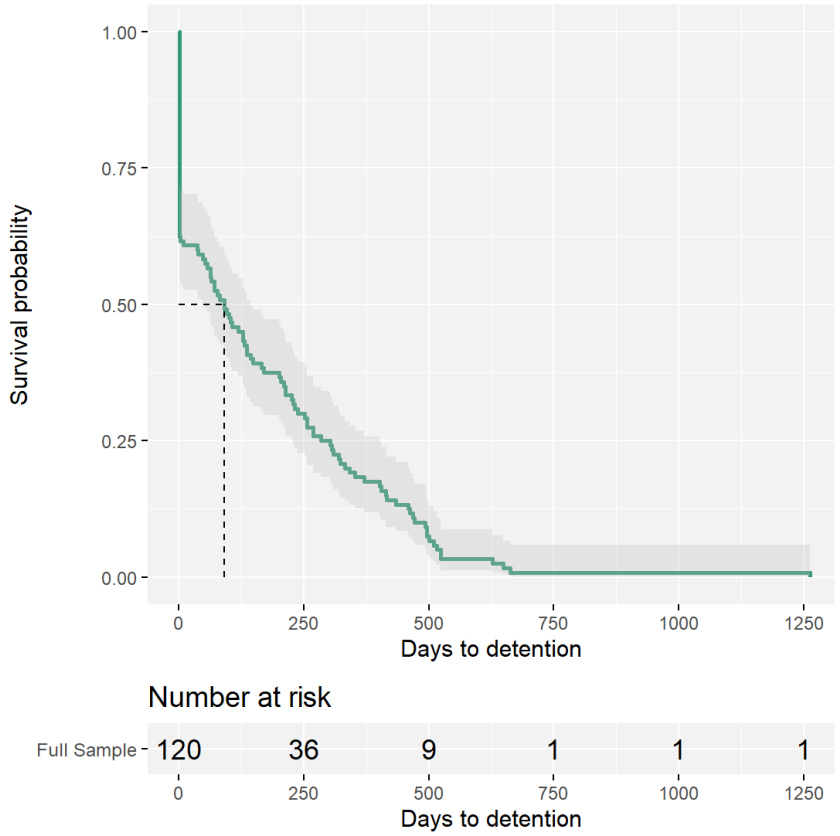

Figure 3. Kaplan-Meier Survival Plot

Some youth with different histories of institutional contacts may have different survival functions. When examining the survival time separately by dual system contact and history of parental arrest, justice-involved youth with experiences of at least one institutional contact appear to decline slightly faster to detention (Appendix C). However, a log-rank test found no statistical difference in the days to detention between youth with dual system contact ($X^2 = (1, 120) = 3.66$; $p = 0.056$) and parental arrest histories ($X^2 = (1, 120) = 0.23$; $p = 0.63$). Furthermore, when institutional contacts (parental arrest histories and dual system contact) are combined in an interaction term, the results were near statistical significance ($X^2 = (1, 120) = 8.00$; $p = 0.046$). The plot in Figure 4 suggests that justice-involved only youth with histories of parental arrest may be entering detention facilities more quickly than all other groups. The question remains whether these factors with additional controls are related to increases or decreases in survival time to detention.

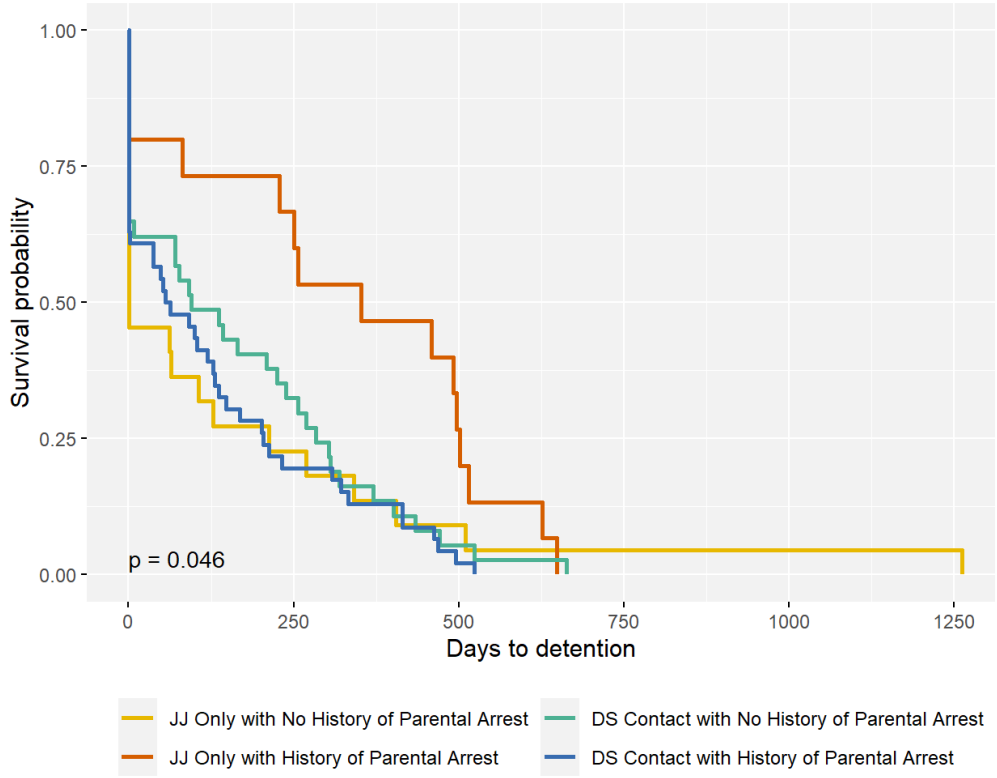

Figure 4. Kaplan Meier Survival Plots by Institutional Contacts

Table 2 displays the first set of results from the Cox proportional hazard models, which show some support for institutional contacts increasing the days to detention. Model 1 examines whether the youth's parents with criminal justice contact and dual system contact were related to the timing of detention. Overall, it appears that youth with dual system contact are detained 52% faster than justice-involved only youth (HR = 1.52, $p < .05$). African American (HR = 2.11, $p < .05$) and Latino (HR = 2.36, $p < .05$) youth were detained approximately two times faster than other race/ethnicity. Net of controls, legal offense characteristics like each additional prior arrest (HR = 1.39, $p < .01$), and each year increase in the age of the original arrest (HR = 1.40, $p < .001$) increases the days to detention. Youth who were arrested for a property offense took longer to enter a detention facility than a violent offense (HR = 0.58; $p < .05$). If the arrest took place at the youth's living location, the speed of detention increases by 2.26 times (HR = 2.26, $p < .001$), but youth took longer to enter detention if the arrest occurred on school grounds (HR = 0.59, $p < .05$).

In Model 2, I examine whether an interaction between prior institutional contacts influences the days to detention. Justice-involved only youth with parental arrest histories entered detention slower than their same counterparts without this history (HR = 0.42; $p < .01$). On the other hand, youth with dual system contact with and without parental arrest histories did not statistically differ in timing of detention ($p > .05$). The most important finding is the impact of more than one institutional contact prior to the youth's arrest. Youth who have parents with arrest histories and dual system contact increase the speed of youth detention by 2.24 compared to families without these experiences (HR = 2.24, $p < .05$). Lastly, similar to Model 1, race/ethnicity and legal factors continues to increase the days to detention (African American and Latino compared to other race/ethnicity youth, prior arrests, age at the time of arrest, and arrest at living location) while a property offense compared to a violent offense decreases the time to detention (HR = 0.60; $p < .05$), net of controls.

Table 2. Cox Models Predicting Time to Detention

	Model 1		Model 2	
	Full Sample		DS Interaction and Parental Arrest	
	HR	Robust SE	HR	Robust SE
Parental incarceration	1.25	(0.28)	1.17	(0.26)
Parental arrest	0.70	(0.14)	0.42**	(0.14)
DS contact	1.52*	(0.30)	1.03	(0.27)
DS contact X Parental arrest			2.24*	(0.75)
Female	1.09	(0.22)	1.11	(0.23)
Race/Ethnicity (ref. Other)				
African American	2.11*	(0.79)	2.21*	(0.74)
Latino	2.36*	(0.80)	2.30**	(0.67)
Number of prior arrests	1.39**	(0.14)	1.37**	(0.13)
Age at time of arrest	1.40***	(0.08)	1.39***	(0.09)
Most serious charge (ref. = Violent)				
Property offense	0.58*	(0.14)	0.60*	(0.15)
Drug offense	0.68	(0.23)	0.73	(0.23)
Other offense	0.61*	(0.14)	0.66	(0.15)
Arrest occurred at living location	2.26***	(0.52)	2.29***	(0.51)
Arrest occurred on school grounds	0.59*	(0.15)	0.60*	(0.15)
Mental health need	1.03	(0.18)	1.08	(0.19)
Alcohol/Substance use	1.18	(0.32)	1.19	(0.31)

*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests).

Model 3 presents the full model with the inclusion of child welfare investigations (Table 3). The results were similar to the previous models. Justice-involved youth who had parents with arrest histories took longer to get detained compared to their counterparts without parental arrest histories (HR = 0.40; p < .01). Yet if justice-involved youth had more than one type of institutional contact, they were detained 2.29 times faster compared to youth without either history (HR = 2.29, p < .05). Each additional child welfare investigation report increases the days to detention by 9% (HR = 1.09, p < .01). The only other difference from the previous model is the most serious sustained charge. Both property offenses (HR = 0.53, p < .05) and other types of offenses (HR = 0.63, p < .05) compared to violent offenses delay the days to detention, net of controls. In comparison, race/ethnicity and other legal characteristics continue to increase the timing of detention.

Table 3. Cox Models Predicting Time to Detention with CW Investigations

	Model 3	
	DS Interaction, Parental Arrest, and Child Welfare	
	HR	Robust SE
Parental incarceration	1.16	(0.25)
Parental arrest	0.40**	(0.13)
DS contact	0.75	(0.20)
DS contact X Parental arrest	2.29*	(0.77)
Numbers of CW investigations	1.09**	(0.03)
Female	1.05	(0.22)
Race/Ethnicity (ref. Other)		
African American	2.07*	(0.71)
Latino	2.16**	(0.64)
Number of prior arrests	1.47***	(0.14)
Age at time of arrest	1.41***	(0.09)
Most serious charge (ref. = Violent)		
Property offense	0.53*	(0.14)
Drug offense	0.69	(0.21)
Other offense	0.63*	(0.14)
Arrest occurred at living location	2.17***	(0.47)
Arrest occurred on school grounds	0.58*	(0.14)
Mental health need	1.06	(0.18)
Alcohol/Substance use	1.13	(0.27)

*p < .05; **p < .01; ***p < .001 (two-tailed tests).

Discussion

Using survival analysis, the results illustrate a significant portion of justice-involved youth experience detention early, sometimes almost at the immediate moment of the arrest. Slightly more than one-third of youth (37%) were detained at time of the arrest and half of the sample were detained within three months. Early detention experiences in the frontend of the juvenile justice system can have a cumulative impact on subsequent court decisions (Thomas et al., 2022; Zane et al., 2022). Studies have shown that juvenile probation officers and the juvenile court's evaluation of family instability may increase the probability of detention (Beger & Hoffman, 1998; Echols & Rodriguez, 2022; Leiber & Fox, 2005). When families are viewed as dysfunctional or inadequate caregivers, youth are more likely to experience a removal from home (Goldman & Rodriguez,

2022). Some studies suggest that child welfare contact and/or parental criminal justice histories increases the likelihood of out-of-home placement for justice-involved youth (Rodriguez et al., 2009; Ryan et al., 2007; Tam et al., 2016). However, less emphasis has been placed on the timing of when detention occurs and whether these factors affect the "speed" to detention. This study fills this critical gap.

Institutional contact which is defined by both prior intergenerational justice contact and child welfare involvement was quite common. Among this sample of justice-involved youth, 31% and 51% of youth on probation supervision had a parent incarcerated or arrested in the past, respectively. Consistent with previous studies (Herz, Eastman, Putnam-Hornstein, et al., 2021; Herz et al., 2019), 69% of justice-involved youth in the sample had child welfare referrals prior to their original arrest. The critical question is whether one or more prior institutional contacts affect the days to detention. The results show that justice-involved youth with parental arrest histories took longer to enter detention than their justice-involved only counterparts without parental arrest histories. In other words, the indirect parental exposure to the criminal justice system did not lead to cumulative disadvantage in detention processing. One explanation is that early institutional contact may have created a deterrent effect that changes youth and parents' behaviors and reduced delinquency risk over time. Early interventions have been found to effectively address behaviors at younger ages and reduce later justice experiences (Jonson-Reid & Barth, 2003; Kolivoski et al., 2014). Although youth with parental arrest histories later have justice contact in this sample, they may have fewer risk factors that make them behaviorally different and, thus, are less likely to be detained and enter detention at a slower rate. Overall, the findings illustrate that single institutional contact in the form of parental arrest histories shows youth are at lower risk of being removed from the home and entering detention immediately after the arrest.

When more than one institutional contact is considered, cumulative disadvantage is more pronounced for justice-involved youth and families entering the juvenile justice system. Multiple

dimensions of institutional contacts (parental arrest and child welfare histories) increase the speed of youth detention by 2.29 times faster than youth without either history. Youth with greater child welfare involvement, in the form of maltreatment and abuse investigations, also enter a detention facility more quickly. Given the juvenile court's mission to protect youth (Feld, 2017), detention may be used as a mechanism to achieve the parens patriae doctrine. Youth who were arrested at their living location (typically home) entered detention two times more quickly. When youth are perceived to be living in a "broken home," the juvenile justice system may view the home environment as a risk factor for future delinquency (Albonetti, 1991). Parental neglect, for example, was assumed to be a sign of a future delinquent career because something must be wrong in the home (Emerson, 1969). This "patterned response" may lead to perceptions of instability and, through systemic bias, may lead to quicker entry into detention facilities for some youth (March & Simon, 1958). The additive effect of criminal justice bias depicts an image that the youth is not suitable to remain at home because their parents are deemed dysfunctional and incapable of caring for their children. Thus, the juvenile court's evaluation of family histories in one or more institutions may compound over time, producing disparities in detention processing.

Study Limitations

While the study contributed to our understanding of how institutional contacts affect the timing of detention, this study is not without limitations. First, this study did not include the perceptions of probation intake officers or judges ordering the detention, specifically how institutional contacts inform judicial decisions. Prior studies suggested that child welfare bias may influence juvenile justice sentencing, to which youth with prior child welfare experiences were more likely to be removed from the home and less likely to have their cases dismissed (Ryan et al., 2007; Tam et al., 2016). Future research may be interested in exploring the extent to which information about institutional contacts is available and how this information is used in conversations with youth and families. Although there is increasing collaboration between child

welfare and juvenile justice agencies (Herz & Dierkhising, 2019), some court actors may have greater access to child maltreatment and neglect information than others.

A second limitation is that the measures of institutional contacts could be more refined in future studies with larger sample sizes. The timing of detention may differ depending on which parent was incarcerated. Prior studies have documented the differential consequences of maternal and paternal incarceration on children (Hagan & Dinovitzer, 1999; Rodriguez et al., 2009; Tasca et al., 2011). Maternal incarceration may result in greater housing instability, while paternal incarceration may affect children's externalizing problems and later delinquency (Turney & Goodsell, 2018). In turn, these consequences may directly or indirectly affect the system's decision to detain youth earlier. Lastly, there may be other risk factors and protective factors about the family that this study did not capture. Juvenile court actors evaluate a spectrum of psychosocial factors to predict recidivism, like individual and family functioning measures (Tolan, 1987). Nevertheless, situations like a parent unwilling to retrieve their children after arrest will increase the youth's likelihood of being detained when no other options are present (Herz & Chan, 2015).

Policy and Practice Implications

The implications for policy and practice are significant. Not only are youth with dual system contact more likely to be detained pre-adjudication (Herz, Eastman, Putnam-Hornstein, et al., 2021), they may be more likely to be detained quicker when they have more complicated family backgrounds. Youth with dual system contact have higher risk factors and needs (Baidawi & Sheehan, 2020a; Lee & Villagrana, 2015; Modrowski et al., 2022), so juvenile court actors must be trained to assess family risks. Detention decisions should be based on a holistic and trauma-informed assessment of justice-involved youth and families' needs. If prior institutional contact (e.g., child welfare, criminal justice) is evaluated, there should be intentional efforts to include family strengths, like how parents/caregivers create safety and stability in the home.

Reducing bias in detention decisions can only be achieved with family and caregiver collaboration. Family engagement may reveal solutions to alternative living arrangements (e.g., relatives) without the assumption that juvenile detention is the only option. To the extent that the speed of detention differs for youth with prior institutional contact, intentional conversations about family stability may alleviate the influence of perceptual risks from historical system involvement. Given that youth who commit offenses at home are detained faster, family perspectives regarding detention should be considered while balancing public safety. As a result of justice contact, the least restrictive option must prioritize community placement to prevent early home removals and deeper justice involvement. The finding that school-based arrests appear to delay time to detention may suggest promising efforts to decrease the school-to-prison pipeline. If youth remain at home, families with cumulative adversities might benefit from appropriate services in the community to help stabilize family relationships, living situations, and problem behaviors. Any effort to delay youth detention is an opportunity to strengthen resilience and the well-being of justice-involved youth and their families.

CHAPTER 2: PHYSICAL MOVEMENT PATTERNS: VISUALIZING LOCATION CHANGES IN JUVENILE PROBATION SUPERVISION

Abstract

Justice-involved youth in restrictive placement settings have produced poor outcomes in juvenile justice. Experiences in justice facilities may disrupt home stability through physical location changes and impair youth's connections with their families. Yet, more attention must be paid to the ordering and placement patterns that disrupt family stability due to justice contact. In this chapter, I contribute to the existing literature by examining trajectories of physical movement patterns and placement changes among a sample of justice-involved youth (n=120) during one year of juvenile probation supervision. Using rich physical case files and probation administrative data, I employ sequence and cluster analysis to visualize and describe five physical movement typologies during justice contact. Two typologies show that the juvenile court exercised the least restrictive care option, where most youth remained at home with their families at the time of the arrest and generally throughout their probation supervision. In contrast, three typologies show precarious physical movement patterns among females and youth with dual system contact. This study highlights the dynamic nature of physical movement patterns in and out of justice facilities during justice involvement, which may produce family instability over time in the form of frequent physical movement changes and time spent in out-of-home placements.

Introduction

Recently, the Office of Juvenile Justice and Delinquency Prevention (OJJDP, 2022) reaffirmed ongoing priorities to support community-based alternatives to juvenile justice facilities stating that children and youth are better served in their own communities and with their families. This commitment stems from the poor outcomes of youth removed from their homes and entering justice facilities. Justice-involved youth in out-of-home placements are more likely to be detained, recidivate, and experience multiple placements (Boulger & Olson, 2011; Bullis et al., 2002; Hay et al., 2018; Minor et al., 2008). As a result, placement instability can negatively affect youth's connections with their families and communities (Havlicek, 2010; Shaw, 2012; Simmons-Horton, 2021) and compound their ability to achieve long-term stability. Yet, minimal research explores the ordering and patterns of placement changes that highlight this instability of physical movements in justice-involved youth lives (Wulczyn et al., 2003). We know little about how justice system contact can influence physical movements changes from place to place and different locations. Considering OJJDP's priority to keep children with their families, exploring justice-involved youth's physical movements and placement trajectories is essential to illustrate the (in)stability of youth's experiences within the context of system decisions. Particularly, physical movements in early justice contact can be consequential to later justice pathways. Increasing our understanding in this area may suggest ways to promote family stability and expand family-based interventions.

To some extent, scholars have attempted to study placement instability using aggregate measures of placement changes. However, this tendency views instability as a static backdrop to youth's lives and treats multiple placement experiences as a single lens (Havlicek, 2010). Physical movements are not singular events or experiences. Snapshots of experiences at one or two points in time give the perception that placement changes happened to justice-involved youth as histories of their past, undermining the trajectories and their experiences through time. A count of placement

changes also conceals potential patterns and variations that may arise from different placement types and time spent in various locations. Justice-involved youth may remain at home under justice supervision, runaway from care, or be court-ordered to a juvenile justice facility. These physical movements encompass a set of related transitions and closely intertwines with court mandates (e.g., running away may elicit a bench warrant for youth detention). In turn, justice involvement may produce physical movement changes and disruptions to family stability at the individual and family levels. Moreover, justice-involved youth with child welfare histories require unique considerations because they have more physical movement changes (Halemba & Siegel, 2011b; Herz, Eastman, Putnam-Hornstein, et al., 2021). A study found that past child welfare experiences contribute to later chronic placement experiences in the juvenile justice system (Kolivoski et al., 2017).

To date, no study has examined the sequence and patterns of physical movement changes among justice-involved youth. I use sequence analysis to address this gap by visualizing and describing location patterns in a sample of justice-involved youth (n=120). I constructed a physical movement timeline from the original arrest to one year on probation supervision using rich physical case files and administrative data. Analytically, this is one of the first comprehensive examinations of placement instability in juvenile justice and extends new research on precarious physical movement patterns among justice-involved females and youth with dual system contact. The emphasis on one year of supervision highlights how early justice decisions significantly impact family life and unstable living arrangements, including immediate detention and out-of-home placements. Although justice-involved youth have different placement experiences, some trajectories show greater transitions in and out of detention facilities and probation out-of-home placements in one year. Specifically, females and youth with dual system contact are predominately in typologies where more time is spent in probation out-of-home placements and leaving care without permission. Compared to justice-involved youth, dual system youth have more diverse and

less stable trajectories over time. Overall, I demonstrate that placement instability, when studied with only aggregate measures, undermines the extent that justice supervision can have on family stability in the long term.

Family Instability as a Consequence of Justice Supervision

Justice system contact may impact family stability in the lives of youth and the families they serve. The balance between protecting legal rights and public safety can negatively affect family life. One guiding principle in juvenile court is to make decisions based on the least restrictive option in that discretion must prioritize keeping youth with their families before escalating system actions. Restrictive options may include removal from home in a temporary detention facility and probation placements in a residential or secure confinement facility. If the least restrictive option is exercised, the order or escalation of systems actions should reveal early considerations of home supervision at the frontend of justice processing rather than immediate detention and entrances in out-of-home placements. Existing research has yet to fully explore this sequence and patterns of physical movements changes among justice-involved youth.

Changes to physical locations from the youth's typical social context (e.g., in a home) to an atypical social context has long-term consequences (Cavanagh, 2022). Youth in out-of-home placements have generally produced higher recidivism rates as opposed to keeping youth on home supervision (Lipsey & Cullen, 2007; Ryan et al., 2014; Ryon et al., 2013). When youth recidivate, their chance of re-experiencing detention and replacements in more restrictive settings increases (Aalsma et al., 2012; Herz & Chan, 2017; Snyder, 2004). In this way, system practices may create trajectories of placement instability or frequent movements between justice placements. In perspective, a short stay in a detention facility encompasses two physical movement transitions. However, a commitment to a secure confinement facility entails three transitions across four

locations (see below). This physical movement from place to place constitutes a major disruption to family stability that is rarely studied.

Home → **Detention Facility** → Home (2 transitions)
Home → Detention Facility → **Secure Confinement Facility** → Home (3 transitions)

The most common form of justice supervision is to maintain home stability in youth's communities as opposed to youth confinement (Hockenberry & Puzzanchera, 2021). Nevertheless, although with this intention, justice supervision may lead to changes in later physical movements through increased surveillance. Past scholars have noted that probation serves as a net-widener for low level offenses, and community supervision is merely a delay to later incarceration (Klingele, 2013; Phelps, 2018). On average, youth on probation supervision in the United States are monitored for 12 months (OJJDP, 2023). Under supervision, new arrests and/or violations of court-ordered conditions may initiate new court proceedings and as a result, lead to official probation placements in out-of-home settings, including incarceration in a secure confinement facility. Physical movement changes may also be initiated by the youth when they leave care without permission (LWOP) and later detained to clear a bench warrant. Because justice supervision encompasses court-ordered probation conditions and frequent monitoring, the likelihood of detection and revocation increases the chances of more punitive measures like home removals.

When physical transitions disrupt family stability, adjustments that can be stressful to justice-involved youth and their families. For example, youth in secure confinement facilities may be away from their home communities in areas that are difficult to reach by public transportation, which creates significant barriers to family visitations. Vera Institute of Justice found that 30% of incarcerated youth had no family visits during secure confinement (Shanahan & Agudelo, 2012). Restricted telephone access and geographical separation reduce family communication during incarceration (Ashkar & Kenny, 2008). This may exacerbate stress in family cohesion and create ambiguity in household rules once youth are released from justice facilities. Still, examining only

one placement experience neglects to capture the instability in youth and families' lives before and after justice placement. In turn, justice supervision may increase family instability through juvenile decisions, leading to changes in youth physical locations.

Our understanding of physical movement patterns and their consequences can be informed by sociological research on instability and family structure changes. The instability and change perspective suggest that "the loss or addition of a parental figure can disrupt a child's sense of insecurity and create ambiguity in household rules, family relationships, and parental expectations about behavior" (Cavanagh & Fomby, 2019, p. 497). This instability may produce multiple and repeated disruptions in family structure and adverse outcomes for children and young people. Although this literature is driven by changes in parents' union status causing family instability, there are reasons to expect that the same mechanisms apply to youth in the juvenile justice system.

Justice system actions can create a loss in parental figures by removing youth from their homes, thereby increasing exposure to non-intact family structures and repeated changes to family structures. Like changes in parent union status, the probability of changes to youth's locations is not determined by the child but, in this case, a function of institutional decisions. The harm is that children who experience family transitions are at higher risk of experiencing subsequent transitions (Cavanagh & Fomby, 2019; Wulczyn et al., 2003). During probation supervision, youth may experience one or more repeated changes in family structure as a result of temporary detention stays or prolonged periods in out-of-home placements. Alternatively, some justice-involved youth may experience minimal disruptions to family stability if appropriate services and resources are provided to families in their communities.

By broadening the literature to recognize justice contact as a source of family instability, I emphasize that punitive institutions can exacerbate and change the family structure. A lack of this recognition is a substantial oversight in how family instability is conceptualized in contemporary

family life for populations at risk of system exposure. This leads to a critical question: To what extent does justice supervision introduce family (in)stability to youth lives? It is vital to consider the sequence and patterns of physical movement changes among justice-involved youth, especially females and youth with dual system contact who are at greater risk of recurring family instability.

Females, Dual System Contact, and Out-of-Home Placements

Girls and young women in the juvenile justice system have considerable trauma exposure (Kerig et al., 2009; Teplin et al., 2002). Research has suggested that trauma is a catalyst for female delinquency, given that girls may run away to escape abuse at home (Belknap, 2001; Hershberger et al., 2018; Hickle & Roe-Sepowitz, 2018; Pullmann et al., 2020). When probation officers view justice-involved youth as needing mental health (Espinosa et al., 2019) or substance use (Walker et al., 2022) treatment, they are more likely to be removed from their homes and enter residential placements compared to males (Tam et al., 2016). Running away could also be a coping mechanism to avoid parental conflict from verbal disagreements and fighting (Rand, 2010), but leaving care without permission typically results in a bench warrant for detention. Girls, young women, and victims of commercial sexual exploitation especially have chronic histories of running away from home and leaving residential care (Choi, 2015; Cole et al., 2016; Hershberger et al., 2018).

As a result, entering out-of-home placements lead to physical location changes between family home environments and justice facilities (McMahon & Clay-Warner, 2002). Females with signs of family dysfunction appear to have multiple detention experiences and deeper justice involvement (Beger & Hoffman, 1998; Lederman et al., 2004). Thus, the physical movement trajectories of justice-involved females may illustrate greater family instability than males. This suggests that compared to males, females are more likely to enter justice facilities rather than be given the opportunity for home supervision. These movements may appear earlier in the frontend of justice processing which has consequential outcomes for later justice decisions.

Relatedly, the nexus between females and trauma exposure has shown early contact with the child welfare system. Changes in living arrangements and disruptions to family life may emerge in a substantial way for youth with dual system contact due to prior histories of child abuse and neglect. Youth with extensive maltreatment histories have higher odds of being removed from their homes and experiencing child welfare placements (Orsi et al., 2018). The "foster care drift" is the perception that youth are trapped in long placement stays and constantly moving from one place to another. Frequent drifting decreases opportunities for family reunification (Usher et al., 1999) and creates an ambiguous loss in children's lives (Boss, 2007; Mitchell & Kuczynski, 2010). This may be similar to a change in family structure during cohabitation and divorce, where one of the child's biological parents resides outside the home but is still present in the child's life. Being removed from a home can create ambivalence in the family's physical presence and uncertainty about returning home. This is similar to the experience of detention as youth are uncertain about the timing and outcome of release.

Exposure to out-of-home placements in child welfare can also increase later contact with the juvenile justice system (Baglivio et al., 2016; Goodkind et al., 2013; Kolivoski et al., 2014; Malvaso et al., 2019; Ryan et al., 2007; Ryan & Testa, 2005) and probation out-of-home placements (Cutuli et al., 2016; Fader et al., 2001; Halemba & Siegel, 2011b; Jonson-Reid & Barth, 2000; Lee & Villagrana, 2015; Orsi et al., 2018; Rodriguez et al., 2009). This is consequential because justice-involved youth with child welfare histories will spend more time in non-intact family structures and experience more frequent physical movements across childhood and adolescence. Studies have suggested a child welfare bias because youth with dual system contact are more likely to be ordered an out-of-home placement rather than home supervision (Ryan et al., 2007; Tam et al., 2016). Another explanation is that in-home supervision may be more complicated due to maltreatment histories; therefore, youth are more likely to experience a physical disruption and

transition to the deeper ends of the juvenile justice system (Ryan et al., 2014). In other words, limited housing options exist for youth with complex family backgrounds.

However, it is unclear whether there are different physical movement trajectories among justice-involved youth with and without child welfare histories. Research in this area has only been limited to youth with concurrent contact between the child welfare and juvenile justice systems, which is a much smaller population of dually involved youth. Drawing on this research, studies suggest that youth with child welfare experiences may have persistent histories of family instability from childhood to adolescence. Herz et al. (2010) noted that 65% of dually involved youth in probation out-of-home placements had no signs of family stability. Other scholars found that dually involved youth have experienced up to 12 placement changes after a delinquency petition has been filed, approximately a placement change every 2.2 months (Halemba et al., 2004; Halemba & Siegel, 2011b).

A shortcoming of this research is the consideration of placement ordering and time spent in physical locations. Studies typically only count placement entrances and exclude placement exits which is a form of transitional movement. For example, a transition of returning home is an important event not to overlook. Children have reported feeling worried about living with their parents after placement (Johnson et al., 1995). Thus, prior studies do not adequately capture an accurate representation of family instability in young people's lives as they move from place to place, especially those with prior child welfare experiences. Overall, the sequence and duration of physical locations may differ for justice-involved females and youth with dual system contact, given their higher probability of experiencing detention and probation out-of-home placements.

Data and Methods

In order to study physical movement trajectories in juvenile justice, data for this study come from *The Los Angeles County Juvenile Probation Outcomes Study*, Part II (POS2). The advantage of the

POS2 dataset is the inclusion of physical case file data in combination with juvenile justice administrative data. The sample comprises 120 justice-involved youth on probation supervision in Los Angeles County. I designed a "physical movement timeline" for each youth that tracks their day-to-day physical location changes starting with the original arrest. The original arrest years range between 2010 and 2014. Almost half of the sample had their initial arrest in 2013 (41%), followed by 2012 (24%), 2014 (21%), 2011 (12%), and 2010 (2%). I limit the analysis of physical movements within one year of justice supervision which begins on day one of their initial arrests, until 365 days later. There are two primary reasons for this decision. National data on justice supervision indicate that youth remain on juvenile probation supervision for, on average, one year (OJJDP, 2023). Moreover, the highest recidivism occurs between six months to one year of an arrest (Brown & Hall, 2021; Hockenberry & Puzzanchera, 2021; Ryan et al., 2014). In this case, one year of justice supervision will capture any physical movements into temporary detention facilities and possible entrances to out-of-home placements.

The process of collecting physical movement data contains two steps. I visited probation field offices to collect data on-site. During data collection, the probation supervisor printed all case notes and facility histories found in the Probation Case Management System (PCMS). A facility movement is any entry or release to and from a detention facility or out-of-home placement. I begin the movement timeline with only administrative data, highlighting the location changes due to juvenile court actions. This includes start and end dates for entrances to all juvenile probation facilities. Next, I expand the movement timeline with information discovered during physical case file reviews. I read all the case notes and documents in the physical probation case files to fill the gaps in the movement timeline. Case file reviews provided rich narratives highlighting the probation officers' actions and capturing their interactions with youth and families. This data source is vital because administrative data only capture physical location changes due to system actions. Not all events will generate court actions (e.g., a bench warrant) when youth run away from

their homes or placements. This novel method paints a comprehensive picture of justice-involved youth's daily movements and location changes. Note that physical movements transitions are often interrelated as entrance into placement also include a release from placement. If the event of returning home and return to placement are excluded, justice-involved youth in this sample were changing physical locations largely due to a new arrest/disposition (31%) and court detention/revocation (26%) followed by leaving care without permission (23%), bench warrant detention (15%), and other reasons (5%).

Measures

Dependent Variable. The outcome of interest is the changes in physical movement patterns during one year of juvenile justice supervision. Using the physical movement timeline data, I constructed a person-day dataset that categorizes youth's physical location in five exclusive types of locations (or "states," in the language of sequence analysis): "Detention," "Home Supervision," "Residential Placement," "Secure Confinement," and "LCWOP" (e.g., runaway). Each time *t* from day 1 to 365 days represents one of these five states, which is defined by the following:

- Detention (DT): Until 2019, the Probation Department operated three juvenile detention facilities (i.e., juvenile halls) in Los Angeles, Sylmar, and Downey. Detention is a temporary facility for housing youth due to new arrests, court violations (e.g., bench warrants), pending court proceedings, and placement transfers. All youth must be taken to a detention facility to be processed and physically transferred to their placement locations by the Probation Department. Unlike the following categories listed, detention is temporary because it has no defined set of time parameters (i.e., no set time for release), but youth are typically released within days.
- Home Supervision (HS): Home supervision is a broad category that captures living arrangements with biological parents, relatives, and non-relative/guardians (e.g., a family

friend) while the youth is under justice supervision. Youth placed on justice supervision are monitored by their probation officer and must adhere to probation conditions like drug testing, school attendance, and curfew.

- Residential Placement (RP): Residential placement is a category that emphasizes its location in the community and its less physically restrictive nature than incarceration. In Los Angeles County, approximately 12% of justice-involved youth are court-ordered to reside in a residential placement for six months on average (Herz & Chan, 2017; LA County Probation Department, 2021). In residential placements, youth must continue to follow probation conditions to attend school, meet curfew restrictions, and receive services. Some of these services may be provided on-site at the placement locations. Due to the small sample of youth (n=6), child welfare placements were also coded as residential placements.
- Secure Confinement (SC): A secure confinement facility is the most physically restrictive category (or youth incarceration). About 5% of the justice-involved youth population in Los Angeles County will receive a camp placement order (LA County Probation Department, 2021). In 2015, the Probation Department operated 14 juvenile probation camps or secure confinement facilities. Juvenile court orders at the time included 3, 6, and 9-month terms. On average, this sample remained in a secure confinement facility for six months. Due to its physical confinement, all services are delivered on-site (e.g., education, counseling).
- Leave Care Without Permission (LCWOP): Youth may run away or leave care without permission. This captures all situations where a youth left a designated location where the juvenile court orders the youth to reside at home or in a designated probation out-of-home placement.

Demographic, Legal, and Behavioral Characteristics. Physical movement patterns may differ by youth with dual system contact. Using CWS-CMS data, this is defined by a prior child welfare referral for abuse or neglect at the time of the original arrest in Los Angeles County.

Demographics and legal measures were taken from the Probation Case Management System (PCMS). Demographic variables include gender and race/ethnicity. Legal measures include offense characteristics at the time of the arrest: a number of prior arrests, age in years, and most serious sustained charge. Behavioral characteristics, such as mental health needs and alcohol/substance use, were coded from probation documents during physical case file reviews. For example, a mental health need is if there was an explicit mention of mental health diagnoses or services referred to the youth at the time of the arrest.

Analytical Strategy

Sequence analysis describes and visualizes sequences of states in longitudinal data, primarily applied to career and family trajectories in social sciences to highlight the ordering of events or states as they unfold over time (Abbott, 1995; Gabadinho et al., 2011). I use sequence analysis in this study to provide descriptive information on justice-involved youth's physical movements during one year of justice supervision. This method enables a comprehensive and unique examination of family stability and instability among justice-involved populations. To illustrate the strengths of sequence analysis, Figure 5 shows two individual sequences with different juvenile justice experiences from the original arrest to one year. In the first sequence, the youth remained at home throughout the year except for a few days in a detention facility. In contrast, the second sequence highlights greater movement instability, beginning with an arrest that led to immediate detention on one day. After release from detention, the youth was ordered home supervision until the youth ran away (i.e., left care without permission or LCWOP). Mid-way through the year, the youth continued to re-experience detention and out-of-home placements. In these examples, sequence analysis offers a longitudinal analysis of youth experiences, highlighting the order of location changes and the ability to describe sequence characteristics (e.g., time spent in each state).

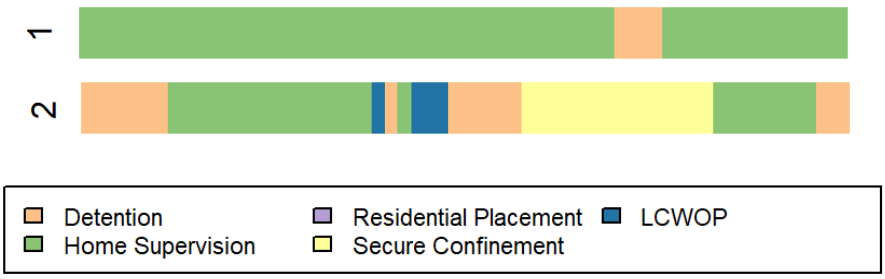

Figure 5. Sequence of Physical Movement Example

Along with sequence analysis, cluster analysis produces typologies to describe patterns of physical movement trajectories. In general, cluster analysis requires a distance matrix to change sequences to be more similar to each other by assigning costs for specific actions (i.e., insertions, deletions, substantiations of states). The fewer costs applied, the more similar sequences are together. I used the Longest Common Subsequence (LCS) method to calculate the distances because person-day states may create significant heterogeneity among trajectories, and aggregating days to more extended periods loses the transitory states of short-term detention stays. LCS is interested in the subsequences of events (i.e., ordering) rather than the timing of day-by-day states (Elzinga, 2006). In simulation studies, Barban and Billari (2012) found little differences between Optimal Matching (OM) and LCS results, which they argued perform better for life course sequences with variations within a group due to sequencing and timing.

I used the distance matrix and Ward's algorithm[5] to choose the number of clusters. I examined a range of cluster quality measures (e.g., the Average Silhouette Width and Hubert C's measures), state distribution plots, and distinct groups of clusters to assess for theoretical clarity and interpretability. Ultimately, the five-cluster solution[6] showed the most meaningful patterns that

[5] Another method for clustering sequences is the Partitioning Around Medoids (PAM). PAM partitions the sequences into a predefined number of clusters and selects the best representative sequence for each group (Studer, 2013). I evaluated the PAM algorithm and produced similar patterns of trajectories comparable to Ward. However, in the end, I selected the Ward method to distinguish similar group types rather than infrequent trajectories.

[6] A six-cluster solution separates Type 4 (n=24) into two groups. The first cluster (n=10) is characterized by most of the time spent in residential placements. The second cluster (n=14) has more youth on home supervision and residential placements later in the trajectory (see Appendix F).

distinguished out-of-home placement trajectories for justice-involved youth. Recently, Studer (2021) also introduced a clustering validation procedure to bootstrap sequences of similar but non-clustered data using a "null" model. To put it simply, these procedures assessed whether our selected number of typologies had a statistical clustering structure. Appendix D shows that the cluster validation for a five-cluster typology was a good fit for the data. In the results section, I also briefly examine the child welfare characteristics within each typology. However, these descriptive statistics are provided for context only. Readers should be cautious about interpretation due to the small sample size in each typology.

Overall, a major advantage of using sequence analysis is the graphical displays to describe and illustrate the results of sequence clusters. I highlight several plots to show the longitudinal succession of states across time, the heterogeneity of experiences among youth with dual system contact, and the mean time spent in each location across clusters. Sequence analysis was conducted in R using the TraMineR (Gabadinho et al., 2011) and the WeightedCluster packages (Studer, 2013).

Results

I first present the descriptive statistics from the sequence analysis. Figure 6 illustrates the state distribution plot, which plots the person-day locations during one year. As mentioned in Chapter 1, 37% of youth at arrest were detained on day one, but most youth remained at home (63%) after arrest, and a few (3%) remained in a child welfare placement. By six months, the percentage of youth on home on supervision decreased to 57%, while the rest of the sample resided elsewhere: 13% in detention, 13% in residential placement, 11% in secure confinement, and 6% left care without permission (LCWOP). By one year later, even fewer youth were living at home (45%). A greater percentage of youth had moved to detention (16%) and residential placements (19%). However, the percentage of youth in secure confinement facilities (13%) and those who left care without permission remained the same (7%).

During one year of justice supervision, youth had experienced, on average, 4.38 movement changes (SD = 3.74) ranging between 0 movements (youth remained at home the entire time) to 16 movements. On average, 213 days were spent at home, 49 days in detention and residential placements, approximately one month in secure confinement facilities, and 20 days away from care. Some youth had statistical differences in the number of physical movements, such as youth with alcohol/substance use issues ($p < .01$). Youth who had experienced secure confinement facilities were near statistical significance ($p = 0.05$).

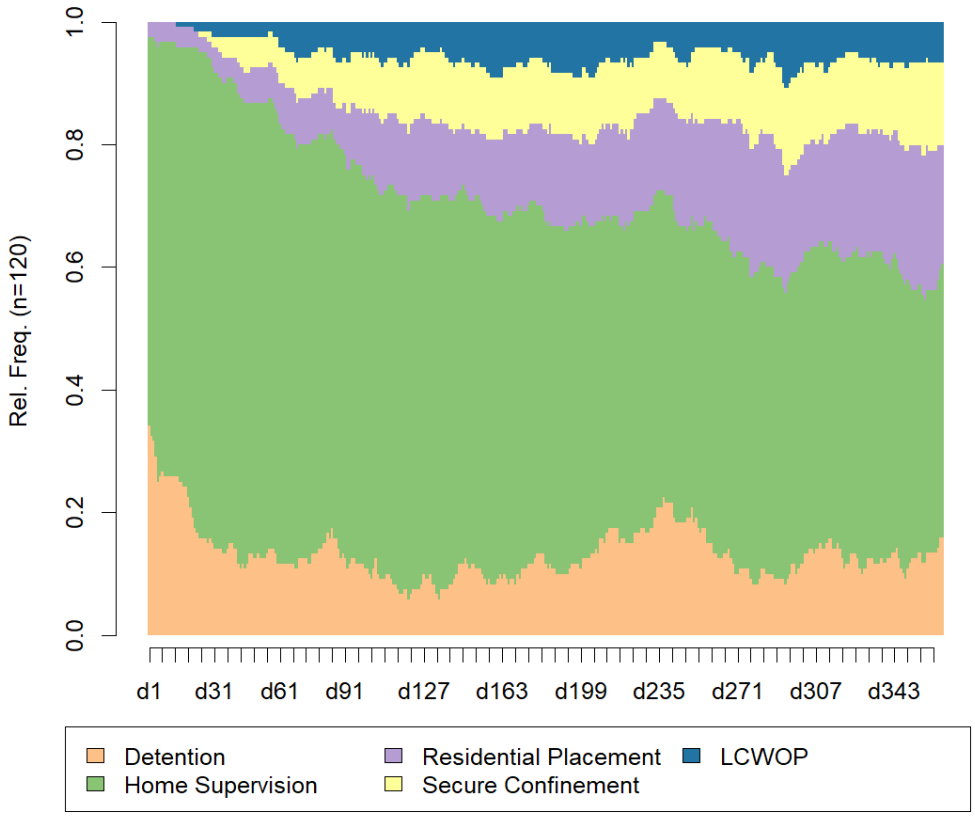

Figure 6. State Distribution Plot

Physical movements were also statistically different for youth with dual system contact ($p < .05$). One way to illustrate this difference is to graph the transversal entropy of state distributions. The entropy index captures the diversity of states or heterogeneity observed at each position (Gabadinho et al., 2011). An entropy of 0 is when all cases are in the same state (e.g., home),

whereas higher entropy suggests greater states of diversity or changes. Figure 7 shows the transversal entropies by youth with justice involvement only and dual system contact. In both groups, the entropies of the state distributions increase over time (i.e., more changes in physical movements). However, youth with dual system contact have noticeably higher entropies earlier in the trajectory than justice-involved only youth and, subsequently, remains high over time. This represents more diverse and less stable trajectories. In other words, there was more significant physical movement changes from location to location for the dual system population.

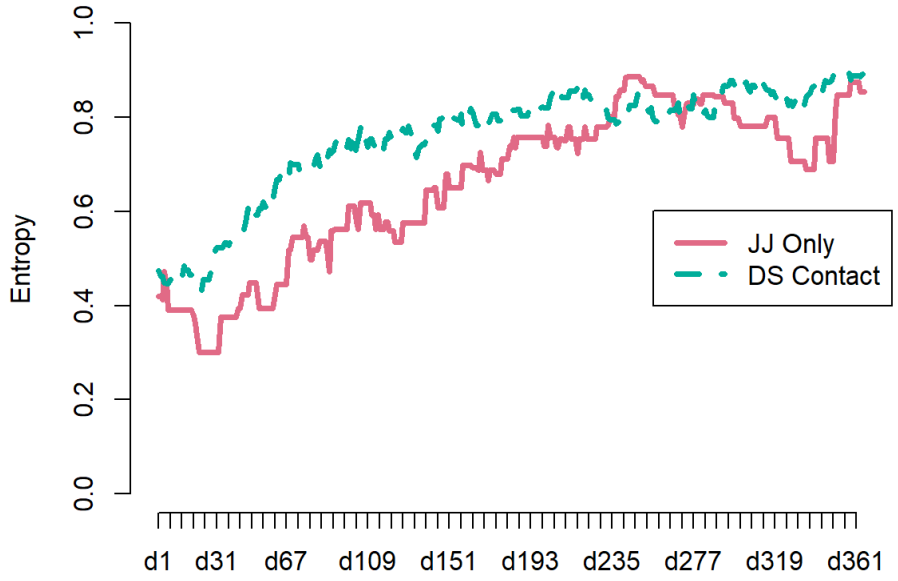

Figure 7. Transversal Entropies by System Contact

Physical Movements Typologies

Although there are different physical movement experiences, some youth may have similar trajectories of physical movements patterns. The cluster analysis explores these patterns and groups similar trajectories into typologies. Figure 8 shows five distinct patterns of physical movement trajectories. Clusters were significantly different by the number of movement changes ($F(4,115) = 15.73$, $p < .001$), gender ($X^2 = (4, N=120) = 9.77$, $p < .05$), and by age at the time of arrest

($F(4,115) = 6.07$, $p < .001$)[7]. Descriptive statistics for each typology are displayed in Table 4 and the mean time spent in each placement type is visually depicted in Figure 9 by typologies. A description of each typology follows.

Type 1, labeled "Home Care and Supervision," comprises 39 youth (or 33%) and reflects state distribution patterns that primarily show youth who remained at home during justice supervision (M = 353.97, SD = 13.23). A few days were spent in detention (M = 8.46, SD = 11.64), residential placements (M = 1.33, SD 5.23), and leaving care (M = 1.23, SD = 4.28). No youth in this typology had been placed in a secure confinement facility. Compared to the other typologies, there was a significant difference in the number of physical movements (Types 2-5: M = 5.78, SD = .41); $t(118) = -6.96$, $p < .001$), in Type 1). Youth in this typology only had 1.49 (SD = .270) physical movement changes during the year on average, representing the most "stable" typology out of the five typologies. In the gender distribution, there are approximately two times as many males as females (64% and 36%, respectively). On average, youth are younger at the time of arrest (M = 14.53, SD = 0.89), and the distribution of most serious charges includes 44% property offense, 33% violent offense, 15% other offense, and 8% drug offense. Overall, youth in this typology have the lowest percentage of mental health needs and alcohol/substance use compared to youth in the other typologies.

[7] Original arrest year is statistically associated with physical movement typologies ($X^2 = (16, N=120) = 77.41$, $p < .001$). However, readers should note the small sample sizes in the original arrest years (see Appendix E).

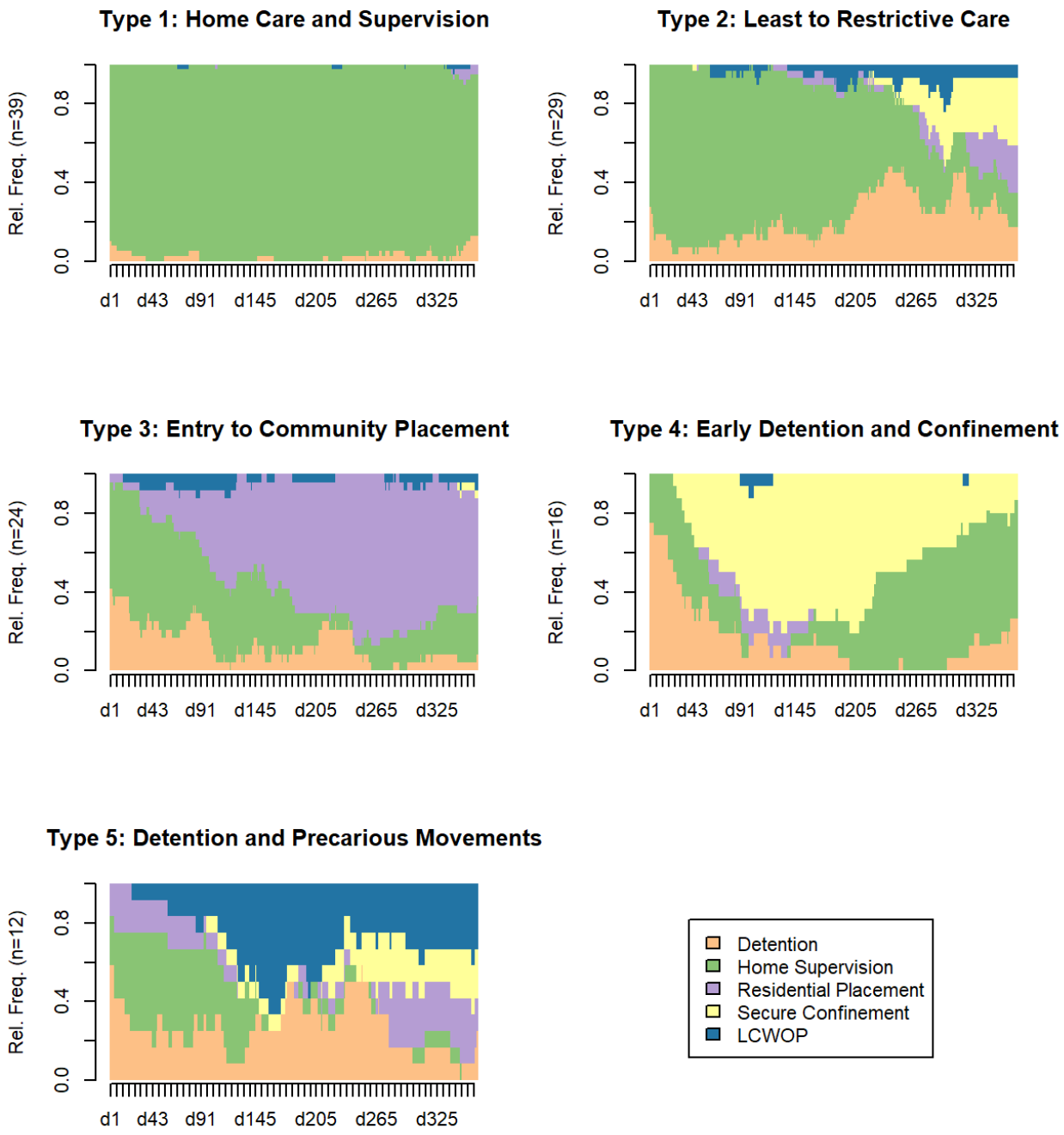

Figure 8. State Distribution Plot, by Typologies

In Type 2, "Least to Restrictive Care," the sample comprises 29 youth (24%) which is the second typology with the greatest time spent at home (M = 217.90, SD = 53.91) and the typology with the most frequent number of physical movement changes (M = 6.76, SD = 4.01). At the time of

arrest, 72% remained at home, while 28% were detained. In approximately six months, more youth had moved into out-of-home placements. By one year, 24% were in residential placements, 34% were in secure confinement facilities, and 17% were in detention facilities. Only 17% of youth at one year time were on home supervision, and a smaller portion (7%) of youth had left care. On average, youth in this typology spent 2.6 months detained during the year and approximately 17-30 days in out-of-home placements. Unlike Type 1, males (55%) and females (45%) are almost equally likely to be in this group and are slightly older at time of arrest (M = 15.38, SD = 1.15). Regarding behavioral health, 52% had a mental health need, and 90% used alcohol/substances.

Type 3, "Entry to Community Placement," comprises 24 youth (20%) who spent the most time in residential placements (M = 187.83, SD = 64.60). Most youth in this trajectory at the time of arrest are at home (54%) or in detention (42%). As time progresses, half of the youth are in residential placements by one year. During one year of supervision, youth in this typology spent, on average, 112 days at home supervision and 188 days in residential placements. They were detained, on average, for 48 days and spent 16 days away from care. This is the second typology where youth were less likely to be in a secure confinement facility. Slightly more than half (54%) are males and 46% are females. On average, youth was 14.98 years old (SD = 1.28) at the time of the arrest. Their arrest was equally likely to be a violent or property offense (42%). Compared to Type 2, youth in this typology have higher rates of mental health needs (52% to 67%) and a slightly higher percentage of alcohol/substance use (90% to 92%). Lastly, although the racial distribution for Type 1 and Type 3 reflects the only typologies with youth with "other" races (majority white), but readers should be cautious of the small sample size.

Type 4, "Early Detention and Confinement," comprises 16 youth (13%) and reflects state distribution patterns with almost immediate detention experiences at the time of arrest and the most time spent in secure confinement facilities (M = 169.44, SD = 52.18). At the beginning of the trajectory, three-quarters of the youth were detained on day one. Over time, the majority entered

secure confinement facilities in the middle of the year and were later released home. For this reason, youth in this typology are less likely to leave care without permission (M = 2.75, SD = 8.28) and have fewer physical movement changes during the year (M = 3.69, SD = 1.35). Overall, youth in this typology spent approximately half the year in a secure confinement facility and approximately half the time at home (M = 122.00, SD = 66.70). They also spent, on average, one month in detention (M = 57.19, SD = 30.49) and significantly less time in residential placement (M = 11.88, SD = 33.18). Among the five typologies, Type 4 has the greatest percentage of males compared to females (81% and 19%, respectively). This is also the first typology where the race/ethnicity distribution between African American (44%) and Latino (56%) are almost similar. On average, youth are older (M = 16.02, SD = 1.17) and it is the only typology where violent offenses represent the majority of the most serious charge at the time of the arrest. Similar to Type 2, half of the youth (56%) have a mental health need, but all (100%) have a documented history of alcohol/substance use.

The final typology in Type 5, "Detention and Precarious Movements," comprises 12 youth (10%) with distinct instability patterns compared to the other four typologies. On average, youth in this typology had 6.50 physical movement changes (SD = 4.46). They spent most of their trajectories leaving care (M = 109.75, SD = 95.91) and being detained (M = 96.25, SD = 74.22). However, they also had frequent experiences in residential placements (M = 50.22, SD = 48.41) and/or secure confinement facilities (M = 39.67, SD = 46.09). By one year time, 33% were still missing from care, 25% were in detention and secure confinement facilities, and 17% resided in residential placements. Unlike the other four typologies, females (75%) represent the majority. This typology has the second youngest population (M = 14.75, SD = 1.23), highest mental health needs (75%), and relatively high alcohol/substance use (83%).

Table 4. Descriptive Statistics by Sample and Typologies

	Full Sample (n=120)	Type 1 (n=39, 33%)	Type 2 (n=29, 24%)	Type 3 (n=24, 20%)	Type 4 (n=16, 13%)	Type 5 (n=12, 10%)
Movements changes	4.38 (3.74)	1.49 (1.68)	6.76 (4.01)	5.63 (3.44)	3.69 (1.35)	6.50 (4.46)
Days in placement type						
Detention	48.65 (48.57)	8.46 (11.64)	78.48 (47.67)	48.42 (29.70)	57.19 (30.49)	96.25 (74.22)
Home supervision	213.25 (119.96)	353.97 (13.23)	217.90 (53.91)	111.92 (71.68)	122.00 (66.70)	69.00 (58.27)
Residential placement	48.68 (80.08)	1.33 (5.23)	16.79 (27.07)	187.83 (64.60)	11.88 (33.18)	50.33 (48.41)
Secure confinement	33.92 (63.99)^	0 (0.00)	29.72 (45.02)	0.88 (4.29)	169.44 (52.18)	39.67 (46.09)
Runaway	20.28 (47.31)	1.23 (4.28)	22.10 (33.71)	15.96 (26.32)	2.75 (8.28)	109.75 (95.91)
Dual system contact	83 (69%)*	23 (59%)	22 (76%)	17 (71%)	12 (75%)	9 (75%)
Age at first placement	6.92 (4.93)	0.22 (0.74)	1.36 (3.57)	1.47 (3.81)	0.42 (1.16)	4.89 (6.15)
Age at last placement	12.10 (3.23)	0.83 (2.50)	1.59 (4.04)	3.65 (6.11)	1.67 (3.37)	7.38 (7.95)
Gender						
Male	58%	64%	55%	54%	81%	25%
Female	42%	36%	45%	46%	19%	75%
Race/Ethnicity						
African American	25%	23%	21%	21%	44%	25%
Latino	68%	64%	79%	67%	56%	75%
Other	7%	13%	0%	13%	0%	0%
Number of prior arrests	0.36 (0.67)	0.26 (0.64)	0.38 (0.56)	0.33 (0.70)	0.63 (0.96)	0.33 (0.49)
Age at time of arrest	15.05 (1.20)	14.53 (0.89)	15.38 (1.15)	14.98 (1.28)	16.02 (1.17)	14.75 (1.23)
Most serious charge						
Violent offense	38%	33%	21%	42%	69%	42%
Property offense	43%	44%	52%	42%	25%	50%
Drug offense	8%	8%	14%	8%	0%	0%
Other offense	12%	15%	14%	8%	6%	8%
Mental health need	55%	44%	52%	67%	56%	75%
Alcohol/Substance use	87%**	77%	90%	92%	100%	83%

Note: Significance denote differences by average number movements. *$p < .05$ **$p < .01$ ***$p < .001$ (two-tailed tests), ^p=0.05

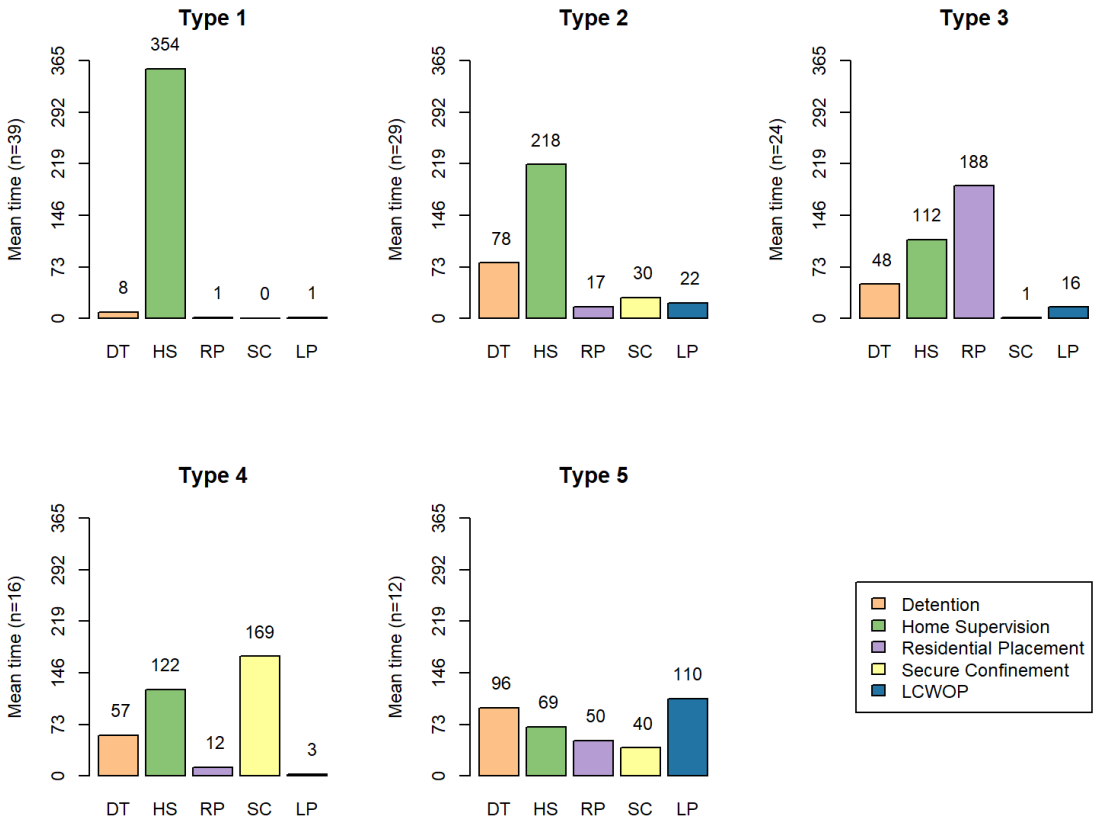

Figure 9. Mean Time Spent in Placement, by Typologies

<u>Relationship between Typologies and Dual System Contact</u>

Next, I examine whether the composition of dual system contact differ across typologies. Although the sample sizes are quite small, females and youth with dual system contact comprise most of the precarious physical movement patterns. Dual system youth are predominately allocated in the typologies where greater time was spent in out-of-home placements including: "Least to Restrictive Care" (76%, Type 2), "Early Detention and Confinement" and "Detention and Precarious Movements" (75%, Types 4 and 5), and "Entry to Community Placements" (71%, Type 3). This is compared to only 59% of dual system youth in the typology "Home Care and Supervision" (Type 1). For example, in the typology "Detention and Precarious Movements" (Type 5), youth spent the most days in a detention facility and leaving care without permission. Within this typology, 75% are

females, and all had prior child welfare referrals. To put it differently, at the time of arrest, all the females in this typology had some contact with the child welfare system before their probation supervision began. A few youth (n=3) were already in a child welfare placement at the time of arrest, as illustrated by their current living situation at a residential placement on day one of the arrest.

Furthermore, I explore whether dual system youth within each typology had different child welfare histories using official child welfare records. The following results are provided for context and should be interpreted cautiously due to extremely small sample sizes among dual system youth in each typology (Table 4). Experiences in child welfare placements across typologies statistically differ by age of first ($F(4,115) = 3.87$, $p < .01$) and last placement ($F(4,114) = 3.58$, $p < .01$). Descriptive statistics shows that youth who had child welfare placements early in childhood and ended their last child welfare placement before adolescence, belong in typologies with the least physical movement instability during justice supervision. For example, dual system youth in Type 1's "Home Care and Supervision" entered their first child welfare placements before age three (min = 0, max = 3) and had their last child welfare placements before age 12 (min = 0 and max = 11). In comparison, youth who had their first child welfare placements in late childhood/early adolescence had the most physical movement instability during one year of justice supervision. On average, dual system youth in Type 5's "Detention and Precarious Movements" entered their first child welfare placement at age five and some remained in child welfare placements up until age 15. This may suggest that some youth with more chronic or deeper involvement in the child welfare system are experiencing some level of placement instability in juvenile justice. However, cautious inference should be made in this section due to the small sample sizes.

Discussion

The vast majority of research on probation out-of-home placements have shown poor outcomes for justice-involved youth (Lipsey & Cullen, 2007; Ryan et al., 2014; Ryon et al., 2013), yet minimal research has explored the ordering and patterns of physical movement changes in justice-involved youth lives. This is important because youth's trajectories in juvenile justice may include transitions in and out of different justice facilities. Frequent physical movements in juvenile justice, in the form of placement instability and changes in locations, can compound the youth's ability to achieve family reunification and stability in later adulthood (Huang et al., 2015; Osgood et al., 2010; Simmons-Horton, 2021). In this chapter, I draw on the family instability literature to explain the potential consequences of juvenile justice contact. When system contact is theorized alongside the research on family instability, it suggests that the consequence of justice contact may increase exposure to non-intact family structures and instability in the family unit. This is an essential step toward illustrating the (in)stability of justice-involved youth experiences within the context of physical location changes. To this end, this study explores the patterns of physical movement trajectories and whether frequent movements and disruptions to family stability are more precarious for some justice-involved youth.

Using sequence analysis among a sample of justice-involved youth, I illustrate physical movement locations from day one of the arrest until 365 days of justice supervision. On average, justice-involved youth have experienced approximately five physical location movements during supervision, ranging between 0 and 16 movements. The results suggest four primary conclusions that shed light on potential areas for promoting family stability and community-based efforts. First, justice system contact can result in immediate and ongoing disruption to youth and families lives' through detention practices. At the time of arrest, 37% of youth were arrested and detained immediately on day one. Prior research has documented pre-adjudication detention's substantial

impact on increasing formal involvement in the justice system (Gann, 2019; Guevara et al., 2006; Leiber & Fox, 2005; Thomas et al., 2022). The impact of detention on the individual and family level should be considered. By one year, the percentage of youth who remained at home decreased from day 1 to day 365 (63% and 45%, respectively). In this perspective, some levels of justice contact have increased family instability as youth fluctuate in alternative and more restrictive settings. This evidence may suggest youth were not adequately served in their home communities or a higher level of supervision was needed due to youth's risk factors for delinquency.

Second, the cluster analysis reveals five typologies featuring similar physical movement trajectories. In two of the five typologies, the juvenile court explicitly exercised the least restrictive option in the typologies labeled "Home Care and Supervision" (Type 1) and "Least to Restrictive Care" (Type 2). In these typologies, the juvenile court has made early decisions to avoid detention and keep youth with their families at home. Home supervision is beneficial for justice-involved youth for multiple reasons. Decisions at arrest not only affect subsequent legal decisions in juvenile court, but community supervision is a cost-efficient approach and more effective at preventing recidivism (Lipsey & Cullen, 2007; Robertson et al., 2001). If family stability considers the greatest time spent at home, maintaining this stability must include community efforts to expand evidence-based resources. Supporting families is a practice trend that has emerged following the success of family-based treatments (Lipsey & Cullen, 2007). One type of evidence-based practice that have shown success in addressing delinquency risk factors and family needs is Functional Family Therapy (Lipsey, 2009). Increasing family protective factors can reduce the chances of system escalation (Ryon et al., 2013). Thus, developing effective delinquency interventions at the community level is crucial for achieving family stability among the juvenile-involved populations.

In contrast, three out of five typologies show greater physical movement patterns and disruptions to family stability. This is explicitly illustrated in the following typologies: "Entry to Community Placement" (Type 3), "Early Detention and Confinement" (Type 4), and "Detention and

Precarious Movements" (Type 5). Youth in these typologies have almost immediate, and early experiences in detention facilities and entrance into out-of-home placements over time. Changes in living situations disrupts family life by removing youth away from their homes and into residential and secure confinement facilities. This raises an important consideration whether delinquency risk factors are adequately addressed when youth are on home supervision. Many studies has found that justice-involved youth who have mental and behavioral service needs are not being met in the community (Espinosa et al., 2019; Rogers et al., 2001; Spinney et al., 2016; Teplin et al., 2005; Wasserman et al., 2008). In one study, only 25% of probation youth have received mental health treatment for which they need services (White, 2019). Unmet needs without services and treatment increases recidivism (Aalsma et al., 2012) and may lead to detention and out-of-home placements. On the other hand, justice surveillance may led to out-of-home placements through noncompliance with court-ordered probation conditions. Juvenile courts may revoke home supervision due to failure to appear in court, not complying with school conditions, and curfew issues (Herz & Chan, 2015; Nemoyer et al., 2020; Phelps, 2018). As such, family instability becomes a potential consequence of justice supervision by virtue of surveillance and increased monitoring.

Time spent in out-of-home placements may disrupt family relationships and increase exposure to non-intact family structures. The outcome of instability to the family unit through justice contact may lead to alienation and distrust toward systems (Mitchell & Kuczynski, 2010; Panuccio et al., 2012; Simmons-Horton, 2021; Unrau et al., 2008). For this reason, the implications of early justice processing decisions are significant to family stability. On the frontend of justice processing, the priority should consider the least restrictive setting in the community and evaluate internal detention practices. When home placement is not possible, intentional family engagement is essential to exploring alternative living arrangement with relatives and non-relatives.

At the policy level, investment in less restrictive alternatives will reduce later entrance into secure confinement facilities. In the long term, restrictive settings may increase recidivism rates

compared to home supervision (Trulson et al., 2005). For example, in Los Angeles County, justice-involved youth who were assigned to residential placements and secure confinement facilities following an arrest were twice as likely to recidivate within the first year of probation supervision (Ryan et al., 2014). Youth in out-of-home placements may experience increased surveillance which leads to a greater likelihood of law enforcement contact and detentions (Pullmann et al., 2020). Overall, justice systems must prioritize home care and monitor placement changes over time to prevent family instability.

Lastly, this study contributes uniquely to the dual system youth research that underscores the long-term consequences of child welfare contact on later juvenile justice experiences. Family instability is a feature of dual system contact. Compared to justice-involved youth with no prior child welfare contact, dual system youth have significantly higher movement transitions early in their justice trajectory and less stable trajectories over time. Indeed, approximately three-quarters (71%-76%) of youth with dual system contact belonged to four of the five typologies characterized by the most time spent in detention and out-of-home placements. In contrast, the most stable typology only comprises 59% of youth with dual system contact, where they spent the most time at home (Type I, Home Care and Supervision). This is consistent with cross-sectional research. Youth with deeper involvement in the child welfare system are more likely to receive out-of-home placements in juvenile justice (Fader et al., 2001; Tam et al., 2016). This may be partially explained by child welfare bias at early justice processing (Ryan et al., 2007). The other explanation concerns fewer housing options for dual system youth who have experienced abuse and/or neglect at home. This population is more likely to enter residential placements when no alternative safe options are available due to complex family backgrounds and limited options.

Moreover, females in the dual system population are worth noting. All females in Type 5 are youth with dual system contact. Research has well-documented how sexual violence is a pathway to confinement, especially for girls of color who are criminalized due to physical and sexual abuse

(Belknap, 2001; Morris, 2016). Girls and young women with child welfare histories have histories of leaving care without permission, experiencing early and continuous detention, and frequent placement instability (Hershberger et al., 2018; Pullmann et al., 2020). What remains unclear in the current sample and outside the scope of this analysis is whether females in this population had a history of commercial sexual exploitation (CSE). Leaving care without permission or running away is a common characteristic among youth with child welfare and CSE histories (Dierkhising et al., 2020), which leads to frequent disruptions in living arrangements and recurring detention episodes (Pullmann et al., 2020). As a result, residential placements may unsuccessfully discharge youth from their care, making finding adequate and stable housing difficult for this population (Hickle & Roe-Sepowitz, 2018). Longitudinal research is needed on youth with dual system contact (and females specifically) to disentangle early justice actions and later family instability.

Limitations and Future Research

Although this study makes unique contributions to literature, it has some limitations to consider. The findings cannot represent all justice-involved youth experiences, especially in other jurisdictions and those with alternative placement options. As noted in the "Introduction" chapter, the study's sample selection was based on the placement release in a residential or secure confinement facility in 2015. Although the analysis was limited to the first year of justice supervision to adjust for this, some readers may find this population as a "high risk" sample. In this perspective, the results are likely to underestimate the amount of youth in each typology. In recent years, significant efforts have been made to increase diversion and deinstitutionalization. Therefore, more justice-involved youth are likely to be placed home under supervision than captured in this study. Future research should improve the sample selection by conducting a random sample of justice-involved youth and observing their first year of justice supervision experiences. However, readers should caution that restricting this criterion will also undermine the possibility of justice contact occurring beyond one year. This is important because, given the length

of justice supervision, this will affect young people's physical movement patterns from adolescence to emerging adulthood.

Moreover, this study did not consider the timing (e.g., noncurrent and concurrent contact) and order (e.g., later child welfare contact) of dual system contact. The duration and intensity of child welfare involvement may reveal different juvenile justice experiences in physical movement trajectories. Past scholars have hypothesized that youth with dual system contact is much more different than they are similar to each other (Baglivio et al., 2016; Ryan et al., 2013). A large and representative sample of dual system youth may explore the long-term consequences of family instability among youth with simultaneous child welfare and juvenile justice monitoring. Recent research suggests that concurrent contact with both systems ("dually involved youth") generates earlier experiences with detention compared to historical child welfare contact (Herz, Eastman, Putnam-Hornstein, et al., 2021). This has implications for physical movements and placement trajectories, which is essential for future research.

An additional limitation is the reliance on administrative and physical case file data. While this collectively enables a rich data source, the paper case file content is subject to human error and is still limited to what probation actors record. The next step to improve upon this research is to examine the reasons for initiating changes in physical movement locations. In other words, what events precipitated changes in physical movements, and how are the movement transitions related to one another? System processing decisions may change locations due to an arrest, revocation, or court order. Studying these reasons in the context of location change may help identify behavior patterns, develop alternative interventions, and reduce placement instability in the long term.

Conclusion

Notwithstanding these limitations, this study informs our knowledge about the potential consequences of ongoing system contact on family stability. The unique and yet common

occurrence of prior child welfare contact in the juvenile justice population is an important distinction. Youth with dual system contact have intermittent and persistent system interventions throughout childhood and adolescence (Herz et al., 2022). Once youth are under justice supervision, however, their level of family instability increases due to the possibility of multiple detention and out-of-home placements. The amount and frequency of time spent away from youth's home communities cannot be understated. Future research and practice must not overlook these experiences by focusing only on one placement episode because the ordering and sequencing of placement experiences within trajectories are significant. Moving forward, we must continue examining the system's impact on the holistic experiences of youth and families. In this same manner, efforts must prioritize reducing placement instability, exploring options for community placements, and ways to strengthen family stability.

CHAPTER 3: THE RELATIONSHIP BETWEEN OUT-OF-HOME PLACEMENT, DUAL SYSTEM CONTACT, AND RECIDIVISM

Abstract

Time spent in out-of-home placements has been associated with increased recidivism rates at reentry. The "revolving door" of experiences in and out of detention facilities and out-of-home placements has significant consequences for justice-involved youth's stability and well-being. Yet, this relationship remains unclear because studies rarely consider the presence of different justice facilities that youth may face under juvenile justice supervision. Out-of-home placement may be a turning point by increasing and decreasing recidivism risk over time for subgroups of justice populations, especially youth with child welfare histories. In this chapter, out-of-home placement, specifically residential placement, is a turning point associated with later delinquency trajectories. Justice-involved youth had fewer arrests after one year if they were placed in residential placements instead of home supervision. In contrast, dual system youth had higher recidivism rates over time in residential placements, and those with previous out-of-home placements in child welfare had fewer arrests after one year of justice supervision. Future research must examine what type of out-of-home placements are most beneficial for delinquency intervention among subgroup populations of justice-involved youth.

Introduction

Research has long debated incarceration's effects on recidivism among justice-involved populations (Cohen, 2008). Empirical methods in social sciences have tested incarceration as a causal process that unfolds over time, sometimes referred to as "turning points" (Cohen, 2008). Incarceration as a turning point implies that the experience in a correctional facility may later create desistance (positive changes) or increase recidivism (negative changes) which can substantially impact the direction of the life course. Yet, the application of turning points in juvenile justice research rarely accounts for different types of youth facilities like residential placements, but evidence suggests that out-of-home placements may serve as turning points depending on the type of environment. As seen in Chapter 2, justice contact can change physical movements, encompassing multiple detention stays and experiences in out-of-home placements. The potential to enter justice placements during supervision means turning points may lead to changes in youth life trajectories. For example, justice-involved youth in secure confinement facilities have higher recidivism rates than community placements (Lipsey & Cullen, 2007; Loughran et al., 2009; Ryan et al., 2014).

Although the growing consensus is that youth incarceration facilities are not meeting juvenile justice goals of community safety and youth rehabilitation (Mallett & Boitel, 2016; OJJDP, 2022), the few studies linking turning points and long-term offending have not paid attention to the presence of different placement types available to justice-involved youth populations on supervision. Higher levels of supervision, such as justice-involved youth in out-of-home placements, are a concern for policy and practice due to the increased rates of recidivism after reentry (Loughran et al., 2009; Minor et al., 2008; Ryan et al., 2014; Ryon et al., 2013). Yet, existing research typically categorizes "out-of-home placement" as a single indicator for grouping detention, residential placements and/or secure confinement facilities (Loughran et al., 2009; Wooldredge,

1988). These facilities are very different in their level of physical restriction and supervision, and their combined categorization may mask the unique effects of placement type and later offending trajectories. Relatedly, there has been a limited emphasis on how child welfare histories influence the relationship between out-of-home placements and later delinquency delinquencies (Fader et al., 2001). This oversight is notable because youth with dual system contact are more likely to enter out-of-home placements due to child welfare bias or behavioral differences (Ryan et al., 2007; Tam et al., 2016), but their child welfare histories may put them at greater risk of delinquency compared to justice-involved youth without child welfare histories.

To address the gaps in juvenile justice literature, this chapter suggests that the experience of out-of-home placement during justice supervision is a turning point associated with later delinquency trajectories. Outcomes may differ for youth with dual system contact. Specifically, I examine how out-of-home placement experience during one year of justice supervision may lead to subsequent arrests after one year by system contact. Unlike the focus on Chapter 2's typologies of *day-to-day* physical movements, Chapter 3 is interested in the experience of placement type in itself, which carries the persistence effect over time beyond one year of justice supervision. This approach[8] is more meaningful for juvenile justice practice because, while transitions in placement matter, the juvenile court is limited in legal placement disposition options. Thus, from the juvenile court's perspective, a potential question of interest is whether different out-of-home placements are an effective intervention for delinquency. To that end, the results of 120 justice-involved youth with different out-of-home placement experiences highlight residential placement as a turning point for different populations. Justice involved only youth (without child welfare histories) in residential placements had fewer subsequent arrests after one year compared to if they were

[8] The typologies in Chapter 2 were considered for this chapter, but their implications for juvenile justice practice are limited, and one had a small sample size (n=12, Type 5). This chapter presents as a standalone chapter without the sequence analysis typologies for the purpose of future publications.

placed home on supervision. In contrast, youth with dual system contact had more predicted arrests in the same setting. Given these findings, placement types are potential turning points for delinquency intervention, and delinquency trajectories may differ by system contact.

Out-of-Home Placement as a Potential Turning Point

In 2019, 55,100 cases in juvenile court were ordered an out-of-home placement (Hockenberry & Puzzanchera, 2021). Yet, a well-documented line of research has demonstrated that the justice system's "get tough" approach is ineffective at reducing juvenile recidivism (Feld, 2017). When youth are justice-involved, they are likely to encounter one or more turning points, including temporary detention stays and out-of-home placements, that may ensnare them to a delinquency trajectory. Rutter (1996) describes two features that underlie turning points. A turning point encompasses an event or experience that changes the quality and direction of an individual's life, and these experiences carry the potential for the persistence of effects over time. In particular, justice-involved youth have reported that out-of-home placement has changed their delinquency behaviors through its discipline, structure, and reward-based system (Laub & Sampson, 2003). On the one hand, out-of-home placement experiences may elicit a rehabilitative effect through opportunities for education and treatment. Justice-involved youth populations have significant mental health and substance use issues that can benefit from evidence-based treatment approaches (Espinosa & Sorensen, 2015; Lederman et al., 2004; Teplin et al., 2002; Walker et al., 2022).

On the other hand, removing youth from their homes is a disruption in the life course which is linked by family and networks of shared relationships (Elder, 1985). Entering an out-of-home placement may inhibit the formation of close ties and attachments to prosocial adults and peers (Mitchell & Kuczynski, 2010; Simmons-Horton, 2021; Unrau et al., 2008). Out-of-home placement may increase risk factors for offending if differential association with delinquent peers changes or increases values, techniques, and motivations for criminal behavior (Akers, 1973; Baidawi &

Sheehan, 2020a; Modrowski et al., 2022). Alternatively, reentry from placement to the community may limit access to opportunities that enforce stability and prevent normative transitions (e.g., school reentry; see a systematic review in (Kubek et al., 2020), thereby increasing criminal propensity. Overall, out-of-home placement as a turning point may have differential effects on later delinquency trajectories. In this perspective, the juvenile justice system, through its legal authority in changing youth's permanent living situation, could help youth desist from crime or inadvertently increase their likelihood of delinquency (Moffitt, 1993).

Type of Out-of-Home Placements and Recidivism

The types of out-of-home placements are critical to consider because being in a placement in itself does not increase the likelihood of recidivism (DeGue & Widom, 2009). Out-of-home placements differ in the level of physical restriction, supervision, and services available that may affect delinquency trajectories. Residential placements are located in communities with less physical restriction, which increases youth access to resources available in the community and family accessibility. In contrast, secure confinement facilities are 24-hour locked-down facilities, limited programming, and are typically away from youth's home communities, making family engagement difficult (Ashkar & Kenny, 2008; Shanahan & Agudelo, 2012). Consequently, a significant problem in prior studies is that the definition of out-of-home placements often combines both residential placements and secure confinement facilities in a single category (Ryon et al., 2013; Wooldredge, 1988). Given the range of placement options in juvenile justice, investigating the effects of out-of-home placement as a potential turning point for delinquency trajectories is essential for juvenile justice practice and policy.

Extant research suggests that residential placements have more positive outcomes as opposed to secure confinement facilities, which are generally associated with poor outcomes (Ryan et al., 2014). Lipsey and Cullen's (2007) meta-analysis found that justice-involved youth who

receive rehabilitation treatment at home or in a residential placement have shown positive effects on reducing recidivism. Each study had no less than a 10% average reduction in recidivism. This implies that distinct placement types can be beneficial and effective at reducing future recidivism (Mallett & Boitel, 2016). Conversely, secure confinement facilities are counterproductive for preventing recidivism (Wooldredge, 1988) with little or no marginal benefit (Loughran et al., 2009). Compared to youth placed at home on supervision, those placed in secure confinement facilities are more likely to experience a subsequent arrest (Lipsey & Cullen, 2007; Loughran et al., 2009; Ryan et al., 2014). In a Los Angeles County study, Ryan et al. (2014) found that three years after the youth's first arrest, 28% of in-home probation supervision cases had recidivated compared to 35% of youth in residential placements and 51% in secure confinement facilities.

Even so, this research is complicated because multiple experiences in justice facilities are not fully captured. Some youth may experience both residential placements and secure confinement facilities during justice supervision. Focusing only on one placement type across youth's histories may obscure the effects of multiple experiences in justice facilities. As Mulvey et al. (2004) pointed out, even most existing longitudinal studies rarely include detailed measures on the type and intensity of sanctions that youth may experience. This is important because some youth may face more punitive sanctions in juvenile court. Justice-involved youth with child welfare histories are more likely to enter out-of-home placements in juvenile justice (Ryan et al., 2007; Tam et al., 2016) and have higher rates of recidivism compared to their justice-only counterparts (Halemba et al., 2004; Herz et al., 2019; Lee & Villagrana, 2015; Malvaso et al., 2019; Widom et al., 2018). It is unclear whether out-of-home placements as turning points operate differently in their delinquency trajectories between these justice-involved populations.

Dual System Contact and Out-of-Home Placement Experiences

There is robust literature linking children's early life experiences in child welfare and later experiences in juvenile justice (Alltucker et al., 2006; Baglivio et al., 2016; Cho et al., 2019; Sampson & Laub, 1993; Smith & Thornberry, 1995). Since not all child welfare youth "cross" over to the juvenile justice system (Baidawi & Sheehan, 2020a; Cho et al., 2019; Cutuli et al., 2016), child welfare experiences may moderate the relationship between out-of-home placements and recidivism. For instance, child welfare cases that close before age 13 are less likely to enter the juvenile justice system (Kolivoski et al., 2014) as opposed to children who experience persistent or adolescent maltreatment (Hurren et al., 2017; Jonson-Reid & Barth, 2003; Stewart et al., 2008; Thornberry et al., 2001). However, studies have found that specific child welfare characteristics, like the frequency of child welfare contact (Cusick et al., 2008; Herz et al., 2019; Malvaso et al., 2019) and exposure to out-of-home placements in child welfare (Kolivoski et al., 2017) are generally associated with higher recidivism rates in adolescence (Baglivio et al., 2016; Cottle et al., 2001; Kolivoski et al., 2017; Vidal et al., 2017). Children and youth may have early experiences in out-of-home placements in child welfare due to significant safety concerns in the home or if the family is unwilling to care for their children. If placement instability occurs, they have a greater risk of delinquency across the life course (Malvaso et al., 2016; Ryan et al., 2008; Widom & Maxfield, 2001). Unlike justice-involved youth without child welfare histories, youth with dual system contact may potentially experience both an out-of-home placement in child welfare and the juvenile justice system. This has long-term consequences on youth's stability and well-being, especially those with child welfare experiences entering the justice system.

In this perspective, child welfare experiences may also alter an individual's life trajectory as a turning point (Esposti et al., 2020) in addition to subsequent placement experiences in juvenile justice. When youth with child welfare histories have justice contact, they may be more likely to be

placed in out-of-home placements in juvenile justice (Ryan et al., 2014; Tam et al., 2016). Fader et al. (2001) have found that youth with a history of child welfare contact are significantly more likely to enter residential placements than their counterparts with no child welfare history (38% vs. 11%). From the juvenile court's perspective, in-home probation may be more complicated due to children's histories of abuse and neglect (Ryan et al., 2008). This may explain why youth with dual system contact is often pushed to the deeper ends of the juvenile justice system in a residential or correctional facility (Halemba et al., 2004; Ryan et al., 2007; Tam et al., 2016). Research has not yet disentangled whether youth with dual system contact are behaviorally different from their justice-involved counterparts or whether bias in placement decisions has resulted in behavior change due to the out-of-home placement effects.

Relatively few studies have examined the relationship between out-of-home placement in juvenile justice and recidivism by dual system contact (Baglivio et al., 2016). Recidivism may be higher for dual system youth in out-of-home placements due to adverse peer effects and specific policies/procedures that lead to more contact with law enforcement (Ryan et al., 2008). Coupled with possible placement instability from child welfare to juvenile justice throughout youth lives, building relationships and trust are even more challenging (Simmons-Horton, 2021; Unrau et al., 2008) because informal social controls are changing and weakening over time (Sampson & Laub, 1993). Due to the potential impact of multiple system contact and out-of-home placement experiences, it is essential to account for the justice facilities and supervision options that may increase the frequency of recidivism over time.

The Present Study

This study focuses on three main objectives. The first objective is to estimate the impact of out-of-home placement experiences during one year of justice supervision on subsequent recidivism. The second objective is to assess the differential effects of system contact (justice

involvement only and dual system contact) between out-of-home placement and recidivism. To accomplish this, I tested the interaction between out-of-home placement and dual system contact in predicting the number of subsequent arrests after one year. Third, I explore whether child welfare histories, such as the number of investigations and ever experienced a child welfare out-of-home placement, are associated with arrest rates in later adolescence. Ultimately, this chapter explores the association between out-of-home placement type in juvenile justice and later recidivism through the following research questions:

1. Is the type of out-of-home placement related to the number of arrests after one year?
2. Does dual system contact moderates the relationship between out-of-home placement type and subsequent arrests after one year?
3. Are out-of-home placement type and dual system contact, including child welfare histories, related to arrests after one year?

Data and Methods

Data come from The Los Angeles County Juvenile Probation Outcomes Study, Part II (POS2, Herz & Chan, 2017). This study captures 120 justice-involved youth and their experiences during justice supervision. Part of the POS2 dataset contains information about physical movements and out-of-home placement experiences during one year of justice supervision, capturing both juvenile court actions (e.g., justice placement) and non-system actions (e.g., the youth ran away from care). In the first year of justice supervision, the sample had different placement experiences: 37% of justice-involved youth were placed home on supervision only, 34% had experienced residential placement, 22% were in secure confinement facilities, and 8% had experienced both a residential placement and secure confinement facility during the year.

Dependent Variable

Arrest data come from the Probation Case Management System (PCMS) through a research petition with the County of Los Angeles Juvenile Division. There are different ways to measure recidivism in juvenile justice literature (e.g., adjudication, petition filed, petition sustained). In this study, recidivism is measured at the arrest level, which may overestimate the true scope of delinquency. It captures all juvenile arrests in Los Angeles County after one year of justice supervision from the youth's initial arrest. This measure is broad in scope because youth on probation home supervision, and more so, for youth in out-of-home placements, are under increased surveillance that may lead to greater contact with law enforcement and future arrests (Baidawi & Sheehan, 2020a; Gerard et al., 2019; Ryan et al., 2008, 2014). From this perspective, youth with more prior arrests during supervision have an increased risk for recidivism regardless of how arrest is defined (Cottle et al., 2001). After one year on juvenile probation supervision, 65 out of 120 (54%) justice-involved youth had recidivated.

Independent Variable

The triangulation of physical case file data and probation administrative data provides information about supervision level and out-of-home placements during one year of justice supervision. Placement type is a categorical variable distinguishing a potential turning point during one year of justice supervision. Cases were coded into one of four categories. The category "Home Supervision" refers to youth who lived at home under justice supervision and had never been in an out-of-home placement in the first year of justice supervision. The category "Residential Placement" and "Secure Confinement Facility" for youth who were placed in one of these respective out-of-home care (OOHC). Lastly, the "Both OOHC Types" are cases where the youth had experienced both a residential placement and secure confinement facility sometime during the year.

Residential placement is a probation-run facility typically located in the community. Due to its less restrictive setting, the youth can leave the premises and receive services at the placement location or in the community. Youth will generally share a room with other youth residents at these locations. On the other hand, secure confinement facilities are lockdown facilities where all services are provided at the location site. Unlike suitable placements, secure confinement facilities are typically far away from communities and require car transportation. Youth in these facilities have their own room with a high level of physical restriction and surveillance.

In this study, dual system contact is defined as a prior history of reported maltreatment by the child welfare system. Through a partnership with the USC's Children Data Network, child welfare data were retrieved from Child Welfare Services Case Management System (CWS-CMS) and matched to the study's sample. The probabilistic match resulted in 83 out of 120 justice-involved youth (69%) who had child welfare referrals prior to their initial arrest in this study. Child welfare characteristics such as the number of investigations and ever in a child welfare out-of-home placements were also included. Lastly, an interaction variable was created between dual system contact and placement type.

Control Variables

Control measures[9] were created to capture justice experiences generally, including the number of physical movement transitions and days spent in a detention facility. For example, a total of 0 physical movement transitions shows that the youth remained at one location for 365 days (e.g., at home), while two physical movement transitions show that the youth had one change in location (e.g., home to detention to home) during the year. Greater physical movements during the year are signs of placement instability, highlighting greater location changes during justice

[9] Physical movement transitions and days spent in detention facilities were calculated in Chapter 2's sequence analysis.

supervision. I also captured the number of days spent in a detention facility during the first year of justice supervision. Unlike an out-of-home placement decision by the juvenile court, detention is meant to be temporary and is not considered a court-ordered placement. Youth in detention may only spend a few days detained compared to out-of-home placements, which average approximately six months.

Additional control variables were included to account for demographic, legal, and behavioral characteristics at the time of the arrest. Demographic and legal variables were obtained from PCMS. Demographic variables include gender (Male, Female) and race/ethnicity (African American, Latino, and Other/White). Legal and offense variables include the number of prior arrests (arrests prior to youth's original arrest in this study), age at the time of arrest, and offense type (violent offense, property offense, drug offense, or other offense). Behavioral characteristics of the youth were coded during physical case file reviews. Dichotomous indicators were created to distinguish whether youth have mental health needs and alcohol/substance use problems as indicated by court reports or probation officer contacts.

Analytical Strategy

When the dependent variable represents a count of discrete events (such as the number of arrests), a Poisson regression model accounts for nonnegative integer values (Walters, 2007). The Poisson model assumes that the conditional variance equals the conditional mean (Osgood et al., 2010). Once the Poisson models are estimated, postestimation tests are used to assess model fit. In Model 1, out-of-home placement experiences predict the count of arrests after one year of juvenile justice supervision (Deviance $X^2 = 134.56$, $p < .05$; Pearson $X^2 = 131.27$, $p < .05$). This means that the data was overdispersed. In other words, the conditional variance is larger than the conditional mean. Since the model X^2 was significant, a negative binomial regression is a better fit for Model 1. In Model 2, I examine the main and joint effects of out-of-home placement type and dual system

contact on arrests after one year of supervision (Deviance $X^2 = 121.90$, $p > .05$; Pearson $X^2 = 119.71$, $p > .05$). The model X^2 was nonsignificant, which shows that the Poisson model was a good fit. In Model 3, child welfare characteristics were added to the previous model. The predictive margins and average marginal effects are plotted in the final model to further examine the interaction term comparing out-of-home placement experiences among justice-only and youth with dual system contact. Analyses were estimated in Stata, and graphics were produced in R. All estimates are shown in terms of Incidence Rate Ratios (IRR) with robust standard errors.

Results

Descriptive statistics are presented in Table 5. On average, justice-involved youth in the sample had 1.02 (SD = 1.62) arrests after one year of juvenile justice supervision. Arrests ranged from 0 (no arrests) to 13 arrests. During one year of justice supervision, justice-involved youth had an average of 4.38 (SD = 3.74, min = 0, max = 16) physical movement transitions and 48.65 (SD = 48.57) days spent in detention. Excluding days spent in detention, slightly more than one-third of youth (n = 44, 37%) remain home on justice supervision without any experience in out-of-home care. However, half of the youth had either experienced a residential placement (n = 41, 34%) or secure confinement facilities (n = 26, 22%) during the year. A smaller portion of youth (n=9, 8%) had been placed in both a residential placement and secure confinement during justice supervision. Across out-of-home placement experiences, the number of physical movement transitions ($F(3,116) = 17.99$, $p < .001$), days spent in detention ($F(3,116) = 18.13$, $p < .001$), and age at time of arrest ($F(3,116) = 8.75$, $p < .001$) were statistically significant. On average, days spent in detention increased by type of out-of-home placement. For example, youth who remained under in-home supervision for the entire year were detained, on average, for 19.68 days (SD = 39.03). In comparison, youth who ever experienced a residential placement or a secure confinement facility during supervision were detained, on average, for 60 days during one year.

Table 5. Descriptive Statistics by Full Sample and Out-of-Home Placement Type

	Full Sample (N=120)	Home Supervision (n=44, 37%)	Residential Placement (n=41, 34%)	Secure Confinement (n=26, 22%)	Both OOHC Types (n=9, 8%)	Diff.
	Mean/% (SD)	Mean/% (SD)	Mean/% (SD)	Mean/% (SD)	Mean/% (SD)	
Total arrests after one year	1.02 (1.62)	1.11 (1.15)	1.10 (2.29)	0.58 (0.86)	1.44 (1.59)	
One Year of Justice Supervision						
Physical movement transitions	4.38 (3.74)	1.91 (2.61)	6.24 (3.69)	4.38 (2.74)	8.00 (3.71)	***
Days spent in detention	48.65 (48.57)	19.68 (39.03)	57.29 (41.62)	69.81 (53.25)	89.78 (32.09)	***
Characteristics at Time of Arrest						
Dual system contact	69%	64%	76%	62%	89%	
Gender						
Male	58%	57%	54%	73%	44%	
Female	42%	43%	46%	27%	56%	
Race/Ethnicity						
African American	25%	25%	22%	35%	11%	
Latino	68%	66%	68%	65%	89%	
Other	7%	9%	10%	0%	0%	
Number of prior arrests	0.36 (0.67)	0.34 (0.68)	0.29 (0.60)	0.46 (0.76)	0.44 (0.73)	
Age at time of arrest	15.05 (18.22)	14.48 (0.98)	15.19 (1.15)	15.84 (1.12)	14.86 (1.34)	***
Most serious charge						
Violent offense	38%	29%	54%	33%	36%	
Property offense	43%	46%	38%	56%	41%	
Drug offense	8%	10%	4%	11%	7%	
Other offense	12%	15%	4%	0%	16%	
Mental health need	55%	52%	61%	42%	78%	
Alcohol/Substance use	87%	77%	95%	85%	100%	

Note: Significance denote differences by type of placement experience.
*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests).

To estimate the number of arrests after one year of justice supervision, Table 6 shows the results of the negative binomial regression. In Model 1, none of the placement type or dual system contact experiences are statistically significant. Each additional increase in physical movement transitions, however, have a rate of 1.09 increase in obtaining an arrest one year later, given all other factors held constant ($p < .05$). In this sample, Latino youth compared to other race/ethnicity have fewer subsequent arrests one year later ($p < .05$). As expected, females compared to males have fewer arrests after one year ($p < .05$) as well as each year increased in age ($p < .001$).

Table 6. Model Predicting Arrests After One Year JJ Supervision

	Model 1 Negative Binomial DS Contact	
	IRR	Robust SE
Out-of-home Placement Type (ref = Home supervision)		
Residential placement	0.79	(0.24)
Secure confinement	0.60	(0.23)
Both OOHC types	0.90	(0.42)
Dual system contact	0.67	(0.15)
Physical movement transitions	1.09*	(0.04)
Days spent in detention	1.00	(0.00)
Characteristics at Time of Arrest		
Female	0.63*	(0.15)
Race/Ethnicity (ref = Other)		
African American	0.72	(0.25)
Latino	0.49*	(0.17)
Number of prior arrest	0.99	(0.14)
Age at time of arrest	0.53***	(0.06)
Most serious charge (ref = Violent)		
Property offense	1.01	(0.26)
Drug offense	0.71	(0.31)
Other offense	0.67	(0.24)
Mental health need	0.80	(0.21)
Alcohol/Substance use	0.98	(0.34)

*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests).

Model 2 explores whether dual system contact moderates the relationship between out-of-home placement type and subsequent arrests after one year (Table 7). The statistical significance of

the interaction term suggests that subsequent arrests after one year have a differential effect for youth with dual system contact and out-of-home placement types. In the first year of supervision, justice-involved only youth (without child welfare histories) in residential placements have 75% fewer arrests compared to in-home supervision for this group (IRR = 0.25, $p < .05$). In comparison, youth who had dual system contact have an increased risk of arrests in this setting. Youth with dual system contact in residential placements in the first year have a rate of 3.93 times greater arrests after one year than if they were placed home on supervision (IRR = 3.93, $p < .05$). All of the previous significant estimates remain unchanged. The number of physical movement transitions during one year of justice supervision correlates with an increase in subsequent arrests by 1.10 (IRR = 1.10, $p < .05$). Fewer arrests after one year were associated with the following variables: females compared to males (IRR = 0.60, $p < .05$), Latino compared to other race/ethnicity (IRR = 0.47, $p < 05$), and each year increases in the age of arrest (IRR = 0.55, $p < .001$).

Model 3 is the full model that includes child welfare measures (Table 7). Each additional physical movement transition during the first year of justice supervision continues to increase the frequency of arrests (IRR = 1.08, $p < .05$). Latino youth and older youth have less recidivism after one year of probation supervision (IRR = 0.41, $p < .05$; IRR = 0.51, $p < .001$). Overall, there are two statistical differences from the previous models. First, female is no longer statistically significant, which previously showed that female youth were less likely to recidivate following one year of justice supervision. Second, dual system contact appears to moderate the relationship between out-of-home placement type and subsequent arrests after one year. When justice-involved only youth (without child welfare histories) enter residential placements in the first year, they have fewer arrests after one year compared to if they were placed home on supervision (IRR = 0.29, $p < .05$). Home supervision shows 52% fewer arrests for the dual system contact population after one year (IRR = 0.48, $p<.05$). However, youth with dual system contact in residential placements is expected to recidivate 3.59 times more than if they were placed with home supervision. If dual system youth

had ever been placed in a child welfare out-of-home placement in the past, they had fewer arrests after one year of justice supervision (IRR = 0.34, p < .01). The number of child welfare investigations was not statistically significant (p > .05).

Table 7. Interaction Models Predicting Arrests After One Year JJ Supervision

	Model 2 Poisson		Model 3 Poisson	
	DS Contact and Placement Type		DS Contact, Placement Type, and CW	
	IRR	Robust SE	IRR	Robust SE
Dual system contact	0.55	(0.17)	0.48*	(0.16)
Placement Type (ref = Home supervision)				
Residential placement	0.25*	(0.14)	0.29*	(0.16)
Secure confinement	0.85	(0.34)	1.10	(0.49)
Both OOHC types	0.51	(0.32)	0.61	(0.38)
DS X Residential placement	3.93*	(2.17)	3.59*	(1.82)
DS X Secure confinement	0.39	(0.27)	0.40	(0.26)
DS X Both OOHC types	1.75	(1.12)	2.24	(1.46)
Number of CW investigations			1.06	(0.04)
CW out-of-home placement			0.34**	(0.14)
Physical movement transitions	1.10*	(0.04)	1.08*	(0.04)
Days spent in detention	1.00	(0.00)	1.00	(0.00)
Characteristics at Time of Arrest				
Female	0.60*	(0.15)	0.68	(0.17)
Race/Ethnicity (ref = Other)				
African American	0.77	(0.30)	0.66	(0.25)
Latino	0.47*	(0.18)	0.41*	(0.15)
Number of prior arrest	1.02	(0.14)	1.12	(0.14)
Age at time of arrest	0.55***	(0.06)	0.51***	(0.05)
Most serious charge (ref = Violent)				
Property offense	1.10	(0.32)	1.39	(0.36)
Drug offense	0.70	(0.30)	0.75	(0.29)
Other offense	0.74	(0.26)	0.95	(0.33)
Mental health need	0.83	(0.22)	0.80	(0.20)
Alcohol/Substance use	1.18	(0.43)	1.35	(0.49)

*p < .05; **p < .01; ***p < .001 (two-tailed tests).

To compare justice-involved youth with and without child welfare histories, I estimate the predictive margins and average marginal effects of arrests after one year. The results are graphically displayed in two plots. The first plot in Figure 10 shows the predictive margins with

95% confidence intervals, which is the predicted number of arrests after one year by the level of system contact. If justice-involved youth were placed on home supervision, after one year of supervision they have a predicted number of 1.29 arrests and 1.41 arrests if they were placed in a secure confinement facility. Dual system youth have 0.61 arrests for home supervision and 0.26 if they were placed in a secure confinement facility. If dual system youth were placed in a residential placement, after one year of supervision they have a predicted number of 0.65 arrests compared to 0.38 for justice-involved youth only. In order to make predicted arrest comparisons between system contact, Figure 11 shows the average marginal effects (or simple effects). On average, dual system youth accumulate statistically more arrests in a residential placement ($p < .05$) and less arrests in a secure confinement facilities ($p < .01$) after one year compared to justice-involved youth without child welfare histories.

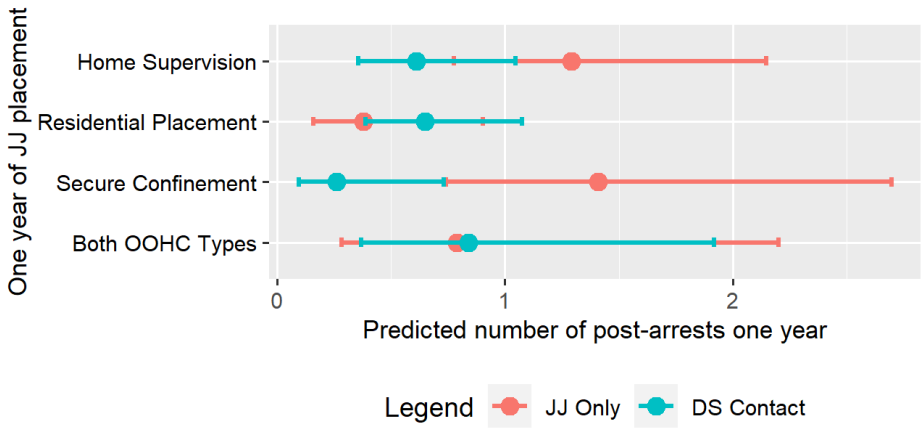

Figure 10. Predictive Margins of Arrests with 95% CIs

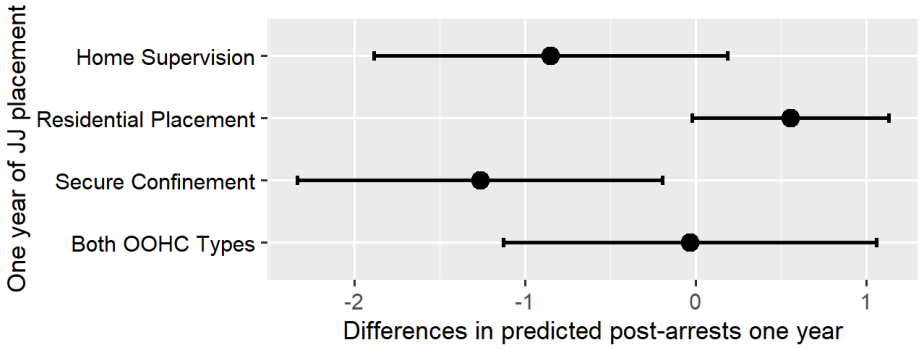

Figure 11. Average Marginal Effects of Arrests with 95% CIs

Discussion

Out-of-home placements in juvenile justice are potential turning points because justice contact decisions may influence youth's desistance and persistence from crime (Moffitt, 1993). Extant research has consistently found that incarceration has long-term consequences on youth's well-being and stability in later adulthood (Abrams, 2006; Boulger & Olson, 2011; Bullis et al., 2002; Washington State Institute for Public Policy, 2019). However, there has been less emphasis on the types of out-of-home placement experiences that youth may face under juvenile justice supervision. One of the limitations of this research is the categorization and grouping of out-of-home placements as a single indicator for a spectrum of justice placements. Another limitation is that cross-sectional research studies do not typically account for multiple placement experiences that may cumulatively contribute to delinquency risk factors over time. Or that some youth with child welfare histories are more likely to enter out-of-home placements, thereby their recidivism rates over time are higher than justice-involved youth without past child welfare involvement. To address this gap, this study aimed to ascertain whether recidivism, measured as juvenile arrests, differed by out-of-home placement experiences during one year of justice supervision and the level of system contact.

Using a sample of youth on justice supervision, the findings showed that out-of-home placement type during one year of juvenile justice supervision was not related to the number of arrests after one year (RQ1). However, a higher number of changes in physical locations increases the frequency of arrests after one year. Youth placed in residential placements and or both types of out-of-home care placements (OOHC, residential placement and secure confinement facilities) were significantly more likely to have more physical movement transitions. On the other hand, youth in secure confinement facilities and with both OOHC spent more days in temporary detention. The notion that physical movement patterns are related to subsequent arrest histories is a unique contribution to the literature. Previous studies have only examined placement changes after filing a delinquency petition (Halemba et al., 2004; Halemba & Siegel, 2011a). Although this measure captures a form of instability, it underreports the amount of physical movement transitions in justice-involved youth's lives. Nonetheless, a measure of physical movement transitions captures juvenile court orders (e.g., detention, placements) and non-system-related events (e.g., leaving care without permission, returning home), highlighting a critical consequence of justice system contact.

Does dual system contact moderates the relationship between out-of-home placement type and subsequent arrests after one year? (RQ2) Out-of-home placements appear to be turning points for potential opportunities for delinquency intervention. Specifically, residential placements in the first year of justice supervision had differential effects for youth with justice involvement only versus dual system contact with child welfare histories. There are two important differences to note that builds on previous research on the effectiveness of justice placements. First, justice-involved youth in residential placements was associated with fewer arrests after one year of supervision compared to home on supervision. In contrast, youth with dual system contact in residential placements, compared to home supervision, were three times more likely to get arrested after one year. Second, youth with dual system contact were significantly less likely to

receive an additional arrest if supervised at home compared to justice-involved youth at home on justice supervision.

These findings are consistent with prior research, but they may appear to contradict the goal of keeping justice-involved youth with their families. For justice-involved only youth, why do residential placements produce fewer arrest rates than keeping youth on home supervision? One possible explanation is that residential placements as a turning point is offering a rehabilitative effect for justice-involved youth with unmet needs and those undetected by service systems in the past. At home, delinquency may have manifested as a result of missed opportunities to address trauma and family needs (LA County Office of Child Protection, 2021). Significant research has found a high prevalence of trauma exposure and psychiatric disorders in juvenile justice youth compared to the general population (Dierkhising et al., 2013; Teplin et al., 2012). Substance use and education issues are important delinquency risk factors for justice-involved populations without child welfare histories (Lee & Villagrana, 2015; Malvaso et al., 2019). To this extent, residential placements, compared to home supervision, may lead to less arrests in adolescence because justice-involved youth can receive the necessary services and assessments that appropriately address their unmet needs. Additionally, residential placements can provide opportunities to foster family relationships (Lipsey & Cullen, 2007).

For youth with dual system contact, residential placements appear to increase arrest rates after one year. Therefore, placement type can also be a negative turning point for exacerbating delinquency risk factors over time due to missed opportunities and increasing instability. Ineffective placements may directly contribute to youth leaving care without permission and increasing law enforcement contacts as a result (Dierkhising et al., 2020; Hershberger et al., 2018; Hickle & Roe-Sepowitz, 2018; Pullmann et al., 2020). Hence their recidivism rate over time may be higher than their justice-involved only counterparts because of their increased likelihood of being placed out-of-home in the past. Research have found that youth with child welfare histories are

more likely to enter out-of-home placements in juvenile justice (Goodkind et al., 2013; Jonson-Reid & Barth, 2003; Kolivoski et al., 2014; Ryan et al., 2007; Tam et al., 2016) and be arrested in these settings (Baidawi & Sheehan, 2020a; Gerard et al., 2019; Huang et al., 2015; Ryan et al., 2008). For some dual system youth, moving from a family-like setting to a residential placement can increase recidivism (Huang et al., 2015).

However in this study, youth who had experienced out-of-home placements in child welfare were significantly less likely to receive an additional arrest after one year of justice supervision (RQ3). It is possible that youth with dual system contact received early interventions in child welfare that later reduced their overall recidivism risk over time (Jonson-Reid & Barth, 2003). Child welfare in this sense became a positive turning point that later changed youth's delinquency trajectories. A second possibility is that youth who experienced placement instability in child welfare are at greater risk of delinquency across the life course (Malvaso et al., 2016; Ryan et al., 2008; Widom & Maxfield, 2001), but the sample size and dichotomous measure of child welfare placement in this study precluded this relationship. Some evidence suggests that youth with more chronic histories of out-of-home placements in child welfare have different delinquency trajectories (Herz et al., 2022; Kolivoski et al., 2017). Although this study did not address instability in child welfare, Ryan and Testa (2005) found that child welfare placement did not influence delinquency risk in the same way for males and females. Child welfare placement increased delinquency risk for females, but for males, placement instability was associated with delinquency risk. Lastly, youth may have also received services during justice supervision that lowered their delinquency risk. Youth needs were effectively addressed during community or placement settings (Lipsey, 2009; Lipsey & Cullen, 2007) which lowered their likelihood of having additional arrests post-year.

While this study contributes to our understanding about out-of-home placement types and delinquency trajectories, there are some limitations that are important to note. This study is not a causal test of out-of-home placement as a turning point, but investigates its association for future

research to consider. This study only examined out-of-home placement experiences in the first year of justice supervision, but later placement experiences after one year could also increase surveillance practices and greater contact with law enforcement. In turn, these experiences may shape delinquency trajectories and increase the likelihood of future arrests. Moreover, while this unique dataset tracked physical placement transitions, it is missing the services youth received during justice supervision that could be an unobserved heterogeneity. The opportunities to receive services are important to consider in the life course. Evidence-based services have shown positive outcomes in reducing risk factors for delinquency (Landenberger & Lipsey, 2005; Lipsey, 2009; Robertson et al., 2001), but access to these services are not always readily available. Services delivered in placement may be more accessible on site, in comparison to community-based services, that may have specific eligibility requirements and waitlists.

A closely related issue is the assessment of mental health and alcohol/substance use concerns. While the inclusion of these psychosocial needs was considered in this study, this information was only limited at the time of the initial arrest. On the frontend of justice processing, probation officers may have limited information about youth needs, which may underestimate the impact of psychosocial needs on delinquency trajectories. For instance, scholars have found that girls are more likely to be removed from their homes during justice supervision due to mental health needs (Espinosa et al., 2019). Hence, youth with mental health needs may produce higher recidivism rates over time because they are more likely to enter out-of-home placements in juvenile justice. Future research is encouraged to pursue longitudinal research on delinquency trajectories and consider the dynamic changes in youth characteristics and placement type experiences.

Despite the current study's limitations, understanding the impact of out-of-home placement type experiences on subsequent delinquency trajectories can inform decision-making in policy and practice. Youth must be matched to the most appropriate setting. Placement decisions should be trauma-informed and guided by comprehensive assessments. This study highlights that it is not

only *where* youth are placed but also the importance of *who* and *where* may matter in later delinquency trajectories. Although youth with dual system contact has shown to have more significant risk factors and trauma exposure than justice-involved youth (Dierkhising et al., 2013; Kerig et al., 2009; Lee & Villagrana, 2015; Modrowski et al., 2021), home placement with the appropriate resources can be beneficial for desistance. This maintains that policy efforts should provide more opportunities for diversion and deinstitutionalization. Yet, residential placements can also be a potential turning point for instilling behavioral change and reducing recidivism risk in the long term. For this reason, future research must examine which placement types are most beneficial for what subgroups of justice-involved youth.

SUMMARY AND CONCLUSION

This dissertation has significant implications for the well-being of youth and families in juvenile justice, especially youth with prior histories of child welfare contact. Dual system contact is a particular concern in juvenile justice research because nearly all dual system youth had their first contact with the child welfare system before the juvenile justice system (Herz, Eastman, Putnam-Hornstein, et al., 2021; Herz et al., 2019). These youth enter the justice system with significant maltreatment histories and trauma exposure (Baglivio et al., 2016; Dierkhising et al., 2013; Ryan & Testa, 2005) and may continue to have disruptions to family stability as a result of justice supervision. To investigate physical movement changes during juvenile justice supervision, I used a novel dataset from *The Los Angeles County Juvenile Probation Outcomes Study, Part II* (POS2, Herz & Chan, 2017), which contains the experiences of 120 justice-involved youth on juvenile probation supervision in Los Angeles County. Among this sample, 83 out of 120 (69%) youth in the study had a previous child welfare referral in Los Angeles County at the time of their original arrest.

The purpose of this dissertation is to explore both the stability and instability of youth physical movement patterns during justice supervision, which may help to shed light on areas to promote stability. Justice contact may hinder family stability over time through detention practices and frequent physical movement transitions in and out of justice placement facilities. Chapter 1 shows how the cumulative disadvantage of justice-involved youth with family histories of parental arrest and child welfare involvement were detained faster at the time of arrest. Detention at early stages of the justice processing may lead youth to the deeper ends of the justice system (Beckman & Rodriguez, 2021; Leiber & Fox, 2005; Thomas et al., 2022; Zane et al., 2022), which may suggest more frequent location changes. Frequent transitions during justice contact may exacerbate trauma and hinder educational progress (Ruch & Yoder, 2018; Teplin et al., 2012; Toldson et al., 2010).

Chapter 2 illustrates five typologies of physical movement patterns among a sample of justice-involved youth during one year of justice supervision. On average, justice-involved youth had moved approximately five times during the year. Two typologies of youth's physical movement patterns during one year of justice supervision show family stability in the form of home supervision on the frontend of justice processing after arrest. However, the use of more physically restrictive placements was shown in three typologies where detention and out-of-home placements were more common. The majority of these "unstable" typologies were comprised of females and youth with dual system contact. Youth with dual system contact had significantly more diverse changes in location states compared to justice-involved only youth without child welfare histories. Frequent location changes and experiences in out-of-home placements have consequential outcomes for delinquency trajectories. Evidence from Chapter 3 suggests that the level of system contact may moderate the relationship between out-of-home placement experiences and subsequent arrests after one year. In other words, the effectiveness of the out-of-home placement type may not be uniform for subgroup populations of justice involvement. Residential placements appear to reduce the frequency of arrests for justice-involved youth without child welfare histories, but the opposite occurred for the dual system sample.

Notwithstanding the study's limitations, the results support two crucial recommendations for increasing family stability in juvenile justice. Juvenile courts are often concerned about using the least restrictive options in the community to prevent early home removal and, later, deeper justice involvement. There is some progress in this area. Between 2018 and 2021, the Los Angeles County Probation Department reduced 50% of its institutional confinement population in juvenile halls and secure confinement facilities (LA County Probation Department, 2021). To keep families together and effectively serve them, jurisdictions must conduct comprehensive risk assessments and only use out-of-home placements when necessary and appropriate. Using risk assessments may

reduce bias in decision-making by providing a set of criteria for evaluating recidivism risk (Baglivio, 2007; Bonta & Andrews, 2007).

Still, most risk assessments are not jurisdiction-specific or customized to the justice population for an agency (Hamilton et al., 2016). Scholars have reported the inconsistent use of risk assessments to aid decision-making, such as overriding risk assessment recommendations (Shook & Sarri, 2007). This may increase inequity among youth of color who are perceived as high-risk compared to their white counterparts (McCafferty, 2018; Onifade et al., 2009; Schwalbe et al., 2007). Given the number of disproportionate females and Black youth in the dual system population (Herz et al., 2019), the increased risk of out-of-home placements is detrimental to the well-being of youth and their families. Future research should examine the extent to which risk assessments incorporate gender-responsive items, trauma exposure, and protective factors.

Relatedly, efforts to increase resources and evidence-based practices on the community level are necessary for justice-involved youth and families who remain at home or in residential placements. Justice-involved youth, and even more so youth with dual system contact, may have unaddressed (historical and sometimes persistent) delinquency risk factors that require services (Espinosa et al., 2019; Lee & Villagrana, 2015; Vidal et al., 2017). Services should include family in-home treatment/intervention and increase the availability of evidence-based practices in residential placements. Cognitive behavioral therapy and specific interventions focused on treatment have consistently shown more positive outcomes than deterrence-focused and punishment approaches (Landenberger & Lipsey, 2005; Lipsey & Cullen, 2007). Due to the prevalence of dual system contact, services must be trauma-informed for populations with prior maltreatment histories. Scholars have suggested a movement toward a trauma-informed research agenda in light of the crossover trajectories between child welfare and juvenile justice (Modrowski et al., 2021).

Of equal importance should be a priority to incorporate positive youth development opportunities at both the community and institutional levels. Positive youth development is a strengths-based approach to helping youth build positive relationships, enhance skill development, and have shown positive outcomes for youth with maltreatment histories (Oshri et al., 2017). Overall, juvenile justice's goal to achieve rehabilitation and positive outcomes requires developing a strong community network of services to help families and simultaneously addressing system practices (LA County Office of Child Protection, 2021). Increasing individual, family, and community resilience are a foundation for increasing family stability and preventing future delinquency trajectories.

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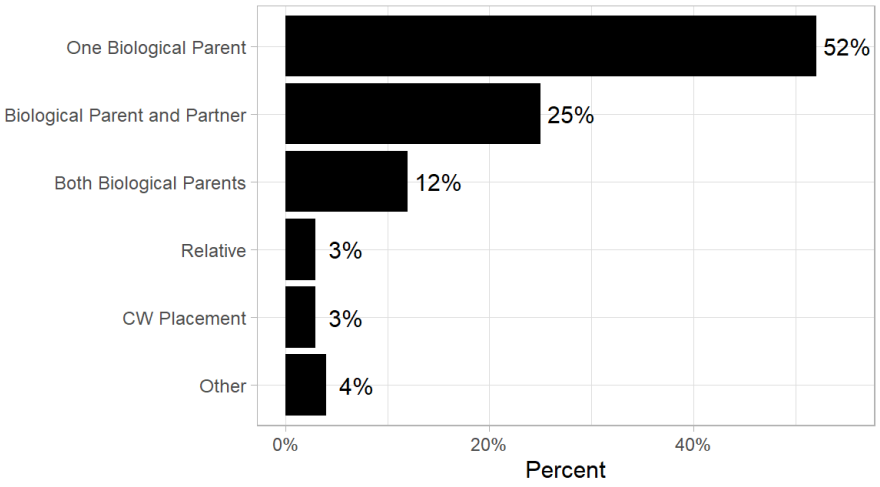
APPENDIX

Appendix A. Living Situation at Time of Original Arrest

The majority of youth (89%) lived at home with one or both biological parents; 4% lived in other types of home environments (e.g., adopted parents, girlfriend, family, friend), and 3% resided in child welfare placements.

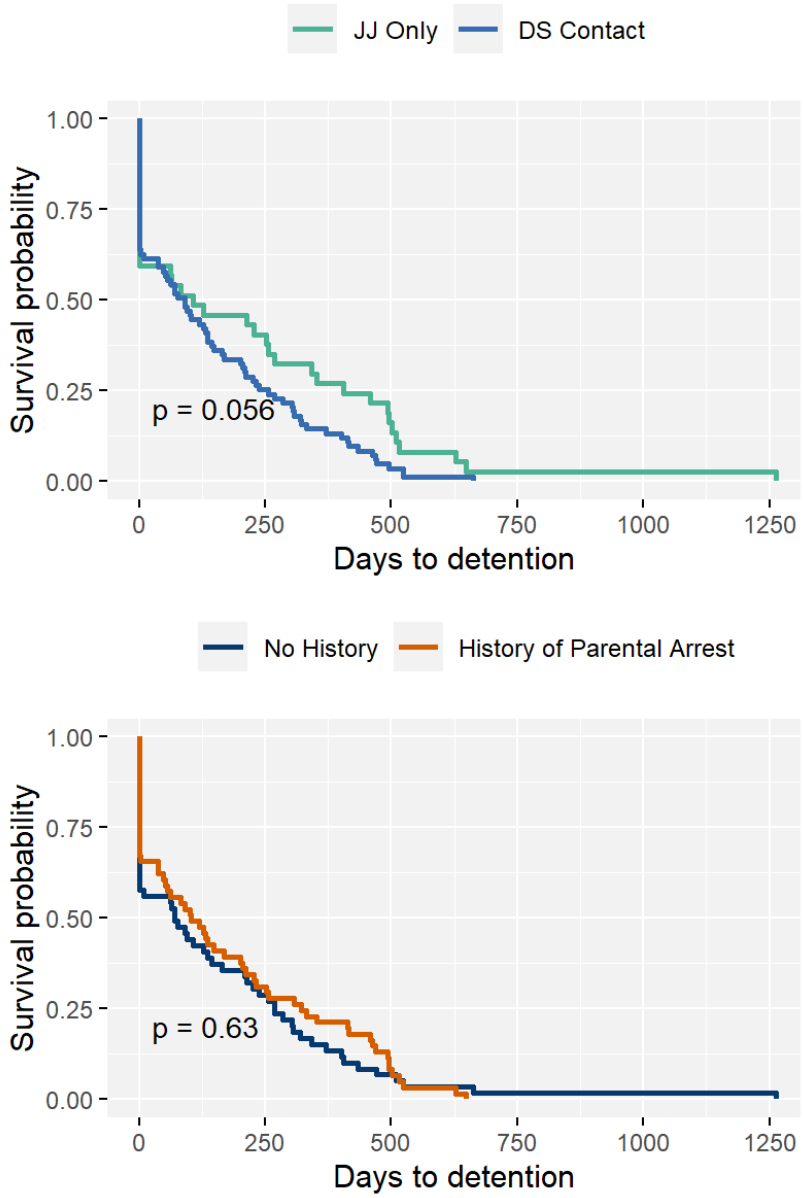


Appendix B. Cox Model Predicting Time to Detention with Original Arrest

	Model	
	HR	Robust SE
Parental incarceration	1.16	0.26
Parental arrest	0.37**	0.14
DS contact	0.99	0.26
DS contact X Parental arrest	2.46*	0.92
Female	1.10	0.22
Race/Ethnicity (ref. Other)		
African American	2.47*	0.89
Latino	2.46***	0.76
Number of prior arrests	1.31***	0.11
Age at time of arrest	1.30***	0.10
Most serious charge (ref. = Violent)		
Property offense	0.58*	0.14
Drug offense	0.78	0.24
Other offense	0.67	0.15
Arrest occurred at living location	2.18***	0.47
Arrest occurred on school grounds	0.56*	0.14
Mental health need	1.10	0.20
Alcohol/Substance use	1.18	0.32
Original Arrest Year (ref = 2010)		
2011	1.03	0.73
2012	0.97	0.67
2013	0.90	0.64
2014	1.67	1.16

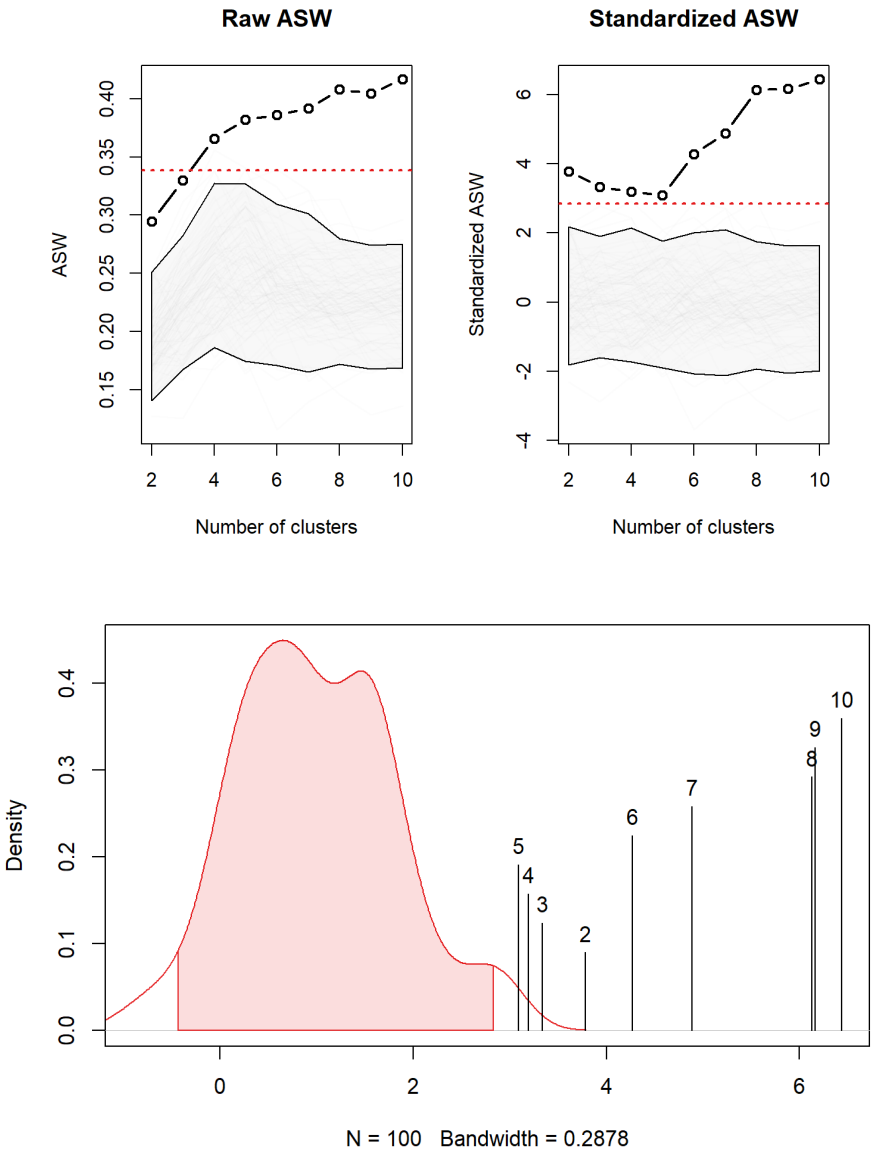
*p < .05; **p < .01; ***p < .001 (two-tailed tests).

Appendix C. Kaplan Meier Survival Plots by Dual System Contact and Parental Arrest



Appendix D. Distribution of the Raw ASW Null Values for Clusters 2 to 10 using the "Max T" Approach

Distribution of the raw ASW null values for Clusters 2 to 10 using the “Max T” approach. Panel 1 plots both the raw and standardized ASW for various clusters. Cluster 5 and on are possible solutions. In Panel 2, the null model suggest no clustering structure exists. Cluster 5 reveals a clustering structure in the data.



Appendix E. Relationship between Original Arrest Year and Typologies

Original Arrest Year	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Total
2010	2	0	0	0	0	2
2011	6	0	3	5	1	15
2012	16	0	5	2	6	29
2013	15	2	18	9	5	49
2014	0	14	3	8	0	25
Total	39	16	29	24	12	120

$X^2 = (16, N=120) = 77.41, p < .001$

Appendix F. State Distribution Plot for Six-Cluster Solution, by Typology