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# Youth placed out-of-home for behavioral reasons: An analysis of characteristics, type of placements, and length of stay

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**Abstract**

This study analyzes the experience of youth placed out-of-home by two local county departments, human services and corrections, in a large Midwestern metropolitan county. The study goals are to determine whether youth placed by each department have similar characteristics and to analyze the factors associated with type of placement and length of stay. We find that youth have similar characteristics and experiences regardless of which department places them. We conclude that county departments appear to be choosing a placement type based on the individual situation or needs of the youth, and, once placed, youth are treated similarly regardless of department.

## Introduction

Youth placed out of their home for behavioral reasons face a complex array of family, societal and personal issues. Most experts agree that a safe, positive family environment is best for youth. When this can't happen, public agencies intervene to place the youth in a safe environment. Out-of-home placements may occur because of child protection-related issues such as abandonment or neglect, in which case youth are primarily placed in emergency shelters, foster care, or treatment foster care. This study focuses instead on youth placed out-of-home for behavioral reasons, including stealing, vandalism, attempting suicide, alcohol or drug abuse, or physical violence. Youth of color, youth living in poverty, and youth with mental health issues are disproportionately placed out of their home. Disproportional placement based on various demographic and socioeconomic factors is a national phenomenon; however it is a state and local issue as well.

When youth are placed for behavioral reasons, many types of placement options exist. Short-term consequence programs, usually serving youth ages 12 to 17, focus on correcting chronic behavioral problems through intense supervision, direction, and support. Group homes are the least restrictive type of placement. Youth placed in group homes are considered a minimal threat for running away, but usually require some type of basic structure that is not provided by their family; behavioral problems are minor. Residential treatment centers are typically secured settings with some type of mental health treatment program. Generally, youth with mental health and behavioral problems or those considered a serious threat for running away but whose behavior was not severe enough to require a juvenile corrections placement are placed in residential treatment centers. Juvenile corrections centers are the most restrictive type

of placement. Youth are sentenced by a court to a specific amount of time in the correctional center based on the type and severity of the offense.

The type of placement is generally decided by judges, social workers, corrections officers, and other relevant parties based on varying factors like previous placements, current incident or offense, and level of offense. Around the nation, youth placed for child protection issues are placed by local or state human services departments in conjunction with local police and juvenile courts. In contrast, youth placed for behavioral reasons can be placed by either human services or corrections departments. If, for example, the incident is a suicide attempt, the youth is placed by human services. When the incident is stealing or vandalism, the youth is usually placed by corrections. Although youth enter a placement based on the most recent behavioral incident, the fundamental underlying problems facing these youth may be similar regardless of which department does the placement. However, research on the similarities and differences of the youth and their experiences across departments is limited.

There is a national trend taking place where local human services and corrections departments are coordinating services in an effort to effectively improve the outcomes for youth and their families. Examples include the Hennepin County Joint Care Management Initiative (JCMI) in Minnesota; The Durham Initiative in North Carolina; and the New York State Office of Children and Family Services (Dodge et al. 2004, Johnson 2004). Coordination efforts require better understanding of the youth in each system and how their experiences differ in terms of type of placement and length of stay in placement. We attempt to fill these gaps by analyzing a sample of youth who are placed for behavioral reasons by both the human services and corrections departments in Hennepin County, Minnesota. The objectives of this study are (1) to identify whether youth placed by each department have similar characteristics, (2) to analyze the

factors that influence the type of placement a youth receives, and (3) to understand what factors influence the length of stay in placement.

This research is one of the first attempts to understand factors influencing type of placement and length of stay for youth in a large metropolitan county system regardless of department or placement agency. Having a better understanding of the overall factors influencing type of placement and length of stay gives policy makers and county workers an opportunity to improve the services provided to these children and their families by providing more efficient services at earlier stages of the placement process. The results also help inform on-going inter-departmental coordination efforts and potential changes in child welfare and juvenile corrections policies and laws.

**Literature review**

Many previous studies have analyzed length of stay of youth in out-of-home placement. Most studies either analyze length of stay in one placement type (for example, foster care) or, more typically, they analyze length of stay in one placement location, such as one group home or group homes in a particular region (for example, New York state). If they use data of youth from both human services and corrections to analyze length of stay, it is because they focus on only one type of placement setting, such as residential treatment centers, that accept placements of youth from either department (Glisson, Bailey, & Post 2000; Hussey & Guo 2005; Kashubeck, Pottebaum, & Read 1994; Kemp & Bodonyi 2002; Landsman et al. 2001; Lyons et al. 2001).

The statistical methods for analyzing length of stay in out-of-home placement have improved over the years. Earlier publications use ordinary least squares (OLS) regression method for analyzing length-of-stay. However, this method may produce biased results because most length of stay data includes censored observations (Wulczyn 1996). If an individual is still

in placement at the end of the study period, the researcher is unable to know the true length of stay. These cases are, therefore, censored. If the researcher assumes that the last day of observation is the last day of placement, the true length of stay for those individuals will be underestimated. More recent studies of the length of out-of-home placement use survival analysis or event history analysis to account for the censored data.

Studies using survival analysis techniques like Cox regression have determined a number of characteristics that influence length of stay in placement. Most studies find that age at entry of placement matters, where an increase in age is associated with a decrease in the length of stay (Baker, Wulczyn, & Dale 2005; Hussey and Guo 2005; Pavkov, Goerge, & Czapkowicz 1997; Vogel 1999). However, the relationship might not be linear. Wulczyn (2003) analyzes age groups and finds a non-linear relationship between age groups and length of stay. Benedict and White (1991), however, find no significant association between age and length of stay in foster care.

Other demographic characteristics have been found to influence placement length of stay as well. Pavkov et al. (1997) study state hospitalization length of stay and find being female associated with longer stays in state hospitals. However, Vogel (1999) finds that being male is associated with longer placement stays in human services placements like foster care or group homes. Benedict and White (1991) find no association between sex and length of stay in foster care. Variations in findings across these studies may be explained by differences in the types of placements and data used.

Findings on the association of race and ethnicity with length of stay in placement have also been mixed. Some studies find that African American or minority youth have longer placement stays than their white counterparts (Glisson et al. 2000; Pavkov et al. 1997; Wulczyn

2003), while others find there is no significant difference (Benedict & White 1991; Vogel 1999). Again, differences in the placements studied, including the department responsible for the placement and the type of placement, may explain these inconsistencies.

A few studies have included a geographic dummy variable when analyzing placement dynamics of youth. Glisson et al., (2000) for example, finds that living in an urban area is associated with a shorter length in state custody placements than those living in a rural area. Wulczyn (2003) finds that living in an urban area is associated with an increase in length of stay in child welfare out-of-home placements.

Other characteristics are associated with length of stay. The number of prior placements has been found to have a significant positive effect on length of stay in placement (Pavkov et al. 1997). In addition, mental health diagnoses, type of exit, and family characteristics have all been found to influence placement length (Baker et al. 2005; Glisson et al. 2000; Hussey & Guo 2005; Pavkov et al. 1997; Smith & Efron 2005; Vogel 1999). Baker et al. (2005) find that having mental health issues increases length of stay for youth who exit placement by reunifying with their family or transferring to another placement agency. They also find that substance abuse history is associated with shorter stays in residential treatment facilities for those youth who run away. Hussey and Guo (2005) found that a history of parental alcohol abuse is associated with a decrease in length of stay in residential treatment centers.

The type of placement is a principal determinant of the length of stay for out-of-home placement; in fact, the placement type defines the length of stay in many cases. Vogel (1999) finds that "…caretaker [kinship care] and foster care placements tended to be much longer term than group home or institutional ones (689)." Although not the primary purpose of her research, she also finds that placements in group homes have shorter stays than other institutions. Yet,

even though placement type clearly influences the length of stay, it also varies even for the same type of placement. Individual agency characteristics, worker characteristics and other system variables have all been found to influence placement length (Smith & Efron 2005; Vogel 1999). Smith and Efron find that worker effects matter in length of stay and faster, better coordination can influence length of stay. Vogel finds that receiving in-home services prior to placement is associated with longer placement stays.

While there are numerous studies of length of stay in placement, we find sparse literature analyzing factors influencing type of placement. One reason why this literature might be lacking is because it is very difficult to get access to cross-departmental administrative data. By focusing on analyzing youth in one type of placement, researchers only need access to data from one placement agency. Another reason why these studies might not be common is a belief that type and length of placements do not need to be analyzed simultaneously because the type of placement depends on factors such as the event or incident rather than characteristics of the youth or the system.

One study of the factors associated with placement type is by Leon et al. (1999) who estimate a model to predict whether a youth enters a psychiatric hospital or not. Indexes identifying potential for suicide, dangerousness, and impulsivity were found to be most associated with whether or not to place in a psychiatric hospital. However, the study did not analyze other types of placements.

Few studies have attempted to analyze differences between characteristics of those placed by human services and those placed by corrections departments. Only a few recent studies analyze characteristics of youth in placement from multiple departments (Hussey & Guo 2002; Dale et al. 2007). Hussey and Guo's data contain youth placed by both human services and

corrections, but they do not distinguish between youth entering residential treatment from the two departments. Dale et al. (2007) find that youth currently served by child welfare [human services] departments are more likely to have juvenile corrections backgrounds than youth from ten years ago. These studies focus only on youth placed in residential treatment centers however, and, therefore, are limited in their generalization of the differences in characteristics of all youth.

In another study, Malmgren and Meisel (2004) try to identify a link between early child maltreatment, child disability and behavioral disorders, and disproportional representation of youth with emotional and behavioral disorders (EBD) in child welfare and juvenile corrections facilities. They analyze a cross-section of youth with EBD from special education programs, child welfare, and juvenile corrections facilities in a northeastern suburban area. This study is the closest attempt at researching similarities or differences of youth in child welfare and juvenile corrections placements; however, it only focuses on testing for risks associated with EBD. The authors do not test for whether differences in other characteristics among youth in these placements are significant.

**Data**

Hennepin County, Minnesota is a large metropolitan county in the Midwest, including the city of Minneapolis and suburban areas around it. The data used in this study were provided by the Hennepin County Departments of Human Services and Corrections. The two departments have different data systems, privacy rules, and procedures, making it very difficult for researchers to access data across departments, a challenge that exists in most local and state governments. The data needed to compare youth and their placements in both human services and corrections are not readily available because of the distinct department administrative systems that do not interact with each other.

Through a unique partnership with the County, we obtained data on youth placements from both systems. The initial data files included all youth in a placement for behavioral reasons in the county who ended a placement during a three-year time span from October 1, 2001 to September 30, 2004.[1] For this study, a database containing a five-percent random sample of these youth was constructed. In addition to the electronically available data, case file data about the decision-making process to place each youth were manually searched and added to the database. The database contains information about youths' past placements in both human services and corrections departments, allowing for a more complete analysis of how past placements influence current ones. Many studies are unable to access this sort of information, particularly across departmental databases.

The study database includes information on the youth's age, sex, race, neighborhood, poverty, physical disability, mental health diagnoses, child and parent behavioral problems, and number of previous placements. Age refers to the age at entry into the placement being observed in our sample. Because of the small number of Asian and American Indian youth in our sample, race is coded into the following categories: white, non-Hispanic; black, non-Hispanic; and other race, including Hispanic, Asian, American Indian and other. Neighborhood identifies whether the youth lives in the city of Minneapolis or one of the three suburban rings that surround the city

[1] Ideally the data collection would have focused on youth entering a placement during the time period; however, the data were already collected prior to our study. We were able to determine that nearly all (more than 90%) of youth in placement during this time period exited during this time period so that had we been able to include all placements, the sample would have been nearly the same. Nearly all youth who entered placement also exited during the time period analyzed.

of Minneapolis. The poverty indicator is based on whether the youth was identified as qualifying for federal IV-E funding for their placement. Federal IV-E funding uses poverty threshold guidelines to distinguish youth who qualify for placement funding from those who do not. The extensive detail on mental health diagnoses in the database was grouped into six major categories: behavioral disorders, mood disorders, anxiety disorders, substance abuse disorders, mild mental retardation, and other mental health diagnoses. Child or parent behavioral problems are dummy variables indicating whether the worker at time of placement noted any additional problems exhibited by the child or parent. These include problems that are not directly associated with the incident leading to the placement. Examples could be drug or alcohol abuse by either parent or child or abandonment on the part of the parent and so forth.

A number of variables in the database are related to the child's history of placements and characteristics of the placement itself. Previous placements refer to the total number of previous placements experienced by the youth in both human services and corrections. Placement type indicates whether the child's placement is in a short-term consequence program, a group home, a residential treatment center, or a juvenile corrections center. The department placing the youth for the observed placement, whether it was human services or corrections, is identified in the database. Other system variables describe aspects of the process of making the placement decision in each department, including whether placement goals were established for the case and whether or not a committee reviewed the child's placement options and made a joint decision about the best possible placement for the child.

**Methods**

In order to gain a better understand of the placements of youth for behavioral reasons, regardless of whether they are placed by human services or corrections departments, the study

has three specific objectives. Our first objective is to identify whether the youth placed by each department have similar characteristics. We assume that these youth face similar problems and have similar characteristics regardless of which department places them, but that their experiences may be different depending on which department they are in. To test whether youth characteristics are similar, we conduct chi-square tests for independence between the department and individual youth characteristics.

We also test for differences between the departments in a number of system variables, including placement goals, placement review, and placement type. These variables describe the experiences of the youth as they interact with the system. The two departments vary in their practices regarding youth placements despite recent efforts at inter-departmental coordination. We, therefore, expect to find significant differences between these system variables and department. It is unclear whether number of previous placements will be significantly different by department because although it is partially a characteristic of the youth, it also reflects the practices of the two systems. However, previous placements refer to placements by both departments, further confounding its relationship with the department variable.

Our second objective is to test which factors significantly influence the type of placement a youth experiences. A multinomial logistic regression is estimated to test whether the type of placement is associated with various individual child characteristics and system variables. The variables that may influence type of placement include both child and family characteristics (age, sex, race, neighborhood, mental health diagnoses, and child or parent behavioral problems), and system variables (number of previous placements, placement goals, placement review, and department). Age influences type of placement because some placement settings restrict the age group of youth they accept, but, in addition, younger youth may be placed in less restrictive

placements because they have fewer previous placements and fewer interactions with these departments. Type of placement may also vary for girls and boys, related in part to the different ways in which they tend to act out. Boys are more likely to act out by becoming violent, stealing or vandalizing, whereas girls are more likely to internalize their problems and demonstrate self-destructive behavior (although this trend is changing).

A mental health diagnosis and the type of diagnosis may also influence whether youth enter a residential treatment center or other type of placement. Child or parent behavior problems could indirectly or directly influence where the youth is placed. If the youth's behavioral problems are minor, but the parent is unstable because of alcohol or drug abuse, a youth would likely be placed in a group home instead of a more restrictive setting. We expect restrictiveness of type of placement to increase with an increase in the number of previous placements. We expect that goals are associated with some placement types, but not with others. For example, it is likely that a youth placed in a residential treatment center will have goals listed for their placement; where as a youth placed in a juvenile correction facility might not.

We anticipate that youth placed in less restrictive settings are less likely to have a committee review their placement before they are placed. As restrictiveness increases, more is at stake, so it becomes even more essential to have a committee review the placement setting for appropriateness. Finally, although we expect some overlap in placements by department, we assume that human services will tend to place youth in certain types of placements (like group homes or residential treatment centers), while corrections will place youth in other types of placements (like short-term consequence programs or juvenile correction centers).

For the third objective, we use a Cox or proportional hazards regression model to analyze the significant factors that influence length of stay in placement. Based on the literature review

and the authors' knowledge of the way in which placement decisions are made locally, we test whether the following various child characteristics and system variables influence the length of stay in placement: age, sex, race, neighborhood, poverty, physical disability, mental health diagnoses, child and parent behavioral problems, previous placements, placement goals, placement review, placement type, and department. To compare our results with previous studies, we estimate the Cox regression model first with only the child demographic variables and then with the system variables and additional characteristics that have not been available in most other studies.

**Findings**

Table 1 provides basic descriptive statistics on the 168 youth in the study sample. These youth experience an average stay of nearly five months in placement. Less than one third are female, and almost 60 percent live within the city of Minneapolis. Average age at entry into placement is around 16 years old. Over 40 percent of the youth are identified as black, non-Hispanic, while slightly less than one-third are identified as white, non-Hispanic. At least 20 percent of the sample lives in poverty. The most common mental health diagnoses are behavior disorders (almost half of the sample), followed by mood and substance abuse disorders. The youth have experienced five previous placements, on average, and 60 percent are placed by the human services department. Almost three-fourths of all placements have placement-related goals listed in their case files. Finally, almost 40 percent of all placements are in short-term consequence programs and 27 percent are in group homes. The rest of the youth are in residential treatment centers (23 percent) and corrections facility placements (10 percent).

Table 2 shows the percentiles for length of stay (measured as number of days in placement) by placement type. Short-term consequence programs have the shortest median

length of stay of 31 days. Group homes have a median length of stay of 72 days, still relatively short compared to median stays in residential treatment centers (235 days) and juvenile corrections facilities (330 days). Certain types of placements are expected to be longer than others, yet there is also considerable variation in length of stay within placement type. The 75$^{th}$ percentiles of stays in short-term consequence programs and group homes are more than twice as long as median stays in these placements. This is not true for residential treatment centers and corrections facilities, where the 75$^{th}$ percentile length of stay is much less than twice as long as the median stay.

Overall, youth placed by both departments are similar in terms of most characteristics. Youth placed by human services differ significantly from those placed by corrections only in terms of sex, being diagnosed with an anxiety disorder, and having child protection-related or child behavioral problems (table 3). Girls are more likely to enter the human services department while boys are more likely to enter via corrections. In addition, those placed by human services are more likely to have an anxiety disorder and not be identified as having behavioral problems. There are, however, no statistically significant differences between youth in the two systems by neighborhood, age at entry, race, poverty, disability, and other mental health disorders.

Even though the youth share many of the same characteristics, there are some differences in system-related variables for youth placed by the two departments. Without controlling for other variables, having a placement reviewed by a committee and the type of placement a youth experiences are significantly different for youth placed by the two departments. Therefore, even though youth are similar in terms of individual characteristics, they experience different types of placements and different system review practices based on the department with which they interact. There are more youth in group homes and residential treatment centers from the human

services department than corrections, and youth placed by corrections are more likely to have their placement reviewed.

We next investigate whether the characteristics of the youth, the department, or other system characteristics are associated with the type of placement. The results of the multinomial logistic analysis are shown in table 4. Few of the covariates are statistically significant. This may be because of the small sample size or because these variables are not important factors. It is possible that the most important predictor of the type of placement is the actual specific incident that prompted the need to place the youth. Few studies have looked at factors associated with type of placement, though Ryan et al. (2006) found that caseworker characteristics matter. It is possible that placement type is primarily decided by the individual worker placing the youth. We do not have data on the caseworker or the specific incident that led to placement, but further research should consider incorporating this information into the analysis.

A few variables are found to be significant in the multinomial logistic analysis of type of placement. A youth diagnosed with an anxiety disorder is less likely to be placed in a group home or residential treatment center than in a juvenile corrections center. Youth in short-term consequence programs are less likely to have goals related to their placement than youth placed in a juvenile corrections center. Short-term consequence programs are very structured and short in nature, so it is not surprising that youth in short-term consequence programs are less likely to have individual goals listed. Youth placed in group homes are more likely to have parents with identified behavioral problems and have more previous placements than youth placed in a juvenile corrections center. Group homes are the least restrictive type of placement, so there are a higher proportion of youth in these types of placements who might be facing family or other external problems and need a safe place to live temporarily rather than needing to be placed

because they are a threat to themselves or others. Finally, youth in group homes are more likely to have their placement reviewed by a committee than youth in a juvenile corrections center. The finding that group homes are more likely to be reviewed than juvenile corrections center placements could reflect the fact that when a youth commits a crime serious enough to be placed in a juvenile corrections center, they receive very strict orders from the courts regarding the type of placement and length of stay – eliminating the need for a comprehensive review of placement options.

We next estimate Cox regression models of the factors associated with the length of stay. The first column in table 5 provides the results of the Cox regression including only the demographic and child characteristics that are commonly found in studies of this type. The second model includes additional child characteristics, including mental health diagnoses and conditions at placement. The third model includes system variables related to committee review and type of placement. Finally, the fourth model stratifies by type of placement rather than including it as a covariate, as explained below.

Figure 1 displays the hazard functions for each type of placement, showing clear differences in the hazard functions. Not surprisingly, the likelihood of leaving a short-term consequence program is much higher at first than for other placement types, because these stays are typically shorter than those in residential treatment programs and corrections facilities. Because the average length of stay clearly differs across types of placement, one approach is to include type of placement as a covariate in the Cox regression model. However, in the proportional hazards model, a key assumption is that the baseline hazard functions (for different groups) are proportional, regardless of the different lengths of stay. A stratified Cox regression should be used when the baseline hazard ratios are different over time (StataCorp 2005). We

conduct two tests to analyze whether the proportional hazards assumption holds by placement type. We first graphically test if the proportional hazards assumption is violated by plotting the negative log of the negative log of the survival function [-log(-log(S(t))] over the log of time for each group, as in figure 2. If the proportions do not remain constant over time, the lines will not be parallel, implying that a stratified Cox regression should be used. In figure 2, we observe that, even though the residential treatment centers and juvenile corrections centers look parallel in earlier time periods, they do not remain parallel and no other lines are parallel. This is evidence that the proportions are not constant over time. In addition, we run a log-rank test for equality of survivor functions (table 6). We find that there is a statistically significant difference between observed and expected survivor functions by type. We, therefore, conclude that a Cox regression stratified by type of placement is the best method for analyzing length of stay with this sample.

We focus here on the results of the stratified Cox regression model in table 5 (last column), though, in general, most of the variables that are significant in the other models remain significant in the stratified regression. Controlling for a different baseline hazard by type of placement, the stratified Cox regression identifies other covariates associated with a higher (or lower) rate of exit from placement. Table 5 shows the estimated hazard ratios for each covariate, which provide an estimate of the increased or decreased probability of exiting placement given they have been in placement up until that point. In the stratified Cox regression, being female, being either black, non-Hispanic or other race, including Hispanic, having an anxiety or substance abuse disorder, and having more previous placements are all associated with an increased probability of exiting placement, in other words, a shorter stay. For example, being female is associated with a 70 percent increase in the likelihood of exiting placement compared to males.

Having a substance abuse problem is associated with a 46 percent increased likelihood of exiting placement (shorter length of stay) than those who did not have a substance abuse problem. The literature shows that youth with substance abuse problems are more likely to run away sooner from a placement than those without substance abuse problems, so a shorter stay could be due to an increased probability of running way early in placement. Each additional previous placement is associated with a 7 percent increase in the likelihood of exiting placement given they've been in placement up to that point. Age may be a confounding factor with number of previous placements, however, because the older youth become, the less time they have available to experience a placement, since most youth exit these types of placements at age 18. The results also suggest that youth in poverty have considerably longer stays in placement, perhaps because of the availability of federal funding under the IV-E program.

There is no statistically significant difference in length of stay by department or for those with a committee placement review, controlling for other factors. Longer stays are associated with having program goals, which is not surprising given that youth with very short stays might not be in placement long enough to have placement goals developed and documented in their files.

Stratifying by placement type and controlling for other factors, the racial and ethnic identity of the youth are associated with length of placement stay. Black, non-Hispanic youth have two times the probability of exiting placement relative to their white, non-Hispanic counterparts, after controlling for a neighborhood effect and poverty status.[2] In other words

[2] Even if we do not control for poverty and neighborhood, race is weakly associated with exiting placement. Black, non-Hispanic and other, including Hispanic, youth are more likely to exit

black, non-Hispanic youth are in placement approximately half as long as white, non-Hispanic youth.

To further investigate these results, we tested whether interaction terms between race and placement type are statistically significant and found that the interaction terms are not statistically significant. We, therefore, conclude that the race effect is similar across all types of placements. Table 7 shows that black, non-Hispanic youth and white, non-Hispanic youth are placed in similar proportions in each type of placement. Yet with the exception of residential treatment centers, black, non-Hispanic youth have shorter stays than their white, non-Hispanic counterparts in all types of placements. In contrast, other youth including Hispanics are more often placed in group homes and less often placed in short-term consequence programs and their length of stay differ considerably compared to the other groups. The relatively small number of youth in the other race category, however, reduces our confidence in these results.

Shorter placement stays for black, non-Hispanic youth may reflect differences in initial treatment by the system. If more black, non-Hispanic youth than white, non-Hispanic youth are placed for minor behavioral issues, it could explain the shorter stays of black, non-Hispanic youth. If, for example, black, non-Hispanic youth are more quickly or more often placed out of home for small offenses than white, non-Hispanic youth (who are not placed unless they commit a more serious offense), this systematic bias at the entry point into the system could result in more short stays for black, non-Hispanic youth. However, given that the youth are placed into different types of placements in similar proportions, there is not much evidence for this hypothesis. Shorter placement stays for black, non-Hispanic youth could also reflect an increased

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sooner than their white, non-Hispanic counterparts, 34 percent and 56 percent sooner, respectively.

awareness on the part of placement agencies of historical discrimination. Given concerns over disproportional out-of-home placement of minority youth, further investigation into the likelihood of placement and types of incidents triggering placement is warranted.

**Conclusion**

Across the country, many local human services and corrections departments are attempting to coordinate services in an effort to improve the outcomes for youth and their families. This effort is driven, in part, by the belief that the youth face similar underlying problems regardless of the department making the initial placement, and that many youth have interactions with both departments. There is limited evidence about the characteristics and experiences of these youth, however, as few studies have examined the out-of-home placements of youth from both departments.

In this study we have unique data that combines information on out-of-home placements from both human services and corrections departments in one large metropolitan county over three years. We find that the youth placed by the two departments are similar in terms of most individual and family characteristics. The main differences are that youth placed by corrections are more likely to be male and to have additional child behavioral problems. Controlling for these and other factors, there is no significant difference in type of placement by department. Few covariates predict type of placement, suggesting that the particular incident prompting the placement, rather than individual characteristics, may largely determine the type of placement. We conclude that departments are not systematically placing youth in particular types of placements based on any characteristics or system variables included in the study.

The type of placement is a principal determinant of the length of stay for out-of-home placements, yet there is considerable variation in placement length within each placement type.

Using a Cox regression model stratified by placement type, we find that females and black, non-Hispanic youth have shorter stays in placement, controlling for other factors. Information on the incident precipitating the placement may help to explain some of the apparent disparities, but this information was not available for our study.

The goal of this study was to investigate whether the type of placement or length of stay could be explained by differences between the two departments. Neither outcome is closely tied to the department, suggesting that the youth are treated similarly regardless of department once other factors are included. Some differences were found in terms of placement review and goals, suggesting that departments should agree on standardized processes for handling particular cases, regardless of which department places the youth.

Once a youth is placed in a setting, it is usually the placement agency that makes decisions about when the youth will exit placement. Further research into the decision-making process of placement agencies is needed to understand the experiences of youth in out-of-home placements. Local and state governments, who are responsible for the overall wellbeing of the youth, should work with placement agencies to make sure that youth are exiting placement based on best practices. Better coordination not only between departments, but between placement agencies and both departments, may improve outcomes for these youth and their families.

**Table 1. Descriptive statistics of children in placement for behavioral reasons, Hennepin County, 2001-2004**

| | N | Mean | SD | Min | Max |
|---|---|---|---|---|---|
| **Dependent variable(s)** | | | | | |
| Days in placement | 165 | 139.95 | 166.06 | 0 | 1037 |
| Log days in placement | 165 | 4.12 | 1.52 | 0 | 7 |
| **Geography variables** | | | | | |
| Lives in Minneapolis | 168 | 0.57 | 0.50 | 0 | 1 |
| Lives in 1st ring suburb | 168 | 0.13 | 0.34 | 0 | 1 |
| Lives in 2nd ring suburb | 168 | 0.11 | 0.32 | 0 | 1 |
| Lives in 3rd ring suburb | 168 | 0.03 | 0.17 | 0 | 1 |
| Lives outside Hennepin County | 168 | 0.15 | 0.36 | 0 | 1 |
| **Demographic variables** | | | | | |
| Female | 168 | 0.29 | 0.45 | 0 | 1 |
| Age at entry | 168 | 15.91 | 1.85 | 7 | 19 |
| White, non-hispanic | 168 | 0.31 | 0.46 | 0 | 1 |
| African American, non-hispanic | 168 | 0.44 | 0.50 | 0 | 1 |
| Other children of color, includes hispanic | 168 | 0.20 | 0.40 | 0 | 1 |
| Race missing | 168 | 0.02 | 0.15 | 0 | 1 |
| Lives in poverty | 168 | 0.20 | 0.40 | 0 | 1 |
| Does not live in poverty | 168 | 0.50 | 0.50 | 0 | 1 |
| Poverty missing | 168 | 0.30 | 0.46 | 0 | 1 |
| Has a disability | 168 | 0.04 | 0.20 | 0 | 1 |
| **Additional child characteristic variables** | | | | | |
| Diagnosed with a behavior disorder | 168 | 0.46 | 0.50 | 0 | 1 |
| Diagnosed with a mood disorder | 168 | 0.27 | 0.45 | 0 | 1 |
| Diagnosed with an anxiety disorder | 168 | 0.17 | 0.38 | 0 | 1 |
| Diagnosed with a substance abuse disorder | 168 | 0.20 | 0.40 | 0 | 1 |
| Diagnosed with mild mental retardation | 168 | 0.05 | 0.23 | 0 | 1 |
| Diagnosed with other mental health problem | 168 | 0.33 | 0.47 | 0 | 1 |
| Child protection conditions existed at placement | 168 | 0.17 | 0.38 | 0 | 1 |
| Child behavior problems existed at placement | 168 | 0.89 | 0.31 | 0 | 1 |
| Parental behavior problems existed at placement | 168 | 0.18 | 0.38 | 0 | 1 |
| **System variables** | | | | | |
| Number of previous placements | 168 | 5.39 | 7.85 | 0 | 48 |
| Placed by the human services department | 168 | 0.60 | 0.49 | 0 | 1 |
| Committee reviewed the placement option | 168 | 0.45 | 0.50 | 0 | 1 |
| Committee did not review the placement option | 168 | 0.38 | 0.49 | 0 | 1 |
| Unknown if committee reviewed placement option | 168 | 0.17 | 0.37 | 0 | 1 |
| Goals for placement identified in case file | 168 | 0.73 | 0.45 | 0 | 1 |
| Placed in a short-term consequence program | 168 | 0.38 | 0.49 | 0 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Placed in a group home | 168 | 0.27 | 0.45 | 0 | 1 |
| Placed in a residential treatment center | 168 | 0.23 | 0.42 | 0 | 1 |
| Placed in the County Home School | 168 | 0.08 | 0.28 | 0 | 1 |
| Placed in a juvenile corrections facility | 168 | 0.02 | 0.15 | 0 | 1 |
| Placed in other, non-identified placement | 168 | 0.01 | 0.08 | 0 | 1 |

**Table 2. Percentiles of number of days in placement by type of placement, Hennepin County, 2001 to 2004**

| | | Percentile | | |
|---|---|---|---|---|
| | N | 25th | 50th (median) | 75th |
| Short-term consequence programs | 64 | 19.5 | 31.0 | 87.5 |
| Group homes | 45 | 8.0 | 72.0 | 172.0 |
| Residential treatment centers | 37 | 115.0 | 235.0 | 361.0 |
| Juvenile corrections facilities | 18 | 229.0 | 329.5 | 379.0 |

**Table 3. Chi-square test for significant differences between the department variable and youth characteristics, Hennepin County, 2001-2004**

| | Pearson chi-square | P-value | |
|---|---|---|---|
| **Geographic variables** | | | |
| Neighborhood | 5.26 | 0.262 | |
| **Demographic variables** | | | |
| Female | 13.17 | 0.000 | *** |
| Age at entry | 9.27 | 0.506 | |
| Race | 2.84 | 0.416 | |
| Poverty | 1.45 | 0.229 | |
| Has a physical disability | 0.43 | 0.512 | |
| **Additional child characteristic variables** | | | |
| Diagnosed with a behavioral disorder | 1.27 | 0.260 | |
| Diagnosed with a mood disorder | 0.70 | 0.401 | |
| Diagnosed with an anxiety disorder | 3.88 | 0.049 | ** |
| Diagnosed with a substance abuse disorder | 2.08 | 0.150 | |
| Diagnosed with mild mental retardation | 3.40 | 0.065 | * |
| Diagnosed with other mental health disorder | 0.57 | 0.449 | |
| Child protection related problems at placement | 5.70 | 0.017 | ** |
| Child behavioral problems at placement | 13.71 | 0.000 | *** |
| Parent behavioral problems at placement | 0.00 | 0.953 | |
| **System variables** | | | |
| Number of previous placements | 37.00 | 0.075 | * |
| Goals related to placement exist | 2.38 | 0.123 | |
| Placement options reviewed by a committee | 8.67 | 0.003 | *** |
| Placement type | 19.36 | 0.000 | *** |

p < .01 = ***, p < .05 = **, p < .10 = *

**Table 4. Multinomial logit results by program type, Hennepin County, 2001-2004**

| | STC | GH vs. JCC | RTC |
|---|---|---|---|
| **Geographic variables** | | | |
| Lives in 1st ring suburb | 0.55 | -0.65 | 1.08 |
| | (1.07) | (1.30) | (1.18) |
| Lives in 2nd ring suburb | 0.05 | -1.82 | 0.87 |
| | (1.07) | (1.69) | (1.21) |
| Lives in 3rd ring suburb | -0.43 | -0.36 | 0.26 |

| | | | | | |
|---|---|---|---|---|---|
| | (1.95) | | (1.96) | | (1.92) |
| Lives outside of Hennepin County | -0.02 | | -0.78 | | 0.50 |
| | (1.10) | | (1.23) | | (1.17) |
| Lives in Minneapolis | reference | | reference | | reference |
| **Demographic variables** | | | | | |
| Female | -0.03 | | 0.96 | | -0.43 |
| | (0.98) | | (1.06) | | (1.06) |
| Age | 7.09 | | 1.91 | | -2.86 |
| | (108.64) | | (110.16) | | (110.45) |
| Age-squared | -0.58 | | -0.45 | | -0.07 |
| | (6.75) | | (6.86) | | (6.88) |
| Age-cubed | 0.01 | | 0.02 | | 0.01 |
| | (0.14) | | (0.14) | | (0.14) |
| Black, non-Hispanic | -0.42 | | -0.91 | | -0.56 |
| | (0.84) | | (0.98) | | (0.97) |
| Other children of color, includes Hispanic | 1.08 | | 2.04 | | 2.13 |
| | (1.57) | | (1.64) | | (1.61) |
| White, non-Hispanic^^ | reference | | reference | | reference |
| **Additional child characteristic variables^** | | | | | |
| Diagnosed with a behavioral disorder | -1.14 | | -0.21 | | -0.26 |
| | (0.88) | | (1.03) | | (0.99) |
| Diagnosed with a mood disorder | 0.21 | | -0.73 | | -0.45 |
| | (0.85) | | (0.99) | | (0.91) |
| Diagnosed with an anxiety disorder | -2.03 | * | -2.25 | * | -1.61 |
| | (1.10) | | (1.18) | | (1.11) |
| Diagnosed with a substance abuse disorder | 0.02 | | -0.62 | | 0.48 |
| | (0.88) | | (1.03) | | (0.94) |
| Diagnosed with other mental health disorder | -0.82 | | -0.61 | | -0.76 |
| | (0.85) | | (0.94) | | (0.88) |
| Condition at placement: child behavior problems | -17.94 | | -18.14 | | -17.20 |
| | (588.69) | | (588.70) | | (588.69) |
| Condition at placement: parental behavior problems | 0.63 | | 2.23 | * | 1.58 |
| | (1.27) | | (1.30) | | (1.28) |
| **System variables** | | | | | |
| Number of previous placements | 0.14 | | 0.33 | ** | 0.23 |
| | (0.14) | | (0.16) | | (0.15) |
| Number of previous placements - squared | 0.00 | | -0.01 | ** | -0.01 |
| | (0.00) | | (0.00) | | (0.00) |
| Goals related to placement exist | -1.72 | ** | 0.14 | | 0.01 |
| | (0.82) | | (1.05) | | (1.00) |
| Placed by human services | -0.03 | | 0.96 | | 0.25 |
| | (0.69) | | (0.85) | | (0.79) |
| Placement options reviewed by a committee | -1.13 | | -2.12 | * | -1.28 |
| | (1.14) | | (1.15) | | (1.14) |
| Placement options reviewed by a committee - missing data | -1.14 | | -4.35 | ** | -1.70 |

| | | | |
|---|---|---|---|
| | (1.26) | (1.65) | (1.37) |
| Placement options not reviewed by a committee | reference | reference | reference |
| Constant | -0.80 | 39.03 | 59.61 |
| | (161.90) | (45.25) | . |
| N | 167 | | |
| Log likelihood | -144.68 | | |

p < .01 = ***, p < .05 = **, p < .10 = *

*Note.--- STC = short-term consequence programs, GH = group homes, RTC = residential treatment centers; JCC = juvenile corrections centers (the reference group); standard errors are in parenthesis*

^ *Mild mental retardation and child protection conditions at placement are not included in the model because of low counts.*

^^ *White, non-Hispanic includes missing race. Missing race is excluded in the logit model because of the small sample size.*

**Table 5. Cox regression results for length of stay, Hennepin County, 2001-2004**

| | (1) | | | (2) | | | (3) | | | (4)^^ | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard | Robust | | Hazard | Robust | | Hazard | Robust | | Hazard | Robust | |
| **Geographic variables** | Ratio | s.e. | | Ratio | s.e. | | Ratio | s.e. | | Ratio | s.e. | |
| Lives in 1st ring suburb | 0.83 | 0.211 | | 0.93 | 0.262 | | 1.19 | 0.295 | | 1.19 | 0.290 | |
| Lives in 2nd ring suburb | 0.88 | 0.237 | | 0.96 | 0.276 | | 1.37 | 0.374 | | 1.27 | 0.360 | |
| Lives in 3rd ring suburb | 0.66 | 0.175 | | 0.57 | 0.189 | * | 0.55 | 0.170 | * | 0.71 | 0.177 | |
| Lives outside of Hennepin County | 1.04 | 0.265 | | 0.99 | 0.259 | | 1.00 | 0.283 | | 1.03 | 0.275 | |
| Lives in Minneapolis | reference | | | reference | | | reference | | | reference | | |
| **Demographic variables** | | | | | | | | | | | | |
| Female | 1.38 | 0.239 | * | 1.57 | 0.276 | ** | 1.72 | 0.366 | ** | 1.70 | 0.348 | ** |
| Age at entry | 2.87 | 4.852 | | 2.11 | 5.094 | | 0.35 | 0.886 | | 0.21 | 0.514 | |
| Age at entry-squared | 0.95 | 0.123 | | 0.99 | 0.172 | | 1.14 | 0.214 | | 1.17 | 0.215 | |
| Age at entry-cubed | 1.00 | 0.003 | | 1.00 | 0.004 | | 1.00 | 0.004 | | 1.00 | 0.004 | |
| Black, non-Hispanic | 1.24 | 0.260 | | 1.46 | 0.296 | * | 1.77 | 0.367 | *** | 1.98 | 0.441 | *** |
| Other children of color, includes Hispanic | 1.55 | 0.373 | * | 1.63 | 0.424 | | 1.59 | 0.413 | * | 1.67 | 0.449 | * |
| Race - missing data | 1.34 | 0.461 | | 1.14 | 0.536 | | 0.80 | 0.373 | | 0.81 | 0.381 | |
| White, non-Hispanic | reference | | | reference | | | reference | | | reference | | |
| Lives in poverty | 0.50 | 0.106 | *** | 0.50 | 0.139 | ** | 0.38 | 0.137 | *** | 0.38 | 0.129 | *** |
| Lives in poverty – missing data | 0.91 | 0.180 | | 0.93 | 0.196 | | 1.61 | 0.320 | ** | 1.59 | 0.319 | ** |
| Does not live in poverty | reference | | | reference | | | reference | | | reference | | |
| Has a physical disability | 0.53 | 0.181 | * | 0.48 | 0.193 | * | 0.60 | 0.210 | | 0.61 | 0.194 | |
| **Additional child characteristic variables** | | | | | | | | | | | | |
| Diagnosed with a behavioral disorder | | | | 0.57 | 0.120 | *** | 0.68 | 0.146 | * | 0.75 | 0.159 | |
| Diagnosed with a mood disorder | | | | 0.85 | 0.180 | | 0.94 | 0.211 | | 0.87 | 0.190 | |
| Diagnosed with an anxiety disorder | | | | 1.06 | 0.269 | | 1.43 | 0.388 | | 1.53 | 0.379 | * |
| Diagnosed with a substance abuse disorder | | | | 1.09 | 0.219 | | 1.47 | 0.321 | * | 1.46 | 0.315 | * |
| Diagnosed with mild mental retardation | | | | 0.86 | 0.259 | | 0.77 | 0.317 | | 0.70 | 0.272 | |
| Diagnosed with other mental health disorder | | | | 0.77 | 0.157 | | 0.74 | 0.157 | | 0.79 | 0.157 | |
| Condition at placement: child protection related | | | | 0.83 | 0.264 | | 0.92 | 0.383 | | 0.86 | 0.318 | |
| Condition at placement: child behavior problems | | | | 0.60 | 0.207 | | 0.72 | 0.298 | | 0.81 | 0.300 | |
| Condition at placement: parental behavior problems | | | | 1.24 | 0.244 | | 1.02 | 0.252 | | 1.08 | 0.260 | |
| **System variables** | | | | | | | | | | | | |
| Number of previous placements | | | | | | | 1.07 | 0.033 | ** | 1.07 | 0.033 | ** |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Number of previous placements - squared | | | | 1.00 | 0.001 | * | 1.00 | 0.001 | * |
| Goals related to placement exist | | | | 0.41 | 0.085 | *** | 0.37 | 0.088 | *** |
| Placed by human services | | | | 0.91 | 0.170 | | 0.81 | 0.163 | |
| Placement options reviewed by a committee | | | | 1.01 | 0.180 | | 1.12 | 0.214 | |
| Placement options reviewed by a committee - missing data | | | | 1.33 | 0.378 | | 1.38 | 0.402 | |
| Placement options not reviewed by a committee | | | | reference | | | reference | | |
| Placement type: short-term consequence | | | | 13.32 | 5.315 | *** | | | |
| Placement type: group home | | | | 9.05 | 3.336 | *** | | | |
| Placement type: residential treatment center | | | | 2.72 | 0.952 | *** | | | |
| Placement type: CHS and state correctional facility^ | | | | reference | | | | | |
| N | 165 | 165 | | 164 | | | 164 | | |
| Log pseudolikelihood | -668.86 | -659.04 | | -611.55 | | | -445.62 | | |

p < .01 = ***, p < .05 = **, p < .10 = *; ^ CHS is the Hennepin County Home School; ^^ Regression (4) is the stratified Cox regression, stratified by type of placement.

**Table 6. Log-rank test for equality of survivor functions**

| | Events | |
|---|---|---|
| | Observed | Expected |
| Short-term consequence programs | 64 | 30.88 |
| Group homes | 45 | 31.64 |
| Residential treatment centers | 37 | 61.81 |
| Juvenile correction facilities | 18 | 39.67 |
| Total | 164 | 164 |
| | Chi-square(3) = | 84.69 |
| | Pr>chi-square= | 0.000 |

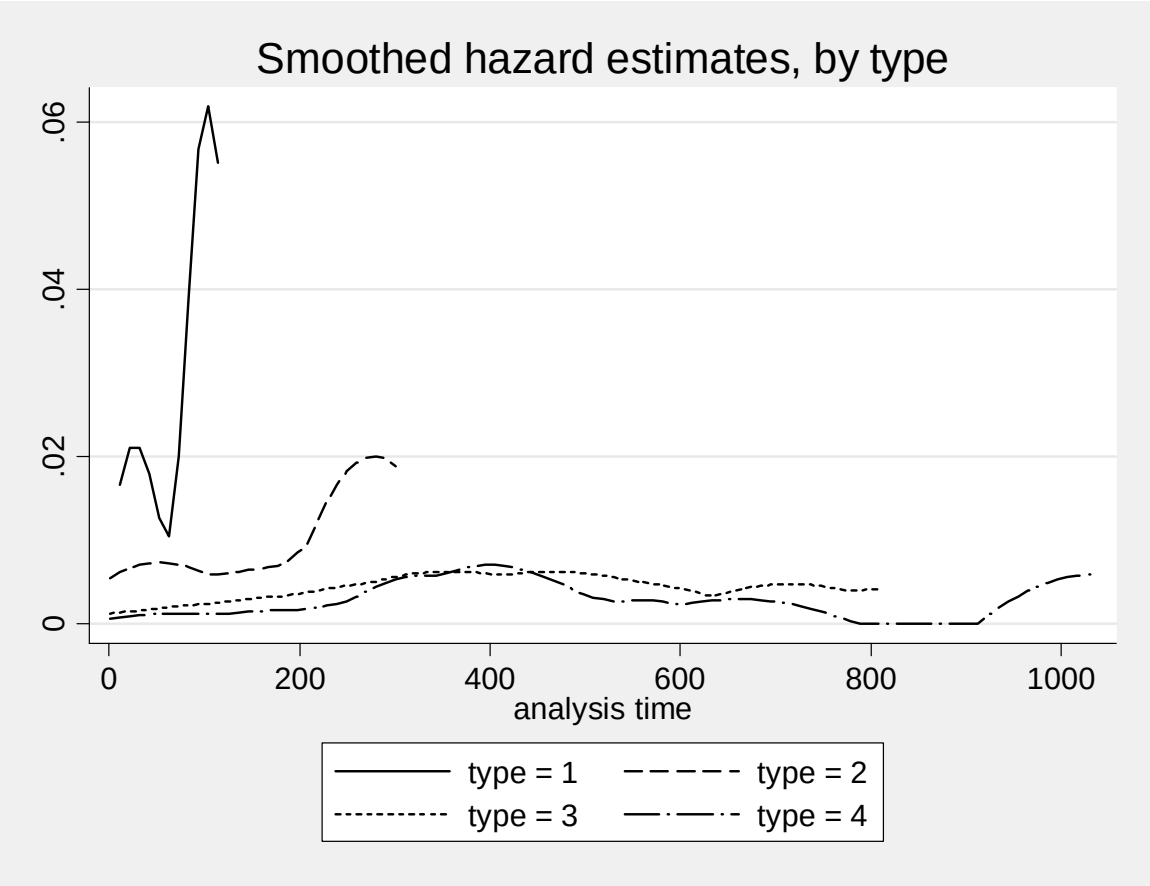
**Table 7. Percent of youth in placement by race and median length of stay by race and placement type, Hennepin County, 2001-2004**

| | Type of placement | | | |
|---|---|---|---|---|
| | STC | GH | RTC | JCC |
| *Percent of youth in placement type by race* | | | | |
| White, non-Hispanic | 43.1 | 25.5 | 19.6 | 11.8 |
| Black, non-Hispanic | 40.5 | 23.0 | 23.0 | 13.5 |
| Other, including Hispanic | 26.5 | 44.1 | 26.5 | 2.9 |
| *Median length of stay by race and type of placement* | | | | |
| White, non-Hispanic | 31.5 | 83 | 200 | 377 |
| Black, non-Hispanic | 28.5 | 53 | 247 | 284 |
| Other, including Hispanic^ | 64 | 16 | 224 | 1 |

*STC = short-term consequence programs, GH = group homes, RTC = residential treatment centers, JCC = juvenile corrections centers*

*^The discrepancy of median length of stay equal to one for other, non-Hispanic in JCC is due to the fact that a youth ran away from the program shortly after placement,.*

**Figure 1. Hazard functions by type of placement**



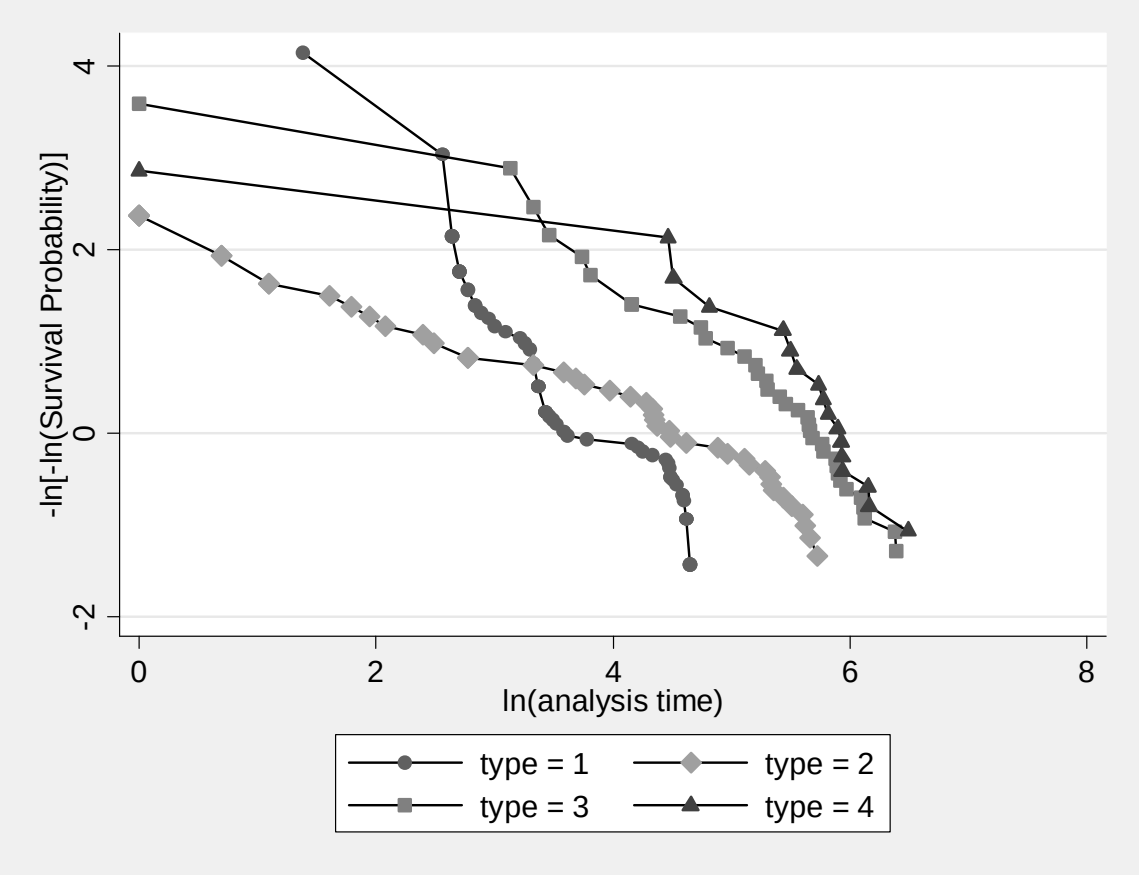

Type 1 = Short-term consequence programs

Type 2 = Group homes

Type 3 = Residential treatment centers

Type 4 = Juvenile corrections centers

**Figure 2. Plot of –log(-log(S(t))) by placement type**




Type 1 = Short-term consequence programs

Type 2 = Group homes

Type 3 = Residential treatment centers

Type 4 = Juvenile corrections centers

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