



Revalidation of the JDC Risk Assessment Instrument Hennepin County, Minnesota

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Table of Contents

JULY 2018	I
JDC RAI ADVISORY COMMITTEE MEMBERS	III
ACKNOWLEDGEMENTS	III
EXECUTIVE SUMMARY	IV
INTRODUCTION	1
BACKGROUND	2
STUDY PURPOSE, DATA DEFINITIONS AND SOURCES	3
PRETRIAL DATA FLOWCHART	6
ELEMENTS ON THE RAI: UNIVARIATE ANALYSIS	9
CHILD CHARACTERISTICS	14
BIVARIATE ANALYSIS	15
MULTIVARIATE REGRESSION ANALYSIS	21
AUC-ROC ANALYSIS	24
GENDER ANALYSIS	26
RACE & ETHNICITY ANALYSIS	30
RAI SCALE AND CUT POINTS	34
SUMMARY OF FINDINGS	36
RECOMMENDATIONS AND ADVISORY COMMITTEE DECISIONS	37
APPENDICES	39
REFERENCES	50

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Executive Summary

Background

In 2007, as a part of participation in the Annie E. Casey *Juvenile Detention Alternatives Initiative*, Hennepin County started using a risk-assessment instrument (RAI) on children brought to the Juvenile Detention Center (JDC). The purpose of a RAI is to help make an objective determination as to which children are appropriate for release after booking and which need to remain detained until their first appearance in front of a judge.

The RAI contains seven risk elements: current charge, residence outside the metro area, irregular school or work attendance, first adjudication prior to age 16, prior adjudications, prior failure to appear, and whether the child has any pending petitions at the time of arrest. The RAI assigns a score from 3 to 30 and places children in one of three categories: low-risk (3 to 10 points), moderate-risk (11 to 14 points), and high-risk (15 to 28 points). The JDC automatically detains those with a score of 15 or more until a judge reviews their detention, while those with a lower score are eligible for a detention alternative or straight release. The cutoff point of 15 or higher is based both on the seriousness of the current offense and the number of additional risk factors.

Study Purpose and Methodology

The Hennepin County RAI is now in its third version. The latest version of the JDC RAI has been in use without revision since late 2009. The purpose of this study is to revalidate the RAI tool currently in use at the Hennepin County JDC. This study determines whether the elements of the RAI tool continue to be predictive of pretrial failure, and ensures elements on the scale are not biased based on gender, race, or ethnicity.

Pretrial failure occurs when a child has a new delinquency-level offense charge after his or her release from the JDC but before the final disposition of their case. This time, between release and disposition, constitutes a child's "pretrial window." Pretrial failure also occurs when the court issues a warrant for failure to appear at a court hearing during a child's pretrial window.

This study focuses on children admitted to the Hennepin County JDC for a new offense between January 1, 2010, and December 31, 2015. The base population for this study includes 2,777 children brought to the JDC and who received a RAI screening. In order to be included in the study the charge must be a delinquency-level offense (as opposed to a petty misdemeanor).

Key Findings

- Bivariate analysis shows pretrial failure relates to all but one element on the RAI. The one risk factor not associated with pretrial failure is the child's community of residence (whether the child lives outside of the seven-county metropolitan area). All the remaining RAI elements relate to pretrial delinquency, failure to appear, or both.
- Multivariate regression analysis explores the impact of multiple variables upon an outcome or dependent variable at the same time. This analysis shows two additional RAI variables did not add predictive strength to the model in explaining pretrial failure. Irregular school or work attendance and first delinquency before age 16 were no longer significant predictors of pretrial failure in the multivariate model.
- The RAI with the fewest number of variables necessary to predict pretrial failure (the Parsimonious Model) includes current offense, prior adjudications, prior failure to appear, and pending adjudications. When just these four elements are included in a regression model, they perform nearly as well at predicting pretrial failure as the full regression model containing all seven RAI elements. This implies the tool can be reduced to fewer elements and be as effective.
- A gender and race analysis show males exhibit pretrial failure more than females, and children of color more than White children. The proposed Parsimonious RAI Model is a good predictor of pretrial failure for males and females alone, as well as for children of color and White children alone. The model performs better at classifying children of color who will fail than White children, and performs equally well in classifying males and females who fail.
- Those scoring a 13 or 14 on the RAI fall in the moderate-risk (detention alternative) category, yet they exhibit some of the highest levels of pretrial failure. Although these youth are a very small percentage of the entire group, the committee spent time discussing the current services provided and additional services that might be appropriate.

Recommendations and Advisory Committee Decisions

A multidisciplinary JDC RAI Advisory Committee convened to oversee the study and approve any potential changes suggested by the data. The Advisory Committee approved the following recommendations and actions.

1. Given community of residence is not associated with any measure of pretrial failure, the recommendation was to remove this element from the next iteration of the JDC RAI.
2. Given the irregular school and work attendance variable does not statistically add value to the predictive power of the RAI in regression analysis, and given the only timely way to gather the data is self-reports, the committee recommended removal of this element from the next iteration of the JDC RAI.

3. Although the data suggests the first delinquency before age 16 variable does not statistically add value to the predictive power of the RAI in regression analysis, the Advisory Committee decided to keep this element on the RAI.

Children who are detained by the JDC receive a second RAI screening (this time conducted in the courtroom and based on the charged offense instead of the arrested offense) when they go before a judicial officer for their detention hearing. This *Courtroom RAI* also has “first adjudication under age 16” as a risk element. The Committee elected to keep this variable on the JDC RAI for consistency between the two RAI tools and because age of first delinquency was associated with pretrial failure in the bivariate analysis.

4. Given support for the removal of the county of residence element and the irregular school/work attendance element, the total risk point value of the RAI is reduced from 30 to 28.
5. Given children who score 13 and 14 on the RAI exhibit the highest levels of pretrial failure, the committee elected to explore options as to how to minimize their risk to the community. Ideas to achieve this include increasing services or accountability at the time of release or this group of children could go to judicial review prior to their release from the JDC.

The Advisory Committee elected not to lower the “detain” cutoff point to include these children but requested additional information prior to making a decision at this time. Lowering the cutoff point to 13 would require holding these youth until the first court appearance. The Committee felt this solution was inconsistent with JDAI goals.

The normal course for children receiving a 13 or 14 would be to work with a Community Coach at their release from the JDC. Further investigation into their engagement with the Community Coach program and the services provided by Community Coaches is also of value.

The Committee had a number of questions about children who score 13s and 14s including what types of new offenses they commit and whether a consistent percentage of youth have received these RAI scores in 2016-2017. Future explorations of these data will help the committee finalize their recommendations on this small number of children who have some of the highest pretrial failure.

Introduction

In 2007, as a part of participation in the Annie E. Casey *Juvenile Detention Alternatives Initiative*, Hennepin County started using a risk assessment instrument (RAI) on children brought to the Juvenile Detention Center (JDC).¹ The purpose of a RAI is to help make an objective decision as to which children are appropriate for release pending the outcome of their case versus those who ought to remain detained until a judge can review their case and make a release decision.

The use of a RAI results in a detention recommendation by assigning point values for the presence of known risk factors associated with pretrial failure. Pretrial failure manifests as either new delinquency charges or the failure to appear for court before disposition of the case. Generally, RAIs often include aspects of a child's criminal history or supervision status as well as extrajudicial elements such as school attendance or the availability of adult supervision if released.²

Effective RAIs contain elements that are statistically predictive of children's likelihood for pretrial failure. Periodic revalidation of RAIs ensures the tool is still predictive of pretrial failure among the target population to which the tool's analysis is applied. Revalidation also checks for risk factors that may contain bias for or against specific populations such as girls or children from communities of color. Biased elements should not remain on the instrument. Finally, RAIs should be clear and easy to administer. The information needed to complete the RAI should be accurate and consistently available, while the tool should be scored uniformly by all who administer the instrument.

The Hennepin County RAI is now in its third version. After testing, the original instrument underwent significant changes to increase its reliability and data quality. Based on these changes, Hennepin County implemented a simpler, more statistically robust version of the original RAI in early 2008. After thirteen months of use (April 2008 to June 2009) a new validation study was completed. The reassessment found two items on the RAI were not statistically predictive of pretrial failure, one of which was also gender biased against females. Changes to the RAI following that study resulted in the removal of the two non-predictive elements, a re-categorization of the offenses for which children are admitted to the JDC, and a reclassification of children's community of residence.³

The latest version of the JDC RAI has been used without revision since late 2009. This study is a revalidation of the instrument using data collected on children admitted to the JDC between 2010 and 2015. The purposes of this study are to ensure:

- Elements on the RAI continue to inform pretrial failure among those released prior to the final disposition of their case,
- And elements on the RAI do not carry race or gender bias.

The *JDC RAI Advisory Committee* has approved changes to the JDC RAI based upon the study outcomes.

¹ All 87 beds at the Hennepin County Juvenile Detention Center are licensed as "secure" by the Minnesota Department of Corrections.

Background

Minnesota's Detention Rules

In Minnesota, both the statute related to delinquency arrests and the court's *Rules of Juvenile Delinquency Procedure* favor the release of children from pretrial detention.

As it relates to arrest, Statute 260B.176 states a child taken into custody "shall be released to the custody of a parent, guardian, custodian or other suitable person" unless "there is reason to believe that the child would endanger self or others, not return for a court hearing, run away from the child's parent, guardian...or that the child's health or welfare would be immediately endangered."⁴

Likewise, Rule 5.05 governing juvenile court related to the detention decision states: "the presumption is for unconditional release" unless one or more of the following criteria are met:

- "(1) The child would endanger self or others,
- (2) The child would fail to appear for a court hearing,
- (3) The child would not remain in the care or control of the person into whose lawful custody they are released, or
- (4) The child's health or welfare would be immediately endangered."⁵

Furthermore, the *Rules of Juvenile Delinquency Procedure* broadly define detention as including "all liberty restrictions that substantially affect a child's physical freedom or living arrangements before trial, disposition or pending a probation violation hearing." Included among these restrictions of liberty are secure juvenile facilities, adult jails, detoxification settings, chemical dependency and psychiatric facilities, shelter facilities, foster care, and even a youth's own home if they are subject to Electric Home Monitoring (EHM).

Risks of Detention and Actuarial Assessments

Risks of Detention

Research demonstrates secure settings are both detrimental to children and costly to the justice system which drives, in part, the strong presumption for pretrial release. Myriad research shows detaining children has "a profoundly negative impact on young people's mental and physical wellbeing, their education and their employment."⁶ Detained children are more likely to experience victimization, to engage in self-injurious behavior, and to attempt suicide while incarcerated.⁷ Mixing low-risk children with higher-risk children in facilities creates a learning environment for criminal attitudes and behaviors and, once children have been detained, they are more likely to be detained again in the future. In addition, detained children are separated from protective influences including school, employment, structured activities, and positive peers or family. Finally, children of color are commonly overrepresented among facility populations as compared to White, non-Hispanic children.⁸

From a financial perspective, maintaining children in a secure setting is one of the most costly interventions when compared with community-based alternatives. Housing children who are unlikely to offend prior to the disposition of their case, and those who are unlikely to fail to appear for court, is a poor allocation of limited justice system resources.

Actuarial Assessments

The practical question for juvenile justice system practitioners then, is how to determine which children, if released from detention, are a risk to public safety or will fail to appear for court? Arguably, the only way to completely prevent pretrial failure is to detain all children during the entire duration of their case proceedings. This, however, contradicts Minnesota's philosophy and policies related to youth. It is here that use of actuarial risk assessments, such as the JDC RAI, can provide practitioners with useful information to make an informed detention decision. Risk assessments, when validated on the population served and applied in a consistent and uniform manner, can help practitioners make an objective, research-tested decision about who requires detention or is who eligible for release.

As a final note, the Annie E. Casey Foundation, whose research has been cited here, does not attempt to quantify whether a child's health or welfare is in danger on detention risk assessments. It is their position that direct observance of children is necessary to make this determination. This may come from behavior witnessed by police or facility staff, or by obtaining collateral information about a child's mental health. This information may not always be available at the time a RAI is administered. Furthermore, detaining children "for their own protection" was a historical method used to punish children who would have otherwise been safe to release.⁹

Study Purpose, Data Definitions and Sources

Study Purpose

This study examines outcomes for 4,619 juvenile admission events to the Hennepin County JDC for new offenses between January 1, 2010, and December 31, 2015. The Hennepin County Department of Community Corrections and Rehabilitation (DOCCR) provided admission and RAI data to the Fourth Judicial District Research Division.

The purpose of this study is to revalidate the RAI tool currently in use at the Hennepin County JDC. This study determines whether the elements on the RAI tool continue to be predictive of pretrial failure and ensures elements on the scale are not biased based on gender, race or ethnicity.

Hennepin County JDC RAI Administration

As a point of introduction, not all children brought to the Hennepin County JDC have the RAI administered upon them. Only those who meet the following criteria receive a RAI score and then a detention decision by facility staff:

- (1) a new delinquency arrest,
- (2) a new delinquency arrest in combination with a warrant or violation of court-ordered conditions (probation violation),
- (3) or, children transferred to Hennepin from another county related to new delinquency charges.

Children brought to the JDC on warrants requesting the child be held are automatically admitted and held for judicial review. They are not screened with the RAI tool.

Finally, not all children who commit delinquent acts are eligible for secure detention in Hennepin County. A document known as the *AR-100 Detention Admissions Criteria* limits the type of offenses for which law enforcement agencies can bring children to the JDC.ⁱⁱ Status offenders and petty offenders are not to be detained securely, nor are many misdemeanants. In addition, non-domestic 5th degree assaults and many property-level offenses do not meet JDC admission criteria. Therefore, a select population of youth offenders go directly to a non-secure Juvenile Supervision Center rather than the secure JDC based solely on the nature of their offense.

Pretrial Failure Data Definitions

Pretrial Delinquency

Consistent with most RAI validations, this study looks for two types of pretrial failure: New offenses and failure to appear for court. For the purpose of this study, children with new offenses are those charged with a new delinquency-level offense during a pretrial release window. Delinquency offenses for this analysis are limited to those charged as felonies, gross misdemeanors and misdemeanors. The analysis excludes status offenses and petty offenses, as well as all traffic-related offenses except for DWI. A pretrial failure occurs when a child is charged, regardless of whether they are ultimately adjudicated delinquent.

Pretrial Failure to Appear

Pretrial failure also occurs when a child fails to appear for a hearing on the case for which they were detained. For this study, failure to appear is counted when a bench warrant is issued related to failure to appear for court. In Hennepin County, bench warrants are not necessarily issued at a child's first non-appearance. Attempts to engage the child or family through probation officers or Community Coaches may be made before a warrant is issued.

Pretrial Release Window

In order to measure pretrial failure, there must be a "pretrial window." A pretrial window is a period of time that a child is not in detention following release from a detention facility. For the purpose of this study, a child's pretrial release window begins the day they are released from the JDC and ends the day of their *First Final*

ⁱⁱ See Appendix A to view the *AR-100 Detention Admissions Criteria*

Disposition on the case for which they were initially detained.ⁱⁱⁱ For inclusion in the study, children must have met all the following criteria:

1. Brought to the JDC following an arrest for an alleged delinquent act, or as a change of venue from another county following an arrest for an alleged delinquent act,
2. Received a RAI assessment,
3. Were subsequently charged by the Hennepin County Attorney with a delinquency-level offense, and
4. Were released from the JDC at any point before the disposition of the case for which they were arrested and charged.

Data Sources

Three data sources are used in this study: 1) DOCCR's detention database where JDC RAI information are collected, 2) DOCCR's *Management of Adolescent Information* system (*MAIn*) which houses data related to youth in Hennepin County juvenile facilities or under probation supervision, and 3) the *Minnesota Court Information System (MNCIS)* where court-related data are stored.

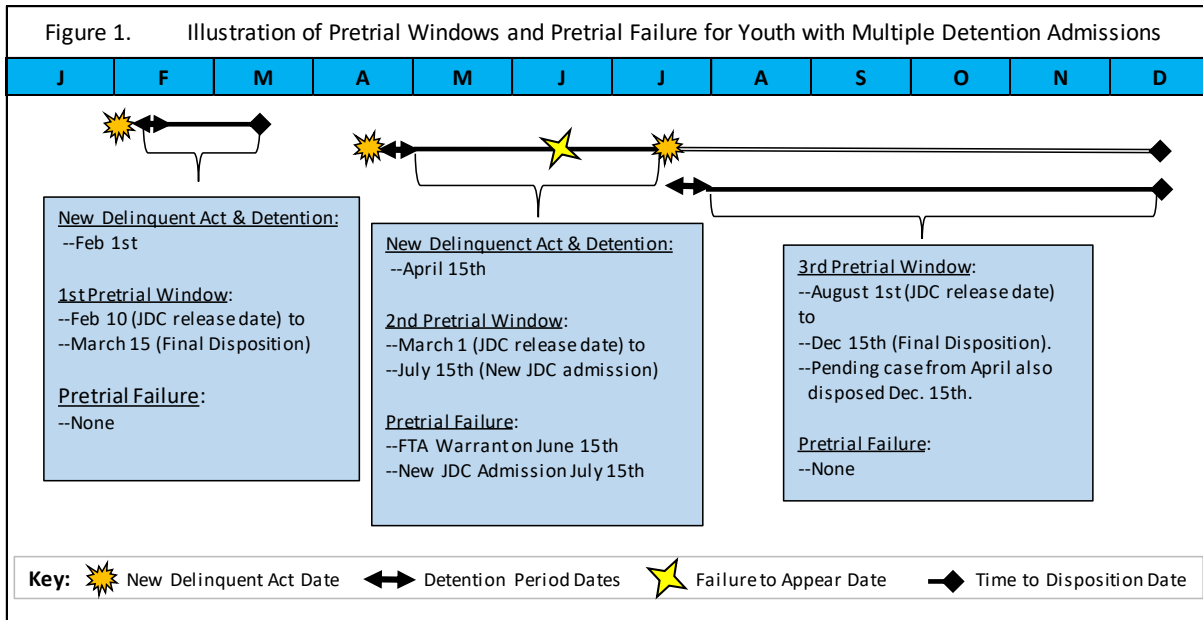
JDC detention data includes children's admission, assessment and discharge dates. Each record of admission includes a total RAI score, as well as children's scores in each section or "domain" of the RAI. Detention data also included the statute number associated with the arrest. The court case number from MNCIS is added to the detention data in the event a child is charged with a delinquent act. For charged children, the court case number and detention admission information are also in DOCCR's *MAIn* system. Finally, the JDC collects self-reported information on race, ethnicity and gender.

The MNCIS database contains comprehensive information about the charging and disposition of juvenile cases. This study used the database to verify which children admitted to the JDC were subsequently charged with a delinquent offense. In addition, MNCIS was used to determine whether pretrial failure had occurred in the form of a new delinquency charge or a warrant for failure to appear during each individual child's pretrial window. MNCIS is used to establish the end of the pretrial window, which is the date all charges on the case are disposed.

Children with Multiple Detention Admissions

It is not uncommon for children to have multiple admissions to a facility over the timespan of a research study. Indeed, of the 4,619 admissions to the facility during the period of the study, 965 (21%) are duplicate admissions meaning the same person has been admitted more than one time. Figure 1 below illustrates how persons with more than one pretrial window are counted for the purpose of the study.

ⁱⁱⁱ First final disposition occurs when all of the charges associated with a court case are disposed.



The illustrative example starts with a child committing a new delinquent act on February 1st for which they are detained at the JDC. When released, they have a pretrial window open from February 10th until the case is disposed on March 15th. In this instance, there is no pretrial failure. They have neither a new delinquency charge nor a warrant for failure to appear during that time span.

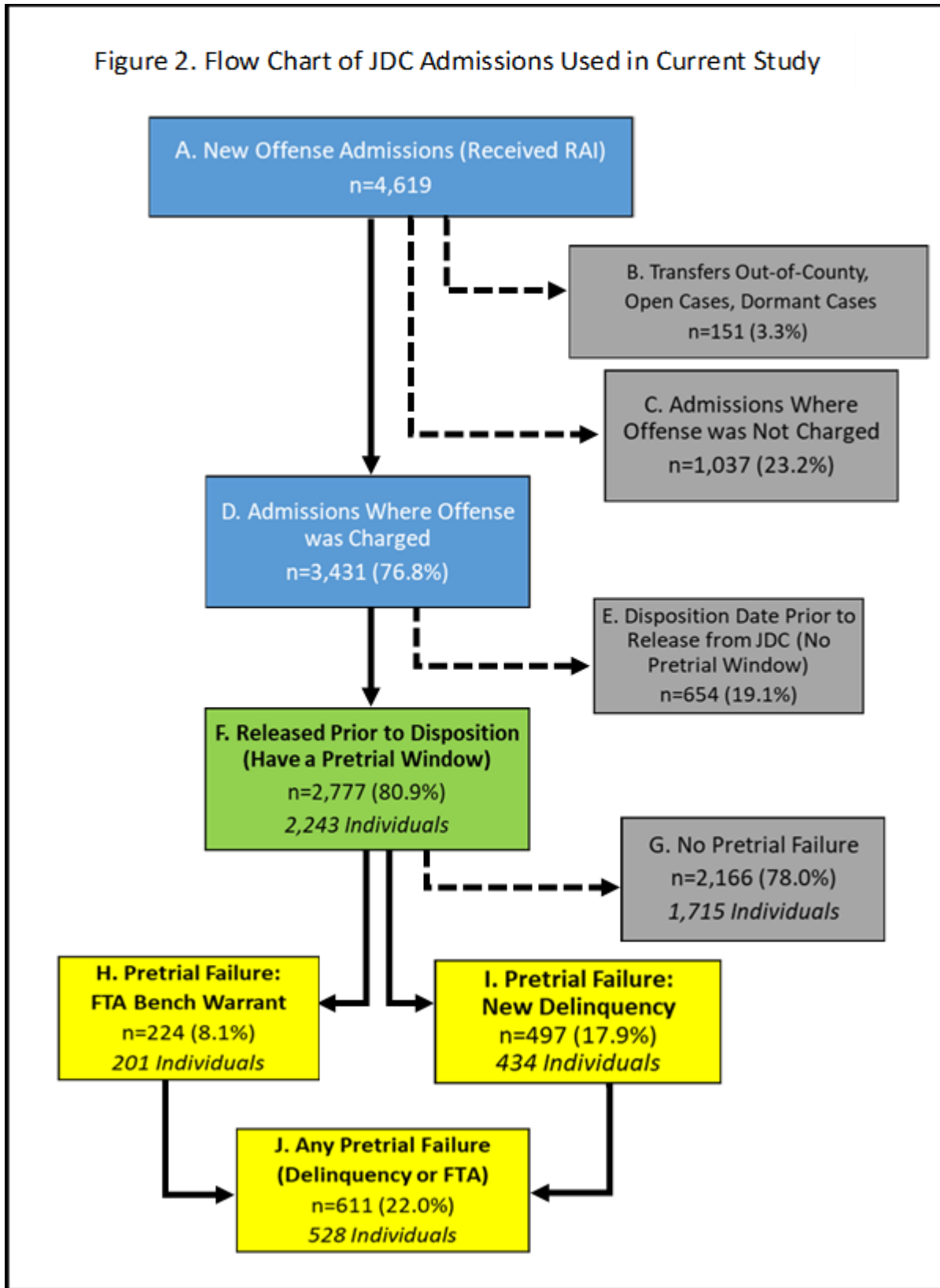
The second box illustrates the commission of a new delinquent offense on April 15th for which the child is again detained. The child is released and has a warrant issued for failure to appear on June 15th. A second instance of pretrial failure occurs on July 15th when the child is detained for a new delinquency offense. Because the new offense results in a detention admission, the date of JDC admit becomes the end-date of the second pretrial window, even though the case has not yet been disposed. This child had two types of pretrial failure during the second window.

Finally, a third pretrial window begins on August 1st when the child is again released from the JDC. The child has a third pretrial window until the case is disposed on December 15th. Note the second delinquent act is adjudicated along with the third, but the end of the second pretrial window occurred in July. The child has no pretrial failure during their third pretrial window. This illustrates how a single individual is counted as multiple admission events during the study period.

Pretrial Data Flowchart

Figure 2 illustrates the different paths taken by the children who comprise the 4,619 JDC admission events in Hennepin County between 2010 and 2015 (Box A). In order to be included in the study, the admission had to

Figure 2. Flow Chart of JDC Admissions Used in Current Study



have resulted in a disposed case. As such, 151 events that were charged but had not reached final disposition were excluded (Box B). These included cases that were transferred to a different county, cases that are still open, and dormant cases where a case has not yet been disposed and a warrant has been issued for the child. Also excluded are instances where the JDC RAI was administered but the child was never charged with an offense by the county attorney. Twenty-three percent of the JDC admissions were not charged (Box C) leaving 3,431 admissions charged by the Hennepin County Attorney's Office (Box D).

Finally, there needed to be a pretrial release window in which children could potentially exhibit pretrial failure. Nineteen percent of charged children remained in custody until their case was disposed, resulting in no pretrial window (Box E). These children are excluded from the study.

The base population for this study includes the 2,777 child admissions to the JDC who were charged, had a final disposition date, and had a pretrial window (Box F). Of those admissions, 18% had one or more new pretrial delinquency charges (Box I) and 8% had one or more bench warrants issued for failure to appear (Box H). Collectively, 22% of admissions with a pretrial window resulted in one form of pretrial failure or the other (Box J).

Pretrial Window Univariate Statistics

The shortest pretrial window between JDC release and final disposition was one day; the longest pretrial window was 2,177 days for a mean of 102 days.^{iv} When time to disposition is divided into four quartiles, 25% of cases were disposed within 25 days, 50% within 52 days and 75% within 109 days.

The number of new delinquency charges in a single pretrial window ranged from no new charges to 14 new delinquency charges. The greatest number of times a child failed to appear for court during a pretrial window was seven, while the fewest was zero. The average number of failure to appear events was less than one.

^{iv} Some youth have particularly long periods between their offense and case disposition. The most common reasons for this relate to assessment of competency to participate in their legal proceedings. Some youth also had extended periods on warrant status during which their whereabouts were unknown. Their cases may have remained open for years until jurisdiction on the case ended when the defendant aged out of the juvenile system.

Elements on the RAI: Univariate Analysis

The following section illustrates the number and percentage of children falling in each category or “domain” of the JDC RAI tool for the 2,777 admissions with a pretrial window (Table 1).^v Descriptive (univariate) analysis describes the population of interest.

Based on the risk factors, children receive a RAI score from 3 to 30, which is to assist the JDC in making a decision to detain or release. According to the RAI scale, those who score 10 or lower are low-risk for pretrial failure and are eligible for straight release. Those scoring 11-14 are moderate-risk and are to be released on a detention alternative. Finally, those scoring 15 and higher are high-risk and are to be detained until seen by a judicial officer. The JDC also has a range of circumstances under which the RAI score can be overridden by facility leadership in favor of release or detention depending on the needs of the child or public safety.

Current Offense Domain

The “Current Offense” domain in the RAI consists of two sections: mandatory holds and non-mandatory holds. Children on mandatory holds must remain at the JDC until a juvenile judge or referee can review their detention status. This review must occur at a *Detention Hearing* within 36 hours of JDC admission.

Children admitted on non-mandatory holds can be released by the JDC without a judicial review. These children may be released home, to kinship care or shelters. Only the most severe offense is scored if children are admitted on multiple charges.

Offenses for which law enforcement may bring children to the JDC are limited. Hennepin County DOCCR policy prohibits status or petty-level offenses from being brought to the JDC. In addition, fifth-degree assaults and most property crimes are diverted from the JDC to the non-secure Juvenile Supervision Center.¹⁰

Mandatory Hold Offenses

Just over half of children who received the RAI in this study (50.3%) and entered the JDC were considered a “mandatory hold” (Figure 3.) Fifteen-point mandatory holds are classified as serious, person-related felony offenses. Among the offenses included are murder and manslaughter, serious assault (including felony domestic assault), aggravated robbery, criminal sexual conduct, and burglary of occupied dwellings.

A second category of mandatory holds applies to a small group of targeted gross misdemeanors scored at 6 points. These offenses were chosen because they are “domestic-violence related” and potentially compromise victim safety. Included are stalking, harassment, interfering with a 911 call, violations of no contact orders or orders of protection, and tampering with a witness. Gross misdemeanor-level domestic assault is also included among 6-point mandatory hold offenses.¹¹ In total, just 2.7% of admissions fall in this category of offense.

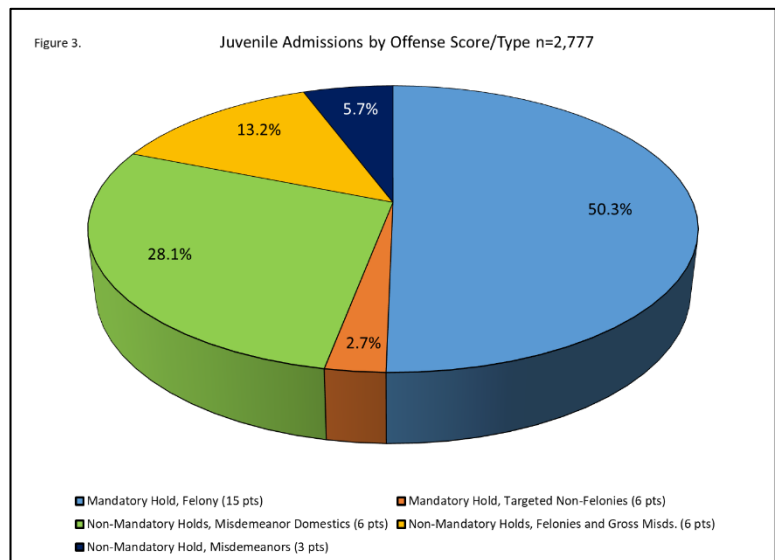
^v See Appendix B to view the current JDC RAI tool and a list of offenses in each *Current Offense* category

Non-Mandatory Hold Offenses

The JDC RAI has two categories of non-mandatory holds: all felonies and gross misdemeanors that do not fall into the mandatory hold category (6 points) and misdemeanors. Misdemeanors for domestic assault score 6 points while all other misdemeanors score 3 points. For the purpose of this analysis, 6-point domestic assault holds were analyzed separately from the other non-mandatory 6-point holds to explore if there are any differences in pretrial failure between these offender populations.

The second largest number of new offense admissions to the JDC consists of misdemeanor domestic assaults (28.1%). These children are typically eligible for release to a shelter, however, in the event a child has any of the following pending/open domestic assault charges or prior adjudication for any of the following “qualifying” domestic offenses, the child is automatically detained. These offenses include:

- Violation of a Domestic Abuse No Contact Order (DANCO)
- Violation of a Domestic Abuse Order for Protection (DAOFP)
- Murder 1st or 2nd degree
- Assault 1st through 5th degree
- Domestic Assault
- Domestic Assault by Strangulation
- Criminal Sexual Conduct 1st through 4th
- Malicious Punishment of a Child
- Terroristic Threats
- Violation of a Harassment Restraining Order
- Harassment/Stalking
- Interference with an Emergency Call



Examples of felonies that receive the 6-point, non-mandatory hold designation include fourth- and fifth-degree assault, felony theft, 1st through 5th degree controlled substance offenses, and burglary of unoccupied dwellings. Approximately 13.2% of child admissions to the JDC were for these non-mandatory hold felonies.

The final category of admissions are non-mandatory misdemeanors (3 points). Many of these are screened out before law enforcement arrives using the Detention Admission Criteria. In total, just 5.7% of JDC RAIs were conducted for non-mandatory misdemeanors.

Other Risk Factors Domain

The second aspect of the RAI score, *Other Risk Factors*, includes one’s community of residence, school or work attendance, and age at first delinquency adjudication.

Community of Residence

The community of residence variable shows over a period of six years, less than 1% of JDC admissions were coded as living outside of the seven-county metropolitan area.^{vi} The previous iteration of the RAI also captured whether children resided inside or outside of Hennepin County. This variable was removed because it was not found to be predictive of pretrial failure. However, given the larger sample size provided by six years of data collection, the variable was reconstructed for analysis. Unfortunately, when a new address is entered into either Correction's *MAIn* system or the District Court's *MNCIS* data management system, any prior addresses cannot be queried. Because of this, the "Hennepin County" residence variable represents the child's current address, which is not necessarily where they lived at the time of their detention. Under the recreated variable, 16.5% of children resided outside of Hennepin County.

School and Work Attendance

As it relates to work and school, just over 1-in-10 were scored as having irregular school or work attendance (10.9%). The instrument defines irregular school attendance as less than 90% attendance or more than 2 days of unexcused school per month. This information is gathered by child self-report.

Age at 1st Delinquency

Finally, early onset of delinquent behavior (prior to age 16) has been associated with greater risk for future delinquent behavior. Nearly 3-in-10 JDC admissions (27.3%) had their first delinquency adjudication before age 16. Delinquency adjudications include felony, gross misdemeanor and misdemeanor offenses. Interim dispositions such as stays of adjudication or continuances for dismissal are not included.

^{vi} Hennepin, Ramsey, Dakota, Carver, Anoka, Washington and Scott counties.

Table 1. RAI Elements: Frequencies and Percentages n=2,777		
Current Offense	N	% of RAIs
Mandatory Hold, Felony (15 pts)	1,398	50.3%
Mandatory Hold, Targeted Non-Felonies (6 pts)	76	2.7%
Non-Mandatory Holds, Misdemeanor Domestic (6 pts)	779	28.1%
Non-Mandatory Holds, Felonies and Gross Misds. (6 pts)	367	13.2%
Non-Mandatory Hold, Misdemeanors (3 pts)	157	5.7%
Community of Residence	N	% of RAIs
Resides Outside 7 County Metro	22	0.8%
Lives in 7 County Metro	2,755	99.2%
Community of Residence	N	% of RAIs
Resides Outside Hennepin County	459	16.5%
Lives in Hennepin County	2,319	83.5%
School & Work	N	% of RAIs
Irregular School or Work Attendance	302	10.9%
Regular School or Work Attendance	2,475	89.1%
Age at 1st Delinquency	N	% of RAIs
Less than Age 16	757	27.3%
No Adjudication Prior to Age 16	2,020	72.7%
Prior Adjudications	N	% of RAIs
2+ Felonies or EJJ/Certification	87	3.1%
1 Felony	228	8.2%
1+ Gross Misdemeanor	182	6.6%
1+ Assault Misdemeanor	130	4.7%
1+ Misdemeanor	340	12.2%
None	1,810	65.2%
Prior Failure to Appear	N	% of RAIs
2 or More Bench Warrants (Last 2 years)	292	10.5%
1 Bench Warrant (Last 2 years)	209	7.5%
None	2,276	82.0%
Pending Petitions	N	% of RAIs
EJJ or Certification Motion	2	0.1%
Other Felony-Level Petition	152	6.0%
Gross Misdemeanor/Misdemeanor-level Petition	334	12.0%
None	2,289	82.4%

Prior History Domain

The third and final section of the RAI tool evaluates a child's prior history in the juvenile justice system. These elements are included based on the premise that past behavior is potentially predictive of pretrial failure.

Prior Adjudications

In the section dedicated to prior adjudications, just under two-thirds of admits had no prior delinquency adjudications on their record (65.2%).^{vii} Approximately 12% of children had one or more prior adjudications for a misdemeanor-level offense other than assault, but nothing more serious. The third largest group had one prior felony-level adjudication (8.2%).

Prior Failure to Appear

Previous validations of the RAI instrument indicate one's prior history of failing to appear for court is predictive of the behavior again in the future. While the majority of children did not have a prior failure to appear (82%), 18% had at least one warrant issued related to FTA in the previous two years.

Pending Petitions

Finally, the RAI tool takes into account how many petitions are outstanding for the child and their level of severity. Again, 82.4% of children did not have any petitions pending at the time they arrived at the JDC for screening. It was most common to have a misdemeanor or gross misdemeanor-level petition pending (12%), and least likely to have a pending petition for EJJ or Adult Certification (<1%).

^{vii} MNCIS is only able to identify prior adjudications, failures to appear or pending petitions in the state of Minnesota.

Child Characteristics

Table 2 illustrates the characteristics of children who had a completed RAI and a pretrial release window. Of the 2,777 children, nearly 8-in-10 were male (78.2%) while 21.8 % were female. In addition, over half (54.1%) were age 16 or older at the time they entered the JDC. Those age 13 or younger constitute 11.9% of the study population.

Gender	N	% of RAIs
Male	2,173	78.2%
Female	604	21.8%
Age at Time of RAI	N	% of RAIs
13 or younger	330	11.9%
age 14	349	12.6%
age 15	593	21.4%
age 16	698	25.1%
age 17	792	28.5%
age 18 or older	15	0.5%
Race/Ethnicity	N	% of RAIs
American Indian/Native American, Non-Hispanic	137	4.9%
Asian or Pacific Islander, Non-Hispanic	54	1.9%
Black or African American, Non-Hispanic	1,813	65.3%
Mutiracial, Non-Hispanic	110	4.0%
Other Race, Non-Hispanic	35	1.3%
White, Non-Hispanic	435	15.7%
Hispanic of Any Race	193	6.9%

Black or African American, non-Hispanic children are the largest study population at 65.3%, followed by White, non-Hispanic children (15.7%). Children of any race with Hispanic ethnicity account for 6.9% of youth with a pretrial window in the study followed by American Indian children (4.9%), and multiracial children (4.0%). The smallest populations with a pretrial window consist of non-Hispanic, Asian children (1.9%) and children who identified as a race other than those captured by the JDC (1.3%). All children of color combined reflect 84.3% of the JDC RAI population.

Bivariate Analysis

A key aspect of validating a risk assessment tool is to look at each variable on the tool and see if there is a statistically significant relationship with the outcome(s) of interest, namely a new pretrial delinquency charge or a new bench warrant issued for failure to appear at a hearing. A bivariate analysis explores the relationship between risk factors and pretrial failure. Each of these events must occur *after* discharge from the JDC but *before* the final disposition on the JDC case to qualify as pretrial failure.

To say a RAI risk factor is statistically significant means the differences observed between success and failure are reliable and not due to chance. This observation comes from the calculation of the “*p*-value” which refers to the probability of observing a difference where no real difference exists. A *p*-value of $p \leq .001$ means fewer than 1 in 1,000 samples would present a meaningless or random difference. A *p*-value $\leq .05$ (5 cases in 100) is commonly accepted in social science research and is used here to indicate reliable, non-random results.¹²

Table 3 explores each RAI variable in relationship to pretrial delinquency and pretrial failure to appear using contingency tables or “crosstabs” that identify statistically significant associations between variables. In order for an element to remain on the tool, it should statistically be predictive of either future delinquency, failure to appear or both. The column titled “percent with new pretrial delinquency” shows the quantity of children charged in each group with an alleged new offense during their pretrial window. The other column shows the percentage with one or more failures to appear for court during the pretrial window.

Crosstabs

Current Offense

Children brought to the JDC on a 6-point, felony-level or gross misdemeanor offense were most likely to acquire an additional delinquency charge between their JDC release and final disposition on the original charge (34.9%). The second offender population most likely to reoffend are those with a misdemeanor offense for something *other than a domestic assault* (27.4%). Those least likely to reoffend during a pretrial release period were those brought into the JDC for misdemeanor domestic assault (10.3%) and for more serious targeted domestic offenses (6.6%). Collectively, the type of offense for which a child is brought into the JDC is statistically related to new pretrial delinquency charges using the Pearson’s chi-squared test of statistical significance ($p=.000$).

Current offense is also statistically related to failure to appear during the pretrial release window ($p=.000$). Those brought to the JDC for non-domestic misdemeanors were most likely to have an FTA warrant issued during their pretrial release window (26.1%), followed by children arrested for non-mandatory hold felonies (16.6%). Again, those arrested for a domestic assault and targeted domestic offenses were least likely to have a warrant issued for failure to appear (4.4% and 1.6%, respectively).

Community of Residence

One element currently on the RAI tool, community of residence, is not statistically predictive of pretrial delinquency charges ($p=.249$) or pretrial failure to appear ($p=.335$). While both frequencies appear higher for

those living outside the seven-county metro area, the figures are affected by the small number of children in the sample who reside outside the metro area (n=22).

The RAI in use before 2009 also captured children's residence but the element distinguished those residing inside Hennepin County from those residing outside of the county. During the previous validation study, the variable was found *not* to be predictive of pretrial failure and was removed from the tool. The inside or outside Hennepin County variable was re-created for testing in this study using current youth addresses available in the corrections and court databases. These addresses may or may not reflect where the children lived at the time of their detention. Nevertheless, this exploration again revealed county of residence was not related to pretrial failure. Nineteen percent of those living outside Hennepin County had a new delinquency charge during their pretrial release period compared to 17.7% of Hennepin County residents (p=.518). Similarly, 9.2% of those residing outside the county had a pretrial FTA warrant issued compared to 7.9% of Hennepin County residents (p=.351).

School and Work Attendance

Children with inconsistent work or school attendance were statistically more likely to have a new pretrial delinquency charge than their peers who maintain consistent attendance (22.5% vs. 17.3%). School and work attendance is statistically significant in relation to new pretrial delinquency charges (p=.027).

Children with regular school or work attendance were statistically more likely to appear for their court appearances (p=.031). Eight percent of those with regular attendance had a warrant issued for failure to appear compared to 11.3% of those with inconsistent school or work attendance.

Age at First Delinquency Adjudication

Children who had their first delinquency adjudication prior to age 16 were statistically more likely to have a new pretrial delinquency charge than children with no other adjudications or a first adjudication at age 16 or later (26.0% vs. 14.9%). Adjudication prior to age 16 is statistically related to new pretrial delinquency charges (p=.000). Age at first adjudication is not, however, statistically related to the issuance of a warrant for failure to appear during a pretrial release window (p=.646).

Prior Adjudications

Children with a prior adjudication history were more likely to receive a new pretrial delinquency charge than those with no prior history of adjudication. Those with a prior misdemeanor for an offense *other than assault* were most likely to reoffend (27.9%), followed by those with prior felonies and gross misdemeanors (range 24.2% to 27.6%). Nineteen percent of children with one prior misdemeanor for assault garnered a pretrial delinquency charge (18.5%). The type and number of prior adjudications is statistically indicative of new pretrial delinquency charges (p=.000).

The number and type of prior adjudications on children's records does not have a statistically significant impact on failure to appear warrants. Between 6% and 12% of children have a failure to appear warrant issued, regardless of their delinquency history or the severity of past offenses (p=.168)

Prior Failure to Appear

Prior failure to appear in court is statistically associated with future delinquency charges. Those with no prior failure to appear were least likely to receive a new delinquency charge (15.4%), followed by those with one prior failure to appear (25.8%) and those with two or more prior failures to appear in the past two years (31.8%). A history of failure to appear in court is statistically associated with new pretrial delinquency charges (p=.000).

Failure to appear at court in the past was related to additional failure to appear among those with a pretrial release window (p=.000). Twenty-one percent of those with two or more failures to appear in the past two years had another failure to appear during this study, as compared to 6.4% among those with no prior history of failure to appear.

Pending Petitions

Children with no prior pending petitions are statistically least likely to reoffend during a pretrial release period (16.3%). Just over one-quarter of those with a pending misdemeanor or gross misdemeanor reoffended (25.4%), followed by those with a pending felony level petition (26.0%). Only two children had a pending EJJ or Certification motion (neither of whom reoffended during their pretrial release), so this category was collapsed in with *Other Felony-Level Petitions*. The presence of a pending delinquency charge is statistically related to new pretrial delinquency charges (p=.000).

Children with no pending petitions are statistically least likely to have a new FTA warrant during their pretrial release period (7.0%). Just over 1-in-10 of those with a pending misdemeanor or gross misdemeanor had a new FTA warrant (10.5%), followed by those with a pending felony-level petition (18.2%). Only two children had a pending EJJ or Certification motion, neither of whom failed to appear during their pretrial release. These two children are included in the *Other Felony-Level Petitions* category.

Table 3. Bivariate Analysis of Current Offense and Dependent Variables: Pearson Chi-Squared					
n= 2,777 % of all RAIs	RAI Category	Percent With Pretrial Delinquency	Statistically Significant Difference?	Percent With Pretrial Failure to Appear	Statistically Significant Difference?
Current Offense					
1,398 50.3%	Serious Felony, Mandatory Hold (15pts)	17.2%	Yes p=.000	6.2%	Yes p=.000
76 2.7%				Serious Non-Felony Domestic, Mandatory Hold (6 pts)	
779 28.1%	Misdemeanor Domestic, Non-Mandatory (6 pts)	4.4%			
367 13.2%		Other Felony and GM Offenses, Non-Mandatory Hold (6 pts)		34.9%	
157 5.7%	All Other Misdemeanors, Non-Mandatory Hold (3 pts)			27.4%	
Community of Residence					
22 0.8%	Resides Outside 7 County Metro	27.3%	No p=.249	13.6%	No p=.335
2,755 99.2%				Lives in 7 County Metro	
Community of Residence					
459 16.5%	Resides Outside Hennepin County	19.0%	No p=.518	9.2%	No p=.351
2,318 83.5%				Lives in Hennepin County	
School & Work					
302 10.9%	Irregular School/Work Attendance	22.5%	Yes p=.027	11.3%	Yes p=.031
2,475 89.1%				Regular School/Work Attendance	
Age at 1st Delinquency					
757 27.3%	Less than Age 16	26.0%	Yes p=.000	8.5%	No p=.646
2,020 72.7%				No Adjudication Prior to Age 16	

Table 3. Binary Analysis of Elements on Current RAI Tool, Continued					
n= 2,777 % of all RAIs	RAI Category	Percent With Pretrial Delinquency	Statistically Significant Difference?	Percent With Pretrial Failure to Appear	Statistically Significant Difference?
Prior Adjudications					
87 3.1%	2+ Felonies or EJJ/Certification	23.0%	Yes p=.000	6.9%	No p=.168
228 8.2%	1 Felony	27.6%		11.8%	
182 6.6%	1+ Gross Misdemeanor	24.2%		6.0%	
130 4.7%	1+ Assault Misdemeanor	18.5%		6.2%	
340 12.2%	1+ Misdemeanor	27.9%		9.7%	
1,810 65.2%	None	13.9%		7.7%	
Prior Failure to Appear					
292 10.5%	2 or More Bench Warrants (Last 2 years)	31.8%	Yes p=.000	20.5%	Yes p=.000
209 7.5%	1 Bench Warrant (Last 2 years)	25.8%		8.6%	
2,276 82.0%	None	15.4%		6.4%	
Pending Petitions					
2 0.1%	EJJ or Certification Motion	0.0%	Yes p=.000	0.0%	Yes p=.000
152 12.0%	Other Felony-Level Petition	26.3%		18.4%	
334 12.0%	GM/Misdemeanor-Level Petition	25.4%		10.5%	
2,289 82%	None	16.3%		7.0%	

Bivariate Crosstabs Summary

Table 4 summarizes which variables on the RAI tool are statistically associated with new pretrial delinquency charges, and/or new warrants issued for failure to appear at court during a pretrial release window. Six out of seven elements on the tool are associated with new delinquency charges if released, and five of seven elements inform both new delinquency charges and pretrial failure to appear. Only one variable, community of residence, was neither associated with new charges nor failure to appear.

RAI elements associated with BOTH pretrial delinquency charges AND pretrial failure to appear	<ul style="list-style-type: none"> • Current Offense • School and Work Attendance • Prior Failure to Appear • Pending Petitions
RAI elements associated with ONLY pretrial delinquency charges	<ul style="list-style-type: none"> • Age at First Delinquency • Prior Adjudications
RAI elements associated with ONLY pretrial failure to appear	<ul style="list-style-type: none"> • <i>None</i>
RAI elements associated with NEITHER pretrial delinquency charges NOR pretrial failure to appear	<ul style="list-style-type: none"> • Community of Residence: 7 County Metro

Bivariate Analysis Summary

- All elements on the JDC RAI are statistically associated with pretrial failure using chi-squared analysis, with the exception of community of residence.
- The community of residence indicator can be removed from the JDC RAI tool without negatively impacting the predictive ability of the tool.

Multivariate Regression Analysis

As its name implies, multivariate analysis explores the impact of multiple variables upon an outcome or dependent variable at the same time. It is the next step in exploring the elements on a predictive tool. In this procedure, the seven independent RAI variables are analyzed simultaneously to determine their respective impact upon the outcome variables related to pretrial failure. Because pretrial failure has only two possible outcomes (yes or no), logistic regression is the appropriate type of multivariate analysis.

Full Regression Model

Table 5 illustrates the effect of the variables on three outcomes: pretrial delinquency, pretrial failure to appear warrants, and any type of pretrial failure. In a full regression model, current offense, prior adjudications, prior failure to appear, and pending adjudications all contribute to some aspect of pretrial failure.^{viii} Current offense and prior failure to appear inform all three possible pretrial failure outcomes. Prior adjudications informs pretrial delinquency, and pending adjudications is predictive of pretrial failure to appear.

As has been noted throughout the report, community of residence does not add to the predictive power of the tool. However, the full model also illustrates irregular school or work attendance does not add predictive power to the tool, nor does first adjudication prior to age 16. These items could be removed from the tool and the predictive power of the RAI would be as strong as if they remained.

RAI Variables	Model 1	Model 2	Model 3
	Pretrial Delinquency	Pretrial Failure to Appear	Any Pretrial Failure
Current Offense Variable	Yes	Yes	Yes
Resides Outside 7 County Metro	No	No	No
Irregular School/Work Attendance	No	No	No
First Delinquency Prior to Age 16	No	No	No
Prior Adjudications Variable	Yes	No	No
Prior Failure to Appear Variable	Yes	Yes	Yes
Pending Adjudications Variable	No	Yes	No
Nagelkerke R2	0.097	0.123	0.104
Variance Explained	9.7%	12.3%	10.4%
Predicted Correctly	82.1%	92.0%	77.9%

^{viii} See Appendix C for a full regression table

The Nagelkerke R² value tells us how much of pretrial delinquency and pretrial failure to appear are explained by the variables on the RAI tool. The model suggests 9.7% of that which contributes to new pretrial delinquency (explained variance) is captured by the tool, as is 12.3% of that which contributes to pretrial failure to appear. Based on the outcomes of 2,777 admission, the tool correctly identified those who committed new delinquency 82% of the time and 92% of the time the model was correct in identifying those with pretrial failure. Ideally, a model should contain as few variables as are needed to predict an outcome in order to prevent over-specification.

Parsimonious Regression Model

The next logistic regression model (Table 6) shows the predictive power of the RAI tool if the non-predictive elements are removed.^{ix} This will be termed the “Parsimonious Model” as it has the fewest variables included.

As is evident by the “variance explained” figure, removing the three elements from the model that do not have predictive power has almost no impact on the percent of delinquency or pretrial failure to appear explained by the model (9.6% and 12.2%, respectively; formerly 9.7% and 12.3% in the full model). In addition, the model correctly predicts pretrial failure at rates nearly identical to the full regression model.

RAI Variables	Model 1	Model 2	Model 3
	Pretrial Delinquency	Pretrial Failure to Appear	Any Pretrial Failure
Current Offense Variable	Yes	Yes	Yes
Prior Adjudications Variable	Yes	No	Yes
Prior Failure to Appear Variable	Yes	Yes	Yes
Pending Adjudications Variable	No	Yes	No
Nagelkerke R2	0.096	0.122	0.104
Variance Explained	9.6%	12.2%	10.4%
Predicted Correctly	82.1%	92.0%	77.7%

^{ix} See Appendix D for the Parsimonious Model regression table

Multivariate Analysis Summary

- In the regression analysis, two additional variables--irregular school or work attendance and first delinquency under age 16—drop off in their ability to predict pretrial failure. The model is not better at predicting pretrial failure with these elements included, suggesting they can be removed from the JDC RAI.
- The variables in the full regression model explain 10.4% of why children have any pretrial failure. The most parsimonious regression model, which excludes irregular school or work attendance and first delinquency under age 16, explains the same level of variance (10.4%). This affirms the model has the same predictive power without these two variables.

AUC-ROC Analysis

An Area Under the Curve for the Receiver Operator Characteristic (AUC-ROC) is a common measure of risk assessment performance that helps to determine the goodness of fit of the regression models. The AUC-ROC from the multivariate analyses gauges the performance of the combined JDC RAI factors in differentiating between children who are successful pretrial versus those who fail. An AUC-ROC value ranges from .500 to 1.00 where .500 is a 50/50 chance the model correctly classifies children who fail, to 1.00 which is a perfect model that 100 percent of the time accurately classifies children who fail.¹³

In short, the larger the area under the curve, the better the model predicts failure. In the social sciences, an AUC-ROC between .64 and .71 is considered “good” and an AUC between .71 and 1.00 is considered “excellent.”¹⁴ The AUC-ROC plots points on a Y-axis that measure sensitivity and an X-axis that measures one minus specificity. The sensitivity (also known as true positives), refers to the number of cases correctly predicted as failures. In these instances the juvenile failed and the model predicted failure. Specificity (also known as true negatives) refers to the number of cases correctly predicted as successes. In these instances, the juvenile did not fail pretrial and the model predicted they would not fail. The regression plotted creates a curve from which the “area under the curve” is calculated.

The full regression model for a new delinquency charge (Table 7) has an under the curve of .681, which is also true for the parsimonious model with only four RAI elements. These values are significant, meaning the JDC RAI elements predict new delinquency charges significantly better than chance alone (.500). The models’ ability to predict pretrial failure to appear is stronger yet than its ability to predict new delinquency. The AUC is .724 for the full model and .718 for the parsimonious models. These again are significantly better than chance and are in the “excellent” range for the social sciences.

Finally, the JDC RAI’s ability to predict any pretrial failure, which consists of two types of possible failure, is .681 in the full regression model and .668 in the limited variable model. Predicting two possible events is more difficult than predicting one, but the tool is still significantly better than chance alone. While the full RAI tool is better predictor of pretrial failure, the parsimonious model is very comparable without issues of over-specification.

Regression Models	Model 1		Model 2		Model 3	
	Pretrial Delinquency AUC	Statistically Significant	Pretrial Failure to Appear AUC	Statistically Significant	Any Pretrial Failure AUC	Statistically Significant
Full Model	.681	Yes	.724	Yes	.681	Yes
Parsimonious Model	.681	Yes	.718	Yes	.668	Yes

AUC-ROC Analysis Summary

- Both the full regression model and the parsimonious model with the fewest statistically significant elements do a good-to-excellent job at correctly classifying true positives and true negatives.
- The models do the best job at properly classifying those who fail to appear as their type of pretrial failure.
- The similarities between the two models, as it relates to AUC-ROC, suggest the parsimonious model would again be sufficient for the JDC RAI tool.

Gender Analysis

The following section explores: (1) The validity of the JDC RAI tool in predicting pretrial failure by females and (2) whether components of the RAI are gender biased.

Recall from Table 2 males make up the largest proportion of the JDC RAI children in the research sample (78%). Table 8 illustrates males and females do not have the same rates of pretrial failure. Males are statistically more likely to have new delinquency charges pretrial and to have any type of pretrial failure. There is, however, no statistically significant difference in the issuance of failure to appear warrants for males and females at 8.3% and 7.1%, respectively.

Independent Variable	Pretrial Delinquency			Pretrial FTA			Any Pretrial Failure		
	N	%	Stat. Sig?	N	%	Stat. Sig?	N	%	Stat. Sig?
Male	429	19.7%	Yes	181	8.3%	No	510	23.5%	Yes
Female	68	11.3%	p=.000	43	7.1%	p=.334	101	16.7%	p=.000

Because male children fail at higher rates does not mean there is bias in the JDC RAI. Indeed, it would never be appropriate to add a child's gender as a scored element on a detention assessment tool. Rather it is important to look at the individual elements on the RAI and make sure any which are not predictive of pretrial failure are assessed for potential gender bias. If an element is biased, against either the male or female population, it should be removed from the tool.

Recall that bivariate analysis revealed community of residence is the only element on the JDC RAI not associated with pretrial failure (Table 3). In checking this variable against gender using crosstabs, we see community of residence is not statistically related to gender (Table 9, p=.911). In other words, neither males nor females are more likely to be assigned a point on the RAI if this item were to remain on the tool.

Independent Variable	Resides Outside 7 County Metro		
	N	%	Stat. Sig?
Male	17	0.08	No
Female	5	0.08	p=.911

Adding Gender to the Parsimonious Equation

While the gender variable should not be a scored item on the RAI tool, we can include it in our models to determine the extent to which the variable has explanatory power regarding who experiences pretrial failure. This analysis compares males versus females to see if gender has a bearing on pretrial failure.

Table 10 below illustrates the most parsimonious model with gender added.^x This model compares males to females, who are the reference group. The table illustrates males are more likely to fail pretrial with a new

^x See Appendix E for a full table of the Parsimonious Model with Gender.

delinquency charge than females. However, males are not statistically more likely to have pretrial failure to appear warrants. Males are statistically more likely to have any pretrial failure when compared to females.

The addition of gender creates two new pretrial outcomes (in bold). Prior adjudications becomes statistically significant to pretrial failure and pending adjudications no longer reaches the level of statistical significance in the model when gender is included.

The Nagelkerke R² for the pretrial delinquency outcome is .105 or 10.5%. The model without gender included had a Nagelkerke R² of .096 or 9.6%. This suggests male gender explains an additional .9% of that which contributes to pretrial delinquency. The Nagelkerke R² for failure to appear increases from 10.4% to 12.3% with gender included explaining an additional 1.9% of the variance.

Table 10. Logistic Regression of Most Parsimonious Model with Gender Added n=2,777			
RAI Variables	Model 1	Model 2	Model 3
	Pretrial Delinquency	Pretrial Failure to Appear	Any Pretrial Failure
Current Offense Variable	Yes	Yes	Yes
Prior Adjudications Variable	Yes	Yes	Yes
Prior Failure to Appear Variable	Yes	Yes	Yes
Pending Adjudications Variable	No	No	No
Male Gender	Yes	No	Yes
Nagelkerke R ²	0.105	0.123	0.107
Variance Explained	10.5%	12.3%	10.7%
Change in Variance Explained from Parsimonious Model without Gender	+ 0.9%	+ 0.1%	+ .0.3%
Predicted Correctly	82.1%	92.0%	77.9%

Risk Level and AUC-ROC Analysis

A final gender analysis compares males and females by JDC risk-level (Table 14). Low- and moderate-risk scores are combined due to the small number of moderate scores (29 for females and 137 for males). Also, both low-risk and moderate-risk children are released from the facility to home, shelter or a detention alternative whereas those who score high-risk are securely detained.

The failure rate calculations show low- to moderate-risk females are less likely to fail than low- to moderate-risk males (15.5% vs. 27.1%, respectively). Conversely, high-risk females and high-risk males have comparable levels of any pretrial failure (19.1% and 20.7%, respectively). Overall, males have a higher base rate of failure (23.5%) than females (16.7%). A chi-squared analysis indicates, for females, risk level is not statistically related to failure ($p=.329$) while risk level is statistically related to failure for males ($p=.000$). A Pearson's correlation analysis confirms risk level is not correlated to any pretrial failure for females ($p=.261$) while it is for males ($p=.000$).

Risk Level	RAI score	Pretrial Failure Rates by Gender							
		Female				Male			
		Total		Any Failure		Total		Any Failure	
		N	%	N	%	N	%	N	%
Low or Moderate	3 to 14	400	66.2%	62	15.5%	943	43.4%	256	27.1%
High	15 to 30	204	33.8%	39	19.1%	1230	56.6%	254	20.7%
Total		604	100.0%	101		2,173	100.0%	510	
Base Rate, Any Failure		16.7%				23.5%			
Chi Square, (risk level by any failure)		1.87, $p=.392$				24.45, $p=.000$			
AUC-ROC		0.664, $p=.000$.682, $p=.000$			
Pearson's Correlation (risk level by any failure)		.046, $p=.261$				-.076, $p=.000$			
AUCdiff		-.018, $p=.281$							

An AUC-ROC analysis shows the parsimonious RAI model, when performed on females only, is a good predictor of pretrial success and failure with an AUC of .664. The model is also a good predictor for males alone, with an AUC of .682. The difference in the AUC between males and females is small (-.018), a value which is not statistically significant ($p=.281$). This leads to the conclusion that the parsimonious model performs equally well for males and females.

Gender Analysis Summary

- Males make up the largest proportion of children in the study (78%).
- Gender is not correlated with community of residence. Males and females are equally likely to receive a point on the JDC RAI tool for this element, meaning it is not harmful if remains on the tool, though it adds no predictive value.
- Males exhibit pretrial delinquency and any pretrial failure more often than females. There is no statistically significant difference between males and females related to pretrial failure to appear.
- When gender is added to the parsimonious model, very small increases in the explained variances are observed (.1% to .9%) suggesting gender does not add much to the predictive strength of the model.
- Males have a higher base failure rate than females. Among males, any pretrial failure is statistically correlated to risk-level, which is not the case for females.
- The AUC-ROC statistic shows us the parsimonious model does a good job at properly classifying failure and success among between males and females and the difference between the models ability to properly classify by gender is not statistically significant.

Race & Ethnicity Analysis

The following section explores: (1) The validity of the JDC RAI tool in predicting pretrial failure for White children and children of color and (2) whether components of the RAI are racially biased.

Recall from Table 2 children of color make up the largest proportion of the JDC RAI children in the research sample (84.3%). Table 12 illustrates White children and children of color do not have the same rates of pretrial failure. Children of color are statistically more likely than White children to exhibit all three types of pretrial failure.

Because children of color fail at higher rates does not mean there is bias in the JDC RAI. Indeed, it would never be appropriate to add a child’s race or ethnicity as a scored element on a detention assessment tool. Rather it is important to look at the individual elements on the RAI and make sure any which are not predictive of pretrial failure be assessed for potential racial bias. If an element is biased, against either the White population or children of color, it should be removed from the tool.

Independent Variable	Pretrial Delinquency			Pretrial FTA			Any Pretrial Failure		
	N	%	Stat. Sig?	N	%	Stat. Sig?	N	%	Stat. Sig?
White Children	44	10.1	Yes	13	3.0	Yes	51	11.7	Yes
Children of Color	453	19.3	p=.000	211	9.0	p=.000	560	23.9	p=.000

Again, bivariate analysis revealed community of residence is the only element on the JDC RAI not associated with pretrial failure (Table 3). In checking this variable against race and ethnicity, we see the measure of community of residence is not statistically related to race (Table 13, p=.133). In other words, neither White children nor children of color are more likely to be assigned a point on the RAI if this item were to remain on the tool.

Independent Variable	Resides Outside 7 County Metro		
	N	%	Stat. Sig?
White Children	6	1.4	No p=.133
Children of Color	16	0.7	

Adding Race and Ethnicity to the Parsimonious Equation

While the race and ethnicity variable should not be a scored item on the RAI tool, we can include it in our models to ascertain the extent to which the variable has explanatory power regarding who experiences pretrial failure. This analysis compares White children versus children of color to see if race or ethnicity has a bearing on pretrial failure.

Table 14 below illustrates the most parsimonious model with race and ethnicity variables added.^{xi} This model compares White, non-Hispanic children to all children of color combined, who are the reference group. Race and

^{xi} See Appendix F for a full table of the Parsimonious Model with Race.

ethnicity has a statistically significant impact across all three measures of pretrial failure. White, non-Hispanic children are less likely than children of color to have a new delinquency charge during their pretrial window, are less likely to have a warrant issued for failure to appear, and are less likely to have either type of pretrial failure than their peers of color.

Adding race and ethnicity does not do much, however to explain the variance in why some children fail and others do not. The power of the tool increases by just 0.3% for new delinquency charges, 0.8% for failure to appear, and 0.6% for either type of pretrial failure.

Table 14. Logistic Regression of Most Parsimonious Model with Race/Ethnicity Added n=2,777			
RAI Variables	Model 1	Model 2	Model 3
	Pretrial Delinquency	Pretrial Failure to Appear	Any Pretrial Failure
Current Offense Variable	Yes	Yes	Yes
Prior Adjudications Variable	Yes	Yes	No
Prior Failure to Appear Variable	Yes	Yes	Yes
Pending Adjudications Variable	No	Yes	No
White, non-Hispanic Children	Yes	Yes	Yes
Nagelkerke R2	0.099	0.130	0.11
Variance Explained	9.9%	13.0%	11.0%
Change in Variance Explained from Parsimonious Model without Race	+0.3%	+ 0.8%	+ 0.6%
Predicted Correctly	82.1%	92.0%	78.9%

Risk Level and AUC-ROC Analysis

A final race and ethnicity analysis compares children of color and White children by JDC risk-level (Table 15). Low- and moderate-risk scores are combined as both are released from the facility to home, shelter or a detention alternative whereas those who score high-risk are securely detained.

The failure rate calculations show children of color at both risk levels are more likely to exhibit any pretrial failure than White children. Overall, children of color have a higher base rate of failure (23.9%) than White children (11.7%). A chi-squared analysis indicates, for White children, risk level is not statistically related to failure (p=.245) while risk level is statistically related to failure for children of color (p=.003). Lower risk children of color are more likely to exhibit any pretrial failure than higher risk children of color. A Pearson’s correlation analysis confirms risk level is not correlated to any pretrial failure for White children (p=.246) while it is for children of color (p=.003).

Risk Level	RAI score	White Children				Children of Color			
		Total		Any Failure		Total		Any Failure	
		N	%	N	%	N	%	N	%
Low or Moderate	3 to 14	302	69.4%	39	12.9%	1,041	44.4%	279	26.8%
High	15 to 30	133	30.6%	12	9.0%	1,301	55.6%	281	21.6%
Total		435	100.0%	51		2,342	100.0%	560	
Base Rate, Any Failure		11.7%				23.9%			
Chi Square, (risk level by any failure)		1.35, p=.245				8.6, p=.003			
AUC-ROC		.676, p=.000				.771, p=.000			
Pearson's Correlation (risk level by any failure)		-.056, p=.246				-.061, p=.003			
AUCdiff		-.095, p=.005							

An AUC-ROC analysis shows the parsimonious RAI model, when performed on White children only, is a good predictor of pretrial success and failure with an AUC of .676. The model is an even better predictor for children of color, with an AUC of .771. The difference in the AUC between White children and children of color is -.095, a value which is statistically significant. This leads to the conclusion that the model performs better in classifying children of color who will fail pretrial than White children, though both are well in range of what the social sciences deem as credible AUC-ROCs.

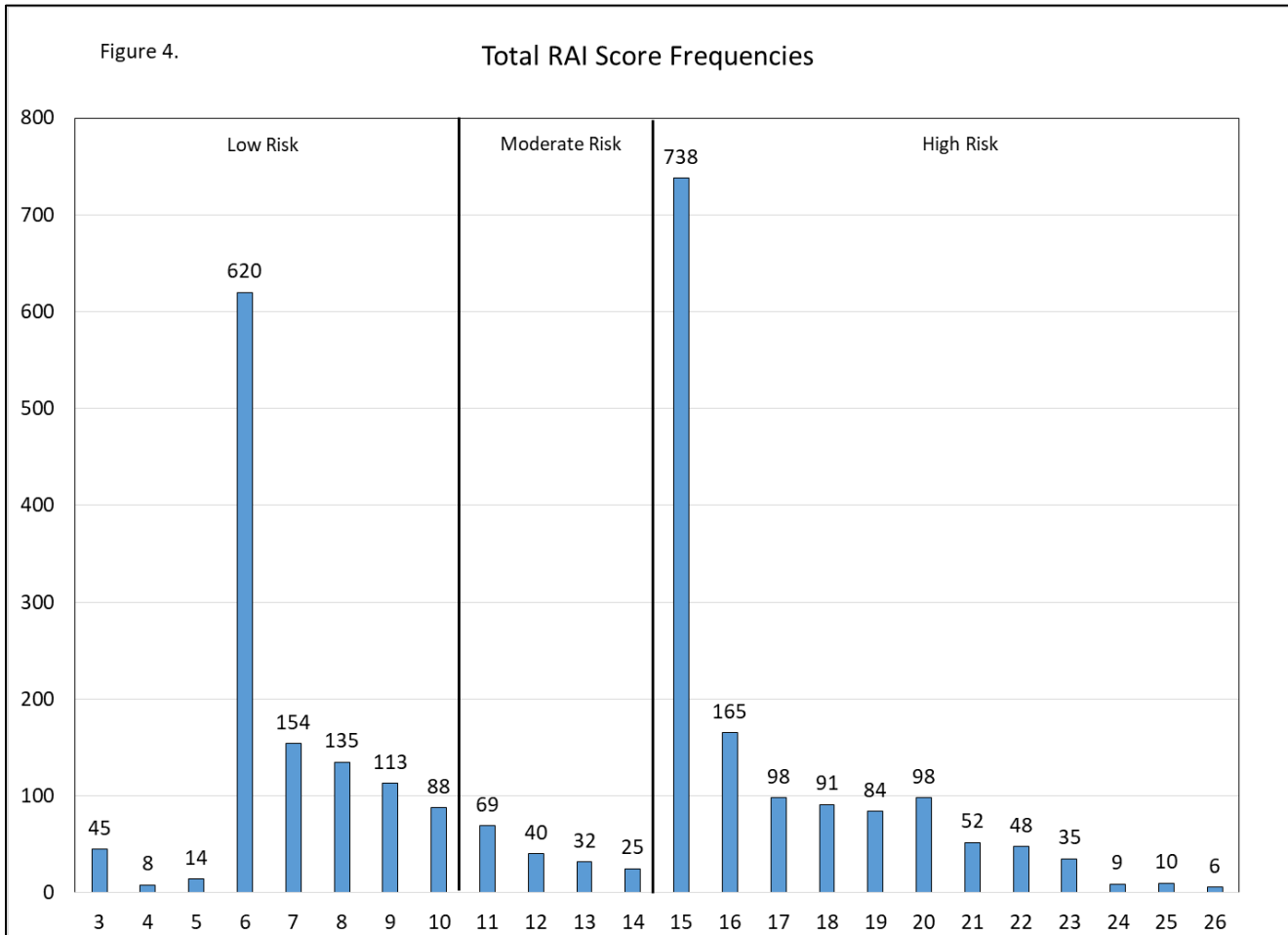
Race & Ethnicity Analysis Summary

- Children of color make up the largest proportion of children in the study (84.3%).
- Race/ethnicity is not correlated with community of residence. White children and children of color are equally likely to receive a point on the JDC RAI tool for this element. This means it is not harmful if it remains on the tool, though it adds no predictive value.
- Children of color exhibit pretrial failure more often than White children across all three measures (new delinquency, failure to appear and any pretrial failure).
- When race/ethnicity are added to the parsimonious model, very small increases in the explained variances are observed (0.3% to 0.8%) suggesting race/ethnicity does not add much to the predictive strength of the model.

- Children of color have a higher base failure rate than White children. Among White children, risk level is not correlated with any pretrial failure. Among children of color, any pretrial failure is statistically correlated to risk level, with higher-risk children as less likely to fail than low- to moderate-risk children.
- The AUC-ROC statistic shows us the parsimonious model does a good job of properly classifying failure and success for both White children and children of color. The difference between the AUC-ROC statistic shows the model is significantly better at predicting the pretrial outcome for children of color than for White children.

RAI Scale and Cut Points

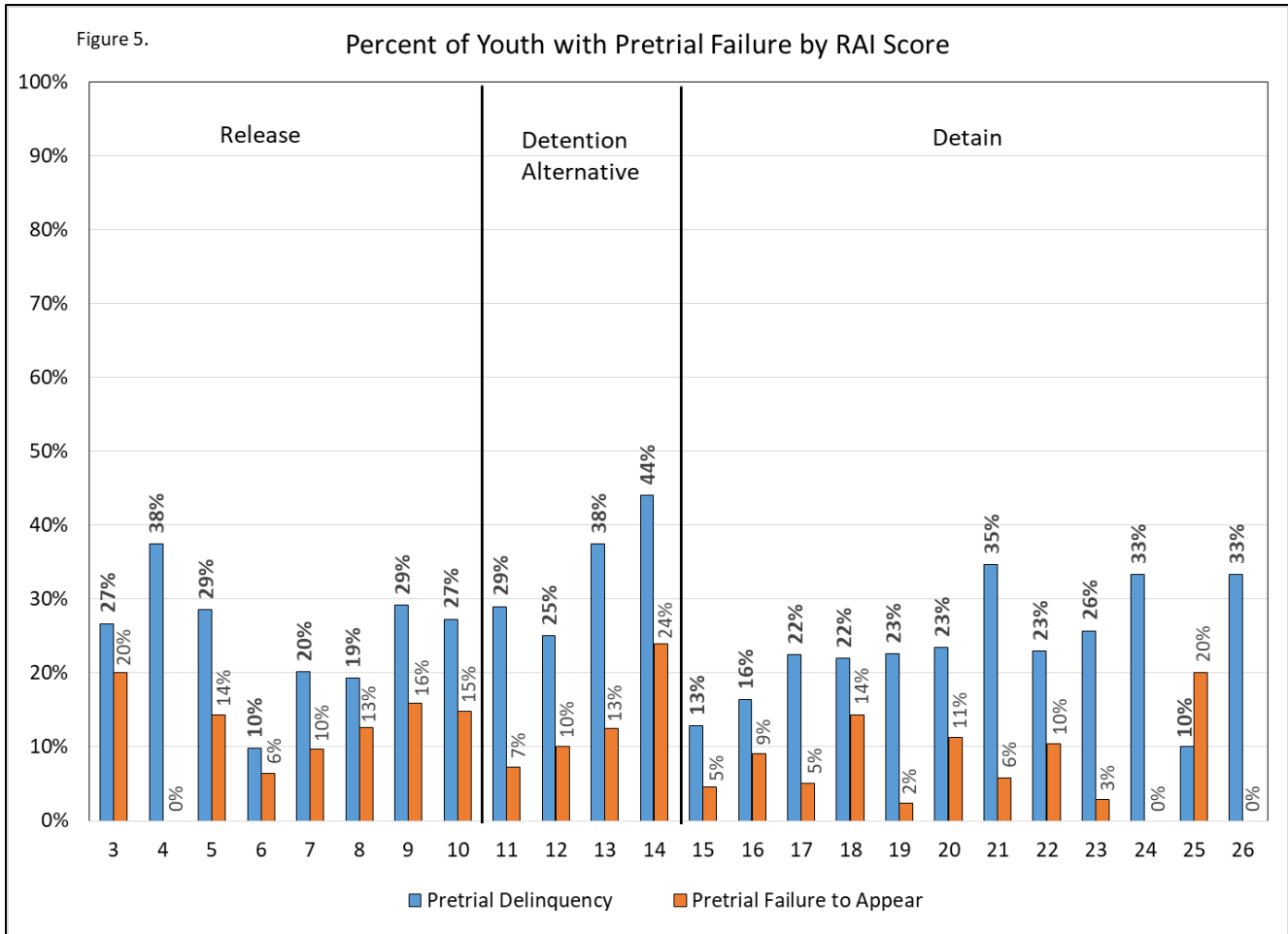
The JDC RAI cutoff points assign children to one of three categories and dictate how the JDC should proceed as it relates to custody: 3-10 (low-risk, release), 11-14 (moderate-risk, detention alternative), and 15-30 (high-risk, detain). Identifying appropriate cutoff points for a tool such as this is difficult because RAI scores do not follow a normal distribution. The graph below (Figure 4) reveals nearly half of the 2,777 RAIs completed (48.9%) resulted in a score of either 6 or 15.



An analysis of failure rates by individual JDC RAI scores provides additional insight. Varying rates of failure can be observed within each risk category as seen in Figure 5. In the low-risk category, it is not uncommon to see children who commit more pretrial delinquency and more pretrial failure to appear than children in the high-risk category.

Pretrial failure in the moderate-risk category is some of the highest. Despite reflecting relatively small numbers of children, 27.5% to 48.0% of those with a score of 13 or 14 exhibited pretrial failure. Those with a score of 13

and 14 have the highest pretrial delinquency levels and 14s also have the highest level of failure to appear level. This would suggest additional interventions may be needed for these children, or it may be appropriate that they be detained until they can go before a judge. These children scored either a 3 or a 6 for their offense and scored points in a substantial number of other domains on the RAI tool.



Another factor to consider is the length of time the children have to fail by risk group. Those in the low-risk category had an average of 86 days between JDC release and case disposition, while those in the moderate-risk category had a slightly shorter average timeframe of 76 days. The highest-risk children had the longest pretrial windows in which to potentially reoffend at an average of 118 days.

Summary of Findings

Predictive Ability of the Model

The current JDC RAI predicts both pretrial delinquency and pretrial failure to appear. Logistic regression shows the model explains 9.7% of the variance for delinquency and 12.3% of the variance for failure to appear. Only four of the seven elements on the RAI are actually necessary to predict pretrial delinquency or failure to appear. These indicators are related to the offense for which children are brought to the JDC, prior adjudications, prior failure to appear and pending adjudications.

Three items on the RAI tool do not add to the overall explained variance of the model: Youth community of residence, school and work attendance, and whether a child had their first delinquency adjudication prior to the age of 16. However, when these are included in the model, there is a slightly higher predictive power according to the AUC-ROC statistic. These elements can be removed from the RAI without compromising the strength of the tool.

Race and Gender: Bias of Scale Items and Model Performance

Only one item on the RAI tool was neither associated with pretrial delinquency nor pretrial failure to appear—community of residence. This element was checked for race and gender bias and none was found. That is, neither males nor females, nor White children or children of color are more likely to receive a point on the RAI for this element. As such, it can remain on the tool without biasing outcomes or it can be removed.

Regression analyses were completed on males versus females, and White children versus children of color. These procedures revealed males are more likely to fail pretrial than females, and children of color are more likely to fail pretrial than White children. While the RAI tool does a comparable job predicting failure by gender, the tool does a better job at predicting failure for children of color than for White children.

RAI Scale

While the elements on the JDC RAI are predictive of pretrial failure, the scoring rubric is a combination of policy (giving more points for more serious current offenses) and other research-based elements. Recall this RAI is employed “at arrest” and is based on the arresting officer’s classification of the current offense. This Risk Assessment Instrument is an instrument to help determine which children the bench was comfortable having the Juvenile Detention Center release without having a court appearance in front of a judge. For children arrested for the most serious offenses, the juvenile bench determined these children should be put on the very next court appearance and the JDC was not to make the decision to release. So, although the current offense is statistically significant as a factor in predicting pretrial failure, it is the less serious offenses that predict more failure; that can seem counterintuitive. At the point the child goes before a judge, the child has been formally charged by a county attorney and points for the current offense may have changed. When the current offense is removed from the scale, the model is highly predictive but the policy decision to give those least likely to reoffend some of the highest scores compromises the effectiveness of the risk-scale as meaningful in classifying some children.

Recommendations and Advisory Committee Decisions

Based on the findings of this report, the following recommendations were presented to the JDC RAI Advisory Committee:

1. Remove the Community of Residence variable from the RAI tool:

In two separate validation studies (2009 and 2018), whether children resided outside of Hennepin County, or even outside of the seven-county metropolitan area, were not statistically related to pretrial delinquency or pretrial failure to appear. The residence variable adds no additional predictive power to the model.

Race and gender analysis found no disparity present for the community of residence variable. Males and females, as well as White children and children from communities of color, were statistically as likely to reside outside the 7-county metro area. This variable could either remain on the tool or be removed without a disparate impact on subpopulations of children.

Decision: The JDC RAI Advisory Committee elected to remove this element from the next iteration of the RAI.

2. Remove the Irregular School/Work Attendance variable from the RAI tool:

While the irregular school or work attendance is related to both pretrial delinquency and pretrial failure to appear, it does not add any predictive ability to the scale when all variables are included in the multivariate regression analysis.

Another concern regarding this variable is it is one of the most subjective items on the scale. JDC staff are to get collateral information from parents or guardians if school attendance is less than 90% or more than 2 days per month unexcused. If guardians are not available, children may self-report their attendance. This variable is the only one not verified by a justice system database.

Because the school attendance variable is statistically related to pretrial failure, it is not subject to gender or race disparity assessment. Only elements that are not predictive of pretrial failure must be investigated for disparate impact.

Decision: The JDC RAI Advisory Committee elected to remove this element from the next iteration of the RAI

3. Consider removal of First Adjudication Under Age 16 variable from the RAI tool:

While this variable is statistically related to pretrial delinquency, when it is explored in the context of all the variables on the RAI, it does not add any additional predictive power to the model.

Because the first adjudication at under age 16 variable is statistically related to pretrial failure, it is not subject to gender or race disparity assessment. Only elements that are not predictive of pretrial failure must be investigated for disparate impact.

Decision: Research demonstrates children who begin offending at a younger age are at a higher risk for delinquency in the future. In addition, after children are detained they receive another assessment in the courtroom at their first detention hearing. The Courtroom RAI, as it is known, also includes the first adjudication under age 16 as a scored element. The JDC RAI Advisory Committee elected to keep this element on the next iteration of the JDC RAI for consistency with the Courtroom RAI tool.

4. Reduce the Total RAI score from 30 to 28.

This change reflects the removal of the community of residence and irregular school or work attendance variables.

Decision: *The JDC RAI Advisory Committee elected to reduce the total score on the JDC RAI from 30 to 28 points.*

5. Address the higher delinquency and failure to appear rates for children scoring 13 and 14 on the JDC RAI.

Children who score 13 and 14 on the RAI have some of the highest pretrial delinquency and failure to appear rates. This issue was placed up for discussion to generate potential solutions. At this time, the JDC RAI Advisory Committee does not support lowering the “detain” cutoff point to include these children. Moving the cutoff point down to 13 would require these youth be held until judicial review. This option would result in approximately one additional detention event per month.^{xii} The Committee felt this solution was inconsistent with JDAI goals.

The normal course for children receiving a 13 or 14 would be to work with a Community Coach at their release from the JDC. Further investigation into their engagement with the Community Coach program and the services provided by Community Coaches is also of value.

The Committee had a number of questions about children who score 13s and 14s including what types of new offenses they commit and whether a consistent percentage of youth have received these RAI scores in years 2016 and 2017 as well. Future explorations of these data will help the committee to finalize their recommendations on this small number of children who have some of the highest pretrial failure.

Decision: *The JDC RAI Advisory Committee elected to continue with additional analysis of issues impacting children who score 13s and 14s on the RAI to support future recommendations.*

^{xii} 57 youth scored 13 or 14 during the six-year study period, or an average of 10 per year. Ten youth divided by 12 months equals .83 additional youth detained per month.

APPENDICES

Appendix A



**MINNESOTA
JUDICIAL BRANCH**

FOURTH JUDICIAL DISTRICT



Hennepin County

AR-100 Detention Admission Criteria

POLICY

The Admissions Juvenile Correctional Officer shall accept custody of juveniles referred to the Juvenile Detention Center by police when the juveniles are charged with felonies or misdemeanors, or have a warrant signed by a judge that is for a child in need of protective services, regardless of the age of the juveniles. Custody of juveniles shall not be accepted for charges of truancy.

DEFINITION

Juveniles, ages 10–17, referred to the Hennepin County Juvenile Detention Center will be eligible for admission to detention if one or more of the following conditions exist:

1. The juvenile is accused of one of the following offenses:
 - A. Any incident resulting in death.
 - B. Assault (1st, 2nd or 3rd degree).
 - Assault: 4th degree if a peace officer is injured sufficiently to require medical attention at a clinic or hospital.
 - Assault: 5th degree domestic.
 - 5th degree assaults, other than domestic, will not be detained.
 - C. Criminal sexual conduct (1st to 4th degrees).
 - D. Aggravated robbery or simple robbery.
 - E. Kidnapping or false imprisonment.
 - F. First-degree arson of a business, dwelling or school (includes explosives, bombs, and molotov cocktails).

- G. Possession or use of firearm.
 - H. Terroristic threats toward or against a school or possession of weapons on school property.
 - I. Burglary of an occupied dwelling including attached garage, or unoccupied dwelling where dwelling is defined as a home but does not include garages. Occupied is defined as a person being on the premises at the time of the burglary.
 - J. Fleeing police while in a motor vehicle.
 - K. Auto theft (tampering and joyriding will not be held).
 - L. Controlled Substance – distribution.
 - M. Controlled Substance – possession (excludes petty offense).
 - N. Tampering with a witness.
 - O. DWI Offense MN Statute 169A.40 Subd.3: Certain DWI Offenses, Custodial Arrest.
2. The juvenile is accused of a new felony offense and
 - A. Is on probation for a previous felony offense, or
 - B. Is pending court on a prior, no-property felony offense or auto theft.
 3. The juvenile is accused of a new felony offense and
 - A. Has previously been certified and sentenced by adult court, or
 - B. Is on parole.
 6. The juvenile is EJJ, under 18, and has any new charge.
 5. The juvenile is on court-ordered Electronic Home Monitoring and
 - A. Is accused of a new felony, or
 - B. Has absented overnight, or
 - C. Has substantially violated terms of the court-ordered supervision.
 - Juveniles placed on Post-Dispositional Electronic Monitoring who commit a new offense that does not meet the detention criteria will not be held without a signed court order.
 6. The juvenile has absconded from
 - A. A correctional facility, or
 - B. A court-ordered residential treatment facility, or

C. Another jurisdiction's court-ordered treatment center, commitment program, probation or parole supervision.

Absenters (runaways) from any county or state, without a warrant signed by a judge to be detained in secure detention, will be referred to First Response by Admissions for return arrangements to the county or state of residence.

7. The juvenile's Hennepin County court-ordered placement has been terminated.
8. The court has issued a warrant for detention.
9. The juvenile has violated a Restraining Order, and the arresting officer has the Restraining Order number and provides it at the time of intake.
10. The juvenile resides out of county or state but has been arrested within Hennepin County on a felony offense.
11. The court has issued a change-of-venue order on an in-secure-custody juvenile, placing the juvenile under Hennepin County jurisdiction.

PROCEDURE

1. Admissions Juvenile Correctional Officers will screen all juveniles referred for admission to the Juvenile Detention Center as to his/her alleged offense by use of the Admissions Criteria List. The Admissions Juvenile Correctional Officer will also review available information regarding current status of probation and/or any matters pending Juvenile Court action, and will review the active state and county warrant lists to determine if there is an outstanding warrant for the juvenile.
2. Those juveniles who do not meet the detention criteria, will not be accepted into the facility. The Security Juvenile Correctional Officer, upon denying admission, will give the referring officer directions to the Juvenile Supervision Center.

The Juvenile Detention Center will accept juveniles arrested on misdemeanor, gross misdemeanor and felony offenses that become unruly while at the Juvenile Supervision Center, provided that the management and staff agree to make every reasonable effort to deescalate and/or solicit cooperation from juveniles, while in custody, prior to transporting them to the Juvenile Detention Center.

"Unruly Juveniles" are defined as:

- Juveniles who become physically uncontrollable while at the Juvenile Supervision Center (excluded are those juveniles who are unruly only upon arrest), or
- Juveniles who are uncooperative after eight hours at the Juvenile Supervision Center (“uncooperative” refers to juveniles who refuse to give information to aid in facilitating their release).

Appendix B

Hennepin County Juvenile Risk Assessment Instrument (RAI)			
Applied to Juveniles Arrested for New Offenses ONLY			
MAIn ID	_____	MAIn Event #	_____
Juvenile Name/Sex	_____	Intake Date/Time	_____
Juvenile DOB	_____	JCO Completing RAI	_____
		RAI Completion Date	_____
Indicators		Points	
Current Offense			
			3 or 6 or 15
Total Max Current Offense Points	15	Total Current Offense Points	_____
Other Risk Factors			
Child resides outside the 7-County metro Area (Not in: Hennepin, Anoka, Dakota, Ramsey, Scott, Carver or Washington Counties)			1
Not regular school or work attendance (defined as 90% or higher attendance rate)			1
First misdemeanors or above adjudication at less than 16 years of age			1
Total Max Other Risk Factor Points	3	Total Other Risk Factor Points	_____
Prior History			
Prior Adjudications			
Two or more felony adjudications -OR- prior EJJ adjudication / previously certified		or	6
One felony adjudication		or	4
One or more gross misdemeanor adjudications		or	3
One or more misdemeanor adjudications for assault		or	2
One or more misdemeanor adjudications		or	1
Prior Failure to Appear			
2 or more bench warrants in last 2 years		or	3
1 bench warrant in last 2 years		or	1
Pending Adjudications			
Pending EJJ or Cert Motion		or	3
Other Felony pending petitions		or	2
GM or Misdemeanor pending petitions		or	1
Total Max Prior History Points	12	Total Prior History Points	_____
Overall Total Max Points	30	Overall Total Points	_____
RAI Decision _____			
JDC Override Decision _____		JDC Override Comments	
0-10 RELEASE 11-14 DETENTION ALTERNATIVE 15+ DETAIN			

JUVENILE DETENTION ARRESTED OFFENSES

* SEE QUALIFYING LIST OF OFFENSES FOR MISDEMEANOR DOMESTICS

15 POINTS (MANDATORY JUDICIAL HEARING)

609.11	Use of Weapon
609.185	Murder in the 1 st Degree
609.19	Murder in the 2 nd Degree
609.195	Murder in the 3 rd Degree
609.20	Manslaughter in the 1 st Degree
609.205	Manslaughter in the 2 nd Degree
609.2112	Criminal Vehicular Homicide and Operation
609.2661	Murder of Unborn Child in the 1 st Degree
609.2662	Murder of Unborn Child in the 2 nd Degree
609.2663	Murder of Unborn Child in the 3 rd Degree
609.2664	Manslaughter of an Unborn Child in the 1 st Degree
609.2665	Manslaughter of an Unborn Child in the 2 nd Degree
609.221	Assault in the 1 st Degree
609.222	Assault in the 2 nd Degree
609.223	Assault in the 3 rd Degree
609.224S4	Assault in the 5 th Degree IF Felony
609.2247	Strangulation
609.2242S4	Felony Domestic Assault
609.267	Assault of an Unborn Child in the 1 st Degree
609.2671	Assault of an Unborn Child in the 2 nd Degree
609.2672	Assault of an Unborn Child in the 3 rd Degree
609.268	Injury or Death of Unborn of Child in commission of crime
609.713	Terroristic Threats (toward/against school)
609.245	Aggravated Robbery
609.24	Simple Robbery
609.25	Kidnapping
609.342	Criminal Sexual Conduct in the 1 st Degree
609.343	Criminal Sexual Conduct in the 2 nd Degree
609.344	Criminal Sexual Conduct in the 3 rd Degree
609.345	Criminal Sexual Conduct in the 4 th Degree
609.346	Solicitation of Children to Engage In Sexual Conduct
609.322S1	Solicitation, Inducement & Promotion of Prostitution of minors only
609.561	Arson in the 1 st Degree
609.582S1	Burglary in the 1 st Degree
609.582S2	Burglary in the 2 nd Degree (if occupied or a home)
609.485	Escape from Justice, Fugitive from Justice
609.495	Aiding an Offender (for 15 pt offenses)
609.66	Dangerous Weapons
609.67	Machine Guns and Short Barreled Shotguns
624.713	Prohibited Persons in Possession of Firearms
617.247	Child Pornography
243.166	Failure to Register as a Sex Offender

6 POINTS (MANDATORY JUDICIAL HEARING)

609.2242	Domestic Assault (GM)
518B.01S22	Violation of No Contact Order
518B.01S14	Violation of Orders for Protection
609.749	Harassment/Stalking
609.498	Tampering with a Witness
609.78	Interfering Emergency 911 call

6 POINTS NON-MANDATORY

OTHER FELONY OFFENSES NOT ALREADY LISTED INCLUDING....

609.2231	Assault in the 4 th Degree
609.225	Assault in the 5 th Degree if NOT felony
609.255	False Imprisonment
609.377	Malicious Punishment of a Child
609.232	Assault of a Vulnerable Adult
609.233	Criminal Neglect
609.2325	Criminal Abuse
609.378	Child Abuse Neglect/Endangerment
609.746	Interference with Privacy (peeping)
617.23	Indecent Exposure
609.346	Criminal Sexual Conduct 5 th Degree
152.021	Controlled Substance 1 st Degree
152.022	Controlled Substance 2 nd Degree
152.023	Controlled Substance 3 rd Degree
152.024	Controlled Substance 4 th Degree
152.025	Controlled Substance 5 th Degree
609.562	Arson 2 nd Degree
609.563	Arson 3 rd Degree
609.582S3	Burglary 3 rd Degree
609.52	Theft
609.52S3(i)	Theft from Person
169A.276	Felony DWI
609.687	Food Adulteration
609.495	Aiding an Offender (for 6 pt offenses)
❖	All Felony Theft Offenses
❖	Other Felony Level

3 POINTS FOR ALL OTHER

NON-FELONY OFFENSES

Misdemeanor Domestic Assault Qualifying Offenses

Any youth, ages 10 to 17, brought into the Juvenile Detention Center for probable cause Misdemeanor Domestic Assault with no prior adjudication for any qualified domestic violence-related offense, as defined by the following statutes:

Qualified domestic violence-related offense includes

- a violation of or an attempt to violate sections 518B.01, subdivision 14 (violation of domestic abuse order for protection); 518B.01, subdivision 22 (violation of domestic abuse no contact order); or
- 609.185 (first-degree murder); or
- 609.19 (second-degree murder); or
- 609.221 (first-degree assault); or
- 609.222 (second-degree assault); or
- 609.223 (third-degree assault); or
- 609.2231 (fourth-degree assault); or
- 609.224 (fifth-degree assault); or
- 609.2242 (domestic assault); or
- 609.2247 (domestic assault by strangulation); or
- 609.342 (first-degree criminal sexual conduct); or
- 609.343 (second-degree criminal sexual conduct); or
- 609.344 (third-degree criminal sexual conduct); or
- 609.345 (fourth-degree criminal sexual conduct); or
- 609.377 (malicious punishment of a child); or
- 609.713 (terroristic threats); or
- 609.748S6 (violation of harassment restraining order); or
- 609.749 (harassment/stalking); or
- 609.78, subdivision 2 (interference with an emergency call); and similar laws of other states, the United States, the District of Columbia, tribal lands, and United States territories; or

A pending charge of Domestic Assault; and

A RAI score of 14 or lower.

Alternative to Detention: The Bridge's Emergency Shelter will be utilized by Hennepin County as an alternative to detention for this target population of youth eligible as noted above. Youth must sign a Conditional Release Order upon being released from the Juvenile Detention Center to The Bridge.

Appendix C. Logistic Regression of the Effects of All RAI Variables on Pretrial Failure										
Variable	Pretrial Delinquency			Pretrial Failure to Appear			Any Pretrial Failure			
	Coef.	SE	Sig.	Coef.	SE	Sig.	Coef.	SE	Sig.	
Y intercept (constant)	-1.54	0.2	***	-1.36	0.22	***	-0.78	0.18	***	
Current offense			***			***			***	
15 points, mandatory hold	-0.33	0.2	NS	-1.48	0.23	***	-0.83	0.18	***	
6 points, mandatory hold	-1.39	0.5	**	-2.99	1.09	**	-1.86	0.46	***	
6 points, non-mandatory hold	0.48	0.22	*	-0.43	0.24	NS	0.07	0.2	NS	
6 point domestics, non-mandatory hold	-0.86	0.23	***	-1.72	0.27	***	-1.2	0.2	***	
3 point, non-mandatory hold	----reference category----									
Lives outside 7 county metro (Y)	0.28	0.5	NS	0.06	0.66	NS	0.39	0.47	NS	
Irregular school/work attendance (Y)	0.05	0.16	NS	0.12	0.21	NS	0.03	0.15	NS	
First adjudication prior to age 16 (Y)	0.08	0.18	NS	-0.28	0.27	NS	-0.01	0.17	NS	
Prior adjudication		*	*			NS			NS	
2 or more felony adjudications or prior EJJ or adult certification	0.06	0.32	NS	-0.6	0.5	NS	-0.001	0.3	NS	
One felony adjudication	0.46	0.22	*	0.2	0.31	NS	0.41	0.21	NS	
One or more gross misdemeanor adjudications	0.31	0.25	NS	-0.68	0.4	NS	0.03	0.24	NS	
One or more misdemeanor adjudications for assault	0.14	0.29	NS	-0.34	0.45	NS	0.01	0.27	NS	
One or more misdemeanor adjudications	0.63	0.19	**	-0.04	0.28	NS	0.39	0.19	*	
No prior adjudications	----reference category----									
Prior failure to appear			**			***			***	
2 or more bench warrants (past 2 years)	0.48	0.15	**	1.08	0.2	***	0.66	0.15	***	
1 bench warrant in (past 2 years)	0.28	0.18	NS	0.18	0.28	NS	0.24	0.17	NS	
No prior failure to appear	----reference category----									
Pending petitions			NS			*			NS	
Pending EJJ, certification or other felony petition	0.14	0.2	NS	0.6	0.24	*	0.32	0.19	NS	
Gross misdemeanor or misdemeanor petition	0.2	0.15	NS	0.04	0.22	NS	0.169	0.14	NS	
No pending petitions	----reference category----									
Sample Size	2,777			2,777			2,777			
Nagelkerke R Square	0.097			0.123			0.104			
Percent Classified Correctly	82.10%			92.00%			77.90%			
Model Chi Square	0.000			0.000			0.000			

*p<.05 **p<.01 *** p<.001

Appendix D. Logistic Regression of the Most Parsimonious Model on Pretrial Failure									
Variable	Pretrial Delinquency			Pretrial Failure to Appear			Any Pretrial Failure		
	Coef.	SE	Sig.	Coef.	SE	Sig.	Coef.	SE	Sig.
Y intercept (constant)	-1.53	0.20	***	-1.34	0.22	***	-0.77	0.18	***
Current offense			***			***			***
15 points, mandatory hold	-0.33	0.20	NS	-1.49	0.23	***	-0.83	0.18	***
6 points, mandatory hold	-1.40	0.50	**	-2.99	1.03	**	-1.86	0.46	***
6 points, non-mandatory hold	0.49	0.22	*	-0.43	0.24	NS	0.07	0.20	NS
6 point domestics, non-mandatory hold	-0.86	0.23	***	-1.74	0.27	***	-1.2	0.20	***
3 point, non-mandatory hold	----reference category----								
Prior adjudication			***			NS			*
2 or more felony adjudications or prior EJJ or adult certification	0.14	0.28	NS	-.84	.45	NS	-0.01	0.26	NS
One felony adjudication	0.53	0.17	**	-.03	.24	NS	0.4	0.16	**
One or more gross misdemeanor adjudications	0.37	0.2	NS	-.90	.39	**	0.02	0.2	NS
One or more misdemeanor adjudications for assault	0.24	0.29	NS	-.59	.40	NS	0.03	0.27	NS
One or more misdemeanor adjudications	0.68	0.15	***	-.25	.23	NS	0.37	0.14	*
No prior adjudications	----reference category----								
Prior failure to appear			**			***			***
2 or more bench warrants (past 2 years)	0.49	0.15	***	1.08	0.20	***	0.67	0.15	***
1 bench warrant in (past 2 years)	0.29	0.18	NS	0.20	0.28	NS	0.24	0.17	NS
No prior failure to appear	----reference category----								
Pending petitions			NS			*			NS
Pending EJJ, certification or other felony petition	0.14	0.20	NS	0.60	0.24	*	0.33	0.19	NS
Gross misdemeanor or misdemeanor petition	0.2	0.15	NS	0.03	0.22	NS	0.15	0.14	NS
No pending petitions	----reference category----								
Sample Size	2,777			2,777			2,777		
Nagelkerke R Square	0.096			0.122			0.104		
Percent Classified Correctly	82.1%			92.0%			77.9%		
Model Chi Square	0.000			0.000			0.000		
*p<.05 **p<.01 *** p<.001									

Appendix E. Logistic Regression of the Most Parsimonious Model on Pretrial Failure, with Gender Variable Added									
Variable	Pretrial Delinquency			Pretrial Failure to Appear			Any Pretrial Failure		
	Coef.	SE	Sig.	Coef.	SE	Sig.	Coef.	SE	Sig.
Y intercept (constant)	-1.99	0.24	***	-1.33	0.27	***	-1.040	.209	***
Current offense			***			***			***
15 points, mandatory hold	-0.36	0.20	NS	-1.45	0.23	***	-0.848	0.182	***
6 points, mandatory hold	-1.40	0.50	**	-2.97	1.03	**	-1.865	0.460	***
6 points, non-mandatory hold	0.50	0.22	*	-0.43	0.24	NS	0.076	0.200	NS
6 point domestics, non-mandatory hold	-0.79	0.23	***	-1.72	0.27	***	-1.161	0.202	***
3 point, non-mandatory hold	----reference category----								
Prior adjudication			***			*			NS
2 or more felony adjudications or prior EJJ or adult certification	0.03	0.28	NS	-.86	.46	NS	-.072	.264	NS
One felony adjudication	0.46	0.17	**	-.04	.24	NS	.358	.163	*
One or more gross misdemeanor adjudications	0.32	0.19	NS	-.91	.35	**	-.013	.195	NS
One or more misdemeanor adjudications for assault	0.32	0.25	NS	-.57	.40	NS	.080	.237	NS
One or more misdemeanor adjudications	0.67	0.15	***	-.26	.23	NS	.359	.144	*
No prior adjudications	----reference category----								
Prior failure to appear			***			***			***
2 or more bench warrants (past 2 years)	0.54	0.15	***	1.1	0.20	***	0.696	0.146	***
1 bench warrant in (past 2 years)	0.29	0.18	NS	0.20	0.28	NS	.249	.173	NS
No prior failure to appear	----reference category----								
Pending petitions			NS			NS			NS
Pending EJJ, certification or other felony petition	0.09	0.20	NS	0.59	0.24	*	0.293	0.189	NS
Gross misdemeanor or misdemeanor petition	0.20	0.15	NS	0.03	0.22	NS	0.154	0.143	NS
No pending petitions	----reference category----								
Gender									
Male	0.57	0.15	***	0.12	0.19	NS	0.337	0.129	**
Female	----reference category----								
Sample Size	2,777			2,777			2,777		
Nagelkerke R Square	0.105			0.123			0.107		
Variance Explained	10.5%			12.3%			10.70%		
Percent Classified Correctly	82.1%			92.0%			78.30%		
Model Chi Square	0.000			0.000			0.000		
*p<.05 **p<.01 *** p<.001									

Appendix F. Logistic Regression of the Most Parsimonious Model on Pretrial Failure, with Race/Ethnicity Variable Added									
Variable	Pretrial Delinquency			Pretrial Failure to Appear			Any Pretrial Failure		
	Coef.	SE	Sig.	Coef.	SE	Sig.	Coef.	SE	Sig.
Y intercept (constant)	-1.497	.202	***	-1.268	0.218	***	-.722	.181	***
Current offense			***			***			***
15 points, mandatory hold	-.322	.201	NS	-1.475	.226	***	-0.818	0.182	***
6 points, mandatory hold	-1.267	.506	**	-2.713	1.031	**	-1.686	0.463	***
6 points, non-mandatory hold	.514	.218	**	-.386	.242	NS	0.107	0.201	NS
6 point domestics, non-mandatory hold	-.795	.227	***	-1.612	.270	NS	-1.115	0.203	***
3 point, non-mandatory hold	----reference category----								
Prior adjudication			***			*			NS
2 or more felony adjudications or prior EJJ or adult certification	.104	.277	NS	-.894	.454	*	-.051	.263	NS
One felony adjudication	.492	.172	**	-.086	.240	NS	.356	.163	*
One or more gross misdemeanor adjudications	0.350	0.197	NS	-.939	.348	**	-.009	.195	NS
One or more misdemeanor adjudications for assault	0.230	0.248	NS	-.614	.403	NS	.018	.237	NS
One or more misdemeanor adjudications	0.656	0.148	***	-.287	.226	NS	.340	.144	*
No prior adjudications	----reference category----								
Prior failure to appear			**			***			***
2 or more bench warrants (past 2 years)	.472	.154	**	1.047	.197	***	.639	.146	***
1 bench warrant in (past 2 years)	.262	.179	NS	.152	.275	NS	.212	.173	NS
No prior failure to appear	----reference category----								
Pending petitions			NS			*			NS
Pending EJJ, certification or other felony petition	.137	.203	NS	.588	.243	*	.315	.188	NS
Gross misdemeanor or misdemeanor petition	.195	.150	NS	.020	.218	NS	0.146	0.143	NS
No pending petitions	----reference category----								
Race/Ethnicity									
White, non-Hispanic Youth	-.392	.176	*	-.846	.301	**	-.540	.165	***
All Youth of Color Combined	----reference category----								
Sample Size	2,777			2,777			2,777		
Nagelkerke R Square	0.099			0.130			0.11		
Variance Explained	9.9%			13.0%			11.0%		
Percent Classified Correctly	82.2%			92.0%			78.0%		
Model Chi Square	0.000			0.000			0.000		

*p<.05 **p<.01 *** p<.001

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