

Pretrial Risk Assessment and Pretrial Supervision in Indiana:

Final Report

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TABLE OF CONTENTS

LIST OF TABLES	5
LIST OF FIGURES	6
EXECUTIVE SUMMARY	8
INTRODUCTION	10
BARTHOLOMEW COUNTY.....	13
Study Context	13
Methods.....	14
<i>Overview</i>	<i>14</i>
<i>Data Cleaning.....</i>	<i>14</i>
<i>Variables</i>	<i>15</i>
<i>Data Limitations</i>	<i>16</i>
<i>Analytic Strategy.....</i>	<i>16</i>
Results	17
<i>Descriptive</i>	<i>17</i>
<i>Bivariable Comparisons</i>	<i>18</i>
<i>Supervision Strategies (RQ #1).....</i>	<i>19</i>
<i>Risk Principle Adherence (RQ #2).....</i>	<i>20</i>
<i>Judicial Adherence (RQ #3).....</i>	<i>21</i>
Summary of Findings	21
Conclusion	22
HAMILTON COUNTY	23
Study Context	23
Methods.....	23
<i>Overview</i>	<i>23</i>
<i>Data Cleaning.....</i>	<i>24</i>
<i>Sample.....</i>	<i>24</i>
<i>Variables</i>	<i>25</i>
<i>Data Limitations</i>	<i>25</i>
<i>Analytic Strategy.....</i>	<i>26</i>
Results	27
<i>Descriptive</i>	<i>27</i>
<i>Bivariable Comparisons</i>	<i>28</i>
<i>Supervision Strategies (RQ #1).....</i>	<i>30</i>
<i>Risk Principle Adherence (RQ #2).....</i>	<i>30</i>
<i>Judicial Adherence (RQ #3).....</i>	<i>31</i>
Summary of Findings	32
Conclusion	32
HENDRICKS COUNTY	34
Study Context	34
Methods.....	34
<i>Overview</i>	<i>34</i>

<i>Data Cleaning</i>	34
<i>Sample</i>	35
<i>Variables</i>	35
<i>Data Limitations</i>	36
<i>Analytic Strategy</i>	36
Results	37
<i>Descriptive</i>	37
<i>Bivariable Comparisons</i>	38
<i>Supervision Strategies (RQ #1)</i>	40
<i>Risk Principle Adherence (RQ #2)</i>	41
<i>Judicial Adherence (RQ #3)</i>	42
Summary of Findings	42
Conclusion	43
JEFFERSON COUNTY	44
Study Context	44
Methods	44
<i>Overview</i>	44
<i>Data Merging and Cleaning</i>	45
<i>Sample</i>	45
<i>Variables</i>	46
<i>Data Limitations</i>	46
<i>Analytic Strategy</i>	47
Results	47
<i>Descriptive</i>	47
<i>Bivariable Comparisons</i>	49
<i>Supervision Strategies (RQ #1)</i>	50
<i>Risk Principle Adherence (RQ #2)</i>	51
<i>Judicial Adherence (RQ #3)</i>	52
Summary of Findings	52
Conclusion	53
MONROE COUNTY	54
Study Context	54
Methods	54
<i>Overview</i>	54
<i>Data Cleaning</i>	55
<i>Variables</i>	55
<i>Data Limitations</i>	56
<i>Analytic Strategy</i>	56
Results	57
<i>Descriptive</i>	57
<i>Bivariable Comparisons</i>	58
<i>Supervision Strategies (RQ #1)</i>	59
<i>Risk Principle Adherence (RQ #2)</i>	60
<i>Judicial Adherence (RQ #3)</i>	61

SUMMARY OF FINDINGS	61
Conclusion	62
POOLED DATASET	63
Purpose of Investigation	63
Methods.....	63
<i>Overview</i>	<i>63</i>
<i>Variables</i>	<i>63</i>
<i>Data Limitations</i>	<i>64</i>
<i>Analytic Strategy.....</i>	<i>64</i>
Results	66
<i>Descriptive</i>	<i>66</i>
<i>Bivariable Comparisons</i>	<i>67</i>
<i>Supervision Strategies (RQ #1).....</i>	<i>68</i>
<i>Risk Principle Adherence (RQ #2).....</i>	<i>74</i>
<i>Judicial Adherence (RQ #3).....</i>	<i>78</i>
Summary of Findings	81
Conclusion	81
REFERENCES.....	84
APPENDIX.....	87
Bartholomew County Matrix.....	87
Hamilton County Matrix.....	88
Hendricks County Matrix	89
Jefferson County Matrix	90
Monroe County Matrix	91

LIST OF TABLES

Table 1. Bartholomew County - Logistic Regression Models of Supervision Strategies on Pretrial Supervision Failure	19
Table 2. Bartholomew County - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure	20
Table 3. Bartholomew County - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure	21
Table 4. Hamilton County - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure	30
Table 5. Hamilton County - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure	31
Table 6. Hendricks County - Logistic Regression Models of Supervision Strategies on Pretrial Supervision Failure	40
Table 7. Hendricks County - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure	41
Table 8. Hendricks County - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure	42
Table 9. Jefferson County - Logistic Regression Models of Supervision Strategies on Pretrial Supervision Failure	50
Table 10. Jefferson County - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure	51
Table 11. Jefferson County - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure	52
Table 12. Monroe County - Logistic Regression Models of Supervision Strategies on Pretrial Supervision Failure	59
Table 13. Monroe County - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure	60
Table 14. Monroe County - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure	61
Table 15. Pooled - Logistic Regression Models of Supervision Strategies on Pretrial Supervision Failure	69
Table 16. Pooled - Multinomial Logistic Regression Models of Supervision Strategies on Pretrial Supervision Outcomes	73
Table 17. Pooled - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure	74
Table 18. Pooled - Multinomial Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Outcomes	77
Table 19. Pooled - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure	78
Table 20. Pooled - Multinomial Logistic Regression Models of Judicial Adherence on Pretrial Supervision Outcomes	79
Table 21. Pooled - Logistic Regression Models of Judicial Adherence (Higher or Lower) on Pretrial Supervision Failure	80

LIST OF FIGURES

Figure 1. Bartholomew County - Model of Pretrial Processing	13
Figure 2. Bartholomew County - Data Cleaning Process	14
Figure 3. Bartholomew County - Highest Offense Charge Type	15
Figure 4. Bartholomew County – Distribution of IRAS-PAT Risk Scores	17
Figure 5. Bartholomew County - Distribution of IRAS-PAT Risk Levels.....	17
Figure 6. Bartholomew County - Risk Level by Supervision Level.....	18
Figure 7. Bartholomew County - Risk Level by Judicial Adherence	18
Figure 8. Bartholomew County - Supervision Failure Rates by Risk and Supervision Level.....	20
Figure 9. Hamilton County - Data Cleaning Process.....	24
Figure 10. Hamilton County - Highest Offense Charge Type	24
Figure 11. Hamilton County – Distribution of IRAS-PAT Risk Scores.....	27
Figure 12. Hamilton County – Distribution of IRAS-PAT Risk Levels.....	27
Figure 13. Hamilton County - Risk Level by Supervision Level	28
Figure 14. Hamilton County - Risk Level by Judicial Adherence.....	29
Figure 15. Hamilton County - Risk Level by Direction of Judicial Adherence	29
Figure 16. Hamilton County - Supervision Failure Rates by Risk and Supervision Level	31
Figure 17. Hendricks County - Data Cleaning Process	34
Figure 18. Hendricks County - Highest Offense Charge Type.....	35
Figure 19. Hendricks County – Distribution of IRAS-PAT Risk Scores	37
Figure 20. Hendricks County - Distribution of IRAS-PAT Risk Levels.....	37
Figure 21. Hendricks County - Risk Level by Supervision Level.....	38
Figure 22. Hendricks County - Risk Level by Judicial Adherence	39
Figure 23. Hendricks County - Risk Level by Direction of Judicial Adherence.....	39
Figure 24. Hendricks County - Supervision Failure Rates by Risk and Supervision Level.....	41
Figure 25. Jefferson County - Data Cleaning Process	44
Figure 26. Jefferson County - Highest Offense Charge Type	45
Figure 27. Jefferson County - Distribution of IRAS-PAT Risk Scores.....	48
Figure 28. Jefferson County - Distribution of IRAS-PAT Risk Levels.....	48
Figure 29. Jefferson County - Risk Level by Supervision Level.....	49
Figure 30. Jefferson County - Risk Level by Judicial Adherence	49
Figure 31. Jefferson County – Supervision Failure Rates by Risk Level and Bond	51
Figure 32. Monroe County - Data Cleaning Process	55
Figure 33. Monroe County - Highest Offense Charge Type	55
Figure 34. Monroe County – Distribution of IRAS-PAT Risk Scores	57
Figure 35. Monroe County - IRAS-PAT Risk Levels	57
Figure 36. Monroe County - Risk by Supervision Level.....	58
Figure 37. Monroe County - Judicial Adherence by Risk Level	59
Figure 38. Monroe County - Supervision Failure Rates by Risk and Supervision Level.....	60
Figure 39. Pooled - Highest Offense Charge Type.....	63
Figure 40. Pooled - Distribution of IRAS-PAT Risk Scores	66
Figure 41. Pooled - Distribution of IRAS-PAT Risk Levels	66
Figure 42. Pooled - Risk Level by Supervision Level	67
Figure 43. Pooled - Risk Level by Meeting Frequency	68
Figure 44. Pooled - Risk Level by Judicial Adherence	68

Figure 45. Pooled – Supervision Failure Rates by Risk Level and Meeting Frequency	70
Figure 46. Pooled – Supervision Failure Outcomes by Risk Level.....	70
Figure 47. Pooled – Supervision Failure Outcomes by Meeting Frequency	71
Figure 48. Pooled – Supervision Failure Outcomes by Risk Level & Meeting Frequency.....	72
Figure 49. Pooled – Supervision Failure Rates by Risk and Supervision Level	75
Figure 50. Pooled – Supervision Failure Outcomes by Supervision Level	75
Figure 51. Pooled – Supervision Failure Outcomes by Risk Level & Supervision Level.....	76

EXECUTIVE SUMMARY

In response to nationwide calls for pretrial reform, Indiana developed a Pretrial Pilot Project in 2015 to pilot and evaluate pretrial reform strategies in 11 Indiana counties. This effort occurred as part of Indiana's participation in the National Institute of Corrections Evidence Based Decision-Making (EBDM) initiative. As part of the Pretrial Pilot Program, selected jurisdictions adopted the Indiana Risk Assessment System – Pretrial Assessment Tool (IRAS-PAT) into their pretrial release decision-making, expanded pretrial services operations to assess and supervise pretrial defendants, and developed and refined structured guidelines for the incorporation of risk assessment information into pretrial decision-making.

The purpose of this investigation was to expand on the study of Indiana's Pretrial Pilot Project by examining supervision decisions and outcomes among jurisdictions that implemented IRAS-PAT assessments into pretrial decision-making. Five counties (Bartholomew, Hamilton, Hendricks, Jefferson, and Monroe) participated in this investigation. *The study objectives were three-fold:*

- 1) to examine the effects of specific supervision strategies on pretrial supervision outcomes;
- 2) to examine the role of risk principle adherence in pretrial supervision outcomes; and
- 3) to examine the effects of judicial adherence to structured guidelines on pretrial supervision outcomes.

Several key findings emerged from this investigation:

Supervision Conditions

- Findings showed varying degree of success of pretrial supervision conditions on supervision outcomes.
- In general, higher levels of supervision were associated with higher rates of failure, even after adjusting for risk level and charge severity of the defendant.
- There was some evidence that this trend differed by risk level, such that Low risk defendants often had higher rates of failure when supervised at high levels of supervision.
- In most jurisdictions, there were no differences in supervision failure rates between defendants who did or did not receive bond or electronic monitoring.

Risk Principle Adherence

- All jurisdictions showed evidence of risk principle adherence in the assignment of supervision conditions by risk level, but to varying degrees. That is, higher risk defendants typically received the most intensive supervision and lower risk defendants typically received the least intensive supervision.

Judicial Adherence to Structured Guidelines

- Across jurisdictions, judges adhered to structured supervision guidelines more often than not. However, there was considerable variability in adherence rates across the five counties.
- When judges deviated from recommended supervision conditions, judge-ordered conditions were most often stricter than recommended conditions.
- With the exception of one jurisdiction, there were no differences in supervision failure outcomes between defendants who received or did not receive judge-ordered supervision decisions that were adherent to structured guidelines.

Recommendations

Based on these findings, we offer several recommendations for improving pretrial supervision practices in Indiana. These recommendations include:

- 1) Promoting the adoption and integration of structured decision-making frameworks that prescribe gradually more restrictive supervision conditions across risk levels;
- 2) Developing criteria to evaluate risk principle adherence in structured decision-making frameworks;
- 3) Providing opportunities for judicial training on the development, intended use, and scientific merit of structured risk assessment tools in pretrial decision-making; and
- 4) Supporting the development, implementation, and evaluation of supervision strategies to reduce pretrial misconduct among high-risk defendants.

INTRODUCTION

In recent decades, high rates of pretrial detention in the United States have stimulated calls for pretrial reform. These efforts have focused on increasing the efficiency of pretrial processing by maximizing pretrial release rates while minimizing pretrial misconduct outcomes like failure to appear (FTA) and new criminal activity during the case processing period (Thigpen & Keiser, 2008). Together, these objectives have sought to address and remedy the adverse effects of pretrial detention on case processing outcomes. These effects include the increased likelihood of conviction and incarceration for individuals incarcerated pretrial (Heaton et al., 2017; Williams, 2003; Wooldredge et al., 2015), trends that have been shown to disproportionately affect racial minorities and those with low socioeconomic status (Sutton, 2013; Wooldredge et al., 2017; Wooldredge, 2012). In 2011, following the National Symposium on Pretrial Justice, the Pretrial Justice Work Group drafted several recommendations for pretrial reform. These included eliminating bond schedules, replacing custodial arrests with citations for low-level offenses, increased judicial training around pretrial decision-making, and creating and expanding pretrial services agencies to administer risk assessments and provide pretrial supervision (Pretrial Justice Institute, 2014). Over the past decade, multiple agencies have developed national pretrial reform initiatives, including the National Institute of Corrections, the National Center for State Courts, and other funding agencies like the MacArthur Foundation, and Arnold Ventures.

Pretrial Reform in Indiana

In 2015, Indiana was selected as a National Institute of Corrections Evidence Based Decision-Making (EBDM) site. As part of this initiative, Indiana created a State EBDM Policy Team to develop strategic action plans for implementing evidence-based criminal justice reform. Pretrial reform was identified as a key priority area for the State, and Indiana developed a Pretrial Pilot Project to implement pretrial reform strategies. Eleven jurisdictions were selected to participate in the Pretrial Pilot Project: Allen, Bartholomew, Grant, Hamilton, Hendricks, Jefferson, Monroe, Porter, Starke, and Tipton. In 2016, the Indiana Supreme Court adopted Criminal Rule 26, which mandated the use of pretrial risk assessments in select counties participating in Indiana's Pretrial Pilot Project. Since this time, pilot counties have integrated risk assessments into their pretrial release and supervision decisions, hired pretrial services or other correctional staff to assess and provide supervision to pretrial defendants, and developed and refined structured guidelines for the incorporation of risk assessment information into pretrial decision-making.

Research and evaluation on these initiatives to date has focused on studying the implementation of the IRAS-PAT in pilot counties (Grommon et al., 2017) and conducting county-level validations of the predictive accuracy of IRAS-PAT assessments on pretrial outcomes. The present investigation extends this work by examining the role of IRAS-PAT risk assessments in pretrial supervision decisions and outcomes. To this end, we sought to address three limited areas of research on pretrial supervision practices.

Supervision Strategies

Despite the growing popularity of pretrial risk assessments (Pretrial Justice Institute, 2019), there has been little investigation into their use in the context of pretrial supervision. What little research exists on pretrial supervision has focused specifically on the effectiveness of pretrial supervision as an overall strategy, with more limited research on conditions of pretrial supervision. Regarding the overall effectiveness of pretrial supervision, prior studies have shown that pretrial supervision may improve appearance rates at hearings, but may not reduce the likelihood of re-arrest during case processing (Barno et al., 2019; Bechtel et al., 2017; Danner et al., 2015; Lowenkamp & VanNostrand, 2013). Research has similarly produced variable evidence on the role of supervision intensity (i.e., frequency of reporting) on pretrial misconduct outcomes (Austin et al., 1985; Goldkamp & White, 2006). Overall, research in this area is limited, with inconsistent findings, and few studies have examined whether supervision strategies may have variable effectiveness as a function of the risk level of the defendant.

Risk Principle Adherence

Pretrial risk assessments are designed to provide information on a defendant's level of pretrial misconduct risk to guide higher risk defendants toward higher levels of supervision and vice-versa for lower risk defendants, consistent with the Risk-Need-Responsivity (RNR) model. The RNR model is a framework for effective offender rehabilitation that is designed to guide practitioners toward the efficient allocation of criminal justice resources while also addressing the criminogenic risks and needs of justice-involved individuals (Andrews, Bonta, et al., 1990; Andrews & Bonta, 2010). One component of this model that is most relevant for pretrial supervision is the risk principle, which directs criminal justice agencies to both assess criminogenic risk and direct the most intensive resources toward the highest risk individuals. Adherence to the RNR model is thought to increase the effectiveness of interventions delivered in criminal justice settings (Andrews, Zinger, et al., 1990; Andrews & Dowden, 2006). However, there has been limited investigation of whether risk principle adherence can pretrial misconduct outcomes in the context of pretrial supervision.

Judicial Adherence to Recommended Guidelines

Risk information produced by a pretrial risk assessment tool is designed to increase the consistency of pretrial decision-making. One of the ways that this is accomplished is through the use of structured guidelines that incorporate risk assessment information together with the level and type of criminal charge to inform release or supervision decisions. Structured guidelines can help increase the consistency of decision-making and may reduce rates of pretrial failure in supervised defendants (Danner et al., 2015). However, there has been little investigation of judicial adherence to recommended guidelines in pretrial decision-making, in Indiana and elsewhere.

The Present Study

The purpose of the present study is to expand on the investigation of Indiana's Pretrial Pilot Project by examining supervision decisions and outcomes among jurisdictions that implemented IRAS-PAT assessments into pretrial decision-making. To this end, the study objectives were three-fold:

- 1) to examine the effects of specific supervision strategies on pretrial supervision outcomes;
- 2) to examine the role of risk principle adherence in pretrial supervision outcomes; and
- 3) to examine the effects of judicial adherence to structured guidelines on pretrial supervision outcomes.

Five Indiana counties agreed to participate in this investigation: Bartholomew, Hamilton, Hendricks, Jefferson, and Monroe. To best capture changing supervision practices within each jurisdiction, we consulted with each county separately to determine the most appropriate 1-year period to examine supervision outcomes, based on available data and changes in supervision practices.

Across jurisdictions, we adopted general inclusion criteria to guide the selection of supervised cases in each county. These criteria included: 1) the individual had to be placed on pretrial supervision during the 1-year period for each county; 2) the supervision case in question had to be linked to assessment, jail, and court records for the purposes of tabulating outcomes; 3) the individual had to have a court case disposition before the end of the 1-year follow-up period to enable tracking of outcomes during the case processing period; 4) the IRAS-PAT assessment had to be related to a period of supervision, which meant a new assessment had to be closely conducted to an index jail booking; and 5) each individual could not be represented only once in the dataset, which meant that we took the first supervision period for each defendant.

When possible, we examined research questions individually for each county. Then, we pooled data across five counties to present an overall analysis of research questions. Below we report individual county findings for the five participating counties as well as overall findings from the pooled analysis.

BARTHOLOMEW COUNTY

Study Context

Bartholomew County was selected as an Indiana pretrial pilot site in 2015 and began its pilot program in 2016. In September 2016, the County began to conduct pretrial operations at the Bartholomew County Court Services Center. At this time, the County also began conducting IRAS-PAT assessments and using structured guidelines to inform pretrial release and eventually supervision decisions. The County’s pretrial processing is distinct from many other jurisdictions due to its use of both the Hawaii Proxy for early pretrial release as well as the IRAS-PAT to inform pretrial release and supervision. Every individual who is booked into jail is assessed with the Hawaii Proxy, a 3-item tool designed to assess risk of offending. Low risk individuals are immediately released with no formal booking into the jail. Some of these individuals may have formal charges filed subsequent to their release; however, this occurs while they are in the community. Among individuals that remain in jail, prosecutors must file formal charges within 48 hours of the booking in order for the individual to be detained. At the point that formal charges are filed, pretrial officers administer the IRAS-PAT. Some individuals who were originally released via the Proxy may return to incarceration following an FTA for an initial court appearance, which triggers a warrant for arrest. These individuals will also be assessed upon re-admission into the jail. Both Proxy- and IRAS-PAT-informed decisions are guided by structured decision-making frameworks (see Appendix for IRAS-PAT decision matrix). This pretrial process is also represented in Figure 1.

Bartholomew County began using updated pretrial release conditions in October 1st, 2017, which we used to define the start of the 1-year study period.

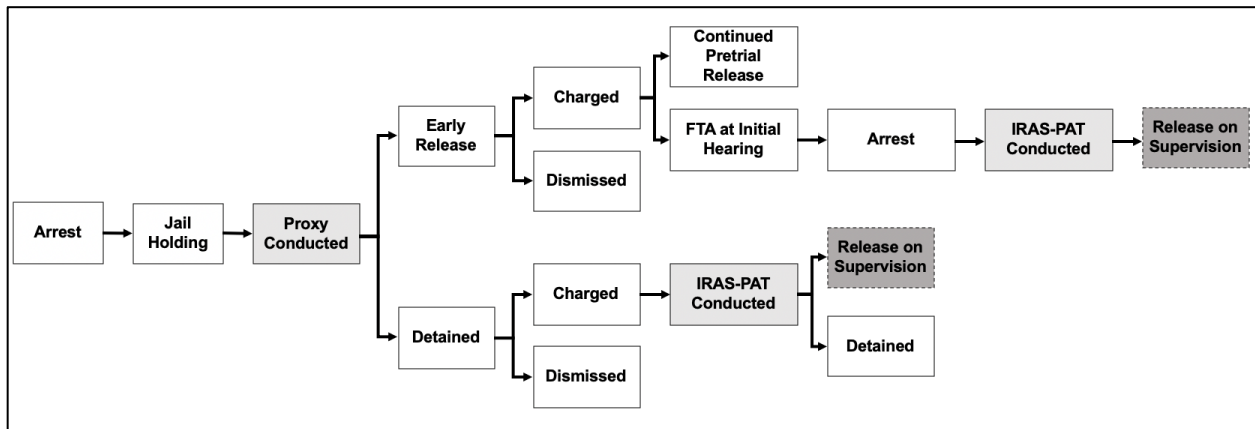


Figure 1. Bartholomew County - Model of Pretrial Processing

Methods

Overview

Overall, because individuals can be placed on pretrial supervision at multiple points throughout the pretrial process (i.e., at an index arrest for a new offense or upon readmission to jail for FTA warrant), there was no consistent way to apply date logic to link IRAS-PAT assessments to an index booking for a new offense and a new court case filing. As a result, we relied on linked records provided by Bartholomew County. Several inclusion criteria guided selection of individuals for this investigation. First, defendants had to have started supervision during the 1-year study period (October 1st, 2017 to September 30th, 2018). Second, defendants had to have had a court case disposition before the end of the 1-year follow-up period (September 30th, 2019). Third, defendants had to represent unique people who were on supervision for the first time during that study period. Fourth, defendants had to have pretrial outcome information available to tabulate records.

We received a single data file from Bartholomew County containing information on defendants who were on pretrial supervision during the study period. Due to the low number of participants who began supervision during the study period ($n = 110$), we opted to include an additional 26 individuals who were on supervision during the study period and completed supervision by the end of the follow-up period. The final study period for Bartholomew County included defendants who started supervision between August 1st, 2017 and December 31st, 2018 and completed supervision by September 30th, 2019.

Data Cleaning

Bartholomew County provided a single dataset of defendants who received an IRAS-PAT assessment and were placed on pretrial supervision during the study period. All cases were linked to court case records and to an index booking for a new offense. Because Bartholomew's pretrial processing differed from other jurisdictions, we relied exclusively on supervision start and end dates provided by the county to indicate start and end of supervision. This sampling frame consisted of 138 individuals. Of these 138 individuals, two cases were removed due to being duplicates. This resulted in a final analytic sample of 136 individuals. We additionally conducted data quality control by using administrative jail data to verify arrest date and charges and used court data to verify disposition dates. Figure 2 displays the data cleaning steps.

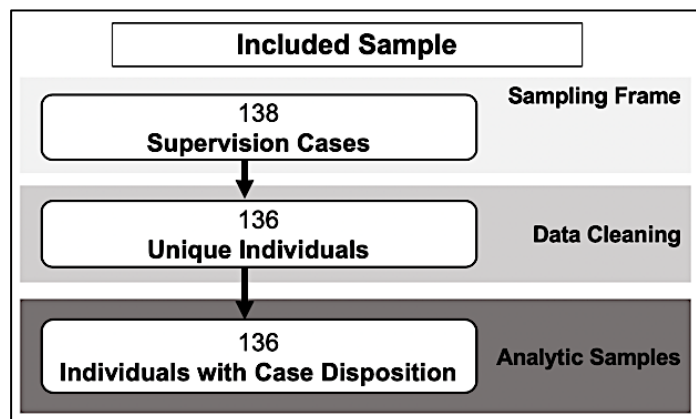


Figure 2. Bartholomew County - Data Cleaning Process

Sample

The Bartholomew County sample was on average 34.68 years old ($SD = 9.913$, Range: 19 to 61). The majority of defendants were male (71.3%, $n = 97$; female: 28.7%, $n = 39$) and White (91.9%, $n = 125$) with only a small group identifying with other racial or ethnic identities (8.1%, $n = 11$). Like other counties, the majority of defendants were arrested on a felony (89.7%, $n = 122$) versus misdemeanor-only (10.3%, $n = 14$) charge. The highest charge for each defendant primarily included drug (58.8%, $n = 80$), assault (11.8%, $n = 16$) and theft (7.4%, $n = 10$) charges. Figure 3 shows the offenses that occurred most frequently. Bartholomew county provided the highest charge category for each pretrial participant, meaning the charges are mutually exclusive.

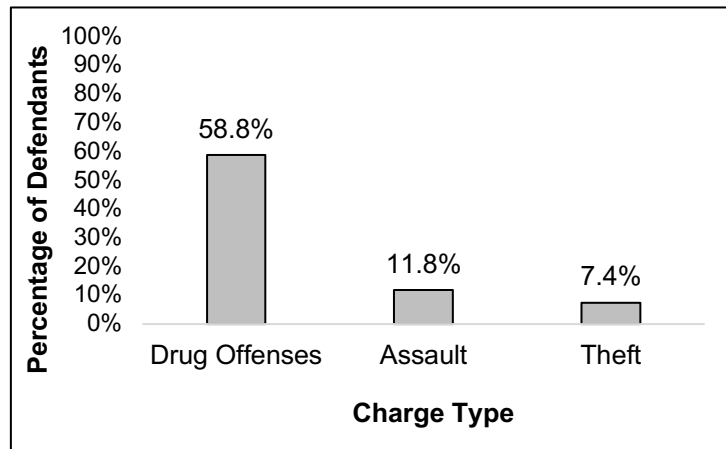


Figure 3. Bartholomew County - Highest Offense Charge Type

Variables

Covariates. Covariates included *charge severity* (1-10), with lower scores corresponding to more serious offenses. Specifically, felony levels 1-6 were coded as 1-6 with misdemeanor levels A, B, and C coded as 7, 8, and 9, respectively. Other offenses were coded as 10. The other covariate in all models was *time on supervision* (days), which measured as the number of days between release from jail (i.e., start of supervision) and either first supervision violation or court case disposition.

Independent Variables. Independent variables included *IRAS-PAT risk level* (Low, Moderate, High). The IRAS-PAT is a 7-item actuarial tool designed to predict risk of arrest and FTA during the pretrial period (Latessa et al., 2009). Items measure four criminogenic risk domains: criminal history, employment, residential stability, and substance use. Item-level ratings produce a total score ranging from 0 to 9, which classify defendants into three risk bins: Low (0-2), Moderate (3-5), and High (6+). *Supervision level* (Basic, Moderate, Enhanced) measured the judge-ordered supervision level at the time of supervision. Basic supervision consisted of court notifications, at least one phone or appointment each month, and other standard or special conditions. Moderate supervision consisted of court notifications, at least one in-person appointment a month, and other standard or special conditions. Enhanced supervision consisted of court notifications, at least two in-person appointments each month, and other standard or special conditions. We additionally measured several supervision strategies representing special conditions of pretrial supervision. These included *bond* (yes; no), *electronic monitoring* (yes; no), and *living conditions* (yes; no). *Judicial adherence* (yes; no) measured whether the judge-ordered supervision level was adherent to structured guidelines. Bartholomew County provided information on both the supervision level recommended by the pretrial services officers and the court-ordered supervision condition. We additionally measured *direction of judicial adherence*

(equal, lower, higher), which defined whether court-ordered supervision conditions were equal to, lower than, or higher than recommended supervision conditions.

Dependent Variable. The main dependent variable was *any pretrial supervision failure* (yes; no), which was defined as any new arrest, FTA, or other arrest or technical violation occurring during the pretrial supervision period.

Data Limitations

Bartholomew County's pretrial processing is unique relative to the other jurisdictions included in this investigation. Because Bartholomew County additionally administers the IRAS-PAT on pretrial defendants who are re-arrested on FTA warrants, it was not possible to establish consistent date logic to link IRAS-PAT assessments to court case filing dates or initial hearing dates. As a result, we relied on the County to provide linked supervision, court, and risk assessment records for the purposes of this investigation. Because many low-risk pretrial defendants in Bartholomew County receive immediate release at the time of jail booking following a Proxy assessment, the overall sample for Bartholomew was higher risk relative to other jurisdictions.

Analytic Strategy

First, we conducted descriptive statistics on all study variables. Second, we examined distributions of risk scores by other key study variables (e.g., supervision levels, judicial adherence) with measures of association. For all comparisons, we report the Cramer's V effect size. Cramer's V values of .10, .30, and .50 indicate small, medium, and large effect sizes, respectively (Cohen, 1988). Third, to address the main research questions, we conducted a series of hierarchical multivariable logistic regression models. All models controlled for IRAS-PAT risk level, highest charge level, and time on supervision in Block 1. Variables of interest were added to models in subsequent blocks, and overall improvement in the predictive capacity of the model was assessed using changes in -2 log likelihood (-2LL) statistics. For all multivariable models, we report odds ratios (ORs) and their associated 95% confidence intervals. Odds ratios are a measure of effect size that communicate the likelihood, or odds, of an event occurring in one group relative to another group. An odds ratio of 1 indicates no difference in the likelihood of an event happening between groups. An odds ratio less than 1 indicates that the group of interest has a lower odds of experiencing the event (i.e., pretrial supervision failure) relative to the reference group. An odds ratio above 1 indicates that the group of interest has a higher odds of experiencing the event relative to the reference group. Odds ratios of 1.50, 3.00, and 5.00 typically indicate small, medium, and large effect sizes, respectively (Chen et al., 2010). Due to the small sample size and low number of failure events, multivariable analyses for within-county investigations focused on modeling any failure rather than type of failure. For all analyses, we used a $p < .05$ criterion for statistical significance. Where we found significant effects, we reported predicted probabilities of supervision failure using average marginal effects.

Results

Descriptive

IRAS-PAT Assessments. Slightly more than half of defendants (59.6%, $n = 81$) scored a 5 or below on the IRAS-PAT risk assessment, corresponding to Low and Moderate risk levels. The most frequent risk score was a 6, with the average total score trending slightly lower ($M = 4.65$, $SD = 1.896$, Range: 1 to 8). Figure 4 shows the distribution of risk scores.

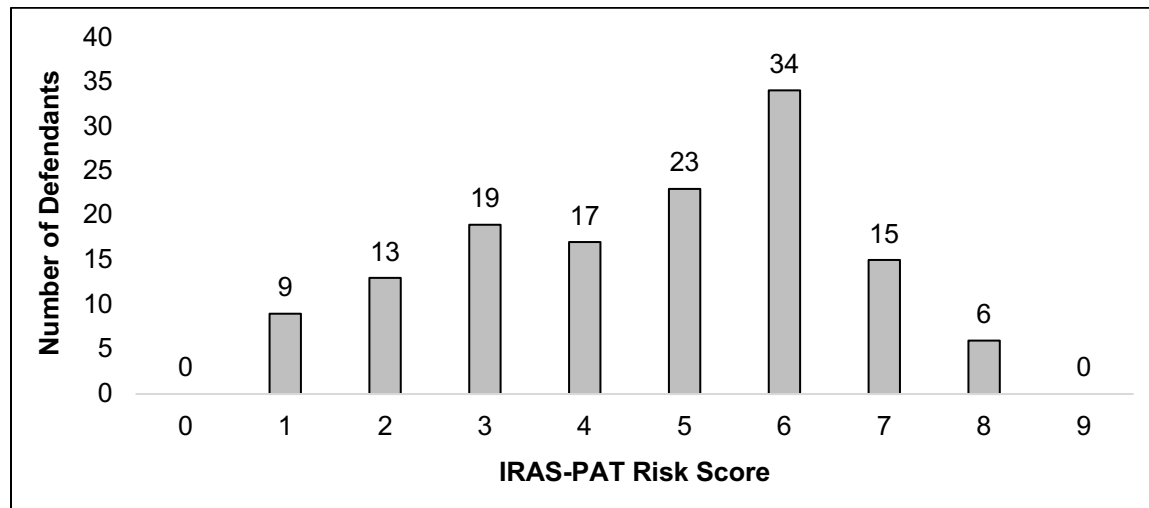


Figure 4. Bartholomew County – Distribution of IRAS-PAT Risk Scores

Consistent with risk scores, the most frequent risk level was Moderate risk ($n = 59$, 43.4%), followed by High risk classification (40.4%, $n = 55$). Fewer defendants were classified at Low risk (16.2%, $n = 22$). The distribution of risk levels is shown in Figure 5.

Supervision Conditions. Most defendants in Bartholomew County were released on Low supervision (39%, $n = 53$) with fewer released on administrative (6.6% $n = 9$), Moderate (29.4%, $n = 40$), and High (25.0%, $n = 34$) supervision. Beyond level of supervision, frequent supervision strategies included bond (10.3%, $n = 14$), electronic monitoring (26.5%, $n = 34$), and living requirements (15.4%, $n = 21$).

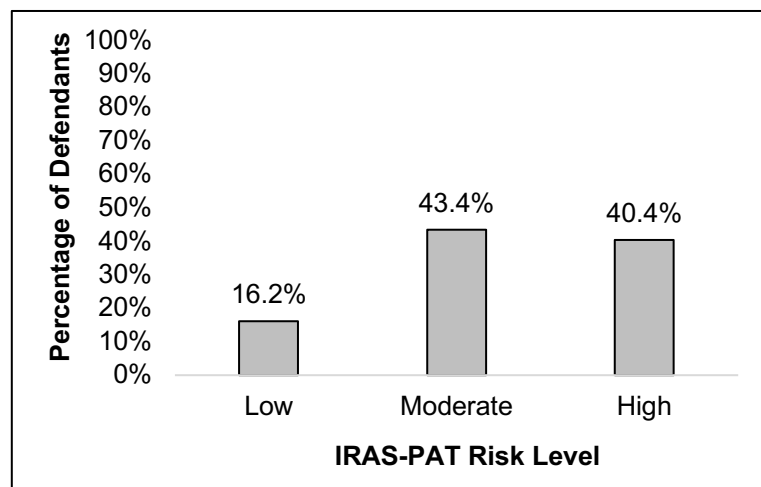


Figure 5. Bartholomew County - Distribution of IRAS-PAT Risk Levels

Judicial Adherence. Judge-ordered supervision adhered to recommended levels of supervision for 77.2% of pretrial defendants ($n = 105$; no adherence: 22.8%, $n = 31$). Non-adherent decisions were primarily for stricter supervision conditions (96.8%, $n = 30$). In one instance, the judge ordered more lenient conditions (3.2%).

Case Outcomes. On average, defendants were on pretrial supervision for 155.70 days prior to a failure event or court case disposition ($SD = 116.581$, Range: 2 to 583). Slightly less than half of pretrial defendants failed to successfully complete supervision without pretrial misconduct (45.6%, $n = 62$). Among defendants with pretrial misconduct, 46.8% failed due to FTA ($n = 29$), 33.9% due to a new arrest ($n = 21$), and 19.4% due to an other arrest ($n = 12$).

Bivariable Comparisons

Risk Level by Supervision Level. The proportion of defendants supervised at each supervision level by IRAS-PAT risk level is presented in Figure 6. As shown, IRAS-PAT risk level was significantly associated with supervision level, $X^2(4) = 20.02$, $p < .0001$, Cramer’s $V = 0.27$, corresponding to a small effect size.

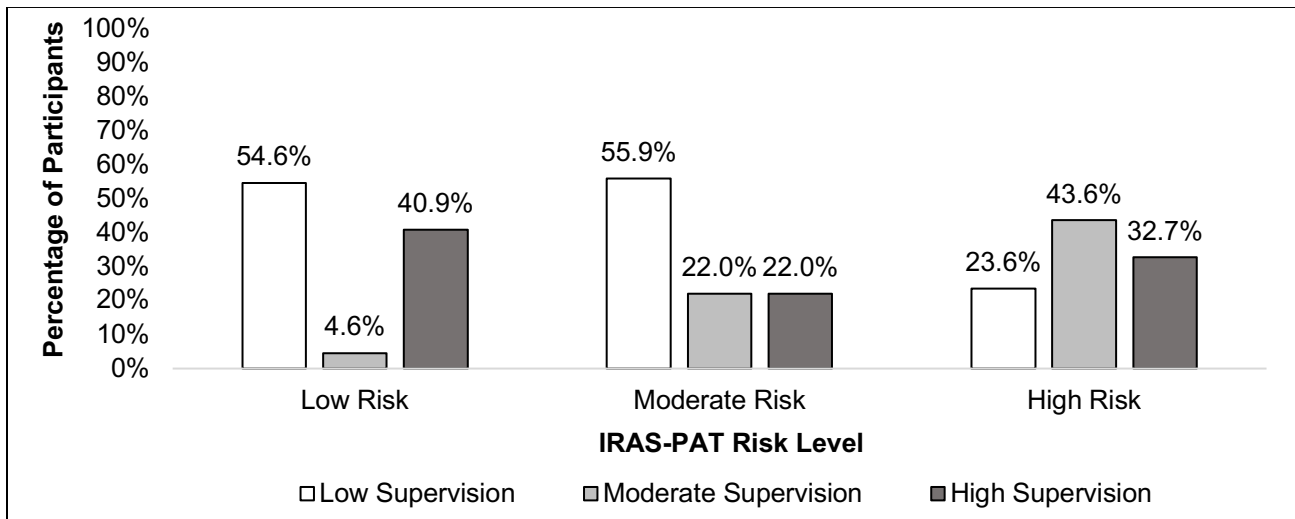


Figure 6. Bartholomew County - Risk Level by Supervision Level

Risk Level by Judicial Adherence. There was no significant association between risk level and judicial adherence, $X^2(2) = 5.41$, $p = .067$, suggesting defendants at all IRAS-PAT risk levels were equally likely to receive adherent judge-ordered supervision conditions. See Figure 7.

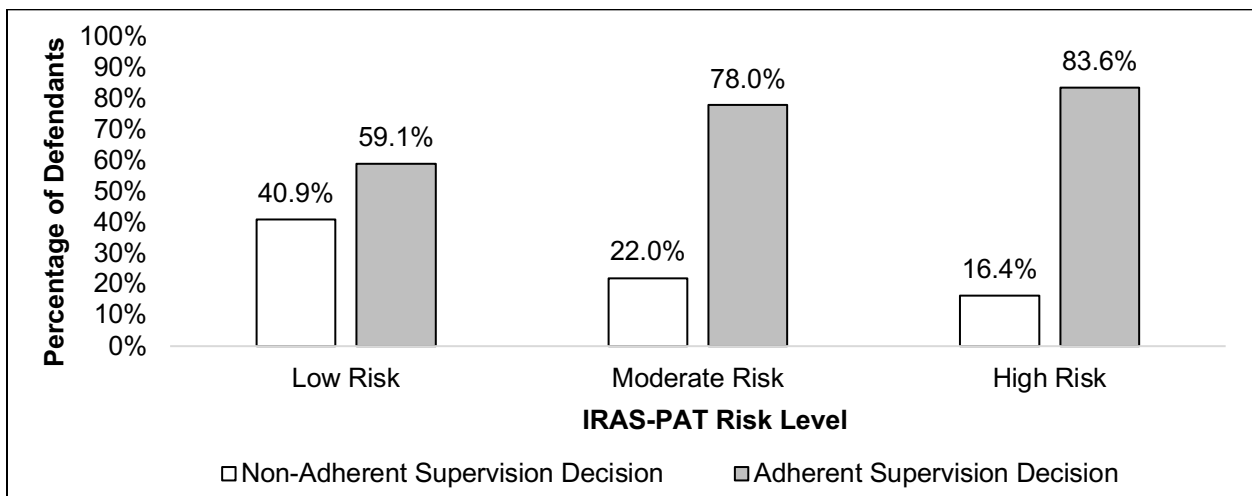


Figure 7. Bartholomew County - Risk Level by Judicial Adherence

Supervision Strategies (RQ #1)

Logistic regression models examining the effects of supervision strategies on pretrial supervision failure are presented in Table 1. As shown in Block 1, controlling for time on supervision and offense severity, High risk defendants were 6.56 times more likely to experience supervision failure (53.8%) relative to Low risk defendants (15.4%). Similarly, Moderate risk defendants were 5.29 times more likely to fail on supervision (48.5%) relative to Low risk defendants. In Block 2, supervision strategies were added to the model. Overall, the addition of these strategies failed to improve the predictive capacity of the model for any supervision failure, $p = .736$. Controlling for variables in Block 1, there were no differences in pretrial supervision failure outcomes between defendants who received electronic monitoring or not ($p = .891$), who received bond or not ($p = .277$), or who received living restrictions or not ($p = .967$). There were also no differences in supervision failure outcomes between defendants on Enhanced (49.7%) and Basic supervision (33.0%), $p = .385$. However, defendants supervised at Moderate supervision were 3.47 times more likely to fail on supervision (59.3%) relative to defendants supervised at Basic supervision, $p = .025$.

Table 1. Bartholomew County - Logistic Regression Models of Supervision Strategies on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.002	<0.01	.259	1.00	0.99, 1.00
Severity Level	0.13	0.20	.510	1.14	0.77, 1.70
Risk Level (Low)					
Moderate	1.67	0.68	.014	5.29	1.40, 19.99
High	1.88	0.70	.007	6.56	1.67, 25.70
Block 2					
Supervision Level (Basic)					
Moderate	1.24	0.56	.025	3.47	1.17, 10.31
Enhanced	0.79	0.91	.385	2.21	0.37, 13.20
Electronic monitoring	-0.12	0.89	.891	0.88	0.15, 5.04
Bond	0.66	0.61	.277	1.93	0.59, 6.35
Living Conditions	-0.02	0.55	.967	0.98	0.33, 2.86
Δ -2LL	$X^2(3) = 1.27, p = .736$				

Notes. $N = 136$.

Risk Principle Adherence (RQ #2)

Logistic regression models examining the effect of risk principle adherence on any supervision failure are presented in Table 2. As shown, after adjusting for relevant variables in Block 1, findings from Block 2 showed similarly that defendants supervised at Moderate supervision had a significantly higher rate of supervision failure relative to defendants supervised at Basic supervision, $p = .014$, but no differences between those supervised at Enhanced or Basic supervision, $p = .130$.

Table 2. Bartholomew County - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.002	<0.01	.259	1.00	0.99, 1.00
Severity Level	0.13	0.20	.510	1.14	0.77, 1.70
Risk Level (Low)					
Moderate	1.67	0.68	.014	5.29	1.40, 19.99
High	1.88	0.70	.007	6.56	1.67, 25.70
Block 2					
Supervision Level (Basic)					
Moderate	1.24	0.55	.024	3.44	1.17, 10.12
Enhanced	0.87	0.57	.130	2.38	0.78, 7.28
$\Delta -2LL$	$X^2 (2) = 5.33, p = .070$				

Notes. $N = 136$. Block 3 removed due to low cell counts.

Although we could not test for significant differences in any failure outcomes as a function of both supervision level and risk level, we present these differences for descriptive purposes in Figure 8.

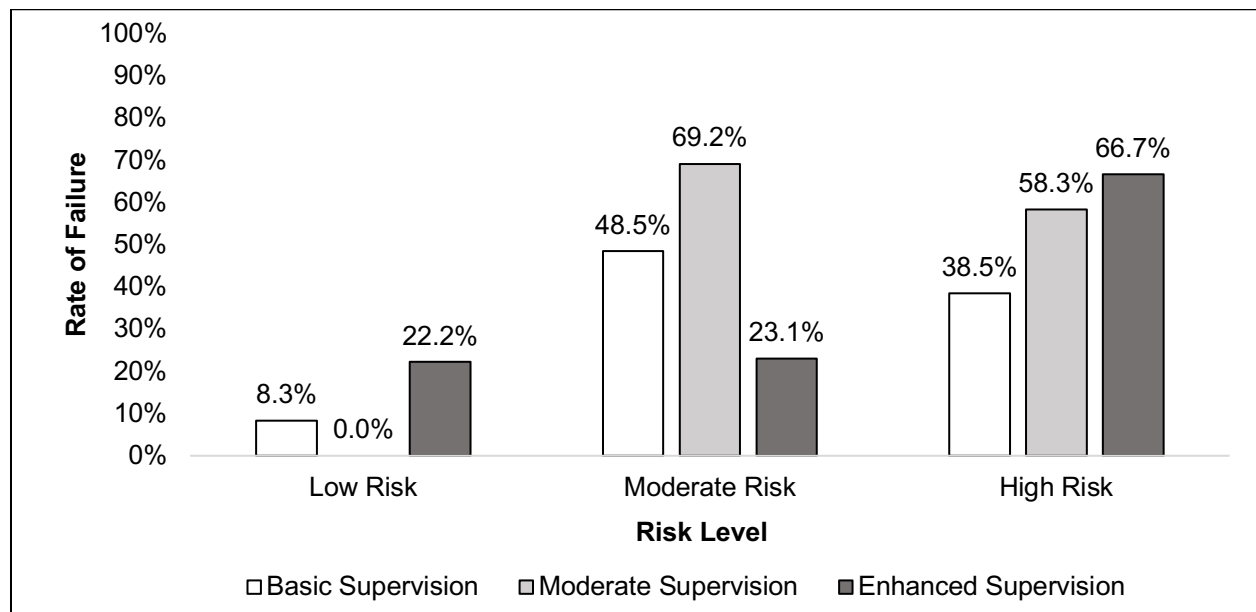


Figure 8. Bartholomew County - Supervision Failure Rates by Risk and Supervision Level

Judicial Adherence (RQ #3)

Results of logistic regression models examining the impact of judicial adherence on any supervision failure are presented in Table 3. In Block 2, after adjusting for relevant variables in Block 1, there was no difference in the likelihood of experiencing supervision failure between defendants with and without supervision conditions adherent to recommendations ($p = .408$).

Table 3. Bartholomew County - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.002	<0.01	.259	1.00	0.99, 1.00
Severity Level	0.13	0.20	.510	1.14	0.77, 1.70
Risk Level (Low)					
Moderate	1.67	0.68	.014	5.29	1.40, 19.99
High	1.88	0.70	.007	6.56	1.67, 25.70
Block 2					
Judicial Adherence (No)	-0.38	0.46	.408	0.68	0.28, 1.68
Δ -2LL	$X^2(1) = 0.69, p = .408$				

Notes. $N = 136$.

Summary of Findings

Overall, several findings emerged from this investigation in Bartholomew County:

- IRAS-PAT risk levels predicted supervision failure with good accuracy.
- Relative to other jurisdictions, Bartholomew County reported higher use of electronic monitoring.
- Moderately supervised defendants had higher likelihood of supervision failure relative to those supervised at Basic supervision; however, there were no differences between those supervised at Basic or Enhanced, suggesting supervision conditions for defendants supervised at Enhanced supervision were appropriately calibrated to risk level.
- There was no evidence of differential supervision failure outcomes between defendants who did and did not receive electronic monitoring, bond, or living restrictions as conditions of supervision, suggesting these strategies were used appropriately with no adverse effects on supervision outcomes
- Supervision decisions showed good evidence of risk-principle adherence (i.e., higher-risk individuals were supervised at higher supervision levels and vice-versa).
- Overall, judicial supervision decisions showed good adherence with structured recommendations, and judges were equally likely to give adherent decisions across all risk levels.
- There were no differences in supervision failure outcomes between defendants who received or did not receive a decision that was adherent to structured guidelines.

Conclusion

In summary, we found few differences in supervision failure as a function of supervision conditions. Despite greater use of electronic monitoring relative to other jurisdictions, there were no differences in supervision failure rates between defendants who received or did not receive electronic monitoring or other supervision strategies, suggesting these strategies were used judiciously. We found some evidence that defendants on Moderate supervision had higher rates of failure relative to defendants who received Basic supervision, even after adjusting for risk level and charge severity. Overall, defendants who were Moderate risk and supervised at Moderate supervision had some of the highest rates of pretrial failure. However, we note that relative to defendants classified at Low and High risk levels, there were very few Moderate risk defendants who were supervised at Moderate and High supervision. Additionally, findings showed good evidence of risk principle adherence. Generally, higher risk defendants were supervised at higher supervision levels, with the exception of a high proportion of Low risk defendants who were supervised at High supervision. Finally, judges adhered to structured supervision recommendations most of the time, and we found little evidence to suggest that adherence rates differed by risk level or that non-adherence to structured guidelines was associated with higher rates of supervision failure.

Overall, Bartholomew County caters to a fairly unique pretrial supervision population that is higher-risk relative to other jurisdictions due to its use of the Proxy to screen out low-risk defendants for early pretrial release. There were few differences overall in the rates of pretrial failure between High and Moderate risk defendants. This could suggest that there are individuals who are supervised at lower levels of supervision who may be more appropriately supervised at higher levels of supervision. With respect to electronic monitoring, recent studies have found consistent effects of electronic monitoring on higher rates of technical violations, but less consistent effects on FTA or re-arrest outcomes (Sainju et al., 2018; Wolff et al., 2017). Here, findings showed no effect overall on the use of electronic monitoring on pretrial supervision failure, which could suggest that use of electronic monitoring did not help the risk management of defendants or, alternatively, was appropriately targeted to higher risk defendants based on other risk considerations beyond IRAS-PAT risk levels. Although judicial overrides of recommended supervision conditions did not worsen or improve the risk management of pretrial supervision defendants, very few studies have examined the role of judicial adherence to structured guidelines in the context of pretrial processing. One prior study has shown that use of structured guidelines may increase the consistency of decision-making and reduce rates of pretrial failure in supervised defendants (Danner et al., 2015). However, to date, there are few, if any, studies examining whether judicial overrides can improve upon structured recommendations. Overall, we note that the small sample size for Bartholomew County may have limited our ability to detect significant effects in models.

Overall, these findings warrant additional investigation into the risk management of Moderate risk defendants, given their high rate of pretrial supervision failure. Bartholomew County's matrix currently recommends Basic supervision for Moderate risk defendants who are charged with lower-level, non-violent, Level 6 felonies and violent Misdemeanors. These recommendations may be driving the high proportion of Moderate risk defendants who are placed on Basic supervision (56%) instead of Moderate supervision and may suggest the need for revision of structured supervision guidelines.

HAMILTON COUNTY

Study Context

Hamilton County began its pretrial pilot program in June 2016, establishing a local criminal justice stakeholder group to develop a matrix to guide incorporation of IRAS-PAT information into decision-making and develop pretrial release policies and procedures. The pretrial program was created in collaboration with local probation and community corrections agencies. Originally, IRAS-PAT assessments were completed by a combination of probation officers, jail, and community corrections staff and targeted to new arrestees booked into the jail. All individuals are assessed following booking but prior to an initial court appearance, but most typically within 8 hours of an arrest. In February 2017, the County created the Hamilton County Pretrial Services as a standalone agency, shifting responsibilities from probation and community corrections. The County also altered its release matrix at this time and hired additional pretrial services staff to administer risk assessments and provide pretrial supervision. Currently, to incorporate IRAS-PAT assessment information into pretrial release and supervision decisions, Hamilton County uses a structured release matrix to guide assessors to recommendations to release on own recognizance with Administrative, Basic, Moderate, or Enhanced supervision, or to detain pending appearance before a judge (see Appendix). In October 2017, Hamilton County began using the INcite SRS case management system to collect data on defendants under pretrial supervision. This event was used to define the start of the study period to capture the most recent changes in data collection practices and Hamilton County's release and supervision matrix.

Methods

Overview

Inclusion criteria for the Hamilton County sample creation mirrored overall criteria. First, individuals had to start supervision during the 1-year study period. Second, all individuals had to have a court case disposition by the end of the 1-year follow-up period. Third, we had to be able to link individuals separately to court and jail records to procure information on court case disposition, FTA outcomes, and booking charges. Fourth, all defendants had to have an assessment completed with the jail booking. Fifth, all defendants could be included in the sample only once.

We received records from the statewide INcite SRS database, which contained information on all individuals under pretrial supervision between 2016 and 2019 in Hamilton County. Database records included risk assessment identifiers, supervision information, and a linked court case record. We additionally received court records from the statewide Odyssey database, which provided information on court case outcomes (e.g., date of disposition) as well as FTA events. Finally, we received jail records from Hamilton county for all bookings during the study period and follow-up period. Jail records included booking and release dates as well as charge information. Although many pretrial misconduct events were recorded in SRS data, we also found some new arrest and FTA events that were under-recorded in these data based on jail and court records. As a result, and in keeping with the consistent operationalization of pretrial supervision failure across counties, we relied on jail and court records to tabulate pretrial supervision failure outcomes where an individual was arrested or an arrest warrant was issued.

Due to the availability of SRS data, we defined Hamilton’s one-year study period as October 1st, 2017 to September 30th, 2018 with follow-up through September 30th, 2019.

Data Cleaning

The sampling consisted of 1,833 defendants who were on pretrial supervision between October 1st, 2017 and September 30th, 2018. Of these, 1,809 cases represented unique individuals. For individuals who were on pretrial supervision more than one time during the 1-year study period, we captured the first episode of pretrial supervision only. Of the 1,809 unique defendants, 1,703 could be linked to a court case based on available data. For those individuals who could not be linked to a court case, we selected a random sample to manually check for potential court records, which did not yield any additional matches. An additional 53 individuals had an assessment conducted prior to jail booking, with the time between assessment and booking ranging from 15 to 600 days. Seven individuals were assessed more than a week post-release. Consistent with inclusion criteria, these cases were removed from the sample. Two individuals who had a supervision start date outside of the one-year study period were removed as well. Finally, 88 individuals had a case disposition occurring either on or before their release date from incarceration or had no disposition date at all. These cases were removed from the sample, resulting in a final sample of 1,553 unique bookings. These steps are outlined in Figure 9.

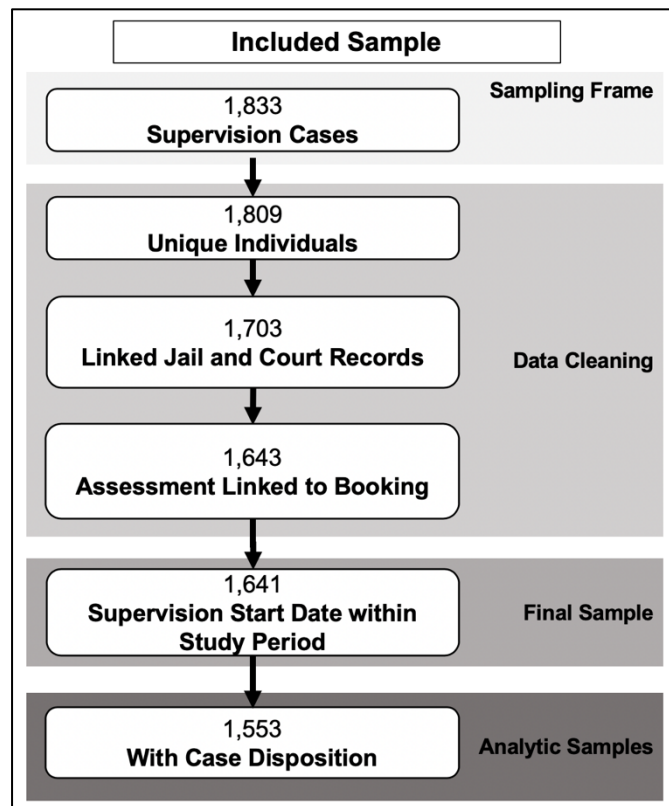


Figure 9. Hamilton County - Data Cleaning Process

Sample

The sample included 1,553 defendants with an average age of 34.56 ($SD = 12.06$, Range:18 to 76). Defendants were primarily White (78.8%, $n = 1,223$) and male (67.8%, $n = 1,053$), with 330 individuals identifying as non-White (21.2%). Most defendants (66.6%, $n = 1,035$) were booked on a misdemeanor charge only and roughly a third of defendants were brought in on a felony-level offense (33.3%, $n = 518$). The most frequent charge type was driving under the influence (38.9%, $n = 604$), followed

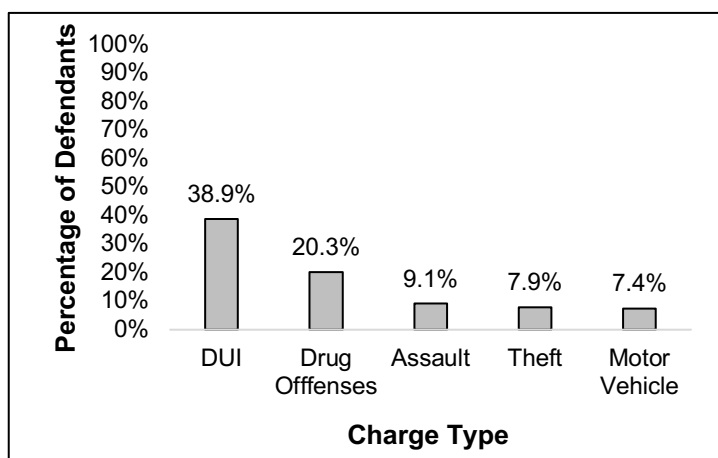


Figure 10. Hamilton County - Highest Offense Charge Type

by drug-related (20.3%, $n = 315$), assault (9.1%, $n = 142$), theft (7.9%, $n = 123$), and motor vehicle (7.4%, $n = 115$) offenses. These charges are displayed in Figure 10. Because only the charge associated with the highest matrix classification was reported, these categories are mutually exclusive. However, defendants may have been booked on other charges concurrently.

Variables

Covariates. Covariates included *charge severity* (1-10), with lower scores corresponding to more serious offenses. Specifically, felony levels 1-6 were coded as 1-6 with misdemeanor levels A, B, and C coded as 7, 8, and 9, respectively. Other offenses were coded as 10. The other covariate in all models was *time on supervision* (days), which measured as the number of days between release from jail (i.e., start of supervision) and either first supervision violation or court case disposition.

Independent Variables. Independent variables included *IRAS-PAT risk level* (Low, Moderate, High). The IRAS-PAT is a 7-item actuarial tool designed to predict risk of arrest and FTA during the pretrial period (Latessa et al., 2009). Items measure four criminogenic risk domains: criminal history, employment, residential stability, and substance use. Item-level ratings produce a total score ranging from 0 to 9, which classify defendants into three risk bins: Low (0-2), Moderate (3-5), and High (6+). *Supervision level* (Administrative, Basic, Moderate, Enhanced) measured the judge-ordered supervision level at the time of supervision. Administrative supervision was limited to court phone notifications. Basic supervision consisted of court notifications and an in-person meeting every other month. Moderate supervision consisted of court notifications and an in-person meeting every month. Enhanced supervision consisted of court notifications and an in-person meeting twice a month. *Judicial adherence* (yes; no) measured whether the judge-ordered supervision level was adherent to structured guidelines. SRS data from INcite provided information on the final, court-ordered supervision level. We coded the recommended supervision level using structured guidelines in Hamilton County's pretrial release matrix (see Appendix). Specifically, each booking charge was coded separately for the associated matrix recommendation and the resulting highest supervision level was adopted as the recommended supervision level. For defendants who were given an initial decision of detain, we coded the matrix recommendation as Enhanced supervision. We additionally measured *direction of judicial adherence* (equal, lower, higher), which defined whether court-ordered supervision conditions were equal to, lower than, or higher than recommended supervision conditions.

Dependent Variable. The main dependent variable was *any pretrial supervision failure* (yes; no), which was defined as any new arrest, FTA, or other arrest or technical violation occurring during the pretrial supervision period.

Data Limitations

We received limited information on supervision conditions beyond supervision levels. As a result, we could not investigate the specific effectiveness of supervision strategies on pretrial outcomes. Additionally, due to the small sample size and low base rate of supervision outcomes, we examined any supervision failure instead of specific supervision failure outcomes (e.g., failure due to FTA, new arrest, technical violation). Finally, records provided information on judge-ordered supervision levels only. As a result, we manually coded recommended supervision

level based on the highest matrix charge at the time of booking. Coded recommendations were consistent with structured guidelines for pretrial supervision, but may not have reflected the actual conditions recommended by correctional staff.

Analytic Strategy

First, we conducted descriptive statistics on all study variables. Second, we examined distributions of risk scores by other key study variables (e.g., supervision levels, judicial adherence) with measures of association. For all comparisons, we report the Cramer's V effect size. Cramer's V values of .10, .30, and .50 indicate small, medium, and large effect sizes, respectively (Cohen, 1988). Third, to address the main research questions, we conducted a series of hierarchical multivariable logistic regression models. All models controlled for IRAS-PAT risk level, highest charge level, and time on supervision in Block 1. Variables of interest were added to models in subsequent blocks, and overall improvement in the predictive capacity of the model was assessed using changes in -2 log likelihood (-2LL) statistics. For all multivariable models, we report odds ratios (ORs) and their associated 95% confidence intervals. Odds ratios are a measure of effect size that communicate the likelihood, or odds, of an event occurring in one group relative to another group. An odds ratio of 1 indicates no difference in the likelihood of an event happening between groups. An odds ratio less than 1 indicates that the group of interest has a lower odds of experiencing the event (i.e., pretrial supervision failure) relative to the reference group. An odds ratio above 1 indicates that the group of interest has a higher odds of experiencing the event relative to the reference group. Odds ratios of 1.50, 3.00, and 5.00 typically indicate small, medium, and large effect sizes, respectively (Chen et al., 2010). Due to smaller sample sizes and low number of failure events within counties, multivariable analyses for within-county investigations focused on modeling any failure rather than type of failure. For all analyses, we used a $p < .05$ criterion for statistical significance. Where we found significant effects, we reported predicted probabilities of supervision failure using average marginal effects.

Results

Descriptive

IRAS-PAT Assessments. IRAS-PAT total scores averaged 2.56 ($SD = 1.76$, Range: 0 to 9), corresponding to a Low risk classification. Figure 11 presents the risk scores obtained by the defendants on pretrial supervision. As shown, 55.7% scored a '2' or below, representing Low risk.

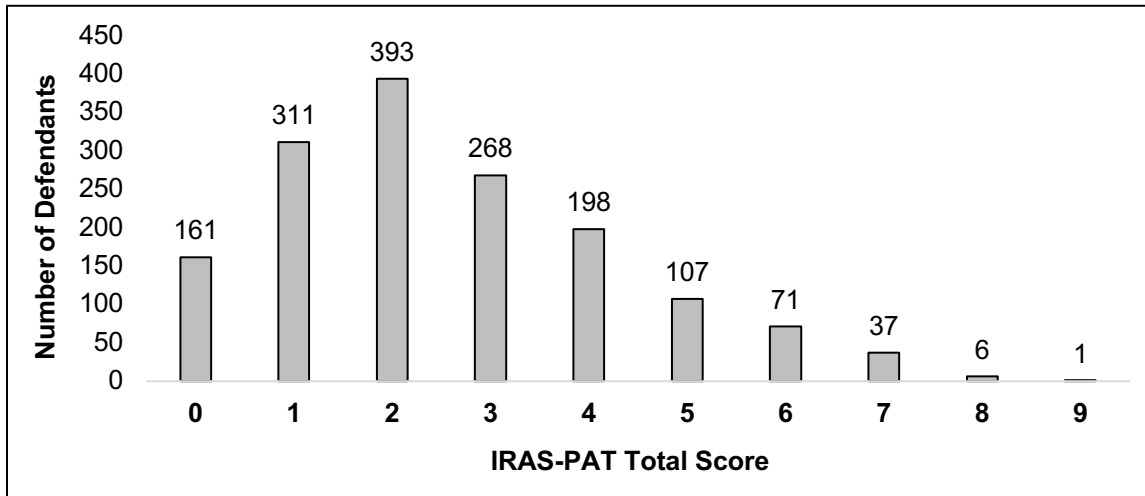


Figure 11. Hamilton County – Distribution of IRAS-PAT Risk Scores

Consistent with risk scores, 55.7% of the defendants scored Low on the IRAS-PAT ($n = 865$) compared to Moderate (36.9%, $n = 573$) and High (7.5%, $n = 115$) risk levels. Figure 12 shows the risk level distribution.

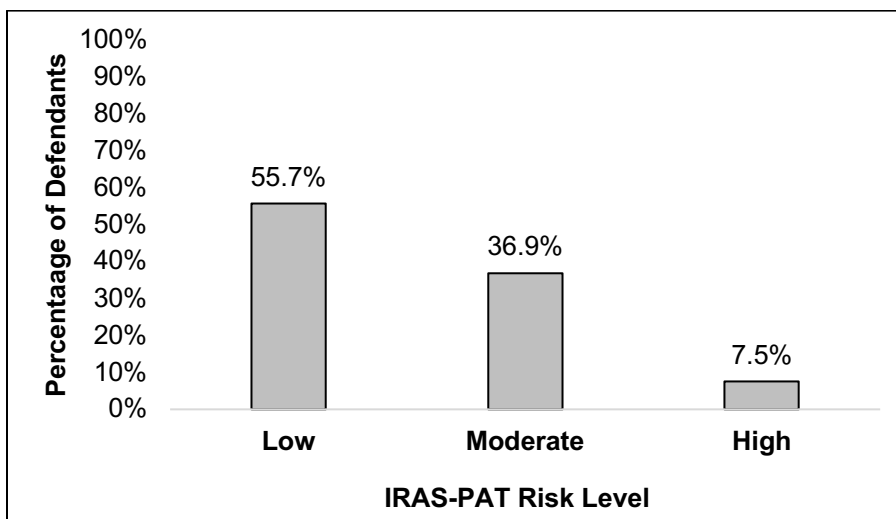


Figure 12. Hamilton County – Distribution of IRAS-PAT Risk Levels

Supervision Conditions. Corresponding to the high proportion of defendants classified at Low risk, the majority of defendants were placed on administrative supervision (60.8%, $n = 945$) followed by Low supervision (25%, $n = 388$). Fewer defendants were placed on Moderate (8.8%, $n = 136$) and High supervision (5.4%, $n = 84$).

In terms of judicial adherence to recommended supervision conditions, 66.5% of cases ($n = 1,033$) showed agreement between conditions recommended by structured guidelines and those ordered by the judge. For 33.5% of defendants ($n = 520$), judge-ordered supervision diverged from recommended guidelines. Where there was disagreement, strategies deviated toward more lenient conditions: 63.6% of defendants were given more lenient supervision conditions ($n = 329$) while 36.7% of defendants ($n = 191$) received stricter supervision conditions.

Case Outcomes. Defendants were on supervision for an average of 148.69 days ($SD = 99.37$, Range: 2 to 683). Most defendants completed supervision with no misconduct (73.5%, $n = 1142$). When defendants failed to successfully complete supervision due to pretrial misconduct (26.5%, $n = 411$), misconduct was most frequently an FTA (49.6%, $n = 204$), followed by an other arrest or technical violation (30.2%, $n = 124$), and a new arrest (20.2%, $n = 83$).

Bivariable Comparisons

Risk Level by Supervision Level. The proportion of defendants assessed at each IRAS-PAT risk level who were assigned to each supervision level is presented in Figure 13. As shown, there was a significant and Moderate association between risk level and supervision level, $X^2(6) = 578.52$, $p < .001$, Cramer's $V = 0.43$. High risk defendants were most likely to be placed at High supervision (30.4%) and least likely to be placed in Moderate supervision (15.6%). Moderate risk defendants were most likely to be placed in Low supervision (44.3%) and least likely to be placed in High supervision (6.3%). Low risk defendants were most likely to be placed in administrative supervision (84.6%) and least likely to be placed in High supervision (1.5%).

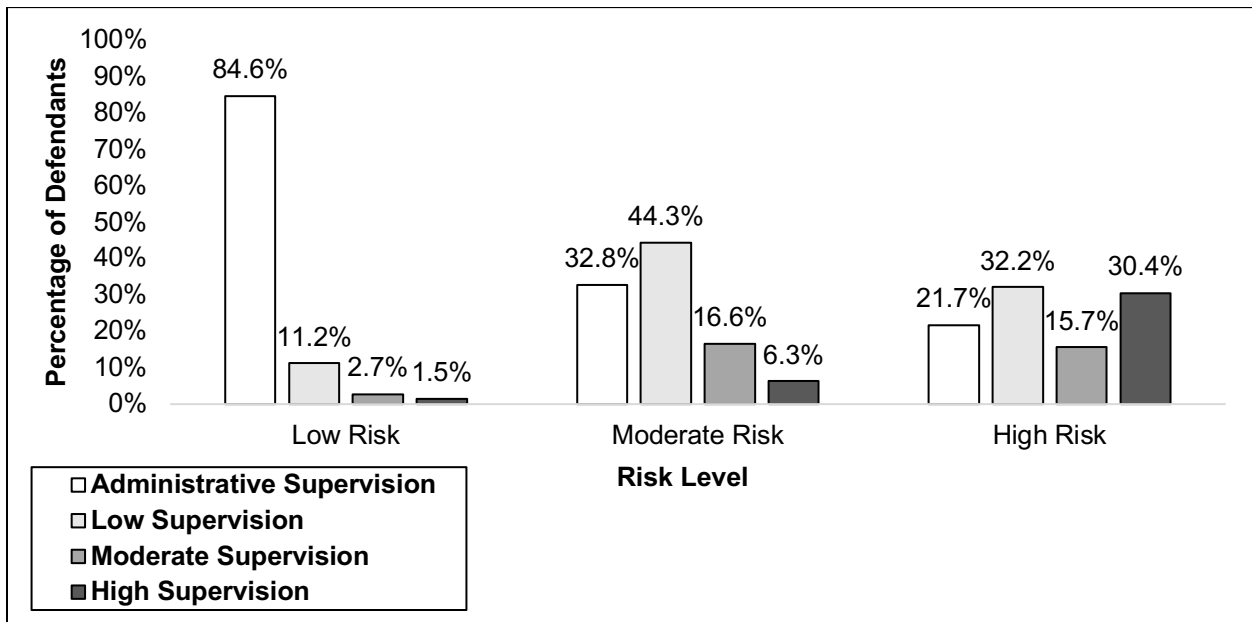


Figure 13. Hamilton County - Risk Level by Supervision Level

Risk Level by Judicial Adherence. Similarly, we found that judicial adherence with recommended supervision conditions differed by risk level, $X^2(2) = 133.48, p < .001$, Cramer's $V = 0.29$, corresponding to a small-to-moderate sized effect. As shown in Figure 14, Low risk defendants were most likely to have adherent supervision decisions (78.8%, $n = 682$) followed by High risk (53.0%, $n = 61$) and Moderate risk (50.6%, $n = 290$) defendants.

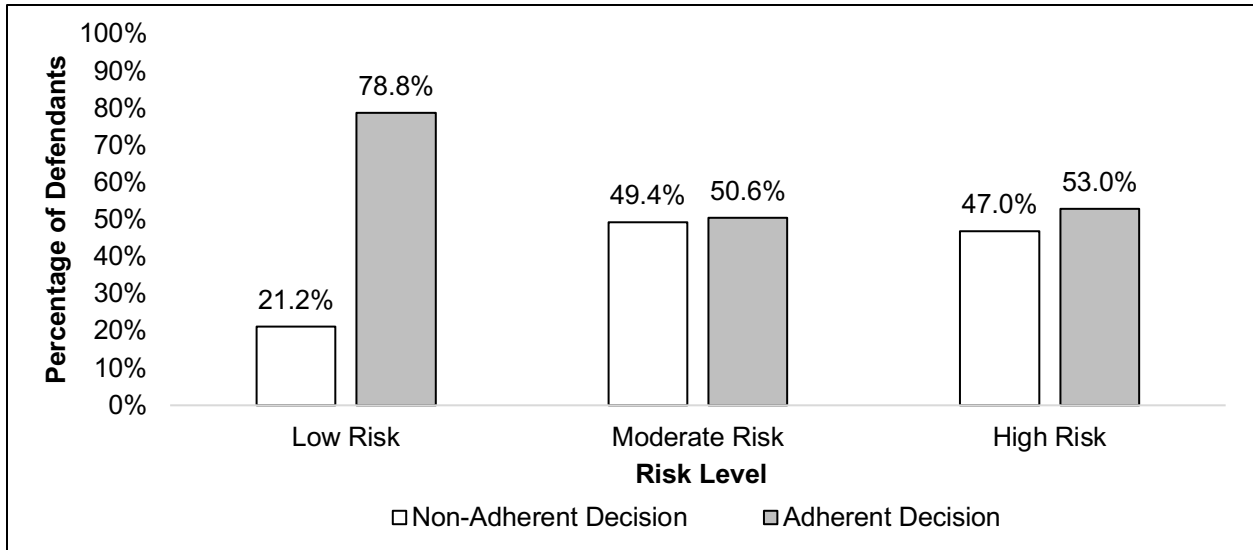


Figure 14. Hamilton County - Risk Level by Judicial Adherence

There was also a significant association between risk level and direction of judicial adherence, $X^2(4) = 149.48, p < .001$, Cramer's $V = 0.22$, corresponding to a small effect. As shown in Figure 15, Moderate (14.8%, $n = 85$) and High (14.8%, $n = 17$) were more likely to receive stricter supervision conditions relative to Low risk defendants (10.3%, $n = 89$). Moderate risk defendants (34.5%, $n = 198$) followed by High risk defendants (32.2%, $n = 37$) were more likely to receive more lenient supervision conditions relative to Low risk defendants (10.9%, $n = 94$).

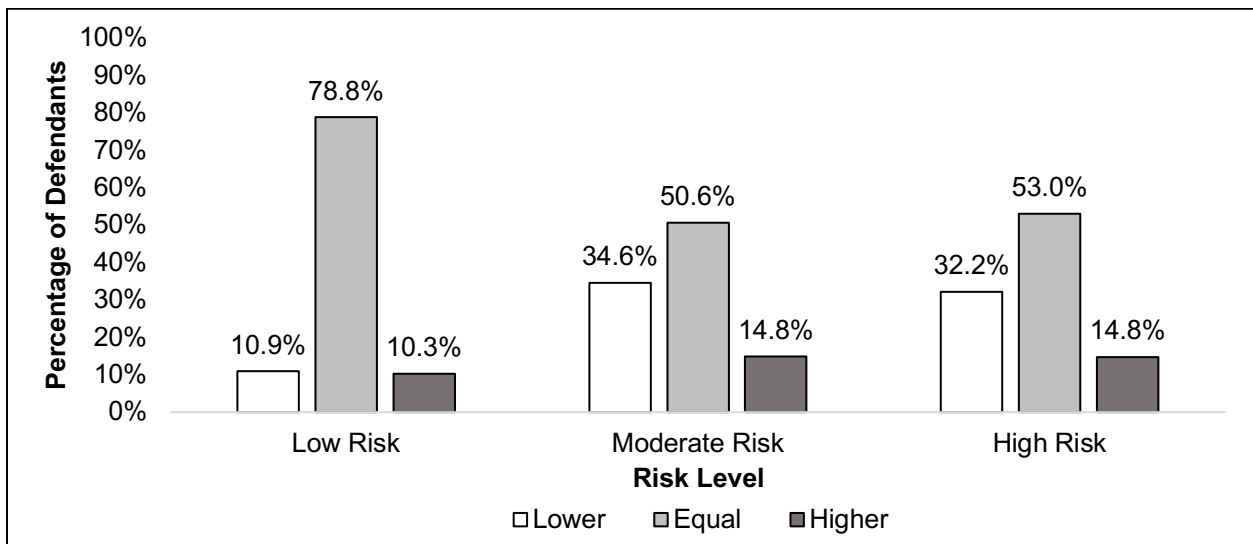


Figure 15. Hamilton County - Risk Level by Direction of Judicial Adherence

Supervision Strategies (RQ #1)

We did not have sufficient data on supervision conditions for Hamilton County. As a result, this research objective was excluded from analysis.

Risk Principle Adherence (RQ #2)

Table 4 presents results of logistic regression models examining the effect of risk principle adherence on any supervision failure. As shown in Block 1, after adjusting for time on supervision and charge severity level, High risk defendants were 6.80 times more likely to fail on supervision (54.5%) relative to Low risk defendants (15.7%). Moderate risk defendants (36.3%) were 3.14 times more likely to fail on supervision relative to Low risk defendants, $ps < .001$. In Block 2, supervision levels were added. As shown, even after controlling for risk level in Block 1, defendants on Enhanced supervision (62.1%) were 8.48 times more likely to fail on supervision relative to defendants on Administrative supervision (17.9%). Similarly, defendants on Moderate supervision (41.8%) were 3.52 times more likely to fail on supervision relative to defendants on Administrative supervision, even after adjusting for risk level and charge severity level. Defendants on Low supervision (31.2%) were 2.16 times more likely to fail on supervision relative to defendants on Administrative supervision. In Block 3, a risk level by supervision level interaction was added to assess effects of risk principle adherence on supervision failure. The addition of this interaction significantly improved the predictive capacity of the model, $p = .044$. This interaction is depicted in Figure 16.

Table 4. Hamilton County - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	<i>B</i>	<i>SE</i>	<i>p</i>	OR	95% CI
Block 1					
Time on Supervision	-0.004	<0.01	<.001	1.00	0.99, 1.00
Charge Severity Level	-0.22	0.06	<.001	0.80	0.71, 0.90
Risk Level (Low)					
Moderate	1.14	0.13	<.001	3.14	2.42, 4.06
High	1.92	0.22	<.001	6.80	4.42, 10.45
Block 2					
Supervision Level (Administrative)					
Basic	0.77	0.16	<.001	2.16	1.57, 2.98
Moderate	1.26	0.22	<.001	3.52	2.28, 5.44
Enhanced	2.14	0.29	<.001	8.48	4.77, 15.08
Δ -2LL	$X^2(3) = 72.83, p < .001$				
Block 3					
Risk Level (Low) by Supervision Level (Admin.)					
Moderate Risk with Basic Supervision	-1.04	0.33	.002	0.35	0.18, 0.67
Moderate Risk with Moderate Supervision	-0.35	0.55	.517	0.70	0.24, 2.05
Moderate Risk with High Supervision	-1.59	0.77	.040	0.20	0.04, 0.93
High Risk with Basic Supervision	-0.84	0.59	.158	0.43	0.14, 1.38
High Risk with Moderate Supervision	-0.35	0.80	.664	0.71	0.15, 3.39
High Risk with High Supervision	-0.84	0.93	.367	0.43	0.07, 2.67
Δ -2LL	$X^2(6) = 12.92, p = .044$				

Notes. $N = 1,553$.

As shown in Figure 16, interaction effects were driven primarily by Moderate and Low risk defendants supervised at Basic and Enhanced supervision. As shown, whereas Moderate risk defendants had higher rates of supervision failure relative to Low risk defendants when on Administrative or Moderate supervision, Moderate risk defendants had a similar rate of supervision failure as Low risk defendants when both were supervised at Basic supervision. Conversely, Moderate risk defendants had a lower rate of supervision failure relative to Low risk defendants when supervised at Enhanced supervision. Low risk defendants supervised at Enhanced supervision had one of the highest rates of pretrial supervision failure (71.9%).

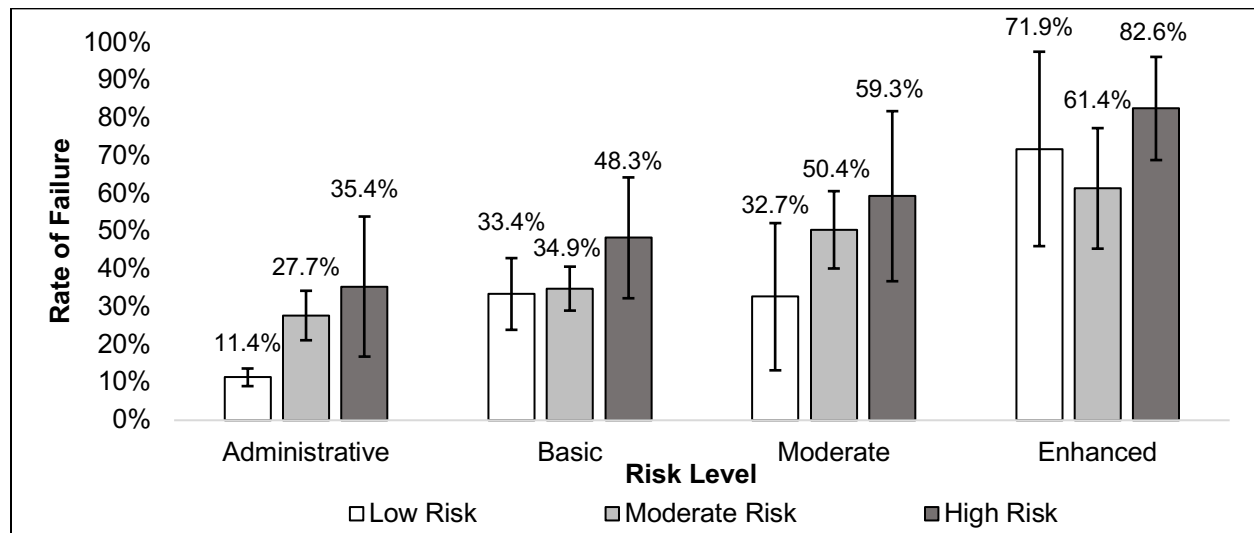


Figure 16. Hamilton County - Supervision Failure Rates by Risk and Supervision Level

Judicial Adherence (RQ #3)

Table 5 presents logistic regression models examining the effect of judicial adherence to supervision recommendations. After adjusting for time on supervision, charge severity level, and risk level (in Block 1), the addition of judicial adherence in Block 2 showed that defendants with final supervision levels that were adherent to initial recommendations were less likely (OR = 0.76) to have any supervision failure (24.5%) relative to defendants with supervision levels non-adherent to recommendations (29.5%), $p = .036$.

Table 5. Hamilton County - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.004	<0.01	<.001	1.00	0.99, 1.00
Severity Level	-0.22	0.06	<.001	0.80	0.71, 0.90
Risk Level (Low)					
Moderate	1.14	0.14	<.001	3.14	2.42, 4.06
High	1.92	0.22	<.001	6.80	4.42, 10.45
Block 2					
Judicial Adherence (No)	-0.28	0.13	.036	0.76	0.58, 0.98
$\Delta -2LL$	$X^2 (1) = 4.36, p = .036$				

Notes. $N = 1,553$.

Summary of Findings

- IRAS-PAT risk levels predicted failure on supervision with good levels of accuracy.
- Even after controlling for risk level and charge severity, defendants who were supervised at higher levels of supervision were more likely to fail on supervision.
- Even after controlling for risk level and charge severity, Low risk participants had the lowest rates of supervision failure when supervised at Administrative supervision, with similar rates at Low and Moderate supervision, but much higher rates of failure when supervised at Enhanced supervision.
- The overall effect of supervision level on supervision failure was consistent for Moderate and High risk participants; those supervised at higher levels had higher rates of failure.
- Despite these findings, there was evidence of risk principle adherence in the assignment of pretrial supervision conditions. The highest risk defendants received the strictest supervision conditions and vice-versa.
- There was a high rate of judicial adherence to structured supervision guidelines. Two-thirds of defendants had decisions adherent to structured guidelines
- However, adherence to structured recommendations differed by risk level. Low risk defendants were much more likely to receive adherent decisions relative to Moderate and High risk defendants.
- Defendants who received decisions adherent to structured supervision guidelines were less likely to fail on supervision overall.

Conclusion

In summary, we found that Hamilton County catered to a much lower risk population overall. The majority of defendants were placed on Administrative or Low supervision (85%). Even after controlling for risk level and charge severity level, more intensive supervision was associated with higher rates of pretrial supervision failure. There was some evidence that this trend differed by risk level and supervision level, such that Low risk defendants who were supervised at Enhanced supervision had higher rates of pretrial supervision failure relative to Moderate risk defendants supervised at Enhanced supervision. However, there was a fairly consistent trend in that higher levels of supervision, particularly Enhanced supervision, contributed to higher rates of failure. Despite these findings, there was strong evidence of risk principle adherence, such that defendants who were higher risk overall were supervised at higher supervision levels. Finally, with respect to judicial adherence, roughly 2 in every 3 defendants received judge-ordered supervision conditions that were adherent to recommended guidelines. When decisions were non-adherent, they were most likely to result in more lenient conditions for the defendant. Defendants who received decisions that were adherent to structured guidelines had lower rates of failure relative to defendants with non-adherent decisions.

Overall, findings could suggest that higher levels of supervision and increased monitoring increase the likelihood of supervision failure, particularly for FTA and other arrests stemming from technical violations or other warrants. Over half of defendants who experienced a failure event experienced an FTA resulting in a warrant issued. Alternatively, these findings could suggest that there are other characteristics of individuals placed on Moderate and Enhanced supervision—beyond risk level and charge severity—that increase their likelihood of pretrial misconduct. One unique trend in Hamilton County’s supervision data, versus other counties or findings from pooled analyses, is that defendants who received adherent decisions had lower rates of failure overall. This could suggest an opportunity for increased adherence to structured guidelines or implementation of additional conditions for defendants who are supervised at higher levels of supervision overall. If supervision conditions are effective in reducing misconduct based on the risk level of the defendant, we should observe that defendants who are classified at higher supervision levels do not have marginally greater rates of misconduct. The opposite trend was observed here; however, we note that we did not examine the type or severity of pretrial misconduct. Most defendants who experienced a failure event had an FTA. There remains very little empirical research on effective strategies for reducing FTAs, beyond high bond amounts (Bechtel et al., 2017), which run counter to the goals of pretrial reform.

Importantly, we note that there were fairly low rates of pretrial supervision failure overall. The clear differences in pretrial supervision failure rates among defendants with more intensive supervision may warrant investigation into characteristics of defendants who are placed on higher supervision to understand factors that may be driving high rates of misconduct in these groups, regardless of risk level or charge severity. Whether there are additional supervision conditions or strategies that could reduce misconduct rates, especially FTAs, may also provide a useful future direction. Hamilton County only implemented its text notification system for court hearings in 2018. It is possible that these changes were not fully reflected in our data given the study period began on October 2017. The potential impact of this system on failure rates is worthy of additional investigation.

HENDRICKS COUNTY

Study Context

Hendricks County began its pretrial pilot program in January 2016. The pilot program targeted all arrestees who were booked into the Hendrick County Jail. Probation officers administered the IRAS-PAT following jail intake but prior to an initial court appearance, most typically within 24 hours of arrest. IRAS-PAT assessment information was provided to judicial officers at the initial hearing. At the time of the pilot start, Hendricks County had not yet developed a structured decision-making framework to guide release and supervision decisions. However, in October 2017, the County launched a Phase I project to incorporate structured guidelines into its pretrial release and supervision decisions. These guidelines can be found in the appended matrix (see Appendix). Phase II of Hendricks County’s pretrial pilot was launched in March 2019 and expanded non-financial release recommendations to non-violent Level 5 felony cases. To allow for sufficient follow-up time, we defined the study period as January 1st, 2018, consistent with Hendricks County’s transition to structured guidelines.

Methods

Overview

Inclusion criteria for Hendricks County were similar to overall criteria. First, individuals had to start supervision during the 1-year study period. Second, individuals had to complete supervision by the end of the 1-year follow-up. Third, defendants had to have an assessment completed with the jail booking. Four, all defendants could be included in the sample only once. Because we received outcome data reported by Hendricks County, all individuals had linked court and jail data necessary to capture pretrial misconduct outcomes. We received a single data file containing linked pretrial supervision, jail booking, court case, and pretrial misconduct outcomes for all pretrial defendants who were on supervision during the study period. Inclusion criteria were applied to this sampling frame and variables created using adopted operationalization. The study period for Hendricks county lasted from January 1st, 2018 through December 31st, 2018. The follow up for Hendricks county lasted through December 31st, 2019.

Data Cleaning

The county delivered a dataset of 330 cases that were assessed and under supervision during the study period. Six of these 330 cases did not include a risk assessment. Finally, 86 cases had a supervision start date in 2019. Because this meant they did not have the opportunity for a full year of supervision, these cases were excluded. The final analytic sample consisted of 238 individual cases. Hendricks county’s data cleaning steps are displayed in Figure 17.

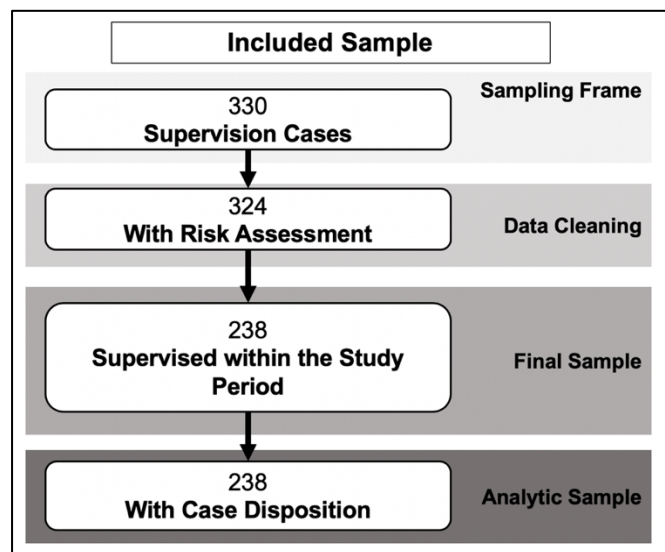


Figure 17. Hendricks County - Data Cleaning Process

Sample

On average, Hendricks county's supervised sample was 34.47 years old ($SD = 11.690$, Range: 18 to 71) and primarily White (74.8%, $n = 178$) versus other racial or ethnic identities (25.2%, $n = 60$). The majority of defendants were male (69.7%, $n = 166$; female, 30.3%, $n = 72$). Most defendants were booked on a felony charge (66%, $n = 157$) with fewer booked on only misdemeanor offenses (34%, $n = 81$). The highest charge for each defendant was primarily for assault (48.7%, $n = 116$), drug (11.8%, $n = 28$), and driving under the influence (9.7% $n = 23$) offenses. The most frequently occurring offenses are displayed in Figure 18. These charge categories are mutually exclusive, but defendants may have been booked on other, lower charges concurrently.

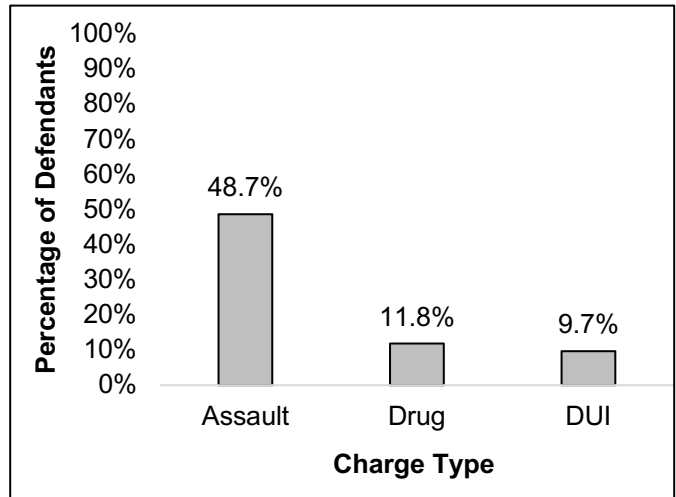


Figure 18. Hendricks County - Highest Offense Charge Type

Variables

Covariates. Covariates included *charge severity* (1-10), with lower scores corresponding to more serious offenses. Specifically, felony levels 1-6 were coded as 1-6 with misdemeanor levels A, B, and C coded as 7, 8, and 9, respectively. Other offenses were coded as 10. The other covariate in all models was *time on supervision* (days), which measured as the number of days between release from jail (i.e., start of supervision) and either first supervision violation or court case disposition.

Independent Variables. Independent variables included *IRAS-PAT risk level* (Low, Moderate, High). The IRAS-PAT is a 7-item actuarial tool designed to predict risk of arrest and FTA during the pretrial period (Latessa et al., 2009). Items measure four criminogenic risk domains: criminal history, employment, residential stability, and substance use. Item-level ratings produce a total score ranging from 0 to 9, which classify defendants into three risk bins: Low (0-2), Moderate (3-5), and High (6+). *Supervision level* (Moderate, Enhanced) measured the judge-ordered supervision level at the time of supervision. Moderate supervision consisted of court notifications, one in-person meeting every month, and monthly criminal background checks. Enhanced supervision consisted of court notifications, two in-person meetings each month, and monthly criminal background checks. Receipt of *bond* (yes, no) additionally was coded based on provided county records as a specific supervision strategy. *Judicial adherence* (yes; no) measured whether the judge-ordered supervision level was adherent to structured guidelines. Hendricks County provided both the recommended matrix supervision level as well as the judge-ordered supervision level. If the recommended level was "TBD" (consistent with the Hendricks County matrix recommendation for "Felony Possession of Controlled Substance Other than Marijuana/Possession of Syringe/OWI with prior OWI Conviction within 10 Years"), we excluded these cases from analysis of judicial adherence outcomes because the offenses fell in the middle of the matrix and were subject to judicial discretion only. We additionally measured

direction of judicial adherence (equal, lower, higher), which defined whether court-ordered supervision conditions were equal to, lower than, or higher than recommended supervision conditions.

Dependent Variable. The main dependent variable was *any pretrial supervision failure* (yes; no), which was defined as any new arrest, FTA, or other arrest or technical violation occurring during the pretrial supervision period. Pretrial supervision outcomes were provided by Hendricks County. In keeping with the operationalization of pretrial misconduct outcomes in other counties, we coded the first instance of pretrial misconduct. If the first instance of pretrial misconduct was a technical violation, we confirmed that the violation resulted in an arrest warrant leading to a booking, consistent with our measurement of other arrests in other jurisdictions. If multiple types of misconduct occurred on the same date, misconduct was coded first as new arrest, followed by FTA, followed by a technical violation.

Data Limitations

Pretrial supervision data were provided in an integrated dataset by Hendricks County Probation. As a result, we were unable to apply the same systematic operationalization of outcomes as with other jurisdictions. However, we verified the meaning of outcome data with county representatives to ensure we were capturing metrics that were comparable to other jurisdictions. For example, when multiple pretrial misconduct events were reported, we captured the first event and associated date as the indication of pretrial supervision failure. Because in other jurisdictions we operationalized technical violations via a new arrest, we similarly checked to ensure that technical violations reported by the county resulted in an arrest warrant leading to a booking. Similar to other counties, due to the sample size and low base rate for specific types of pretrial supervision failure, we analyzed any supervision failure as a single indicator. Finally, we were limited in the number of supervision strategies we could capture beyond supervision level and bond amount.

Analytic Strategy

First, we conducted descriptive statistics on all study variables. Second, we examined distributions of risk scores by other key study variables (e.g., supervision levels, judicial adherence) with measures of association. For all comparisons, we report the Cramer's V effect size. Cramer's V values of .10, .30, and .50 indicate small, medium, and large effect sizes, respectively (Cohen, 1988). Third, to address the main research questions, we conducted a series of hierarchical multivariable logistic regression models. All models controlled for IRAS-PAT risk level, highest charge level, and time on supervision in Block 1. Variables of interest were added to models in subsequent blocks, and overall improvement in the predictive capacity of the model was assessed using changes in -2 log likelihood (-2LL) statistics. For all multivariable models, we report odds ratios (ORs) and their associated 95% confidence intervals. Odds ratios are a measure of effect size that communicate the likelihood, or odds, of an event occurring in one group relative to another group. An odds ratio of 1 indicates no difference in the likelihood of an event happening between groups. An odds ratio less than 1 indicates that the group of interest has a lower odds of experiencing the event (i.e., pretrial supervision failure) relative to the reference group. An odds ratio above 1 indicates that the group of interest has a higher odds of experiencing the event relative to the reference group. Odds ratios of 1.50, 3.00, and 5.00

typically indicate small, medium, and large effect sizes, respectively (Chen et al., 2010). Due to the small sample size and low number of failure events, multivariable analyses for within-county investigations focused on modeling any failure rather than type of failure. For all analyses, we used a $p < .05$ criterion for statistical significance. Where we found significant effects, we reported predicted probabilities of supervision failure using average marginal effects.

Results

Descriptive

IRAS-PAT. Defendants in Hendricks County scored an average of 3.23 ($SD = 1.93$, Range: 0 to 9) on the IRAS-PAT, corresponding to a primarily Moderate risk classification ($n = 119$, 50.0%). Fewer defendants scored at Low (37.0%, $n = 88$) or High (13.0%, $n = 31$) risk. This coincides with a mean risk score of 3.23 ($SD = 1.931$, Range: 0 to 9). Figure 19 presents the IRAS-PAT risk scores for Hendricks County while Figure 20 shows risk classifications.

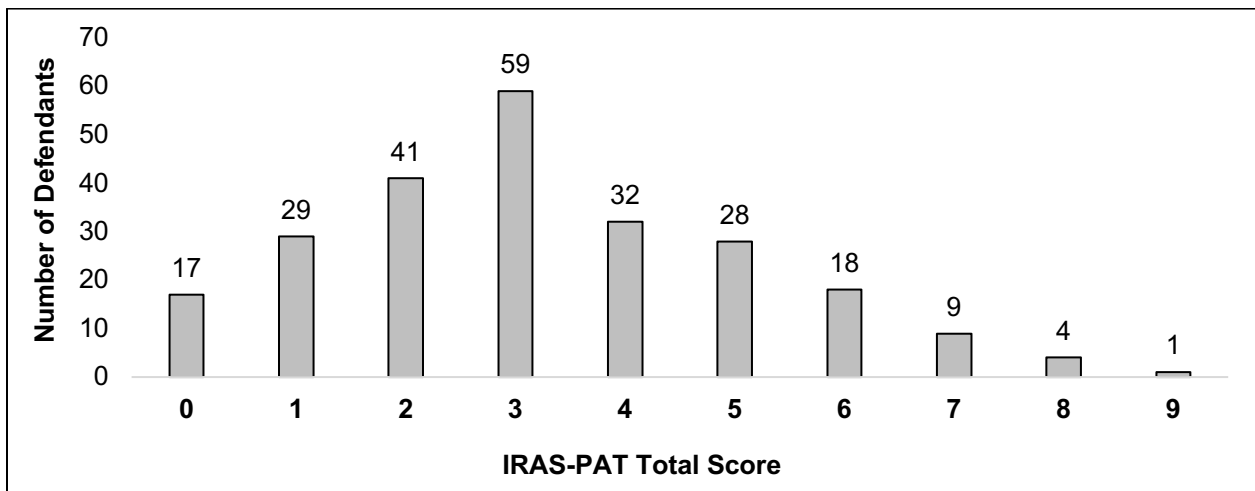


Figure 19. Hendricks County – Distribution of IRAS-PAT Risk Scores

Supervision Level. The majority of Hendricks County defendants were released on Moderate supervision (55.0%, $n = 131$) with slightly fewer defendants released on Enhanced supervision (45.0%, $n = 107$).

Judicial Adherence. Roughly half of pretrial defendants received supervision conditions that were adherent with recommended conditions (52.9%, $n = 126$). For defendants who had non-adherent decisions (42.4%, $n = 101$), supervision strategies were lower than the recommended strategy for 78 individuals (77.2%) and higher for 23 individuals (22.8%). For 11 defendants (4.6%), structured guidelines for recommended release dictated

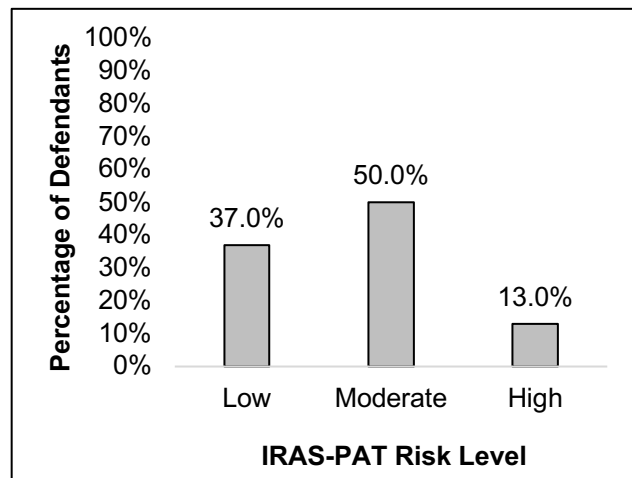


Figure 20. Hendricks County - Distribution of IRAS-PAT Risk Levels

judicial discretion. As a result, these defendants were excluded from analyses of judicial adherence.

Case Outcomes. Defendants were on supervision for an average of 122.25 days ($SD = 94.01$, Range: 3 to 483). Approximately one in three defendants failed to complete supervision due to pretrial misconduct (31.9%, $n = 76$). Among defendants who failed to complete supervision due to misconduct, the first occurrence of pretrial misconduct for each defendant was most commonly a new arrest ($n = 36$, 47.4%), followed by an other arrest or technical violation (32.9%, $n = 25$), or FTA (19.7%, $n = 15$).

Bivariable Comparisons

Risk Level by Supervision Level.

Consistent with the risk principle, we found a small association between risk level and supervision level, $X^2(2) = 9.80$, $p = .007$, Cramer's $V = .20$. Specifically, High risk defendants were most likely to receive Enhanced supervision (71.0%). Moderate and Low risk defendants were both more likely to receive Moderate supervision (60.0% and 57.9%, respectively) versus Enhanced supervision. See Figure 21.

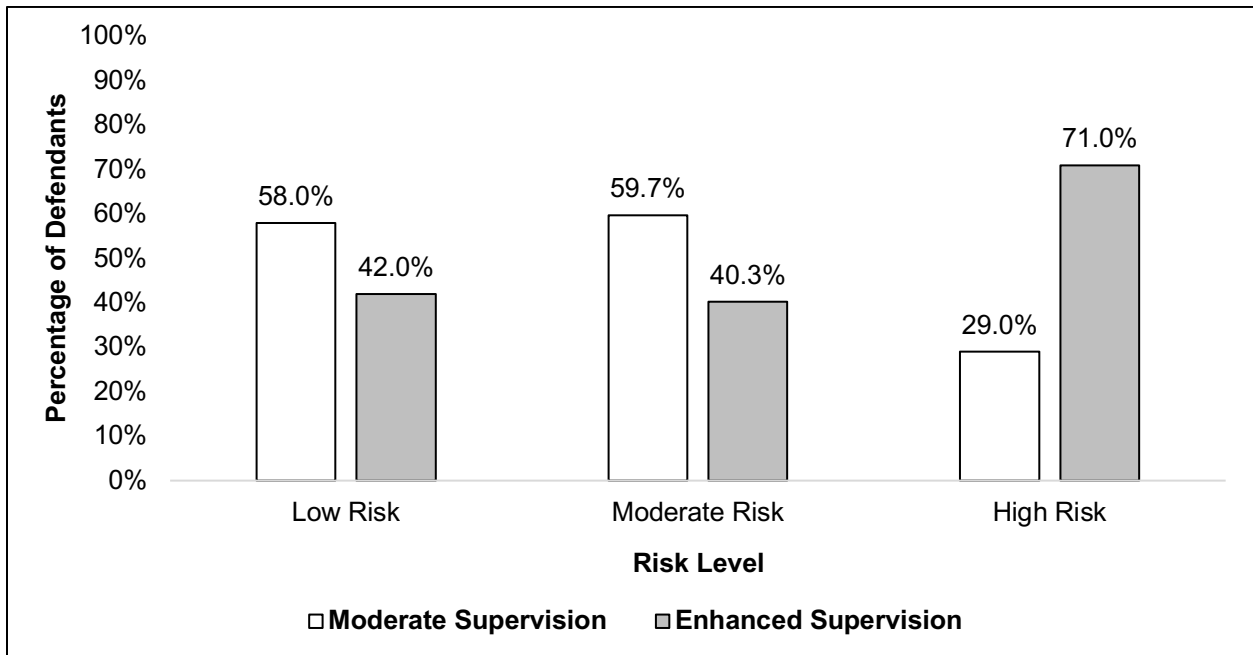


Figure 21. Hendricks County - Risk Level by Supervision Level

Risk Level by Judicial Adherence.

The likelihood of a defendant receiving judge-ordered supervision conditions that were adherent with recommended conditions varied by risk level, $X^2(2) = 13.21$, $p = .001$, Cramer's $V = 0.24$. Specifically, adherent decisions were more common for High risk defendants (72.4%) relative to Moderate (62.5%) and Low risk (40.7%) defendants. See Figure 22.

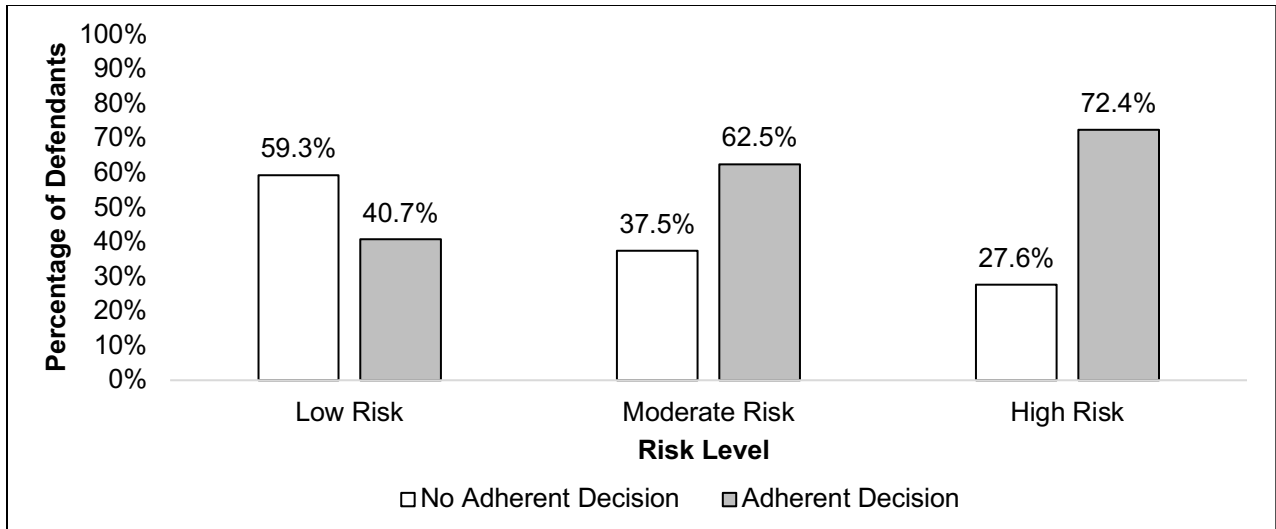


Figure 22. Hendricks County - Risk Level by Judicial Adherence

The direction (i.e., more strict or more lenient conditions) of non-adherence to recommended supervision conditions also differed by risk level, $\chi^2(4) = 14.98, p = .005$, Cramer's $V = 0.18$. In particular, a higher proportion of Low risk defendants (15.1%) received stricter supervision conditions relative to Moderate (8.9%) and High risk (0.0%) defendants. See Figure 23.

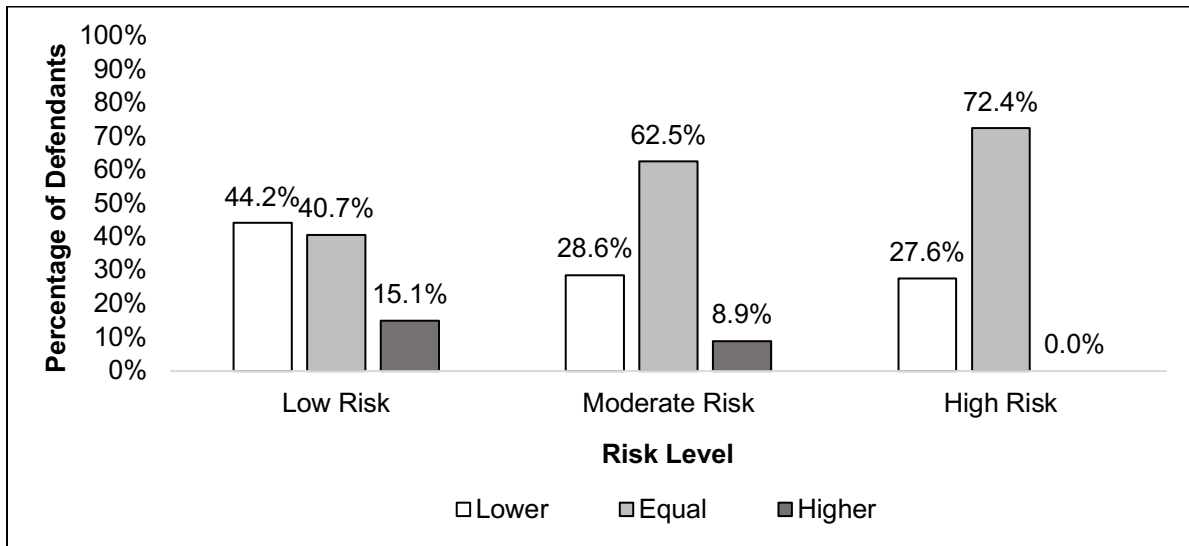


Figure 23. Hendricks County - Risk Level by Direction of Judicial Adherence

Supervision Strategies (RQ #1)

Logistic regression models examining the effects of supervision strategies on any supervision failure are presented in Table 6. In Block 1, after accounting for severity level and time on supervision, findings showed High risk defendants were 10.77 times more likely to fail on supervision (62.2%) relative to Low risk defendants (14.4%), $p < .001$. Similarly, Moderate risk defendants were 3.71 times more likely to fail (37.5%) relative to Low risk defendants. In Block 2, after controlling for variables in Block 1, results showed that defendants who received a bond were 2.13 times more likely to fail on supervision (38.5%) relative to defendants who did not receive a bond (24.8%). There was no difference in supervision failure outcomes between defendants on Moderate or Enhanced supervision, $p = .516$. In Block 3, interactions of supervision strategies by risk levels were added to determine whether the effect of supervision strategies on any pretrial failure differed as a function of risk level. Overall, the addition of these interactions did not improve the predictive capacity of the model for any pretrial failure, $p = .098$. However, one interaction effect was evident. High risk defendants who were supervised with Enhanced supervision were less likely to experience supervision failure (51.5%) relative to High risk defendants supervised at Moderate supervision (88.1%). In contrast, Low risk defendants supervised at Enhanced supervision were more likely to fail on supervision (23.8%) relative to Low risk defendants supervised at Moderate supervision (8.2%). See Figure 24 for visual depiction of this interaction.

Table 6. Hendricks County - Logistic Regression Models of Supervision Strategies on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.01	0.00	.003	0.10	0.99, 0.10
Severity Level	-0.13	0.13	.338	0.88	0.68, 1.14
Risk Level (Low)					
Moderate	1.31	0.36	.000	3.71	1.82, 7.57
High	2.38	0.50	.000	10.77	4.05, 28.68
Block 2					
Bond (No)					
Yes	0.75	0.34	.028	2.13	1.08, 4.17
Supervision Level (Moderate)					
Enhanced	0.22	0.34	.516	1.24	0.63, 2.45
Δ -2LL	$X^2 (2) = 6.04, p = .049$				
Block 3					
Risk Level (Low) by Bond (No)					
Moderate Risk with Bond	0.38	0.78	.626	1.46	0.32, 6.75
High Risk with Bond	0.23	1.08	.835	1.25	0.15, 10.49
Risk Level (Low) by Supervision Level (Moderate)					
Moderate Risk with Enhanced Supervision	-1.11	0.80	.166	0.33	0.07, 1.59
High Risk with Enhanced Supervision	-3.37	1.38	.014	0.03	<0.01, 0.51
Δ -2LL	$X^2 (4) = 7.84, p = .098$				

Notes. $N = 238$,

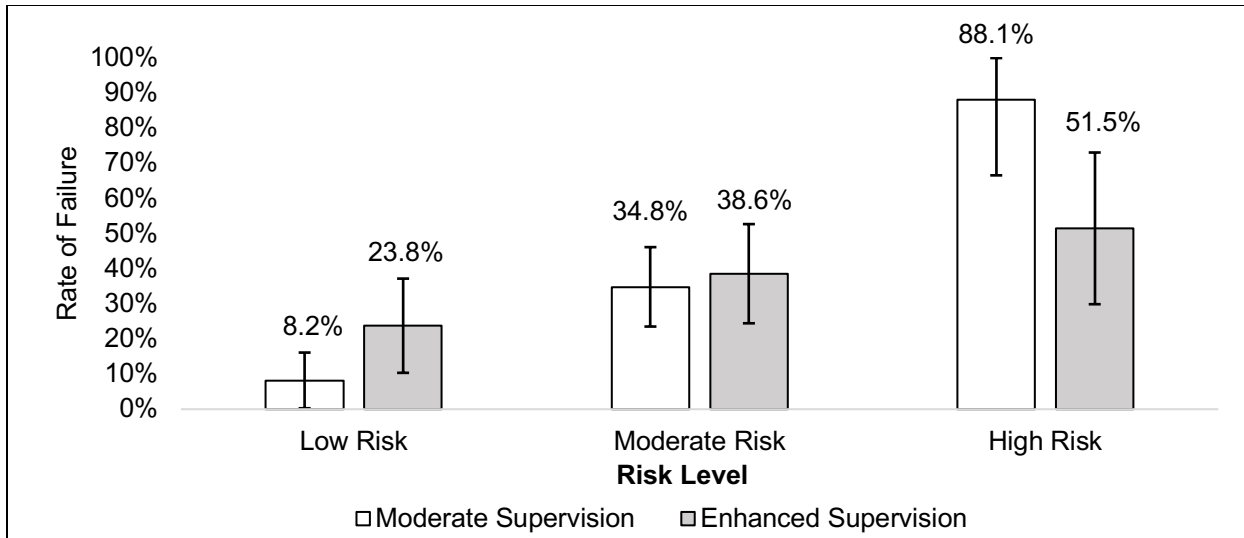


Figure 24. Hendricks County - Supervision Failure Rates by Risk and Supervision Level

Risk Principle Adherence (RQ #2)

Logistic regression models examining the effects of risk principle adherence on any supervision failure are presented in Table 7. As shown, after adjusting for relevant predictors in Block 1, in Block 2, there was no effect of supervision level on any supervision failure, $p = .284$. In Block 3, we modeled a risk level by supervision level interaction. Incorporation of this interaction improved the ability of the model to predict supervision failure, $p = .015$. A similar interaction effect was observed as before. High risk defendants who were supervised at Enhanced supervision had a lower rate of supervision failure relative to High risk defendants supervised at Moderate supervision. We observed the opposite trend for Low risk defendants, and rates of failure were similar for Moderate risk defendants regardless of supervision level (see Figure 24).

Table 7. Hendricks County - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.01	0.00	.003	0.99	0.99, 0.99
Severity Level	-0.13	0.13	.338	0.88	0.68, 1.14
Risk Level (Low)					
Moderate	1.31	0.36	<.001	3.71	1.82, 7.57
High	2.37	0.50	<.001	10.77	4.05, 28.67
Block 2					
Supervision Level (Moderate)					
Enhanced	0.36	0.33	.284	1.43	0.74, 2.76
Δ -2LL	$X^2(1) = 1.15, p = .283$				
Block 3					
Risk Level (Low) by Supervision Level (Moderate)					
Moderate Risk with Enhanced Supervision	-0.98	0.76	.202	0.38	0.08, 1.69
High Risk with Enhanced Supervision	3.45	1.37	.012	0.03	0.00, 0.46
Δ -2LL	$X^2(2) = 8.36, p = .015$				

Notes. $N = 238$.

Judicial Adherence (RQ #3)

Logistic regression models examining the effect of judicial adherence to recommended supervision conditions are presented in Table 8. As shown, after adjusting for relevant variables in Block 1, there was no difference in supervision failure outcomes between defendants who did and did not receive judge-ordered decisions that were adherent to recommended guidelines, $p = .128$.

Table 8. Hendricks County - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.005	<0.01	.007	0.99	0.99, 1.00
Severity Level	-0.12	0.13	.338	0.88	0.68, 1.14
Risk Level (Low)					
Moderate	1.25	0.36	.001	3.51	1.71, 7.20
High	2.25	0.50	<.001	9.50	3.53, 25.53
Block 2					
Judicial Adherence (No)	0.51	0.33	.128	1.66	0.86, 3.21
Δ -2LL	$X^2 (1) = 2.34, p = .128$				

Notes. $N = 227$

Summary of Findings

Several key findings emerged from this investigation in Hendricks County:

- IRAS-PAT risk levels predicted supervision failure with good accuracy.
- There were no differences in supervision failure outcomes between defendants on Moderate or Enhanced pretrial supervision.
- Those who received bond were much more likely to fail on pretrial supervision, even after adjusting for risk level, charge severity, and supervision level.
- High risk defendants who were supervised at Enhanced supervision had lower rates of misconduct relative to those supervised at Moderate supervision. The opposite trend was true low-risk defendants, who had higher rates of pretrial supervision failure when supervised at Enhanced supervision.
- Findings showed good evidence of risk principle adherence (i.e., defendants with higher risk levels were more likely to be placed on Enhanced supervision).
- Roughly half of pretrial defendants received supervision conditions adherent to structured guidelines. However, adherence decisions differed by risk levels such that Low and Moderate risk defendants were less likely to receive decisions adherent with recommended guidelines.
- Despite high rates of non-adherence to structured guidelines, there was no difference in supervision failure rates between defendants who had adherent and non-adherent supervision decisions.

Conclusion

In summary, findings showed few differences in supervision failure rates between defendants who were placed at Moderate or Enhanced supervision. However, there was some evidence that the association between supervision level and supervision failure differed by risk level. This trend was driven by High risk defendants who were supervised at Moderate supervision; 9 out of 10 of these individuals failed on supervision. Conversely, Low risk defendants had much higher rates of failure when supervised at Enhanced supervision versus Moderate. Similarly, after adjusting for supervision level, charge severity, and risk level, receipt of bond was associated with a higher rate of supervision failure. Despite these findings, we found good evidence of risk principle adherence, suggesting that higher risk defendants received higher supervision and vice-versa. Relative to other jurisdictions, Hendricks County had a lower rate of judicial adherence with structured recommendations. Roughly half of all decisions involved a judicial override. Defendants at Moderate and Low risk were more likely to receive non-adherent decisions relative to High risk defendants, and these decisions were most often for more lenient levels of supervision.

Overall, findings may warrant further investigation into the use of bond with pretrial supervision. Here we found that bond requirements were associated with higher likelihood of supervision failure, even after controlling for the risk level of the defendant, the charge severity, and the supervision level. In other studies, bond has been shown to reduce FTA rates, but few studies have investigated its role on other forms of pretrial misconduct (Bechtel et al., 2017). Importantly, half of defendants who failed to complete supervision successfully failed due to new criminal activity; FTA was the least common type of misconduct, suggesting the risk management effect of bond may not extend to this jurisdiction. Additionally, Hendricks County findings underscore the importance of risk principle adherence, or aligning risk levels with supervision levels. Although there were no differences in rates of supervision failure between defendants who had adherent or non-adherent supervision decisions, there were high rates of non-adherence to structured supervision guidelines overall. Roughly 1 in every 4 High risk defendants who were supposed to receive Enhanced supervision were supervised at Moderate supervision. Prior research has shown that adherence to structured guidelines for supervision may improve risk management decisions (Danner et al., 2015), which underscores the importance of calibrating risk management decisions to the risk level of each defendant using a consistent approach.

Given the high rate of judicial overrides in Hendricks County, for High and Low risk defendants in particular, further investigation into factors motivating judicial overrides may be beneficial to informing future risk management decisions. These decision criteria may inform opportunities to realign recommendations with current matrix guidelines, identify other useful legal criteria that could be incorporated into structured supervision guidelines, or suggest additional conditions that may improve the risk management of pretrial defendants.

JEFFERSON COUNTY

Study Context

Jefferson County began its pretrial pilot program in October 2016. The program was targeted to pretrial defendants who received an IRAS-PAT assessment following jail intake but prior to an initial court appearance. Pretrial defendants were assessed by Jefferson Community Corrections staff within 24 hours of an arrest during the week or up to 72 hours on weekends. Jefferson County’s pretrial supervision program began on January 1st, 2017, which provided release authority to pretrial services. The County uses a matrix based on Indiana state pretrial guidelines (see Appendix). Since 2017, the County has revised its matrix and expanded the release authority of pretrial services. To capture the start of the pretrial supervision program, we defined January 1st as the start of the study period.

Methods

Overview

Inclusion criteria for Jefferson County were similar to overall study inclusion criteria. First, individuals had to be placed on supervision during the 1-year study period. Second, individuals had to have completed supervision (i.e., had a court case disposition) by the end of the follow-up period. Third, defendants had to have received an assessment at the time of jail booking. Fourth, defendants had to represent unique individuals; no individual could be included in the sample more than once. Fifth, we had to be able to link assessments to a jail and court case records to establish date of disposition and tabulate pretrial misconduct outcomes. These inclusion criteria guided the data cleaning process for Jefferson County. We received multiple files containing local assessment, pretrial supervision, jail, and court case records for Jefferson County. First, we linked assessments independently to court case records using identifiers provided by the county. We additionally linked assessments to jail records using arrest dates provided with assessment records and an individual identifier consisting of an first three letters of first name, first three letters of last name, and year of birth. We conducted manual matching of records when arrest dates did not match exactly to booking dates or where name

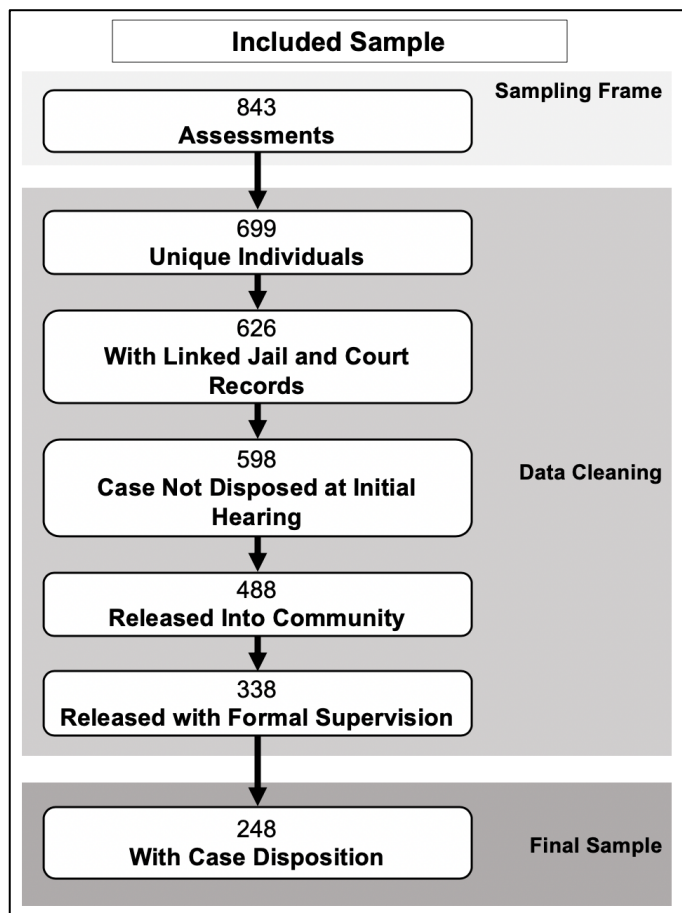


Figure 25. Jefferson County - Data Cleaning Process

spelling differed. We used jail records to tabulate charge information, identify the highest booking charge, and calculate arrest outcomes (new and other) during the supervision period. Court records provided disposition dates and FTA events. The study period for Jefferson county ran from January 1st, 2017 to December 31st, 2017, with follow-up through December 31st, 2018.

Data Merging and Cleaning

The sampling frame consisted of 843 assessments conducted in 2017. Assessment data were recorded together with jail data. Using internally recorded case numbers, we merged court case records stemming from an original booking and IRAS-PAT assessment. The sampling frame contained 843 unique assessment records linked to a booking between January 1st 2017 and December 31st 2017. Of these 843 bookings, 144 individuals were booked into jail and assessed more than once, resulting in 699 unique individuals on a first booking into the jail during the study period. Of these 699 individuals, 626 had a linked court case record and jail record. Of these 625 individuals, a small proportion ($n = 27$) were recommended for pretrial release or supervision, but never received a judge-ordered recommendation because their case was disposed at the initial hearing. Thus, 598 individuals whose cases were not disposed at the initial hearing were included in the sample. Another subset of participants were recommended for release and received a judge-ordered supervision condition, but never successfully bonded out of jail during the pretrial period ($n = 110$). These individuals were excluded from the sample as were 150 individuals who were not on formal supervision (i.e., non-administrative) during the study period and 90 individuals whose final pretrial outcomes could not be assessed because they had no case disposition date prior to the end of the 1-year follow-up period. These steps resulted in a final analytic sample of 248 individuals. Figure 25 presents a flow chart outlining the data cleaning process.

Sample

The final sample consisted of 248 pretrial defendants, who were an average age of 31 years old ($SD = 9.567$, Range: 18 to 64). Defendants were mainly male (66.5%, $n = 165$) and White (92.3%, $n = 229$) versus non-White (0.77%, $n = 19$). The majority of defendants were booked on at least one felony-level offense (64.1%, $n = 159$). Across all jail bookings, drug offenses constituted the most frequent highest charge (37.9%, $n = 94$). Other frequent offense categories included assault (14.1%, $n = 35$), , driving under the influence (6.0%, $n = 15$), disorderly conduct (5.6%, $n = 14$), and motor vehicle (4.0%, $n = 10$) offenses. Importantly, these categories are mutually exclusive because they represent the highest charge at the time of booking. Figure 26 presents the proportion of defendants booked on the most common offense types.

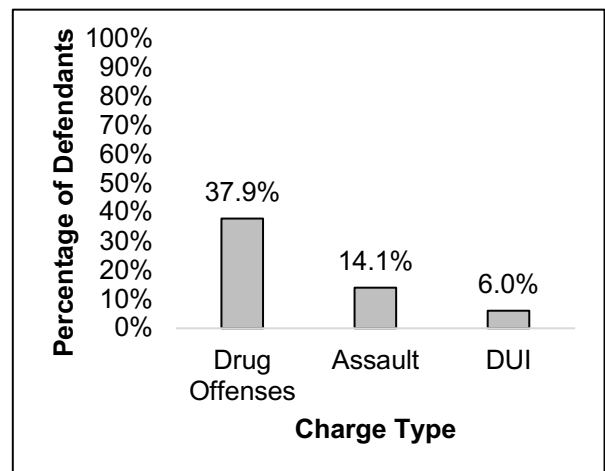


Figure 26. Jefferson County - Highest Offense Charge Type

Variables

Covariates. Covariates included *charge severity* (1-10), with lower scores corresponding to more serious offenses. Specifically, felony levels 1-6 were coded as 1-6 with misdemeanor levels A, B, and C coded as 7, 8, and 9, respectively. Other offenses were coded as 10. The other covariate in all models was *time on supervision* (days), which measured as the number of days between release from jail (i.e., start of supervision) and either first supervision violation or court case disposition.

Independent Variables. Independent variables included *IRAS-PAT risk level* (Low, Moderate, High). The IRAS-PAT is a 7-item actuarial tool designed to predict risk of arrest and FTA during the pretrial period (Latessa et al., 2009). Items measure four criminogenic risk domains: criminal history, employment, residential stability, and substance use. Item-level ratings produce a total score ranging from 0 to 9, which classify defendants into three risk bins: Low (0-2), Moderate (3-5), and High (6+). *Supervision level* (Low, High) measured the judge-ordered supervision level at the time of supervision. Jefferson County uses a scoring system to measure level of supervision intensity. Supervision levels range from 220 to 320. We defined “Low” supervision as any level of supervision between 220 to 250. Low supervision typically consisted of Basic supervision with bond or other miscellaneous conditions (e.g., group counseling or mental health assessment). High supervision was characterized by high bond or use of electronic monitoring (scores 260 to 320). All defendants on pretrial supervision were required to meet monthly with a pretrial supervision officer. We additionally coded two specific supervision strategies: receipt of *bond* (yes, no) and *electronic monitoring* (yes; no). *Judicial adherence* (yes; no) measured whether the judge-ordered supervision level was adherent to recommended supervision levels. Jefferson County provided both the recommended supervision level well as the judge-ordered supervision level. We additionally measured *direction of judicial adherence* (equal, lower, higher), which defined whether court-ordered supervision conditions were equal to, lower than, or higher than recommended supervision conditions. For these ratings, the numerical supervision level was used to indicate stricter or less strict supervision conditions.

Dependent Variable. The main dependent variable was *any pretrial supervision failure* (yes; no), which was defined as any new arrest, FTA, or other arrest or technical violation occurring during the pretrial supervision period. New arrests were coded from jail records for bookings that were associated with at least one new offense. Other arrests were similarly coded from jail booking records where the individual was arrested on a violation or other non-new offense charge. FTAs were coded from court records indicating date that an FTA warrant was issued. If multiple types of misconduct occurred on the same date, misconduct was coded first as new arrest, followed by FTA, followed by an other arrest.

Data Limitations

Similar to other jurisdictions, the small sample size of cases that met all inclusion criteria may have limited our ability to detect statistically significant effects. In contrast to other jurisdictions, supervision intensity in Jefferson County were coded on a numerical, rather than categorical, basis. As a result, we created supervision levels that were consistent with supervision practices in other jurisdictions. This recoding increased consistency of measurement across jurisdictions, but may have limited the relevance of findings to Jefferson County practice, specifically. However,

we note that where we could, we coded specific supervision strategies individually to assess their impact on pretrial supervision outcomes. Court records were drawn from Jefferson County's internal court data management system. Because Jefferson County does not use the statewide Odyssey court management system, these records may have differed slightly from those used by other jurisdictions. However, to the extent possible, we coded variables consistent with operationalization in other counties.

Analytic Strategy

First, we conducted descriptive statistics on all study variables. Second, we examined distributions of risk scores by other key study variables (e.g., supervision levels, judicial adherence) with measures of association. For all comparisons, we report the Cramer's V effect size. Cramer's V values of .10, .30, and .50 indicate small, medium, and large effect sizes, respectively (Cohen, 1988). Third, to address the main research questions, we conducted a series of hierarchical multivariable logistic regression models. All models controlled for IRAS-PAT risk level, highest charge level, and time on supervision in Block 1. Variables of interest were added to models in subsequent blocks, and overall improvement in the predictive capacity of the model was assessed using changes in -2 log likelihood (-2LL) statistics. For all multivariable models, we report odds ratios (ORs) and their associated 95% confidence intervals. Odds ratios are a measure of effect size that communicate the likelihood, or odds, of an event occurring in one group relative to another group. An odds ratio of 1 indicates no difference in the likelihood of an event happening between groups. An odds ratio less than 1 indicates that the group of interest has a lower odds of experiencing the event (i.e., pretrial supervision failure) relative to the reference group. An odds ratio above 1 indicates that the group of interest has a higher odds of experiencing the event relative to the reference group. Odds ratios of 1.50, 3.00, and 5.00 typically indicate small, medium, and large effect sizes, respectively (Chen et al., 2010). Due to the small sample size and low number of failure events, multivariable analyses for within-county investigations focused on modeling any failure rather than type of failure. For all analyses, we used a $p < .05$ criterion for statistical significance. Where we found significant effects, we reported predicted probabilities of supervision failure using average marginal effects.

Results

Descriptive

IRAS-PAT. IRAS-PAT scores averaged a score of 4.29 ($SD=1.702$, Range: 0 to 9), corresponding to a Moderate risk classification. Figure 27 shows the frequency distribution of IRAS-PAT scores. As shown, the majority of the defendants maintained a score of 4 and below (53.6%).

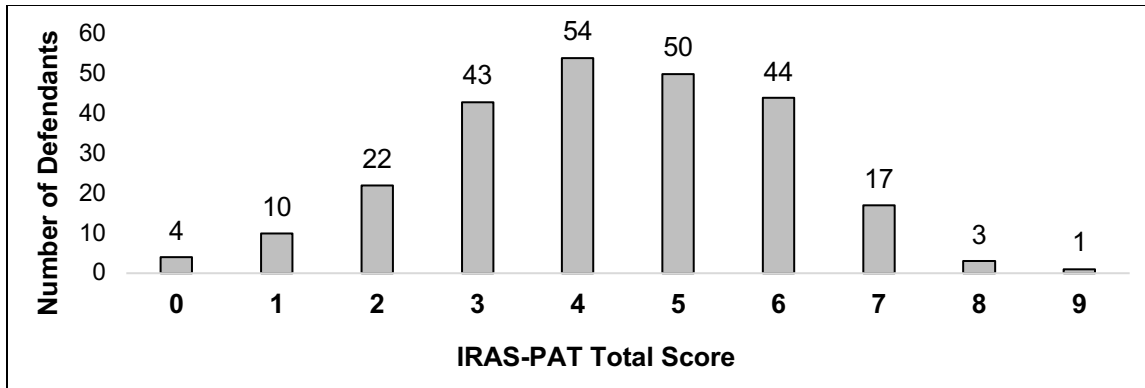


Figure 27. Jefferson County - Distribution of IRAS-PAT Risk Scores

Figure 28 shows the frequency distribution for risk classifications. The majority of defendants were classified at Moderate risk (58.9%, $n = 146$). Fewer defendants were classified as Low risk (14.9%, $n = 37$), and roughly one-fourth of participants were classified at High risk (26.2%, $n = 65$).

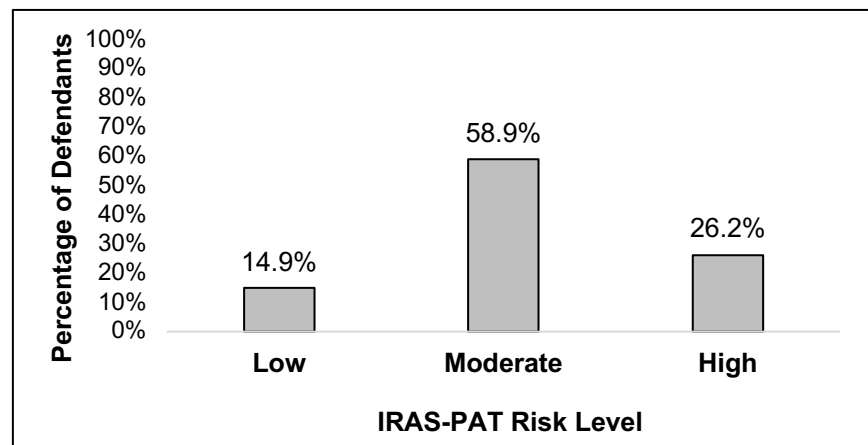


Figure 28. Jefferson County - Distribution of IRAS-PAT Risk Levels

Pretrial Supervision. The majority of the defendants were released on formal pretrial supervision without additional supervision conditions (53.6%, $n = 133$). Additional conditions included formal supervision with electronic monitoring (26.2%, $n = 65$), pretrial supervision with bond (7.7%, $n = 19$), and pretrial supervision with bond and electronic monitoring (5.6%, $n = 14$). In total, 47 individuals were released on bond (19%).

Most defendants received formal pretrial supervision (65.3%, $n = 159$), followed by formal pretrial supervision with electronic monitoring (24.6%, $n = 61$) and text notifications (2.4%, $n = 6$). Judge-ordered supervision adhered to recommended conditions 72.6% of the time ($n = 180$). Judicial override of recommended supervision conditions occurred in 27.4% ($n = 68$) of cases. When there was disagreement between recommended and judge-ordered supervision, 83.8% of the sample was released on stricter supervision terms while only 16.2% was released on less restrictive supervision.

Case Outcomes. On average, defendants spent 119.15 days on supervision prior to resolution of their court case or supervision failure ($SD = 114.446$, Range: 4 to 573 days). Slightly less than half of the defendants failed to complete supervision without pretrial misconduct (48.8%, $n = 121$). Among those who failed on supervision, most had a new arrest (58.7%, $n = 71$) followed by an FTA (38.8%, $n = 47$). Few participants experienced an other arrest as the first failure event (2.5%, $n = 3$). Overall, 127 individuals completed their supervision period without any pretrial misconduct (51.2%, $n = 127$).

Bivariable Comparisons

Supervision Level by Risk Level. We found a significant association between risk level and supervision level, $X^2(2) = 59.43, p < .001$, Cramer's $V = 0.49$, corresponding to a large effect. As shown in Figure 29, although High risk defendants were least likely to be placed on Low supervision (24.6%, $n = 16$), Moderate risk defendants were more likely to be placed on Low supervision (80.1%, $n = 117$) relative to Low risk defendants (56.8%, $n = 21$).

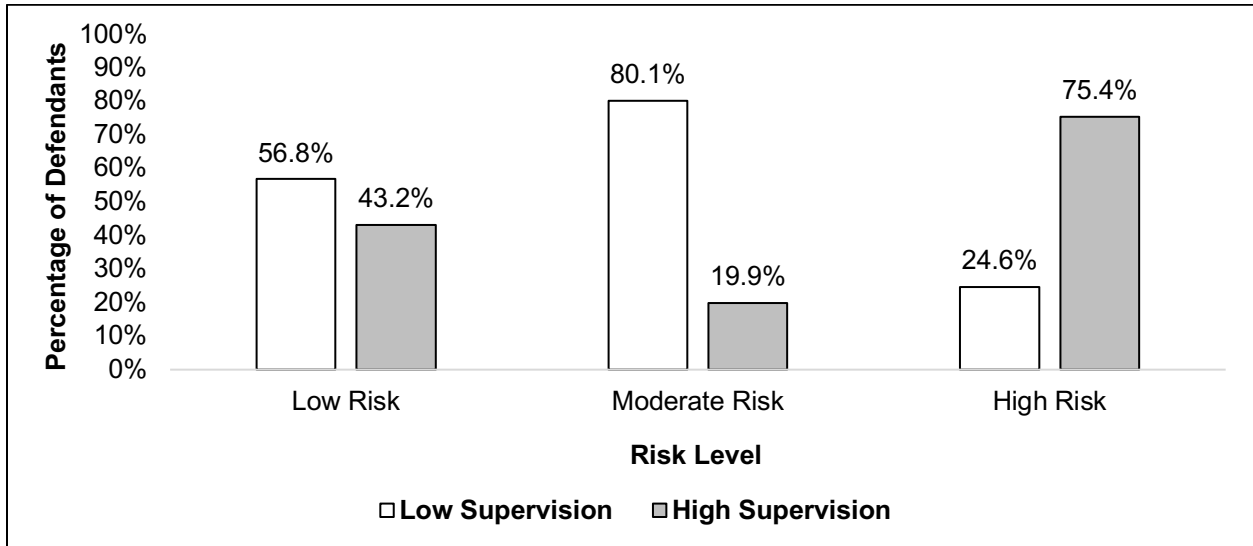


Figure 29. Jefferson County - Risk Level by Supervision Level

Judicial Adherence by Risk Level. We found evidence of a significant association between risk level and judicial adherence, $X^2(2) = 13.46, p < .001$, Cramer's $V = .23$, corresponding to a small effect. Defendants classified at Low risk had a lower likelihood of judicial adherence (48.7%, $n = 18$) relative to defendants classified at Moderate (78.8%, $n = 115$) or High (72.3%, $n = 47$) risk. See Figure 30.

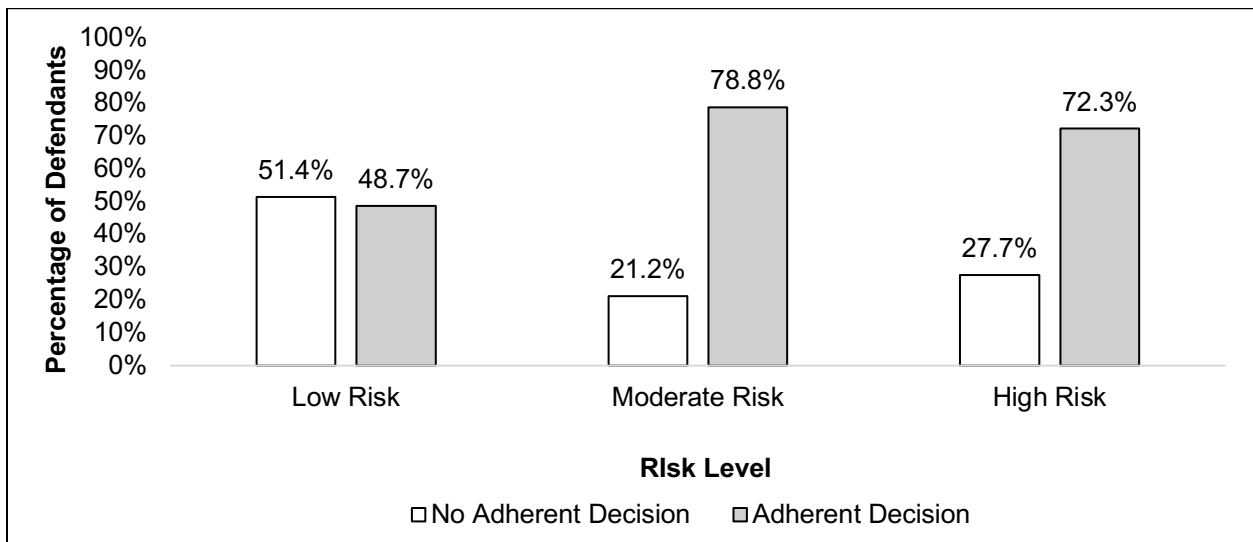


Figure 30. Jefferson County - Risk Level by Judicial Adherence

Supervision Strategies (RQ #1)

Models examining the effect of supervision strategies on any supervision failure are presented in Table 9. Because supervision level was defined by the use of electronic monitoring, supervision level was excluded as a specific variable in these models. As shown, in Block 1, controlling for time on supervision and highest charge level, there were no statistically significant differences in supervision failure between Moderate and Low risk defendants ($p = .202$). However, High risk defendants had a significantly higher rate of failure (59.1%) relative to Low risk defendants (35.8%, $p = .022$). In particular, High risk defendants were 2.83 times more likely to experience failure relative to Low risk defendants. In Block 2, after controlling for predictors in Block 1, there were no differences in rates of supervision failure based on whether pretrial defendants received electronic monitoring ($p = .618$) or bond ($p = .501$). In Block 3, there was no evidence showing that the effect of electronic monitoring on any supervision failure differed as a function of risk level ($ps \geq .626$). However, the effect of bond on any supervision failure differed between High and Low risk defendants ($p = .044$), but not between Moderate and Low risk defendants ($p = .725$). As shown in Figure 31, whereas rates of failure were similar between High risk defendants who received (60.3%) and did not receive (61.3%) bond, Low risk defendants who received bond (26.5%) had lower rates of failure relative to Low risk defendants who did not receive bond (38.2%).

Table 9. Jefferson County - Logistic Regression Models of Supervision Strategies on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.01	0.00	<.001	0.99	0.99, 0.99
Risk Level (Low)					
Moderate	0.52	0.41	.202	1.68	0.76, 3.71
High	1.04	0.45	.022	2.83	1.17, 6.90
Highest Charge Level	-0.11	0.13	.398	0.89	0.69, 1.16
Block 2					
Electronic Monitoring (No)	-0.16	0.33	.618	0.84	0.45, 1.61
Bond (No)	-0.24	0.36	.501	0.78	0.38, 1.59
Δ -2LL	$X^2 (2) = 0.82, p = .664$				
Block 3					
Risk Level (Low) by Electronic Monitoring (No)					
Moderate Risk with EM	0.13	1.00	.900	1.14	0.16, 8.16
High Risk with EM	0.54	1.10	.626	1.71	0.20, 14.82
Risk Level (Low) by Bond (No)					
Moderate Risk with Bond	-0.36	1.03	.725	0.70	0.09, 5.28
High Risk with Bond	-2.20	1.09	.044	0.11	0.01, 0.94
Δ -2LL	$X^2 (4) = 6.73, p = .151$				

Notes. $N = 248$.

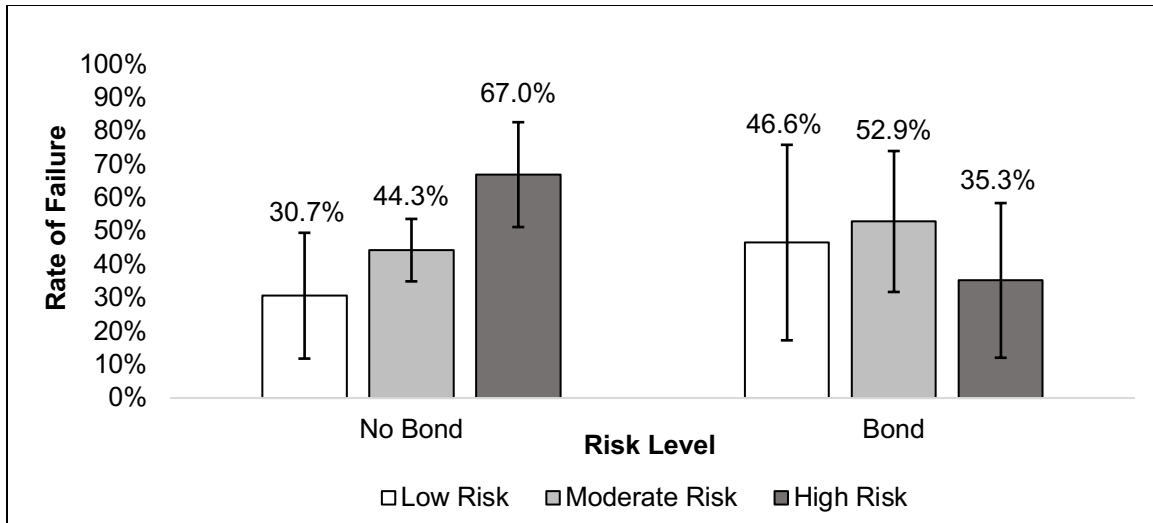


Figure 31. Jefferson County – Supervision Failure Rates by Risk Level and Bond

Risk Principle Adherence (RQ #2)

Models examining risk principle adherence on any supervision failure are presented in Table 10. As shown in Block 2, after controlling for time on supervision, risk level, and highest charge level, there were no differences in supervision failure outcomes between defendants supervised at High or Low supervision ($p = .602$). In Block 3, there was no evidence that the effect of supervision level on any supervision failure differed as a function of a defendant’s risk level, $ps \geq .328$.

Table 10. Jefferson County - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.01	0.00	<.001	0.99	0.99, 1.00
Risk Level (Low)					
Moderate	0.52	0.41	.202	1.68	0.76, 3.71
High	1.04	0.45	.022	2.84	1.17, 6.90
Highest Charge Level	-0.11	0.13	.398	0.90	0.69, 1.16
Block 2					
Supervision Level (Low)	-0.17	0.33	.602	0.89	0.45, 1.60
Δ -2LL	$X^2 (1) = 0.42, p = .517$				
Block 3					
Risk Level (Low) by Supervision Level (Low)					
Moderate Risk with High Supervision	-0.06	0.89	.947	0.94	0.16, 5.41
High Risk with High Supervision	0.62	1.06	.328	1.86	0.27, 12.98
Δ -2LL	$X^2 (2) = 0.70, p = .705$				

Notes. $N = 248$.

Judicial Adherence (RQ #3)

Models examining the effect of a judicial adherence on any supervision failure are presented in Table 11. As shown in Block 2, after controlling for time on supervision, risk level, and highest charge, there was no difference in likelihood of supervision failure between defendants who received or did not receive a judge-ordered supervision decision that was adherent to recommended supervision levels ($p = .206$).

Table 11. Jefferson County - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	<i>B</i>	<i>SE</i>	<i>p</i>	OR	95% CI
Block 1					
Time on Supervision	-0.01	0.00	<.001	0.99	0.99, 1.00
Risk Level (Low)					
Moderate	0.52	0.41	.202	1.68	0.76, 3.71
High	1.04	0.45	.022	2.84	1.17, 6.90
Highest Charge Level	-0.11	0.13	.398	0.90	0.69, 1.16
Block 2					
Judicial Adherence (No)	0.40	0.31	.206	1.49	0.80, 2.76
Δ -2LL	$\chi^2 (1) = 1.61, p = .206$				

Notes. $N = 248$.

Summary of Findings

- IRAS-PAT risk levels showed some ability to predict supervision failure. There were no differences in supervision failure rates between Low and Moderate risk defendants; however, High risk defendants had higher rates of failure relative to Low risk defendants.
- There were no differences in supervision failure rates between defendants supervised at lower or higher levels of supervision, after adjusting for charge severity and risk level.
- After adjusting for charge severity and risk level, there were no differences in likelihood of any supervision failure between defendants who did and did not receive electronic monitoring or bond.
- There was evidence of risk principle adherence for High risk defendants, but less so for Low risk defendants, who were more likely to be placed at higher supervision relative to Moderate risk defendants.
- In three out of four cases, judge-ordered supervision conditions were consistent with recommended guidelines.
- Judicial adherence to recommended supervision conditions varied as a function of risk level. Low risk defendants were less likely to receive judge-ordered supervision conditions that were adherent with structured guidelines.
- However, there was no difference in the likelihood of supervision failure based on whether or not judge ordered supervision conditions consistent with recommendations

Conclusion

In summary, there were few differences in supervision failure rates as a function of supervision level or other supervision conditions like bond or electronic monitoring requirements, suggesting that these strategies appropriately mitigated misconduct risk. However, relative to other jurisdictions, we found less evidence of risk principle adherence. There was a high proportion of Low risk defendants who were supervised with a high bond amount or with electronic monitoring. Moderate risk defendants, in contrast, were much more likely to be supervised without these requirements. Despite these findings, there were no differences in supervision failure rates between defendants who were supervised with more lenient or stricter supervision conditions. However, Low risk defendants were most likely to have judge-ordered supervision decisions that were non-adherent to structured guidelines.

Importantly, one caveat to these findings is that researchers assigned supervision levels artificially to defendants based on whether electronic monitoring or a high bond was ordered. This decision was made in consultation with Jefferson County staff and in keeping with supervision levels used in other jurisdictions; however, assigned supervision levels may not have fully represented actual practice. Additionally, distinct from other jurisdictions, there was no graduated meeting frequency across risk levels. Both supervision levels had similar meeting requirements whereas in other jurisdictions, higher levels of supervision typically indicated more frequent reporting requirements. However, we note that there is not clear guidance in the research literature on the utility of meeting frequency in reducing pretrial misconduct (Austin et al., 1985; Goldkamp & White, 2006). Finally, we found little impact of bond or electronic monitoring on supervision failure rates. This could suggest that these strategies were appropriately targeted toward highest risk defendants, thereby mitigating risk, or that these strategies had little impact on reducing pretrial misconduct relative to defendants who had similar risk levels and charge severity.

Although judges generally adhered to recommended supervision conditions, rates of adherence were generally lower among Low risk individuals. Further investigation may be warranted to examine factors driving judicial overrides for Low risk defendants, in particular. One possible explanation for higher rates of non-adherent decisions for Low risk defendants is that Jefferson County concurrently uses the Ontario Domestic Assault Risk Assessment (ODARA; Hilton et al., 2010) for domestic violence offenses. According to County officials, many defendants who are booked on domestic violence offenses score as Low risk on the IRAS-PAT, but often score higher on the ODARA. High risk scores on the ODARA override the IRAS-PAT risk level and result in mandatory electronic monitoring as part of pretrial supervision.

Consistent with other counties, there may be opportunities to develop and refine structured supervision guidelines to separate pretrial supervision intensity (e.g., reporting requirements) from additional conditions of supervision (e.g., bond, use of electronic monitoring). This may allow for higher risk defendants to be supervised at higher levels of supervision and vice-versa for lower risk defendants, consistent with the risk principle of effective offender rehabilitation.

MONROE COUNTY

Study Context

Monroe County began its pretrial pilot program in October 2016 by creating a pretrial services division within the Monroe Circuit Court Probation Department. As part of this program, Monroe County probation officers began administering the IRAS-PAT to individuals detained in the local county jail. The target population included all new misdemeanor- and felony-level arrestees, excluding individuals on probation, parole, other community supervision, or held on an out-of-county hold or Writ of Attachment. All defendants were assessed following jail booking but prior to an initial court appearance for the purposes of informing the pretrial release and supervision decisions. Monroe County uses structured guidelines for the incorporation of risk assessment information in both pretrial release and supervision conditions (see Appendix). These guidelines were updated in December 2017 and again in February of 2019. Matrix changes have focused on reducing the number of supervision recommendations to streamline decision-making. To capture consistent guidelines in place during the study period, we defined the study period as January 2018 through January 2019 with follow-up through January 2020.

Methods

Overview

Inclusion criteria for Monroe County mirrored overall criteria. First, individuals had to start supervision during the 1-year study period. Second, we had to be able to link individuals separately to court and jail records to procure information on court case disposition, FTA outcomes, and booking charges. Third, all defendants had to have assessment information available and that assessment completed close to the time of the index jail booking. Fourth, all defendants could be included in the sample only once. Finally, defendants had to have a court case disposition before the end of the follow-up period.

Monroe County maintains a unified data management system (QUEST) for all functions that fall within the Monroe Circuit Court Probation Department. As a result, we received records on all individuals who were supervised during the study period as well as individual- and case-level identifiers that allowed us to other provided datasets. These datasets included all new arrests occurring in Monroe County, technical violations filed, requirements of supervision, recommended and judge-ordered supervision conditions, FTA events, and warrant records.

The specific study period for sample inclusion was defined as January 22nd, 2018 through January 21st, 2019. The follow up period lasted from January 22nd, 2019 through January 21st, 2020.

Data Cleaning

The sampling frame consisted of 876 individuals under active supervision during the study period. Of these 876 cases, 222 cases were removed because they were individuals who were under pretrial supervision more than once during the study period. An additional 230 individuals did not have a court case disposition by the end of the 1-year follow-up period, meaning they were still on active supervision. Finally, thirteen cases were removed for not having a risk assessment. The final sample consisted of 411 unique, individual defendants who started supervision between January 22nd 2018 and January 21st, 2019 and completed supervision by January 21st, 2020. Figure 32 shows the data cleaning process.

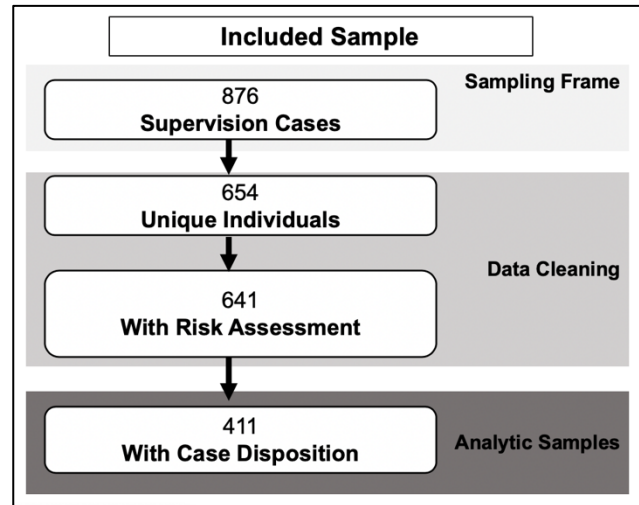


Figure 32. Monroe County - Data Cleaning Process

Sample

Defendants in Monroe County were an average age of 33.81 years old ($SD = 10.344$, Range: 18 to 69). Defendants were on average male (74.7%, $n = 307$; female: 25.3%, $n = 104$), White (82%, $n = 337$; other: 18%, $n = 74$), and arrested for a felony-level offense (77.6%, $n = 319$). Fewer defendants were arrested on misdemeanor-only level offenses (22.4%, $n = 92$). The most frequently occurring highest charges included drug (31.1%, $n = 128$), assault (17.5%, $n = 72$), theft (10%, $n = 41$), and driving under the influence (9.2%, $n = 38$) offenses. Figure 33 displays the most frequently occurring offenses. These charge categories represent the highest offense only for each case and are therefore mutually exclusive; however, defendants may have been booked on other, lower charges concurrently.

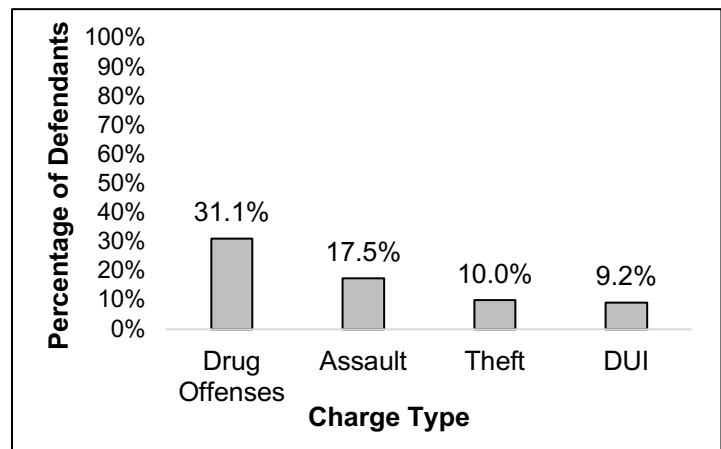


Figure 33. Monroe County - Highest Offense Charge Type

Variables

Covariates. Covariates included *charge severity* (1-10), with lower scores corresponding to more serious offenses. Specifically, felony levels 1-6 were coded as 1-6 with misdemeanor levels A, B, and C coded as 7, 8, and 9, respectively. Other offenses were coded as 10. The other covariate in all models was *time on supervision* (days), which measured as the number of days between release from jail (i.e., start of supervision) and either first supervision violation or court case disposition.

Independent Variables. Independent variables included *IRAS-PAT risk level* (Low, Moderate, High). The IRAS-PAT is a 7-item actuarial tool designed to predict risk of arrest and FTA during the pretrial period (Latessa et al., 2009). Items measure four criminogenic risk domains: criminal history, employment, residential stability, and substance use. Item-level ratings produce a total score ranging from 0 to 9, which classify defendants into three risk bins: Low (0-2), Moderate (3-5), and High (6+). *Supervision level* (Low, Moderate, High) measured the judge-ordered supervision level. Low (Level 1) supervision consisted of a monthly face-to-face meeting with a pretrial case manager, monthly criminal record checks, and other conditions ordered by the court. Moderate (Level 2) supervision consisted of one monthly face-to-face meeting with a pretrial case manager plus one other contact, monthly criminal record checks, and other conditions ordered by the court. High supervision (Level 3) consisted at least two face-to-face meetings with a pretrial case manager each month, monthly criminal record checks, and other conditions ordered by the court. Other supervision strategies included *electronic monitoring* (yes; no), *bond* (yes; no), and *drug testing* (yes; no) as conditions of supervision. *Judicial adherence* (yes; no) measured whether the judge-ordered supervision level was adherent to structured guidelines. Recommended as well as judge-ordered supervision conditions were provided by Monroe County. We coded decisions as adherent when the recommended supervision level agreed with the judge-ordered supervision level. We additionally measured *direction of judicial adherence* (equal, lower, higher), which defined whether the court-ordered supervision level as equal to, lower than, or higher than the recommended supervision level.

Dependent Variable. The main dependent variable was *any pretrial supervision failure* (yes; no), which was defined as any new arrest, FTA, or other arrest or technical violation occurring during the pretrial supervision period. To ensure consistency with other county records, we defined technical violations as those resulting in a warrant issued (i.e., leading to an arrest). All arrest records provided by Monroe County were for new arrests only.

Data Limitations

Despite detailed records provided by Monroe County, we were unable to measure all potential supervision strategies due to low occurrences of various conditions. Additionally, although a high number of supervision cases started during the 1-year study period, many cases represented the same individuals or cases that were not resolved by the end of the follow-up period. As a result, the sample size was smaller than desired.

Analytic Strategy

First, we conducted descriptive statistics on all study variables. Second, we examined distributions of risk scores by other key study variables (e.g., supervision levels, judicial adherence) with measures of association. For all comparisons, we report the Cramer's V effect size. Cramer's V values of .10, .30, and .50 indicate small, medium, and large effect sizes, respectively (Cohen, 1988). Third, to address the main research questions, we conducted a series of hierarchical multivariable logistic regression models. All models controlled for IRAS-PAT risk level, highest charge level, and time on supervision in Block 1. Variables of interest were added to models in subsequent blocks, and overall improvement in the predictive capacity of the model was assessed using changes in -2 log likelihood (-2LL) statistics. For all multivariable models, we report odds ratios (ORs) and their associated 95% confidence intervals. Odds ratios

are a measure of effect size that communicate the likelihood, or odds, of an event occurring in one group relative to another group. An odds ratio of 1 indicates no difference in the likelihood of an event happening between groups. An odds ratio less than 1 indicates that the group of interest has a lower odds of experiencing the event (i.e., pretrial supervision failure) relative to the reference group. An odds ratio above 1 indicates that the group of interest has a higher odds of experiencing the event relative to the reference group. Odds ratios of 1.50, 3.00, and 5.00 typically indicate small, medium, and large effect sizes, respectively (Chen et al., 2010). Due to the small sample size and low number of failure events, multivariable analyses for within-county investigations focused on modeling any failure rather than type of failure. For all analyses, we used a $p < .05$ criterion for statistical significance. Where we found significant effects, we reported predicted probabilities of supervision failure using average marginal effects.

Results

Descriptive

IRAS-PAT

The average IRAS-PAT score was 3.99 ($SD = 1.82$, Range: 0 to 9). The overwhelming majority of defendants were assessed at an IRAS-PAT score of 5 or below (79.6%, $n = 327$), corresponding to a Low or Moderate risk level. Figure 34 shows the distribution of risk scores.

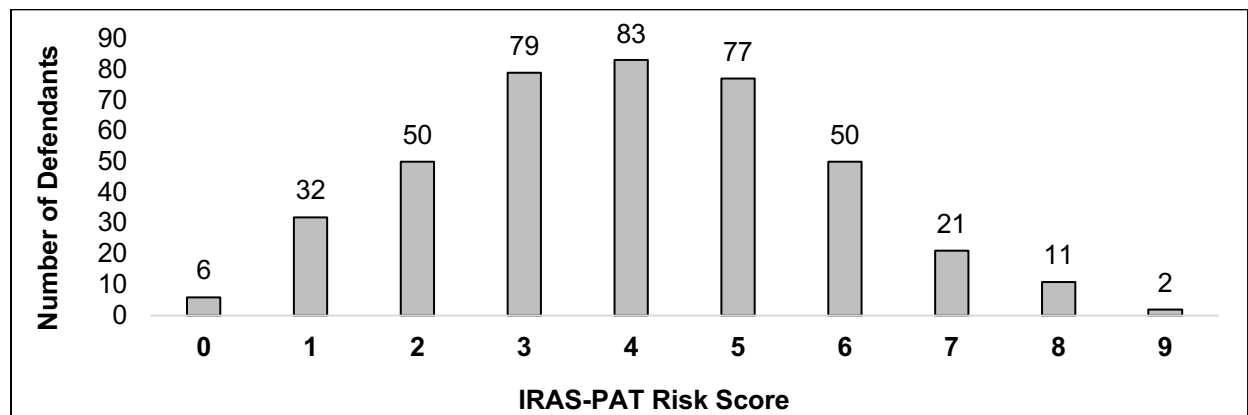


Figure 34. Monroe County – Distribution of IRAS-PAT Risk Scores

As shown in Figure 35, most defendants were classified at Moderate risk (58.2%, $n = 239$), followed by Low (21.4%, $n = 88$), and High (20.4%, $n = 84$) risk.

Supervision Conditions

Defendants were released primarily on Low supervision (64.5%, $n = 265$) with fewer on Moderate (30.7%, $n = 126$) or High (4.9%, $n = 20$) supervision. Common supervision conditions included bond (98.0%, $n = 403$), drug testing (15.1%, $n = 62$), and electronic monitoring (3.9%, $n = 16$). All defendants

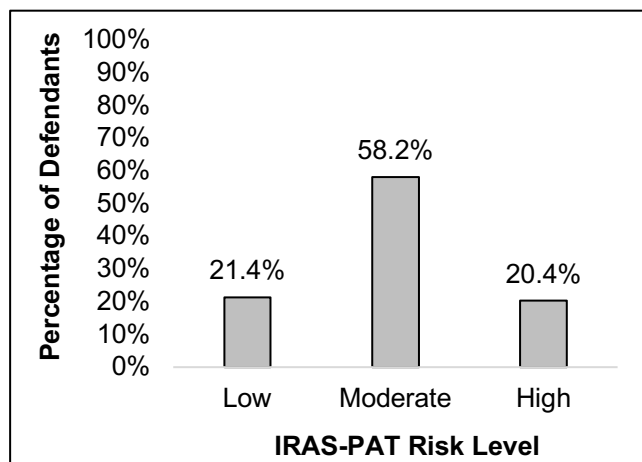


Figure 35. Monroe County - IRAS-PAT Risk Levels

on pretrial supervision additionally received telephone notifications of court hearings.

The majority of defendants were ordered to supervision levels that were adherent to recommended supervision levels (69.1%, $n = 284$). Of remaining 127 defendants, seven individuals were ordered lower supervision than recommended (5.5%), while 120 were ordered to higher supervision (94.5%).

Case Outcomes

Roughly half of Monroe County defendants completed pretrial supervision without a failure event (51.1%, $n = 210$). Of the 48.9% of defendants ($n = 201$) who violated their pretrial conditions, 57.7% were arrested on a new offense ($n = 116$), 26.9% defendants failed on a technical violation resulting in an arrest warrant ($n = 54$), and 15.4% had an FTA resulting in an arrest warrant ($n = 31$). Pretrial defendants were on supervision for an average of 150.31 days prior to a court case disposition or failure event ($SD = 141.62$, Range: 1 to 684).

Bivariable Comparisons

Risk Level by Supervision Level.

We examined the association between risk level and supervision level as evidence of risk principle adherence. Findings showed a large association between risk level and supervision level, $X^2(4) = 184.03$, $p < .001$, Cramer's $V = 0.47$. Low risk defendants were most likely to be supervised at Low supervision (96.6%, $n = 85$), followed by Moderate (72.4%, $n = 173$), and then High risk defendants (8.3%, $n = 7$). The opposite trend was shown for Moderate supervision level. At Moderate supervision, Low risk defendants were least likely to be supervised (2.3%, $n = 2$) relative to Moderate (27.2%, $n = 65$) and High risk defendants (70.2%, $n = 59$). Similarly, High risk defendants were most likely to be supervised at High supervision (21.4%, $n = 18$) relative to Moderate (0.4%, $n = 1$) and Low risk (1.1%, $n = 1$) defendants. These findings provide good evidence of risk principle adherence. See Figure 36.

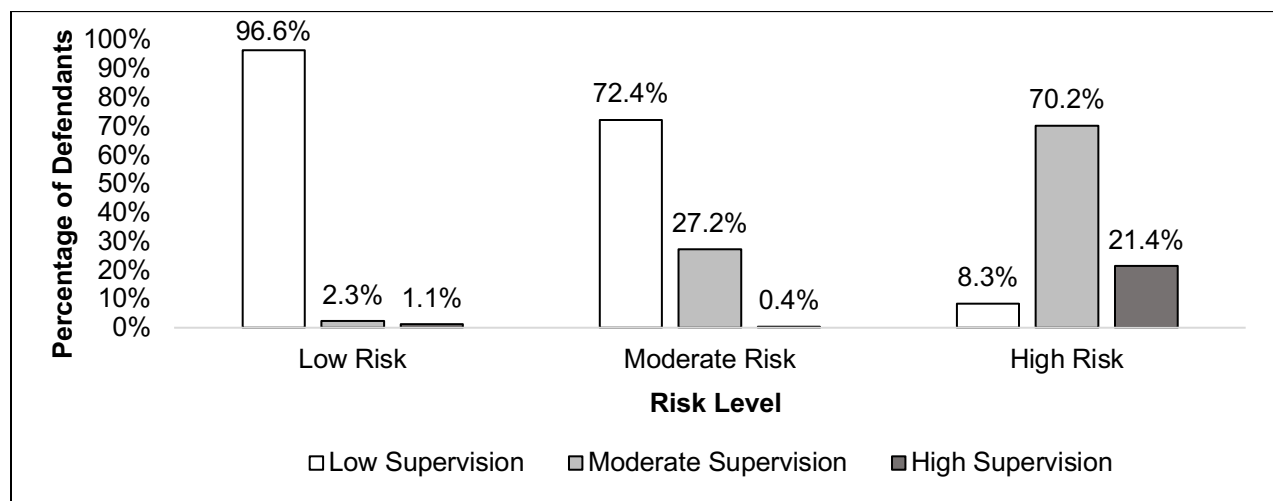


Figure 36. Monroe County - Risk by Supervision Level

Risk Level by Judicial Adherence.

There was no association between risk level and judicial adherence with recommended supervision conditions, $X^2 (2) = 2.30, p = .317$. Rates of judicial adherence were similar across participants classified at Low (62.5%, $n = 55$), Moderate (70.7%, $n = 169$), and High (71.4%, $n = 60$) risk levels. See Figure 37.

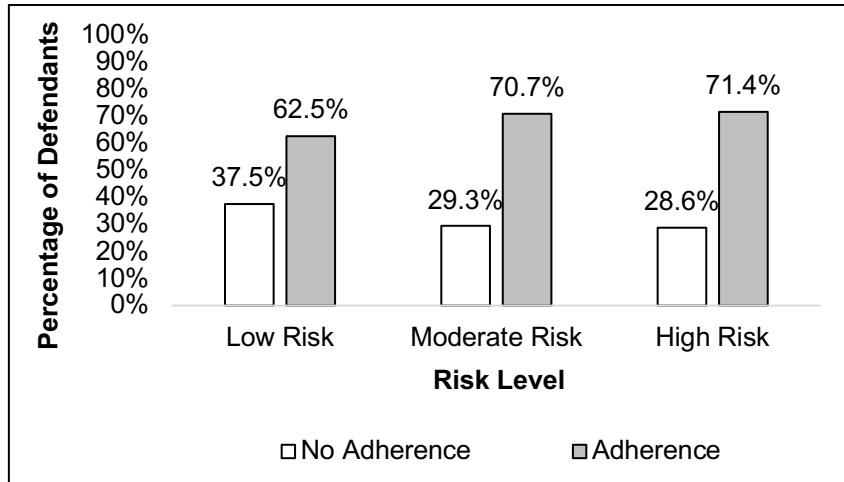


Figure 37. Monroe County - Judicial Adherence by Risk Level

Supervision Strategies (RQ #1)

Logistic regression models examining the impact of supervision strategies on supervision failure are presented in Table 12. As shown in Block 1, after controlling for time on supervision and severity level, High risk and Moderate risk defendants were more likely to fail on supervision (59.9% and 50.2%, respectively) relative to Low risk defendants (32.4%), $ps \leq .002$. In Block 2, the addition of supervision strategies showed few differences in supervision failure outcomes between those who did and did not receive bond ($p = .606$), those who did and did not receive electronic monitoring ($p = .133$), as well as by supervision level ($ps \geq .463$). In contrast, defendants who were required to complete drug testing were significantly more likely to fail on supervision (61.0%) relative to defendants without drug testing requirements (47.1%), $p = .018$.

Table 12. Monroe County - Logistic Regression Models of Supervision Strategies on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.01	<0.01	<.001	0.98	0.98, 0.99
Severity Level	-0.10	0.13	.445	0.91	0.70, 1.17
Risk Level (Low)					
Moderate	1.13	0.36	.002	3.10	1.52, 6.30
High	1.80	0.45	<.001	6.05	2.49, 14.75
Block 2					
Bond (No)	-0.56	1.10	.606	0.57	0.07, 4.87
Drug Testing (No)	1.09	0.46	.018	2.98	1.21, 7.35
Electronic Monitoring (No)	1.65	1.10	.133	5.20	0.61, 44.68
Supervision Level (Low)					
Moderate Supervision	0.22	0.36	.547	1.25	0.61, 2.55
High Supervision	-0.55	0.74	.463	0.58	0.14, 2.49
$\Delta -2LL$	$X^2 (5) = 14.30, p = .014$				

Notes. $N = 411$.

Risk Principle Adherence (RQ #2)

Logistic regression models examining the effect of risk principle adherence on supervision failure are presented in Table 13. As shown in Block 2, after adjusting for relevant covariates in Block 1, there was no difference in the likelihood of supervision failure between defendants who were supervised at High (42.8%) and Moderate (50.8%) supervision relative to Low supervision (48.5%), $ps \geq .563$. We were unable to conduct statistical tests of supervision failure by risk level and supervision level. However, we present these data for descriptive purposes in Figure 38.

Table 13. Monroe County - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.01	<0.01	<.001	0.98	0.98, 0.99
Severity Level	-0.10	0.13	.445	0.91	0.70, 1.17
Risk Level (Low)					
Moderate	1.13	0.36	.002	3.10	1.52, 6.30
High	1.80	0.45	<.001	6.05	2.49, 14.75
Block 2					
Supervision Level (Low)					
Moderate	0.17	0.36	.642	1.18	0.59, 2.37
High	-0.41	0.71	.563	0.66	0.16, 2.67
$\Delta -2LL$	$X^2 (2) = 0.89, p = .641$				

Notes. N = 411.

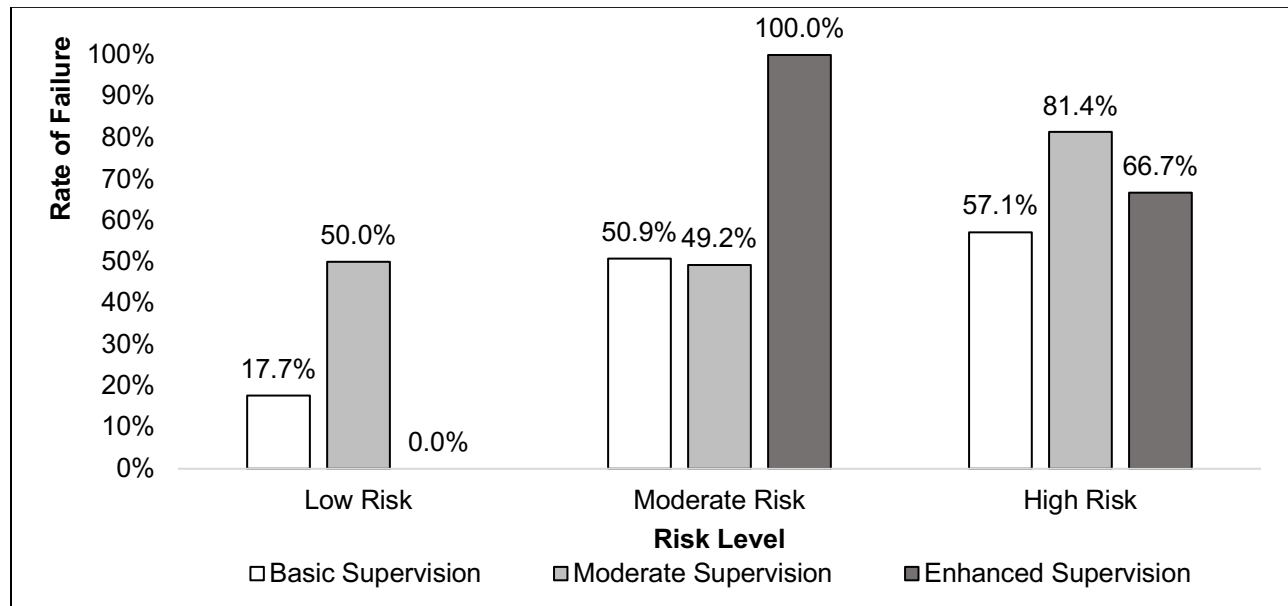


Figure 38. Monroe County - Supervision Failure Rates by Risk and Supervision Level

Judicial Adherence (RQ #3)

Logistic regression models examining the effect of judicial adherence to recommended supervision conditions are presented in Table 14. As shown, after adjusting for relevant covariates in Block 1, there was no difference in likelihood of supervision failure between defendants who did and did not receive judge-ordered supervision conditions that were adherent to recommended conditions, $p = .475$.

Table 14. Monroe County - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.01	<0.01	<.001	0.98	0.98, 0.99
Severity Level	-0.10	0.13	.445	0.91	0.70, 1.17
Risk Level (Low)					
Moderate	1.13	0.36	.002	3.10	1.52, 6.30
High	1.80	0.45	<.001	6.05	2.49, 14.75
Block 2					
Judicial Adherence (No)	0.21	0.29	.475	1.23	0.70, 2.18
Δ -2LL	$X^2(1) = 0.51, p = .475$				

Notes. $N = 411$.

Summary of Findings

Several key findings emerged from this investigation in Monroe County:

- IRAS-PAT risk levels were good predictors of pretrial supervision failure.
- There were no differences in rates of supervision failure between defendants who received and did not receive electronic monitoring, bond, or various supervision levels.
- However, defendants who received drug screening as a condition of supervision were more likely to fail on supervision.
- Results showed strong evidence of risk principle adherence. The highest risk defendants were most likely to be placed on High supervision and least likely to be placed on Low supervision, and vice-versa for Low risk defendants.
- Roughly 3 in every 4 defendants received supervision decision adherent to structured guidelines. When decisions diverged, they were most likely to be stricter.
- There was no evidence that judicial decisions non-adherent with structured guidelines differed by risk level; rather, non-adherent decisions were equally likely for defendants assessed at all risk levels.
- Defendants who received adherent decisions were no more or less likely to fail on supervision relative to defendants who received non-adherent decisions.

Conclusion

In summary, we found no difference in supervision outcomes between defendants who were placed at different risk levels or as a function of whether defendants received bond or electronic monitoring. These results may suggest that these supervision strategies were targeted appropriately to defendants, despite defendants having higher rates of supervision failure overall relative to other jurisdictions. We were unable to test statistically whether the association between supervision level and supervision failure differed by risk level due to a lack of variability in outcomes at some risk and supervision levels. However, descriptively, we found that all Moderate and High risk defendants supervised at High supervision failed to complete supervision successfully without a failure event. Rates of failure were similarly much higher among Low risk defendants who were supervised at High supervision relative to other supervision levels. However, we note that these findings did not control for differences in charge severity. Adjusting for supervision level, risk level, and charge severity, we did find that defendants who were placed on drug testing had higher rates of pretrial failure, suggesting this strategy was not successful in reducing pretrial misconduct. Relative to other counties, Monroe County had very high levels of risk principle adherence, which may explain why there were no differences in outcomes across supervision levels. Furthermore, findings showed high levels of judicial adherence with structured supervision guidelines, though non-adherent decisions were overwhelmingly for stricter supervision conditions.

Overall, findings point to a clear prioritization of risk principle adherence relative to other counties, which again may be responsible for similar levels of pretrial misconduct across supervision levels. There has been little investigation of risk principle adherence broadly in the pretrial supervision context, but aligning risk level and conditions of supervision has been noted as a challenge in other community supervision contexts (VanBenschoten et al., 2016). Additionally, because Moderate and High risk defendants supervised at High supervision had especially high rates of supervision failure, further investigation into these trends may be warranted. These trends could reflect that these defendants were at higher risk overall or had more opportunities to fail on supervision due to increased monitoring. Finally, findings may warrant further investigation into the use of drug testing for pretrial defendants. Prior studies have noted that drug testing is associated with higher rates of failure on probation supervision, particularly for narcotic drugs (Gray et al., 2001; Hicks et al., 2020), and well as in drug court settings (Shannon et al., 2016). Similarly, in Monroe County, even after adjusting for charge severity, risk level, and supervision level, drug testing was associated with higher rates of supervision failure.

Although Monroe County data showed high levels of adherence with structured guidelines and good evidence of risk principle adherence, there may be opportunities to understand factors driving high failure rates among defendants supervised at Enhanced Supervision. Additionally, similar to other jurisdictions, understanding factors that motivate decisions to override recommended conditions with stricter supervision conditions may be beneficial to understand not only judicial decision-making but other factors that may have utility in informing supervision recommendations. Finally, further investigation into the use of drug testing as a condition of pretrial supervision, in the absence of other supports (e.g., connection to treatment), may be necessary to understand whether use of this strategy may be contributing to supervision failure in Monroe County.

POOLED DATASET

Purpose of Investigation

Due to limited sample sizes in county-level investigations, we replicated analyses using a pooled dataset of defendants on pretrial supervision across all five jurisdictions. The purpose of this analysis was to both increase our ability to detect statistically significant effects and increase the generalizability of findings across jurisdictions. To enable pooled analyses, we adopted uniform operationalization of outcome variables across jurisdictions. We also adopted overall inclusion criteria to guide selection of cases in each jurisdiction. Variables of interest, such as supervision level and judicial adherence, were also operationalized similarly to enable cross-county analyses. Below we describe the unique steps we took to compile and conduct analyses on pooled data.

Methods

Overview

Inclusion criteria were identical to overall study inclusion criteria with one exception: all individuals had to be on formal—rather than administrative—supervision. For individual county analyses, we relied on county discretion to determine the individuals placed on supervision. Some counties opted to include administratively supervised individuals while others excluded these individuals. To ensure consistency across counties, we excluded all defendants placed on administrative (i.e., non-reporting) supervision during the study period. Among 2,586 pretrial defendants across five counties, 945 were placed on administrative supervision and excluded from pooled analyses. The final pooled sample included 1,641 pretrial defendants.

Sample

On average, defendants were 33.54 years old ($SD = 10.753$, Range: 18 to 71). Most of the pretrial defendants were male (69.8%, $n = 1145$; female: 30.2%, $n = 496$), White (82.1%, $n = 1,348$; non-White: 17.8%, $n = 293$), and had an average charge severity level of 5.80 ($SD = 1.921$, Range: 1 to 10), corresponding to a Level 6 felony. The most frequently occurring highest charges were for drug (27.5%, $n = 452$), followed by assault (18.0%, $n = 295$), and driving under the influence (15.8%, $n = 259$) offenses. These categories are displayed in Figure 39. Charge categories are mutually exclusive, but defendants may have been booked on other charges concurrently.

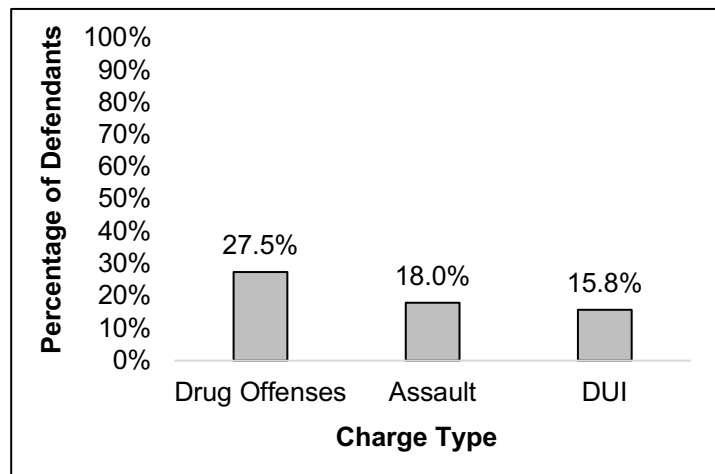


Figure 39. Pooled - Highest Offense Charge Type

Variables

Covariates. Covariates included *charge severity* (1-10), with lower scores corresponding to more serious offenses. Specifically, felony levels 1-6 were coded as 1-6 with misdemeanor levels A,

B, and C coded as 7, 8, and 9, respectively. Other offenses were coded as 10. The other covariate in all models was *time on supervision* (days), which measured as the number of days between release from jail (i.e., start of supervision) and either first supervision violation or court case disposition. *County* (Jefferson, Hamilton, Hendricks, Monroe, and Bartholomew) indicated the jurisdiction in which the defendant was under supervision, with Jefferson as the reference group.

Independent Variables. Independent variables included *IRAS-PAT risk level* (Low, Moderate, High). The IRAS-PAT is a 7-item actuarial tool designed to predict risk of arrest and FTA during the pretrial period (Latessa et al., 2009). Items measure four criminogenic risk domains: criminal history, employment, residential stability, and substance use. Item-level ratings produce a total score ranging from 0 to 9, which classify defendants into three risk bins: Low (0-2), Moderate (3-5), and High (6+). *Supervision level* (Low, Moderate, High) measured the judge-ordered supervision level. Supervision levels were coded based on the categorization in each jurisdiction. However, because the definition of supervision level varied widely across jurisdictions, we additionally defined *meeting frequency* (<1 meeting/month, 1 meeting/month, 2+ meetings/month) as another measure of supervision intensity. All jurisdictions provided data on *electronic monitoring* (yes; no), which was defined as a unique supervision strategy. *Judicial adherence* (yes; no) measured whether the judge-ordered supervision level was adherent to structured guidelines. We additionally measured *direction of judicial adherence* (equal, lower, higher), which defined whether the court-ordered supervision level as equal to, lower than, or higher than the recommended supervision level.

Dependent Variable. The main dependent variable was *any pretrial supervision failure* (yes; no), which was defined as any new arrest, FTA, or other arrest or technical violation occurring during the pretrial supervision period. We additionally measured *failure type* (no failure; FTA; new arrest; technical violation) to indicate whether a defendant experienced pretrial failure and the first failure event.

Data Limitations

Despite our consistent operationalization of variables across counties, we received data from multiple administrative sources, which may have resulted in discrepancies in how key outcome variables were measured. Similarly, although we adopted consistent criteria for categorization of supervision levels, there remained between-county differences in pretrial supervision requirements across levels. For example, “Low” or “Basic” supervision resulted in difference conditions of supervisions across jurisdictions. This inconsistency may have introduced error into models examining effects of supervision level on pretrial supervision outcomes. Finally, although this was a five-county investigation, generalization of findings beyond these jurisdictions or outside of Indiana may be limited.

Analytic Strategy

First, we conducted descriptive statistics on all study variables. Second, we examined distributions of risk scores by other key study variables (e.g., supervision levels, judicial adherence) with measures of association. For all comparisons, we report the Cramer’s V effect size. Cramer’s V values of .10, .30, and .50 indicate small, medium, and large effect sizes, respectively (Cohen, 1988). Third, to address the main research questions, we conducted a series of hierarchical multivariable logistic regression models. All models controlled for IRAS-PAT

risk level, highest charge level, and time on supervision in Block 1. Variables of interest were added to models in subsequent blocks, and overall improvement in the predictive capacity of the model was assessed using changes in -2 log likelihood (-2LL) statistics. For all multivariable models, we report odds ratios (ORs) and their associated 95% confidence intervals. Odds ratios are a measure of effect size that communicate the likelihood, or odds, of an event occurring in one group relative to another group. An odds ratio of 1 indicates no difference in the likelihood of an event happening between groups. An odds ratio less than 1 indicates that the group of interest has a lower odds of experiencing the event (i.e., pretrial supervision failure) relative to the reference group. An odds ratio above 1 indicates that the group of interest has a higher odds of experiencing the event relative to the reference group. Odds ratios of 1.50, 3.00, and 5.00 typically indicate small, medium, and large effect sizes, respectively (Chen et al., 2010).

Multivariable models were replicated using multinomial logistic regression models to examine effects on specific types of supervision failure (i.e., new arrest, FTA, or technical violation) relative to no supervision failure. These models capture how much the relative risk of experiencing a specific type of pretrial misconduct changes for a given group compared to another. Relative risk ratios (RRR) are presented for these models; however, their interpretation is similar to an odds ratio. For all analyses, we used a $p < .05$ criterion for statistical significance. Where we found significant effects, we reported predicted probabilities of supervision failure using average marginal effects.

Results

Descriptive

IRAS-PAT. Across the five counties, defendants had an average risk score of 3.85 (*SD*: 1.808, Range: 0 to 9), corresponding to most defendants classified as Moderate risk (57.8%, *n* = 949). Fewer defendants were classified at Low (22.3%, *n* = 366) and High (19.9%, *n* = 366) risk. Overall, the majority of the pretrial defendants scored a four or lower on the IRAS-PAT (65%, *n* = 1,607). Figure 40 and Figure 41 present IRAS-PAT risk scores and levels, respectively.

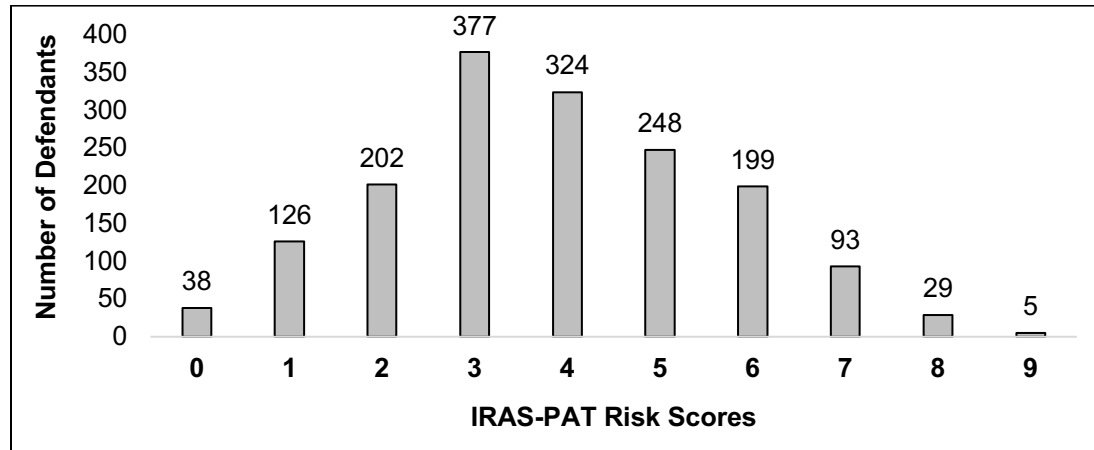


Figure 40. Pooled - Distribution of IRAS-PAT Risk Scores

Pretrial Supervision. Defendants were primarily released on Low supervision (43.3%, *n* = 711), followed by Moderate (35.7%, *n* = 586) supervision. Roughly one in five defendants were released on High supervision (21.0%, *n* = 344).

Across the five jurisdictions, the majority of defendants received judge-ordered supervision conditions that adhered to structured guidelines (61.0%, *n* = 1,002). For 38.3% of defendants (*n* = 628), judge-ordered decisions diverged from recommended guidelines. The remaining 0.7% of defendants (*n* = 11) did not have guidelines established for their offense and risk levels. For defendants whose supervision decisions did not adhere to recommendations, judges typically ordered a higher than recommended supervision level (62.3%, *n* = 391) rather than lower than recommended supervision level (37.7%, *n* = 237).

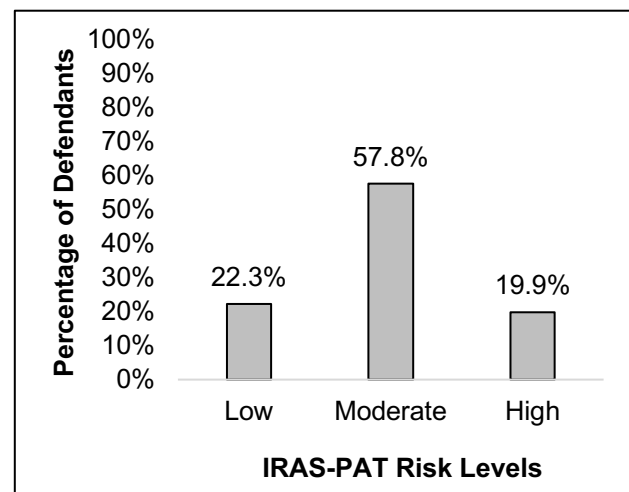


Figure 41. Pooled - Distribution of IRAS-PAT Risk Levels

Case Outcomes. Defendants were on supervision for an average 136.40 (*SD* = 115.52, Range: 1 to 684) days prior to court case disposition or a pretrial failure event. Pretrial failure occurred in 44.5% of the defendants (*n* = 731). Slightly more than half of pretrial defendants completed

supervision without a failure event (55.5%, $n = 910$). When defendants failed to complete supervision successfully, failure events consisted of a new arrest (42.0%, $n = 307$), followed by an FTA (34.3%, $n = 251$), or a technical violation (23.7%, $n = 173$).

Bivariable Comparisons

Risk Level by Supervision Level. There was a significant association between risk level and supervision level, $X^2(4) = 180.63, p < .001$, Cramer's $V = 0.23$, corresponding to a small-to-moderate-sized effect. As shown in Figure 42, High risk defendants were most likely to be supervised at High supervision (43.6%, $n = 142$) and least likely to be supervised at Low supervision (17.5%, $n = 57$). Moderate risk defendants were most likely to be supervised at Low (48.5%, $n = 460$) or Moderate (38.2%, $n = 362$) supervision. Low risk defendants were most likely to be supervised at Low supervision (53.0%, $n = 194$).

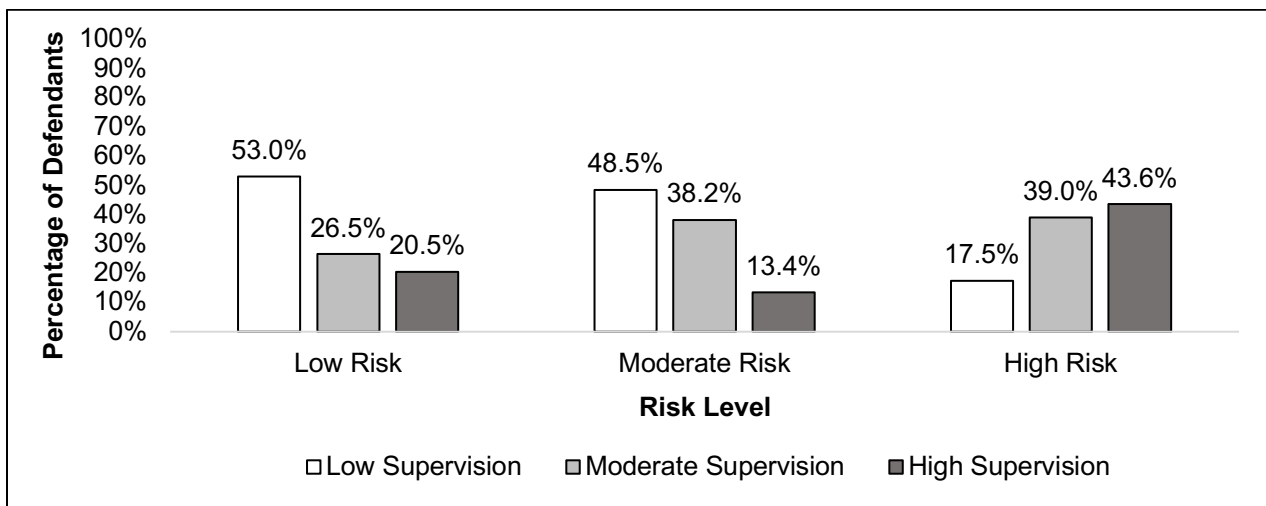


Figure 42. Pooled - Risk Level by Supervision Level

Risk Level by Meeting Frequency. Risk level and meeting frequency were significantly associated, $X^2(4) = 81.99, p < .001$, Cramer's $V = 0.16$, corresponding to a small effect. Although the majority of defendants across all risk levels had one supervision meeting a month (57.4-62.9%), differences across risk levels were more noticeable for defendants supervised with less than one meeting a month or two or more meetings a month. As shown in Figure 43, across all risk levels, High risk defendants were most likely to be supervised with two or more monthly meetings (28.8%, $n = 94$) relative to Low (16.1%, $n = 59$) and Moderate (10.3%, $n = 98$) risk defendants. Similarly, High risk defendants were least likely to be supervised with less than a meeting a month (11.4%, $n = 37$) relative to Low (26.5%, $n = 97$) and Moderate (26.8%, $n = 254$) risk defendants.

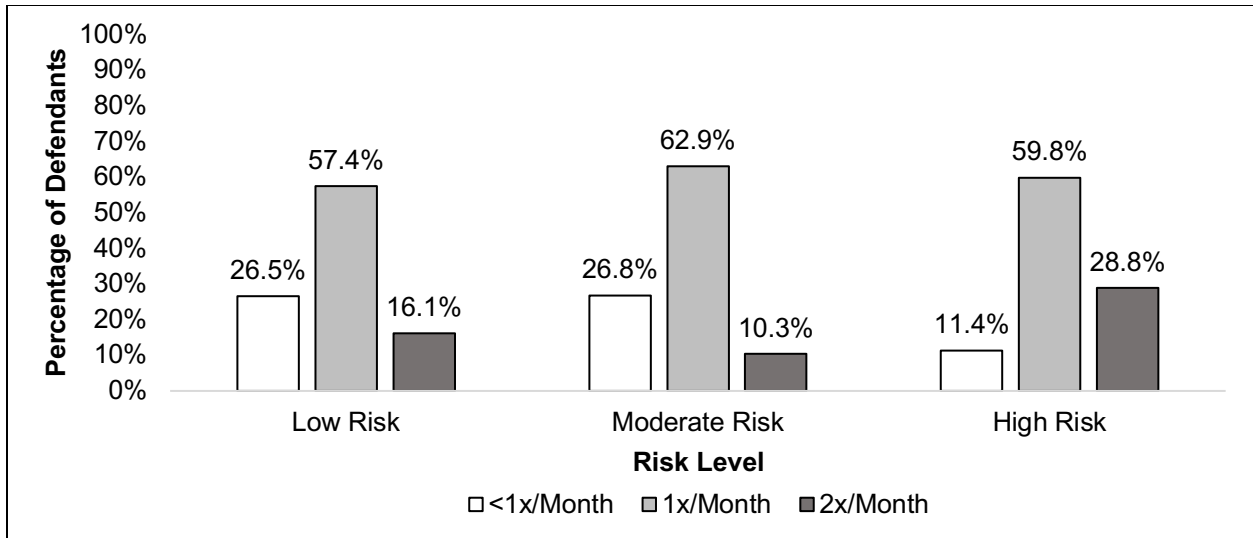


Figure 43. Pooled - Risk Level by Meeting Frequency

Risk Level by Judicial Adherence. Risk level and judicial adherence with recommended supervision conditions were significantly associated, $X^2(2) = 65.70, p < .001$, Cramer's $V = 0.20$, corresponding to a small effect. High (69.1%, $n = 224$) and Moderate (65.8%, $n = 620$) risk defendants were more likely to receive adherent decisions relative to Low risk defendants (43.4%, $n = 158$), as shown in Figure 44.

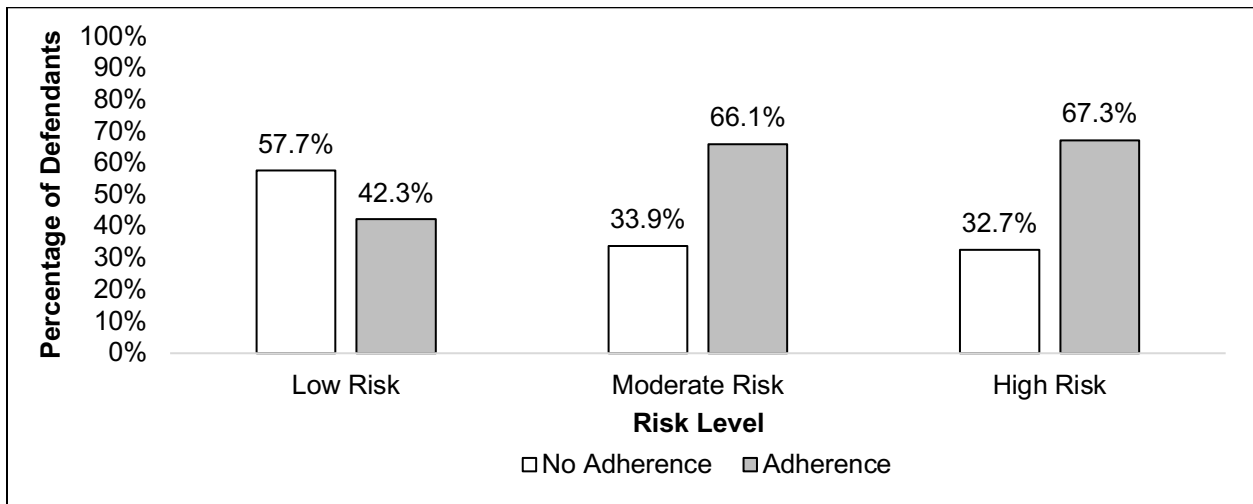


Figure 44. Pooled - Risk Level by Judicial Adherence

Supervision Strategies (RQ #1)

Logistic regression models examining the effects of supervision strategies on any pretrial supervision failure are presented in Table 15. As shown in Block 1, after adjusting for time on supervision, charge severity, and county, High risk defendants were significantly more likely to fail on supervision (60.3%) relative to Low risk defendants (29.7%), $OR = 4.32, p < .001$. Similarly, Moderate risk defendants were 2.07 times more likely to fail on supervision (44.5%) relative to Low risk defendants. In Block 2, after adjusting for variables in Block 1, defendants with two or more supervision meetings a month were 2.83 times more likely to fail on

supervision (54.5%) relative to those with less than a meeting a month (33.9%), $p < .001$. Similarly, defendants with one supervision meeting a month were 1.91 times more likely to fail on supervision (46.6%) relative to those with less than one meeting a month, $p = .001$. There were no differences in supervision outcomes between defendants who did and did not receive electronic monitoring, $p = .968$.

In Block 3 of Table 15, we added risk level by meeting frequency and risk level by electronic monitoring interactions, which improved the overall ability of the model to predict supervision failure, $p = .036$. Findings showed evidence of two interactions, driven by defendants at Moderate risk who were supervised once a month ($p < .001$) and defendants at High risk who were supervised once a month ($p = .008$) relative to Low-risk defendants. As shown in Figure 45, whereas Moderate and High risk defendants who were supervised with one meeting a month had higher rates of failure (48.8% and 61.9%, respectively) relative to Moderate and High risk defendants supervised with less than one meeting a month (30.1% and 41.4%, respectively), the opposite trend was apparent for Low risk defendants. Low risk defendants had slightly higher rates of failure when supervised with less than one meeting a month (31.1%) than one meeting a month (25.2%).

Table 15. Pooled - Logistic Regression Models of Supervision Strategies on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	<i>B</i>	<i>SE</i>	<i>p</i>	OR	95% CI
Block 1					
Time on Supervision	-0.01	<0.01	<.001	0.99	0.99, 0.99
Severity Level	-0.07	0.03	.052	0.93	0.87, 1.00
Risk Level (Low)					
Moderate	0.73	0.15	<.001	2.07	1.55, 2.75
High	1.46	0.18	<.001	4.32	3.02, 6.17
County (Jefferson)					
Hamilton	0.11	0.17	.508	1.12	0.81, 1.54
Hendricks	-0.49	0.20	.017	0.61	0.41, 0.91
Monroe	0.17	0.19	.372	1.19	0.81, 1.74
Bartholomew	0.01	0.24	.966	1.01	0.63, 1.61
Block 2					
Meeting Frequency (<1x/Month)					
1x/Month	0.65	0.20	.001	1.91	1.29, 2.82
2x/Month	1.04	0.23	<.001	2.83	1.82, 4.42
Electronic Monitoring (No)	0.01	0.23	.968	1.01	0.64, 1.58
Δ -2LL	$\chi^2 (3) = 22.24, p < .001$				
Block 3					
Risk Level (Low) by Meeting Frequency (<1x/Month)					
Moderate Risk with 1x/Month	1.20	0.34	<.001	3.33	1.70, 6.51
Moderate Risk with 2x/Month	0.59	0.46	.194	1.81	0.73, 4.45
High Risk with 1x/Month	1.30	0.49	.008	3.68	1.40, 9.70
High Risk with 2x/Month	0.73	0.57	.201	2.08	0.68, 6.41
Risk Level (Low) by Electronic Monitoring (No)					
Moderate Risk with Electronic Monitoring	-0.04	0.61	.952	0.96	0.29, 3.16
High Risk with Electronic Monitoring	-0.06	0.61	.920	0.94	0.29, 3.09
Δ -2LL	$\chi^2 (6) = 13.49, p = .036$				

Notes. $N = 1,641$

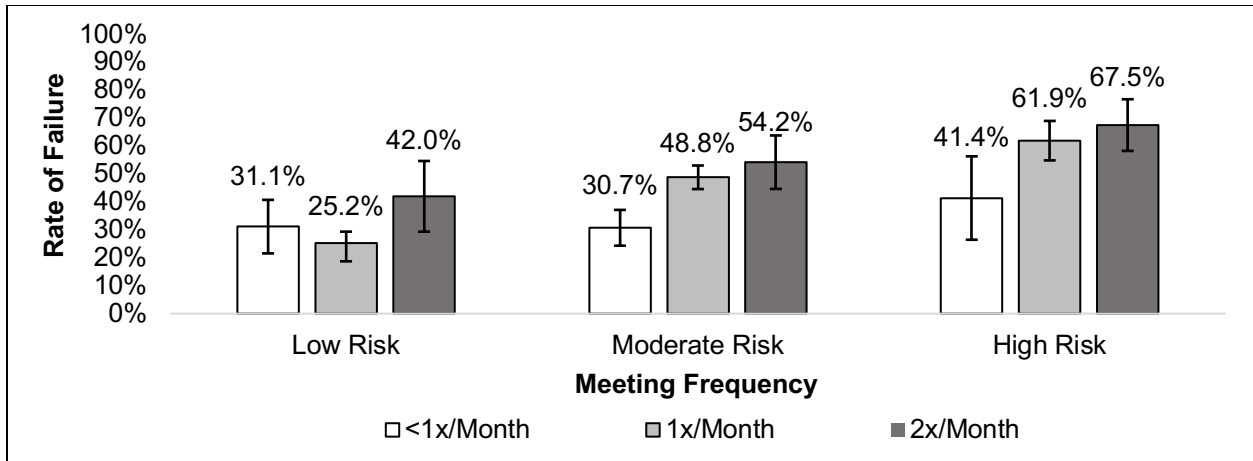


Figure 45. Pooled – Supervision Failure Rates by Risk Level and Meeting Frequency

In Table 16, we conducted multinomial logistic regression models to examine whether the effects of supervision strategies differed based on the type of pretrial misconduct. No pretrial misconduct represented the reference condition. As shown in Block 1, after adjusting for time on supervision, severity level, and county, High risk defendants had higher risk of experiencing an FTA, a new arrest, or a technical violation relative to Low risk defendants and relative to defendants who completed pretrial supervision successfully, $ps < .001$. Moderate risk defendants had a higher risk of experiencing any FTA and a new arrest ($ps \leq .001$), but not a technical violation ($p = .093$), relative to Low risk defendants and those without misconduct. Predicted probabilities of experiencing each outcome by risk level are presented in Figure 46.

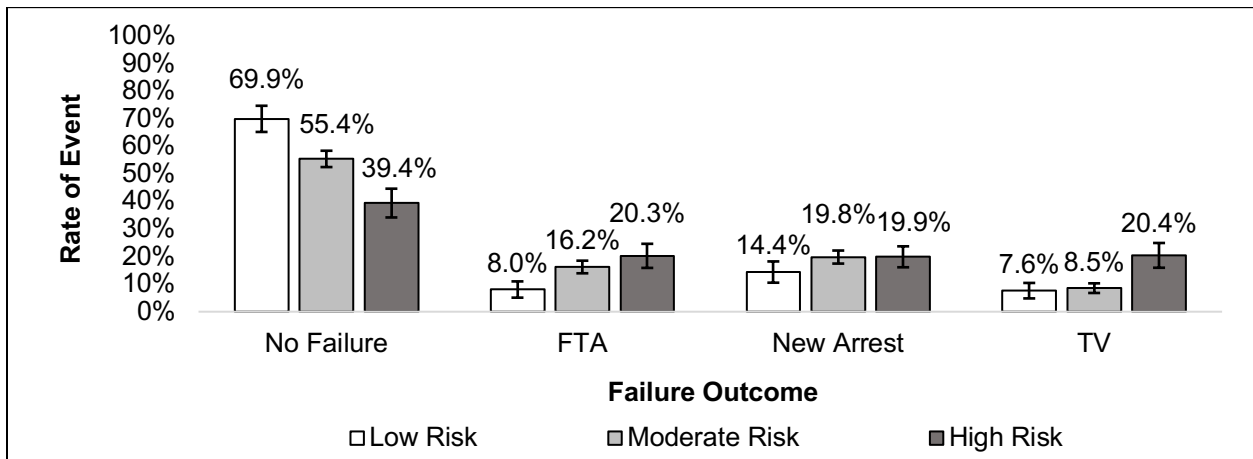


Figure 46. Pooled – Supervision Failure Outcomes by Risk Level

In Block 2, after adjusting for predictors in Block 1, results showed that defendants who were supervised with two or more meetings a month had higher relative risk of experiencing any new arrest and technical violation relative to defendants supervised with less than one meeting a month, $ps < .001$. Defendants supervised with one meeting a month had a higher relative risk of experiencing any new arrest and any technical violation ($ps \leq .009$), but not any FTA ($p = .063$), relative to defendants supervised with less than one meeting a month. See Figure 47 for predicted probabilities of experiencing each outcome by meeting frequency. We found no differences in relative risk of experiencing any type of pretrial misconduct between defendants who did and did not have electronic monitoring as a condition of pretrial supervision, $ps \geq .288$.

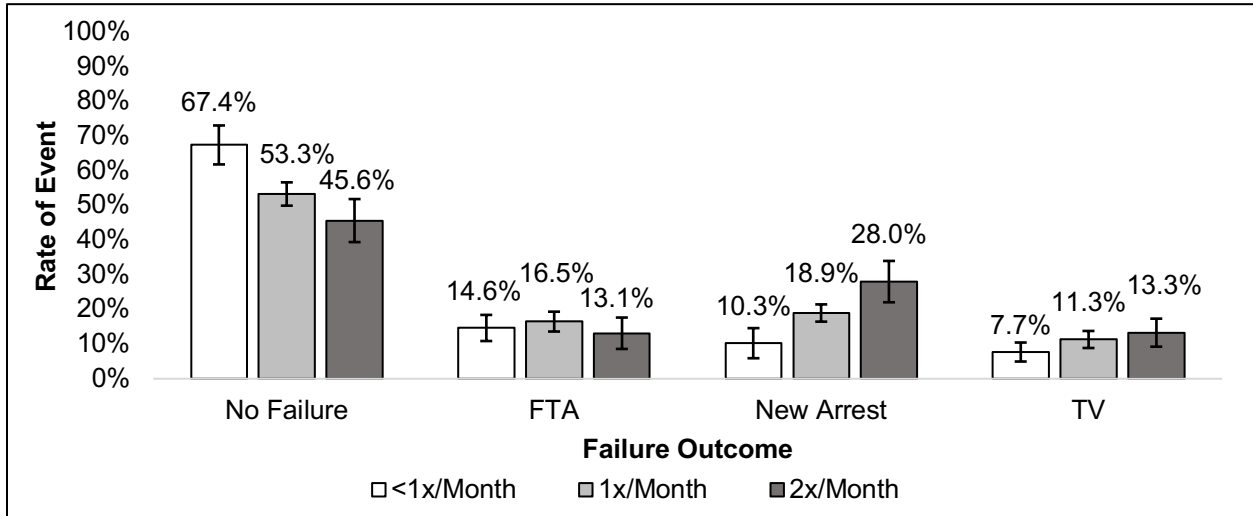


Figure 47. Pooled – Supervision Failure Outcomes by Meeting Frequency

In Block 3, we modeled the interaction between risk level and meeting frequency on supervision outcomes. As shown, inclusion of this effect improved the overall predictive capacity of the model, $p = .032$. Examination of effects suggest differences in outcomes by risk level and meeting frequency occurred mainly for any FTA and any technical violation. As shown in Figure 48, whereas Moderate and High risk defendants had a higher relative risk of FTA when supervised with one meeting a month relative to less than one meeting a month, the opposite trend was observed for Low risk defendants. Low risk defendants had a lower relative risk of experiencing an FTA at higher levels of meeting frequency. A similar and larger effect emerged for the relative risk of experiencing a technical violation or other arrest. Here, Moderate and High risk defendants had a higher relative risk of experiencing an FTA with one meeting a month relative to less than one meeting a month. Low risk defendants, in contrast, had a lower relative risk of experiencing an FTA with one meeting a month.

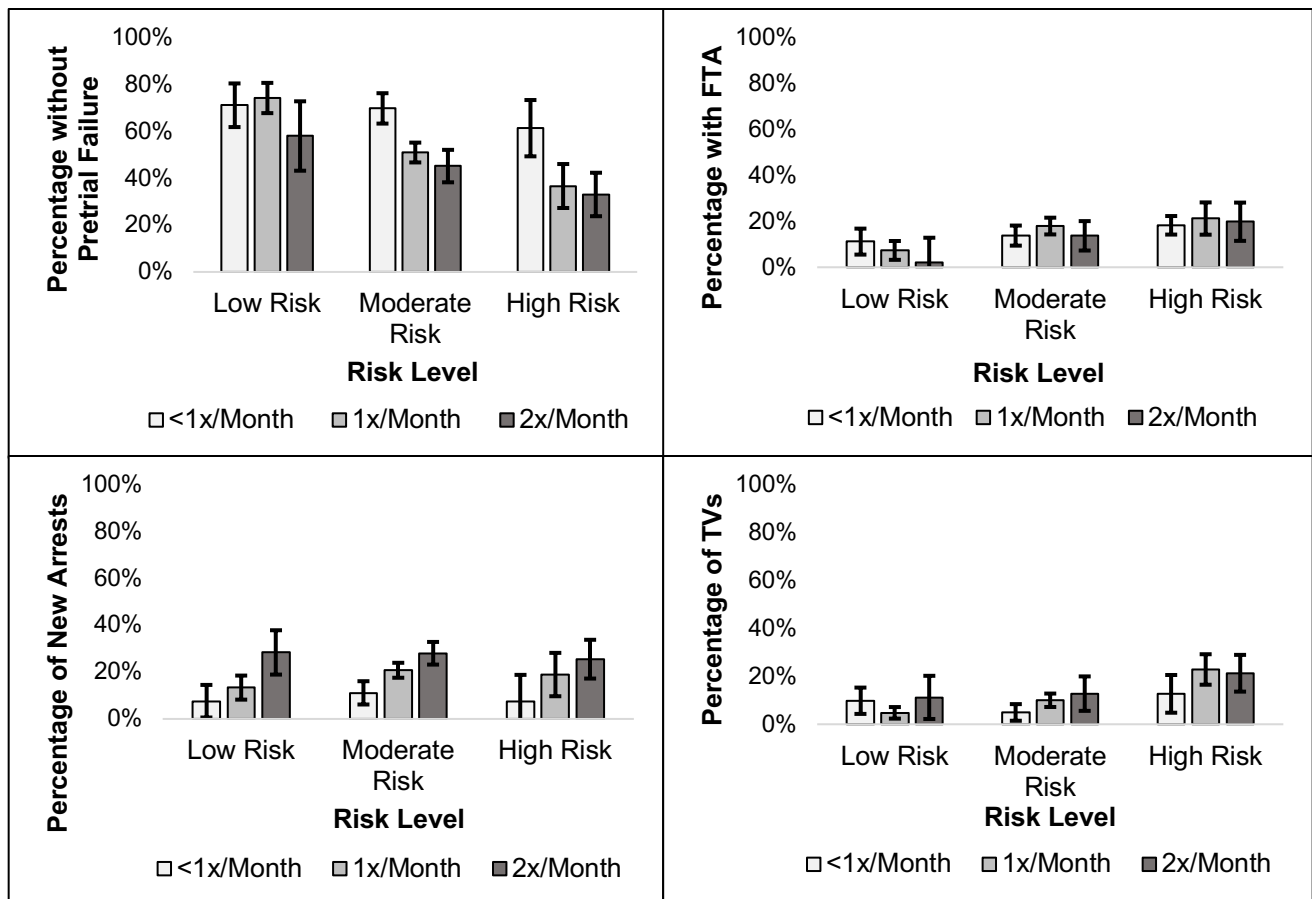


Figure 48. Pooled – Supervision Failure Outcomes by Risk Level & Meeting Frequency

Table 16. Pooled - Multinomial Logistic Regression Models of Supervision Strategies on Pretrial Supervision Outcomes

Conditional Effect by Block	Outcome														
	FTA					New Arrest					Technical Violation				
	B	SE	p	RRR	95% CI	B	SE	p	RRR	95% CI	B	SE	p	RRR	95% CI
Block 1															
Time on Supervision	-0.06	0.05	.233	1.00	0.99, 1.00	-0.01	<0.01	<.001	0.99	0.99, 0.99	-0.01	<0.01	<.001	0.99	0.99, 0.99
Severity Level	-0.004	<0.01	<.001	0.94	0.84, 1.04	-0.09	0.04	.046	0.92	0.84, 1.00	-0.05	0.05	.322	0.95	0.86, 1.05
Risk Level (Low)															
Moderate	0.99	0.23	<.001	2.68	1.71, 4.20	0.66	0.21	.001	1.93	1.29, 2.89	0.41	0.24	.093	1.51	0.93, 2.44
High	1.61	0.27	<.001	5.01	2.97, 8.46	1.11	0.25	<.001	3.03	1.86, 4.92	1.73	0.27	<.001	5.67	3.31, 9.71
County (Jefferson)															
Hamilton	0.25	0.21	.240	1.28	0.84, 1.93	-0.79	0.22	<.001	0.45	0.29, 0.69	2.66	0.60	<.001	14.27	4.36, 46.68
Hendricks	-1.15	0.33	<.001	0.31	0.17, 0.60	-0.71	0.26	.005	0.49	0.30, 0.81	2.18	0.63	.001	8.81	2.55, 30.40
Monroe	-0.75	0.29	.011	0.47	0.27, 0.84	0.17	0.23	.458	1.19	0.75, 1.87	2.69	0.62	<.001	14.74	4.36, 49.88
Bartholomew	0.10	0.29	.722	1.11	0.63, 1.97	-0.39	0.31	.214	0.68	0.36, 1.25	1.96	0.67	.004	7.13	1.90, 26.71
Block 2															
Meeting Frequency (<1x/Month)															
1x/Month	0.45	0.24	.063	1.57	0.98, 2.52	1.03	0.32	.001	2.79	1.50, 5.21	0.77	0.29	.009	2.15	1.21, 3.81
2x/Month	0.43	0.29	.140	1.54	0.87, 2.74	1.71	0.33	<.001	5.55	2.89, 10.63	1.17	0.32	<.001	3.23	1.74, 6.01
Electronic Monitoring (No)	-0.16	0.31	.609	0.85	0.46, 1.57	0.16	0.27	.569	1.17	0.68, 2.00	0.49	0.46	.288	1.63	0.66, 4.00
Δ -2LL	X ² (9) = 37.93, p <.001														
Block 3															
Risk Level (Low) by Mtg. Freq. (<1x/Mon)															
Moderate Risk by 1x/Month	1.14	0.48	.018	3.14	1.21, 8.10	0.56	0.64	.384	1.74	0.50, 6.10	1.93	0.59	.001	6.92	2.18, 21.93
Moderate Risk by 2x/Month	1.97	1.12	.078	7.18	0.80, 64.49	-0.13	0.73	.862	0.88	0.21, 3.69	1.13	0.67	.091	3.09	0.83, 11.48
High Risk by 1x/Month	1.27	0.63	.045	3.55	1.03, 12.28	1.15	0.98	.239	3.15	0.47, 21.35	2.08	0.72	.004	8.04	1.94, 33.29
High Risk by 2x/Month	2.28	1.18	.053	9.76	0.97, 98.04	0.43	1.03	.680	1.53	0.20, 11.58	0.92	0.77	.229	2.51	0.56, 11.29
Δ -2LL	X ² (12) = 22.57, p = .032														

Notes. N = 1,641. RRR = Relative Risk Ratio. CI = 95% CI for RRR.

Risk Principle Adherence (RQ #2)

Table 17 presents results of logistic regression models examining the effects of risk principle adherence on pretrial supervision outcomes. After adjusting for predictors in Block 1, the addition of supervision level in Block 2 showed that defendants supervised at both High and Moderate supervision were more likely to fail on supervision (53.2% and 48.3%, respectively) relative to defendants supervised at Low supervision (37.5%), $ps < .001$.

In Block 3, a risk level by supervision level interaction was added. The overall addition of this interaction did not improve the predictive capacity of the model, $p = .201$. However, examination of individual effects suggested evidence of an interaction between High and Low risk defendants across Low and Moderate supervision levels, $p = .021$. As shown in Figure 49, whereas High risk defendants had higher rates of supervision failure when supervised at Moderate supervision (64.2%) relative to Low supervision (41.6%), Low risk defendants had similar rates of supervision failure at both supervision levels (27.2% and 26.5%, respectively).

Table 17. Pooled - Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.01	<0.01	<.001	0.99	0.99, 0.99
Severity Level	-0.07	0.03	.052	0.93	0.87, 1.00
Risk Level (Low)					
Moderate	0.73	0.15	<.001	2.07	1.55, 2.75
High	1.46	0.18	<.001	4.32	3.02, 6.17
County (Jefferson)					
Hamilton	0.11	0.17	.508	1.12	0.81, 1.54
Hendricks	-0.49	0.20	.017	0.61	0.41, 0.91
Monroe	0.17	0.19	.372	1.19	0.81, 1.74
Bartholomew	0.01	0.24	.966	1.01	0.63, 1.61
Block 2					
Supervision Level (Low)					
Moderate	0.54	0.15	<.001	1.72	1.28, 2.31
High	0.78	0.19	<.001	2.19	1.52, 3.15
Δ -2LL	$X^2 (2) = 19.94, p < .001$				
Block 3					
Risk Level (Low) by Supervision Level (Low)					
Moderate Risk by Moderate Supervision	0.59	0.36	.102	1.80	0.89, 3.63
Moderate Risk by High Supervision	-0.04	0.38	.905	0.95	0.45, 2.02
High Risk by Moderate Supervision	1.13	0.49	.021	3.09	1.18, 8.05
High Risk High Supervision	0.43	0.47	.362	1.54	0.51, 3.87
Δ -2LL	$X^2 (4) = 5.97, p = .201$				

Notes. $N = 1,641$

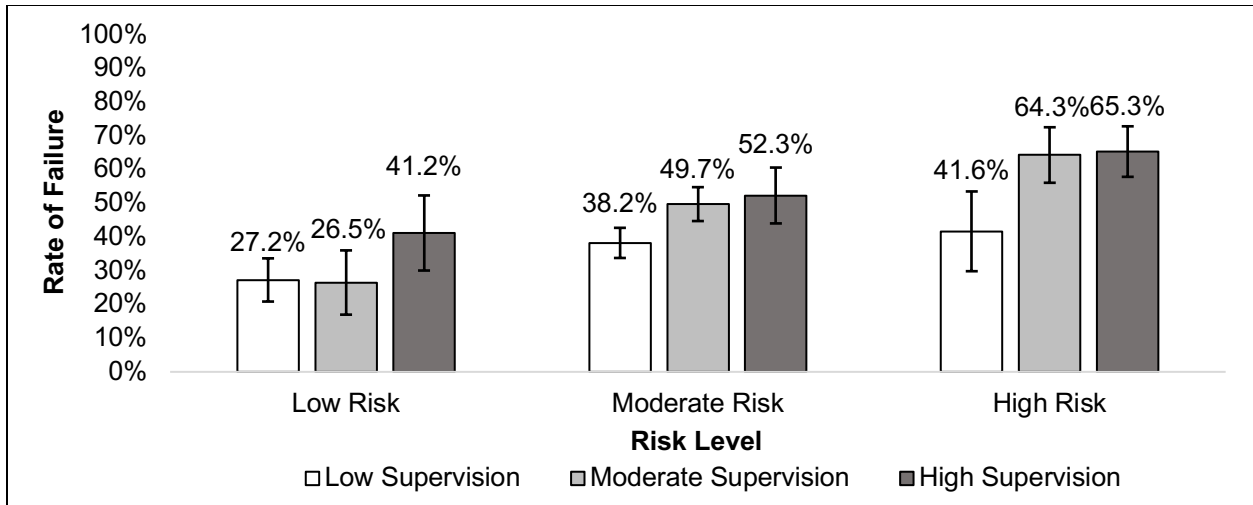


Figure 49. Pooled – Supervision Failure Rates by Risk and Supervision Level

Table 18. presents multinomial logistic regression models examining the effects of risk principle adherence for all pretrial misconduct outcomes. As shown in Block 2, after controlling for relevant predictors in Block 1, defendants supervised at High supervision had a higher relative risk of any new arrest or any technical violation relative to defendants supervised at Low supervision, $p_s < .001$. Similarly, defendants supervised at Moderate supervision had a higher relative risk of both outcomes, $p \leq .002$. There were no differences in risk of experiencing an FTA by supervision level, $p_s \geq .136$. Figure 50 presents predicted probabilities of pretrial misconduct outcomes by supervision level.

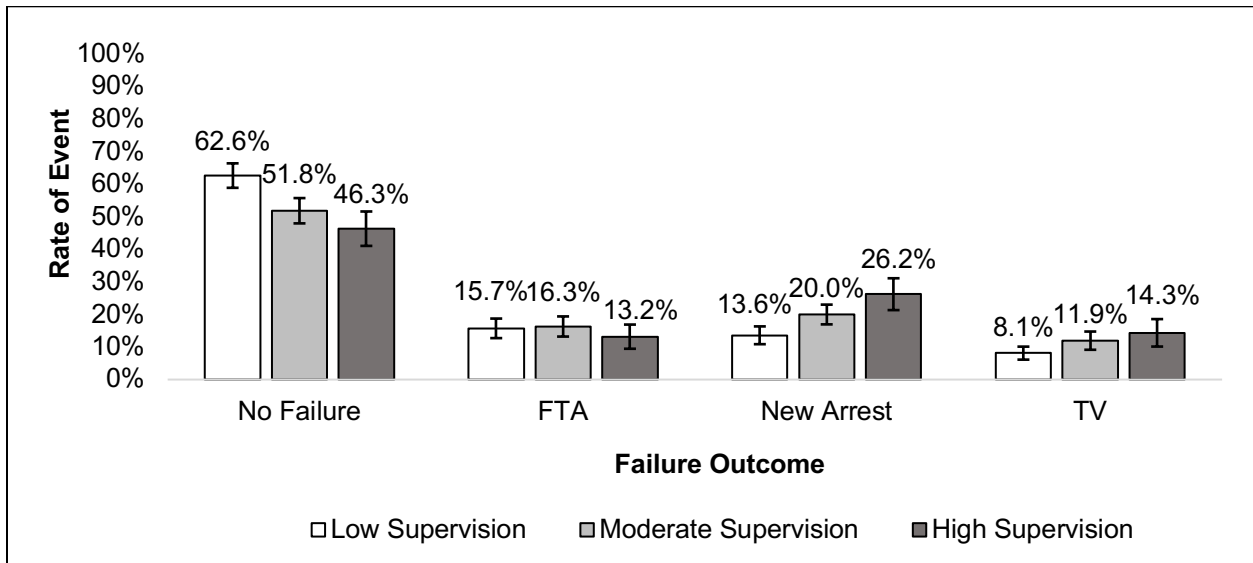


Figure 50. Pooled – Supervision Failure Outcomes by Supervision Level

In Block 3, we modeled a risk level by supervision level interaction on pretrial misconduct outcomes. As shown, incorporation of this interaction failed to significantly improve the predictive capacity of the model, $p = .174$. However, examination of individual effects showed some evidence of risk level by supervision level interactions in the risk of experiencing an FTA outcome relative to no pretrial misconduct. As shown in Figure 51, whereas Low risk defendants had similar rates of FTA failure at all supervision levels, Moderate and High risk defendants had higher rates of FTA failure at higher supervision levels.

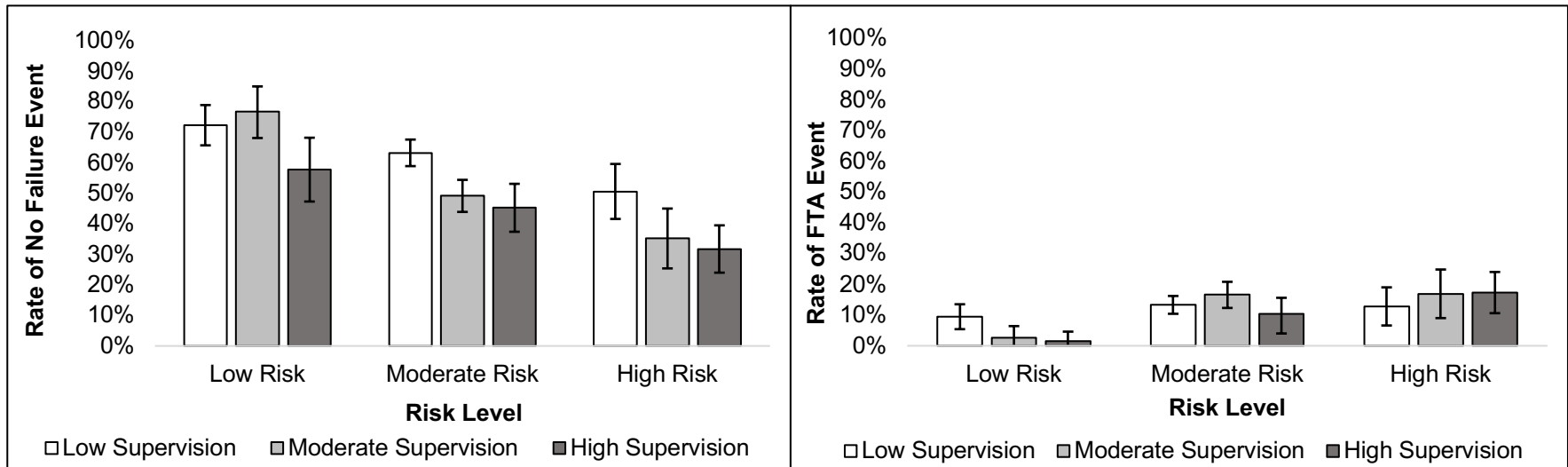


Figure 51. Pooled – Supervision Failure Outcomes by Risk Level & Supervision Level

Table 18. Pooled - Multinomial Logistic Regression Models of Risk Principle Adherence on Pretrial Supervision Outcomes

Conditional Effect by Block	Outcome														
	FTA					New Arrest					Technical Violation				
	B	SE	p	OR	95% CI	B	SE	p	OR	95% CI	B	SE	p	OR	95% CI
Block 1															
Time on Supervision	-0.06	0.05	.233	1.00	0.99, 1.00	-0.01	<0.01	<.001	0.99	0.99, 0.99	-0.01	<0.01	<.001	0.99	0.99, 0.99
Severity Level	-0.004	<0.01	<.001	0.94	0.84, 1.04	-0.09	0.04	.046	0.92	0.84, 1.00	-0.05	0.05	.322	0.95	0.86, 1.05
Risk Level (Low)															
Moderate	0.99	0.23	<.001	2.68	1.71, 4.20	0.66	0.21	.001	1.93	1.29, 2.89	0.41	0.24	.093	1.51	0.93, 2.44
High	1.61	0.27	<.001	5.01	2.97, 8.46	1.11	0.25	<.001	3.03	1.86, 4.92	1.73	0.27	<.001	5.67	3.31, 9.71
County (Jefferson)															
Hamilton	0.25	0.21	.240	1.28	0.84, 1.93	-0.79	0.22	<.001	0.45	0.29, 0.69	2.66	0.60	<.001	14.27	4.36, 46.68
Hendricks	-1.15	0.33	<.001	0.31	0.17, 0.60	-0.71	0.26	.005	0.49	0.30, 0.81	2.18	0.63	.001	8.81	2.55, 30.40
Monroe	-0.75	0.29	.011	0.47	0.27, 0.84	0.17	0.23	.458	1.19	0.75, 1.87	2.69	0.62	<.001	14.74	4.36, 49.88
Bartholomew	0.10	0.29	.722	1.11	0.63, 1.97	-0.39	0.31	.214	0.68	0.36, 1.25	1.96	0.67	.004	7.13	1.90, 26.71
Block 2															
Supervision Level (Low)															
Moderate	0.29	0.20	.136	1.34	0.91, 1.97	0.73	0.21	<.001	2.07	1.38, 3.11	0.70	0.23	.002	2.01	1.29, 3.15
High	0.23	0.25	.363	1.26	0.77, 2.05	1.22	0.25	<.001	3.40	2.07, 5.59	1.07	0.28	<.001	2.92	1.70, 5.01
Δ -2LL	X ² (6) = 32.98, p <.001														
Block 3															
Risk Level (Low) by Supervision Level (Low)															
Moderate Risk by Moderate Supervision	1.50	0.67	.026	4.47	1.20, 16.73	0.16	0.52	.759	1.17	0.42, 3.23	0.26	0.60	.662	1.30	0.40, 4.23
Moderate Risk by High Supervision	1.18	0.83	.152	3.27	0.65, 16.54	-0.60	0.52	.243	0.55	0.20, 1.51	0.18	0.62	.777	1.19	0.35, 4.03
High Risk by Moderate Supervision	2.00	0.79	.011	7.41	1.58, 34.68	0.81	0.74	.269	2.26	0.53, 9.58	0.86	0.73	.238	2.36	0.57, 9.84
High Risk High Supervision	2.00	0.88	.022	7.42	1.33, 41.47	-0.01	0.70	.992	0.99	0.25, 3.88	0.27	0.71	.705	1.31	0.33, 5.22
Δ -2LL	X ² (12) = 16.39, p = .174														

Notes. N = 1,641. RRR = Relative Risk Ratio. CI = 95% CI for RRR.

Judicial Adherence (RQ #3)

Table 19 presents logistic regression models examining the effect of judicial adherence on pretrial supervision failure. As shown, after adjusting for relevant predictors in Block 1, there were no differences in likelihood of pretrial supervision failure between defendants who received and did not receive supervision conditions adherent with recommended conditions, $p = .901$.

Table 19. Pooled - Logistic Regression Models of Judicial Adherence on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.01	<0.01	<.001	0.99	0.99, 0.99
Severity Level	-0.07	0.03	.052	0.93	0.87, 1.00
Risk Level (Low)					
Moderate	0.71	0.14	<.001	2.04	1.53, 2.72
High	1.44	0.18	<.001	4.23	2.96, 6.05
County (Jefferson)					
Hamilton	0.11	0.17	.516	1.11	0.80, 1.54
Hendricks	-0.51	0.21	.013	0.60	0.40, 0.90
Monroe	0.17	0.19	.377	1.19	0.81, 1.74
Bartholomew	0.01	0.24	.966	1.01	0.63, 1.61
Block 2					
Judicial Adherence (No)	-0.01	0.12	.901	0.98	0.78, 1.24
Δ -2LL	$X^2(1) = 0.01, p = .901$				

Notes. $N = 1,630$. 11 cases excluded due to having no judicial adherence information.

Table 20 presents results of multinomial logistic regression models examining the effects of judicial adherence on all pretrial misconduct outcomes. As shown in Block 2, after adjusting for relevant predictors in Block 1, there were no differences in the relative risk of experiencing an FTA, new arrest, or technical violation between defendants who did and did not receive supervision conditions adherent with recommended conditions, $ps \geq .295$.

Table 20. Pooled - Multinomial Logistic Regression Models of Judicial Adherence on Pretrial Supervision Outcomes

Conditional Effect by Block	Outcome														
	FTA					New Arrest					Technical Violation				
	B	SE	p	RRR	95% CI	B	SE	p	RRR	95% CI	B	SE	p	RRR	95% CI
Block 1															
Time on Supervision	-0.004	<0.01	<.001	1.00	0.99, 1.00	-0.01	<0.01	<.001	0.99	0.99, 0.99	-0.01	<0.01	<.001	0.99	0.99, 0.99
Severity Level	-0.07	0.05	.230	0.94	0.84, 1.04	-0.09	0.04	.046	0.92	0.84, 1.00	-0.05	0.05	.325	0.95	0.85, 1.05
Risk Level (Low)															
Moderate	0.97	0.23	<.001	2.64	1.68, 4.14	0.66	0.21	.001	1.94	1.29, 2.91	0.37	0.25	.128	1.45	0.90, 2.35
High	1.58	.0.27	<.001	4.86	2.88, 8.22	1.11	0.25	<.001	3.04	1.87, 4.94	1.70	0.27	<.001	5.50	3.21, 9.44
County (Jefferson)															
Hamilton	0.24	0.21	.247	1.27	0.85, 1.92	-0.80	0.22	<.001	0.45	0.29, 0.69	2.65	0.60	<.001	14.21	4.35, 46.49
Hendricks	-1.25	0.34	<.001	0.28	0.14, 0.56	-0.66	0.26	.010	0.51	0.21, 0.85	2.09	0.64	.001	8.08	2.32, 28.15
Monroe	-0.75	0.29	.010	0.47	0.26, 0.84	0.17	0.23	.463	1.18	0.75, 1.87	2.69	0.62	<.001	14.71	4.35, 49.75
Bartholomew	0.10	0.29	.720	1.11	0.63, 1.97	-0.39	0.31	.212	0.67	0.36, 1.25	1.96	0.67	.004	7.09	1.89, 26.57
Block 2															
Judicial Adherence (No)	0.17	0.16	.295	1.19	0.86, 1.64	-0.08	0.16	.630	0.93	0.68, 1.27	-0.18	0.19	.326	0.83	0.57, 1.20
Δ -2LL	X ² (3) = 2.95, p = .399														

Notes. $N = 1,630$. RRR = Relative Risk Ratio. CI = 95% CI for RRR. 11 cases excluded due to having no judicial adherence information.

Table 21 presents results of logistic regression models examining the effect of the direction of judicial adherence to recommended guidelines on pretrial supervision failure. As shown in Block 2, after adjusting for relevant predictors in Block 1, there were no differences in likelihood of pretrial failure among defendants who received supervision conditions that were adherent to, were non-adherent to but lower than, or were non-adherent to but higher than recommended supervision conditions, $ps \geq .657$.

Table 21. Pooled - Logistic Regression Models of Judicial Adherence (Higher or Lower) on Pretrial Supervision Failure

Conditional Effect by Block	Any Failure				
	B	SE	p	OR	95% CI
Block 1					
Time on Supervision	-0.01	<0.01	<.001	0.99	0.99, 0.99
Severity Level	-0.07	0.03	.052	0.93	0.87, 1.00
Risk Level (Low)					
Moderate	0.71	0.14	<.001	2.04	1.53, 2.72
High	1.44	0.18	<.001	4.23	2.96, 6.05
County (Jefferson)					
Hamilton	0.11	0.17	.516	1.11	0.80, 1.54
Hendricks	-0.51	0.21	.013	0.60	0.40, 0.90
Monroe	0.17	0.19	.377	1.19	0.81, 1.74
Bartholomew	0.01	0.24	.966	1.01	0.63, 1.61
Block 2					
Judicial Adherence (No)					
Lower	-0.06	0.17	.727	0.94	0.68, 1.31
Higher	0.06	0.14	.657	1.07	0.80, 1.41
Δ -2LL	$X^2 (2) = 0.39, p = .823$				

Notes. $N = 1,630$. 11 cases excluded due to having no judicial adherence information.

Summary of Findings

Several key findings emerged from this investigation in five Indiana counties:

- Across jurisdictions, slightly less than half of pretrial defendants under supervision experienced a new arrest, an FTA event that triggered a warrant, or a technical violation or other event resulting in an arrest.
- Defendants who failed on pretrial supervision were slightly more likely to commit a new offense than FTA; TV or other arrests were the least frequently occurring failure event.
- After adjusting for charge severity and risk level, more intensive supervision was associated with higher rates of supervision failure, driven primarily by new arrests and technical violations rather than FTAs.
- There were no differences in supervision failure rates between defendants who were placed on electronic monitoring or not.
- Findings generally showed evidence of risk principle adherence. That is, the highest risk defendants received the highest levels of supervision and vice-versa for lower risk defendants.
- Judges adhered to recommended supervision guidelines in 6 of every 10 cases.
- Judges were more likely to adhere to recommended guidelines when defendants were Moderate or High risk rather than Low risk. Non-adherent recommendations were typically for stricter supervision conditions.
- Additionally, there were no differences in pretrial supervision failure between defendants with supervision conditions that were adherent or non-adherent to structured guidelines

Conclusion

In summary, several trends emerged from the pooled investigation of five jurisdictions. Higher intensity supervision, indicated by greater frequency of monitoring, was associated with higher rates of failure, even after adjusting for risk level, charge severity, and county. However, the effect of supervision frequency differed by outcome, such that those supervised at the highest levels of monitoring (two or more meetings a month) were more likely to fail on supervision due to new arrest or a technical violation, but not an FTA. We found some evidence that the association between meeting frequency and supervision failure differed for Low risk defendants in particular, who had lower and similar rates of failure when supervised with less than one meeting a month or one meeting a month.

Findings showed evidence of risk principle adherence both in level of supervision as well as meeting frequency. That is, defendants classified at higher risk levels typically received stricter supervision conditions. With respect to pretrial failure, higher levels of supervision generally were associated with higher rates of supervision failure, but there was some evidence of differences by type of pretrial failure outcome. For example, rates of FTA failure were similar across supervision levels with the largest differences visible in the proportion of defendants who had a new arrest as the first form of supervision failure. And the association between supervision level and supervision failure differed by risk level, such that Low risk defendants had much higher rates of failure at High supervision relative to Low or Moderate supervision.

In 6 out of every 10 cases, judges agreed with recommended supervision conditions. When disagreement occurred, judges were more likely to order stricter conditions than more lenient conditions. Low risk defendants, in particular, were more likely to receive non-adherent decisions relative to Moderate and High risk defendants. However, there was little difference in supervision failure rates, or type of failure, between defendants who did and did not receive adherent decisions.

Overall, these findings suggest that defendants who are supervised at higher levels of supervision are more likely to fail, particularly for a new arrest or a technical violation. It could be that there are other characteristics of these defendants that increase their likelihood of pretrial failure, or it could be that increased monitoring results in an increased likelihood of re-arrest for a new offense or a technical violation. We did not, however, find any difference in rates of FTA failure across supervision levels, which is partially consistent with prior research, which has shown that pretrial supervision may be most effective at improving appearance rates at hearings, but may not reduce the likelihood of re-arrest during case processing (Barno et al., 2019; Bechtel et al., 2017; Danner et al., 2015; Lowenkamp & VanNostrand, 2013). Thus, pretrial supervision may have reduced risk of FTA similarly across levels, thus mitigating differences in rates of FTA outcomes.

Aligning risk level and supervision levels (i.e., risk principle adherence) seemed to be most effective for Low risk defendants, who had the lowest rates of failure when supervised at Low or Moderate supervision. Risk principle adherence was less effective for High risk defendants, who maintained high rates of failure when supervised at High supervision. These findings suggest several possibilities. There may be something unique about defendants supervised at High risk, beyond charge level or risk level, that increases their likelihood of pretrial failure. Or, it could be that more intensive supervision, regardless of risk level, results in greater likelihood of detecting pretrial misconduct. Across outcomes, defendants supervised at Low supervision had the lowest rates of misconduct, regardless of risk level.

Finally, although judicial override of recommended supervision conditions occurred frequently, these overrides neither improved nor worsened the risk management of pretrial defendants. The ability for judges to maintain discretion while incorporating structured guidelines into decision-making is a key component of the integration of pretrial risk assessments into decision-making (DeMichele et al., 2018). Given the frequency with which overrides occurred, and with varying valence toward stricter or more lenient conditions, further investigation into factors motivating these decisions is warranted. However, judicial training may be warranted as well to increase adherence to structured decision-making guidelines. Judicial overrides did not improve risk management of defendants, which supports the use of structured guidelines to ensure consistent decision-making.

One of the clearest implications from this work is the need for effective strategies to reduce pretrial misconduct risk in High risk defendants, especially when supervised at High supervision. Across most jurisdictions and in pooled analyses, High risk defendants had the highest rates of pretrial failure. This raises broader questions regarding the primary goals of pretrial supervision and the outcomes by which its success should be gauged. For example, is the primary goal to reduce risk of non-appearance in court, to reduce the likelihood of specific types of criminal

activity (e.g., violent offenses), or to ensure compliance with supervision conditions? Depending on the objective(s), different strategies may be warranted, including more intensive supervision practices, addressing other criminogenic risk and needs domains as part of pretrial supervision, or piloting other supervision conditions. Consideration of these strategies may depend on the specific characteristics (e.g., charge type, risk level, etc.) of the pretrial populations in each jurisdiction.

Additionally, our findings suggest need for further research into the calibration of pretrial release and supervision matrices. Although we found evidence of risk principle adherence, levels of adherence differed meaningfully across jurisdictions and also were often small in magnitude. These findings point to the weighting of other factors in pretrial release and supervision decisions. Whether competing decision criteria can be balanced to achieve better supervision and pretrial misconduct outcomes remains to be seen, and there has been little investigation overall in this area.

Finally, and relatedly, is a need for investigation into factors motivating judicial overrides and supervision decision-making more broadly. Across jurisdictions, judicial overrides of recommended supervision conditions occurred in at least one out of every three cases and were heavily targeted toward Low risk defendants. Understanding factors motivating judicial decision-making may prompt investigation into whether these decision criteria have predictive utility for decision-making more broadly and whether they could be used to inform revisions to structured guidelines in a way that increases the consistency and accuracy of decision-making.

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APPENDIX



Bartholomew County Matrix

Offense	IRAS-PAT Score			
	0-2 Low Risk	3-5 Moderate Risk	6+ High Risk	
Murder/Treason	Not Bailable	Not Bailable	Not Bailable	
Level 1 Felony, Level 2 Felony, Class A Felony	Bond/ Court Appearance	Bond/ Court Appearance	Bond/ Court Appearance	
Level 3, 4, 5, Felonies or Class B and C Felonies 1. against a person; or 2. involves the possession and/or use of a firearm; or 3. Drug dealing/possession with intent to deal; or 4. Residential Burglary; or 5. Arson	Bond/ Court Appearance	Bond/ Court Appearance	Bond/ Court Appearance	
All other Level 3, 4, 5 Felonies or Class B and Class C Felonies	Bond/ Court Appearance	Bond/ Court Appearance	Bond/ Court Appearance	
Level 6 Felonies or D Felonies 1. against a person or animal; or 2. involves the possession and/or use of a firearm	ROR*	ROR*	ROR*	
All other Level 6 Felonies or Class D Felonies	ROR*	ROR*	ROR*	
Misdemeanors 1. against a person or animal; or 2. involves the possession and/or use of a firearm	ROR*	ROR*	ROR*	
All other Misdemeanors	ROR*	ROR*	ROR*	
ROR* - Delegated authority to allow a Pretrial Probation Officer to authorize release without posting of bond or first appearing in Court. ROR is not an option for those eligible Defendants who have 2 or more FTAs on the current case or in total for all cases during the past year. Officer may always use discretion and chose not to ROR a Defendant prior to a Court hearing.				
Recommended Level of Supervision	No Conditions	Basic Supervision	Moderate Supervision	Enhanced Supervision
Matrix Applicability	1. Warrant arrests for criminal offenses. 2. Effective upon arrest or upon the completion of the following if applicable. Victim notification. - Reduction in intoxication level to .08 Blood or Breath Alcohol Level in grams.			
Exemptions	Holds for any of the following: ^Civil Cases ^ICE (Immigration) ^IDOC Hold ^Out of County Warrant	^Parole Violation ^Probation Violation ^Serving a Sentence ^Transport Orders		

Hamilton County Matrix

OFFENSE LEVELS →	A	B	C	D	E	F
RISK CATEGORY ↓	LESS SERIOUS MISDEMEANORS	MORE SERIOUS MISDEMEANORS & LEVEL 6 FELONIES	POSS OF NARC. DRUG, POSS. OF SYRINGE, OPERAT. WHILE INTOX. W/PRIOR CONVICTION W/I 10 YEARS	NON-VIOLENT LEVEL 3, 4 & 5 FELONIES	VIOLENT LEVEL 3, 4 & 5 FELONIES	MURDER & LEVEL 1 & 2 FELONIES
CATEGORY 1 <i>0-2</i>	ROR w/ reminder	ROR w/ reminder	ROR w/Basic Supervision	ROR w/Basic Supervision	Detain until appear before a judicial officer	Detain until appear before a judicial officer
CATEGORY 2 <i>3-5</i>	ROR w/ reminder	ROR w/ Basic Supervision	ROR w/Moderate Supervision	ROR w/Moderate Supervision	Detain until appear before a judicial officer	Detain until appear before a judicial officer
CATEGORY 3 <i>6-7</i>	ROR w/ reminder	ROR w/Basic Supervision	ROR w/Enhanced Supervision	ROR w/Enhanced Supervision	Detain until appear before a judicial officer	Detain until appear before a judicial officer
CATEGORY 4 <i>8+</i>	Detain until appear before a judicial officer	Detain until appear before a judicial officer	Detain until appear before a judicial officer	Detain until appear before a judicial officer	Detain until appear before a judicial officer	Detain until appear before a judicial officer

Hendricks County Matrix

Offense  <hr/> Risk Level 	Less Serious CM	More Serious CM, F6, & HTV	Non-violent F5	Felony Possession of Controlled Substance Other than Marijuana/Possession of Syringe/OWI with prior OWI conviction within 10 years	Violent Offenses, F3, & F4	MR, F1, F2, & Treason
Low	Basic	Basic	Basic	TBD	Bond & Enhanced	Bond & Enhanced
Moderate	Basic	Moderate	Moderate	TBD	Bond & Enhanced	Bond & Enhanced
High	Moderate	Enhanced	Enhanced	TBD	Bond & Enhanced	Bond & Enhanced

Basic = Minimum of automated court date reminder (“reminder”) + monthly NCIC check for felony Ds

Moderate = Minimum of reminder + 1 in-person meeting/month + monthly NCIC check

Enhanced = Minimum of reminder + 2 in-person meetings/month + monthly NCIC check

Jefferson County Matrix

RISK GROUP GRID		
RISK GROUP I	0-2	LOW
RISK GROUP II	3-5	MODERATE
RISK GROUP III	6+	HIGH

SECURITY LEVEL GRID
OFFENSE: _____
SECURITY LEVEL: _____

		SECURITY LEVEL					
		1	2	3	4	5	6
RISK GROUP	I	Blue	Light Blue	Light Blue	Yellow	Yellow	Maroon
		Blue	Light Blue	Light Blue	Yellow	Yellow	Maroon
	II	Yellow	Yellow	Yellow	Yellow	Red	Maroon
		Yellow	Yellow	Yellow	Yellow	Red	Maroon
	III	Red	Red	Red	Maroon	Maroon	Maroon
		Red	Red	Red	Maroon	Maroon	Maroon

RECOMMENDED BOND: _____

Murder or Treason: _____

Was on Pretrial Release: _____

Was on Community Supervision: _____

Blue Text

Red Pretrial Supervision, Electronic Monitor

Yellow Pretrial Supervision

Maroon Bond, Pretrial Supervision, Electronic Monitor

Monroe County Matrix

RISK LEVEL IRAS - PAT	OFFENSE LEVEL			
	Non Violent Misdemeanor	Non Violent Felony	Violent Offenses	Murder & Treason
LOW	ROR and Telephonic Notification	ROR and Telephonic Notification	ROR and Monitoring Level 1	Not Eligible for Bail
MODERATE	ROR and Telephonic Notification	ROR and Monitoring Level 1	ROR and Monitoring Level 2	Not Eligible for Bail
HIGH	ROR and Telephonic Notification	ROR and Monitoring Level 2	ROR and Monitoring Level 3	Not Eligible for Bail

**** A recommendation to HOLD shall be provided to the Court when:**

- The defendant is currently on telephonic notification and commits a new VIOLENT FELONY OFFENSE, or;
- The defendant is currently on telephonic notification and now has THREE PENDING OFFENSES (to include pending cases from other jurisdiction).

DEFINITION OF MONITORING LEVELS:

Telephonic Notification: Defendant will only receive telephone and text court reminders. No face-to-face appointments.

Monitoring Level 1 (Supervision Level Low):

- (1) At least one face-to-face appointment with a Pretrial Case Manager every month;
- (2) Monthly criminal record checks; and
- (3) Other conditions pursuant to a court order.*

Monitoring Level 2 (Supervision Level Moderate):

- (1) At least one (1) face-to-face appointment AND one other form of contact with Case Manager every month;
- (2) Monthly criminal record checks; and
- (3) Other conditions pursuant to a court order.*

Monitoring Level 3 (Supervision Level High):

- (1) At least two (2) face-to-face appointments with a Case Manager every month;
- (2) Monthly criminal record checks; and
- (3) Other conditions pursuant to a court order.*