MONROE COUNTY: IRAS-PAT VALIDATION

FINAL REPORT

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DECEMBER 2019

INTRODUCTION

Pretrial decision-making involves timely choices by judges with limited information and variable input from members of the courtroom workgroup (DeMichele et al., 2018). It is well established that the decisions made at this phase of justice system processing have implications for subsequent outcomes. Defendants incarcerated pending trial are more likely to plead guilty, receive lengthier sentences, and subsequently recidivate more often in relation to defendants released prior to court disposition (Stevenson & Mayson, 2017). Incarceration can also stigmatize and disrupt housing, employment, family relationships, and ties to the community (Stevenson & Mayson, 2017). Pretrial risk assessments have emerged as one strategy to structure and improve decision-making. The integration of assessment tools also comes at a time when reforms on the use of monetary bond schedules are being advanced across the country (Stevenson, 2018).

Pretrial risk assessment tools are not without controversy. The primary set of criticisms about these tools concern whether they are able to predict pretrial misconduct, differentiate the likelihood or frequency of misconduct by risk level, and minimize the potential effect of racial, ethnic, and gender biases while maintaining comparable rates or reducing the risk of pretrial misconduct. Much of the evidence for or against the utility of pretrial risk assessment tools is based on theoretical claims; research evaluations have not kept pace with the volume of local implementations and the most prominent research studies have been produced by entities that have designed a tool (Stevenson, 2018). Although studies have demonstrated the predictive validity of specific pretrial risk assessment tools (e.g., Austin, Bhati, Jones, & Ocker, 2010; Austin, Ocker, & Bhati, 2010; Cadigan & Lowenkamp, 2011; Latessa, Lemke, Makarios, Smith, & Lowenkamp, 2010), questions remain about tools that have not been subject to validity tests, tools that have been constructed in one jurisdiction and integrated in another, the items used to score tools, the capacity to administer the tools, how the perceptions of courtroom workgroup professionals can influence the adoption of tools (DeMichele et al., 2018), and the effect of instrument adoption on rates of incarceration and pretrial misconduct (Stevenson, 2018).

Previously, researchers from the Indiana University Public Policy Institute, Center for Criminal Justice Research (CCJR) conducted a process evaluation of pilot counties to understand how the Indiana Risk Assessment System – Pretrial Assessment Tool (IRAS-PAT) was adopted by participating pilot counties. This foundational study also identified barriers and facilitators to implementation and explored relationships between IRAS-PAT items, risk categories, and bond or order for release outcomes (Grommon, Ray, Sapp, & Thelin, 2017). The current inquiry moves to the second stage of research on the IRAS-PAT pilot program. This phase offers a county-by-county validation of the IRAS-PAT.

To date, the IRAS-PAT has not been subject to a formal validation. Other assessment tools in the IRAS suite – Community Supervision Tool (CST), Community Supervision Screening Tool, and Prison Reentry Tool (PRT) – were assessed in a sole Indiana validation study (Latessa, Lovins, & Makorios, 2013). Overall, the findings confirmed that the IRAS-CST, IRAS-CSST, and IRAS-PRT are able to predict recidivism and the relative risk of recidivism varies by risk level. The predictive validity of the IRAS-PAT could not be assessed in this study due to the lack of requisite data (Latessa et al., 2013, p. 9).

Insights about the predictive validity of the IRAS-PAT can be deduced from IRAS's predecessor, the Ohio Risk Assessment System (ORAS) and its Pretrial Assessment Tool (PAT). The ORAS-PAT consists of seven items across four domains: criminal history (three items), employment (one item), residential stability (one item), and substance abuse (two items). ORAS-PAT assessments were validated in a sample of 452 defendants from seven Ohio counties and an average follow-up of 12 months (Latessa, Smith, Lemke, Makarios, & Lowenkamp, 2009). Overall, 16% of defendants failed to appear or were rearrested. Risk score was positively and moderately associated with recidivism (r=0.23). Risk levels also followed a stepwise progression as 5% of low risk defendants recidivated, while 18% of moderate risk and 30% of high risk defendants recidivated. Similar stepwise patterns were observed within ORAS-PAT domains (although the associations between domains and recidivism outcomes were not as strong as those established in the test of relationship between risk score and recidivism, ranging in value from r=0.05 to r=0.19).

The initial validation of the ORAS-PAT offers promising results, but it is not clear if these findings are or are not consistent with the IRAS-PAT or samples of defendants from Indiana. Beyond generalizability concerns, researchers leading the initial ORAS-PAT validation note that findings may be influenced by measurement error as data were generated from detailed structured interviews with defendants. This suggests that the data used to validate the tool were not generated in the same manner used by local jurisdictions to administer the tool and identify risk levels.

To better understand the predictive validity of the IRAS-PAT, we report IRAS-PAT validation findings from Monroe County. This study also provides a demonstration of the approach to be undertaken with the remaining pilot program counties should the appropriate data systems and metrics be in place to support a validation study. Prior to presenting the results, we describe the methods, procedures, and assumptions. The study will conclude with a discussion of key findings and directions for future research.

METHODS

Study Context

Mirroring national trends, the state of Indiana reported the highest local incarceration rate of all midwestern states (330 per 100,000 residents) in 2013, representing a 15% increase over 1999 rates. Indiana's local jail capacity was among the highest for midwestern jurisdictions at year-end 2013 (83.2% capacity), second only to Ohio (Minton et al., 2015). Responding to these trends, the Indiana Supreme Court founded the Committee to Study Evidence-Based Pretrial Release to develop and evaluate evidence-based pretrial release practices. In 2014, the Committee developed a pilot program to examine implementation of the IRAS-PAT in 11 Indiana counties: Allen, Bartholomew, Grant, Hamilton, Hendricks, Jefferson, Monroe, Porter, St. Joseph, Starke, and Tipton. The purpose of the pilot project was to validate and evaluate the implementation of the IRAS-PAT in the 11 pilot counties, including the extent of its use and feasibility for use in other Indiana jurisdictions. The pilot program began between January 2016 and March 2017 in participating counties and is ongoing.

Data for this investigation were drawn from Monroe County, which is located in Central Indiana and has a population of 146,986 people (2017 estimate). Probation officers in Monroe County administered the IRAS-PAT post-booking and pre-arraignment to misdemeanor and felony arrestees. Persons excluded from the pilot project were those individuals who were on probation, parole, and other types of community supervision; who were held on an out-of-county hold; or who were arrested on a Writ of Attachment. The pilot program began October 1st, 2016 and is ongoing; however, we defined the validation period for the pilot program as October 1st, 2016 through September 30th, 2017. The follow-up period for each defendant was defined by the pretrial processing period (i.e., the date of index jail release to the date of court disposition).

Data Sources

We received administrative data from several databases. Jail records from the Monroe County Sheriff's Office provided information on booking dates and length of stay as well as offenses at the time of arrest over a 2.5-year study period (October 1st, 2016-March 19th, 2019). From INcite, we received pretrial records containing information on IRAS-PAT assessments, including date of administration, for the study period. Court records were procured through the statewide Odyssey Case Management System (Odyssey), which included all case-related information including, but not limited to hearings, FTAs, and case outcomes over the same period.

Data Cleaning

We linked jail bookings records to court records contained in Odyssey using a combination of defendant identifiers (i.e., last name, first name, and date of birth) and date logic. Specifically, we created unique person-level identifiers for each detainee using a combination of the first three letters of a first name, first three letters of a last name, and year of birth. Then, we matched court cases filed in Monroe County to booking records based on the individual-level identifier and 1) an initial hearing occurring on the same day as or up to 3 days following a booking date; 2) a filing date occurring on the same day or up to three days following a booking date; or 3) a filing date occurring the day before or up to three days before a booking date. Following this process, assessment records from INcite were linked to jail booking records where the date of assessment occurred during an episode of incarceration.

Overall, we identified 4,870 unique bookings during the pilot period. Of these, we linked 2,022 bookings to a plausible court case filed for each detainee. Of 2,022 bookings with a court case, we identified 1,262 (of 1,993 total assessments) with an assessment conducted during the period of incarceration. Of these 1,262 defendants with a linked court case and assessment, we identified 82 duplicate individuals and 1 booking with an unfeasible filing date. For defendants who had multiple assessments conducted during the pilot period, we selected the first assessment that was associated with a court case filing. Of the resulting 1,179 detainees with a linked court case and an assessment, 84 defendants had no court case disposition by the end of the follow-up period (March 29th, 2019) and an additional 65 defendants had cases that were disposed prior to release from jail, resulting in no defined at-risk period in the community. This process resulted in a final analytic sample of 1,030 pretrial defendants. See Figure 1 for sample flow chart.

Sample

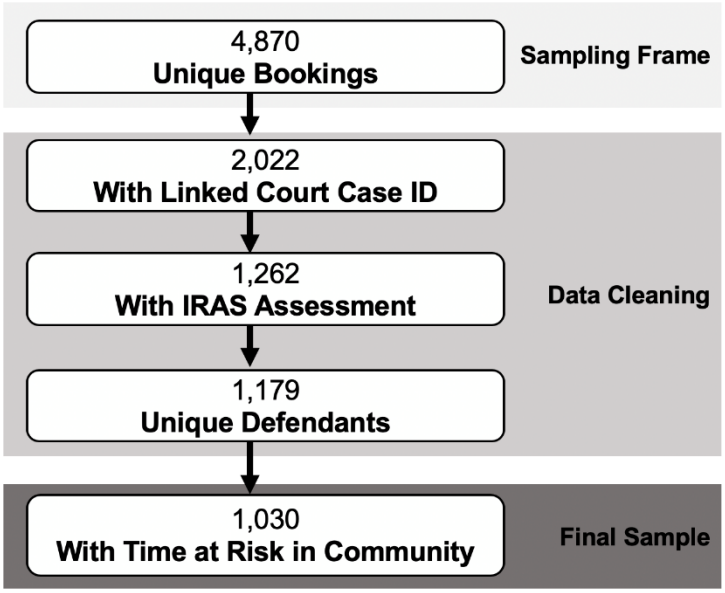

Figure 1. Sample Flow Chart

The sample consisted of 1,030 pretrial defendants who were an average age of 31.79 (*SD* = 12.22, Range: 18 to 78). Defendants were primarily male (*n* = 759, 73.7%) and Caucasian (*n* = 810, 78.6%). Smaller proportions of defendants identified as African American (*n* =143, 13.9%), Asian (*n* = 22, 2.1%), or Hispanic or Latino (*n* = 28, 2.7%). Racial or ethnic identification was unavailable for a small proportion of defendants (*n* = 9, 0.9%). Defendants were primarily booked on misdemeanor charges only (*n* = 684, 66.4%). Roughly one-third of defendants were booked on at least one felony charge (*n* = 346, 33.6%). Across all offenses for which defendants were booked into jail, offense categories included driving under the influence (*n* = 279, 27.1%), disorderly conduct (*n* = 200, 19.4%), battery (*n* = 164, 15.9%), drug-related crimes (*n* = 158, 15.3%), liquor law-related crimes (*n* = 105, 10.2%), theft (*n* = 91, 8.8%), and motor vehicle (*n* = 70, 6.8%) offenses. Importantly, these categories are not mutually exclusive because a detainee can be booked on more than one offense.

Variables

IRAS-PAT. The IRAS-PAT is an actuarial assessment designed to predict risk of arrest and FTA during the pretrial period. The IRAS-PAT is a 7-item instrument measuring 1) age at first arrest, 2) number of FTA warrants in the past 24 months, 3) three or more prior jail incarcerations, 4) employment at the time of arrest, 5) residential stability, 6) illegal drug use in the past six months, and 7) a severe drug use problem. Items 1, 3, 5, 6, and 7 are scored dichotomously (i.e., 0 or 1) and items 2 and 4 are scored on a 0-2 point scale, producing a maximum total score of 9. Total scores classify defendants into three risk bins: Low (0-2), Moderate (3-5), and High (6+). Our investigation used IRAS-PAT *total scores*, *risk estimates*, and *items.*

Case outcomes. Case outcomes were measured in the period between a defendant's release date and case disposition date. We measured three primary outcomes. *Any arrest* measured a new booking occurring during the pretrial period. *Any new arrest* measured a new booking occurring during the pretrial period in which a detainee was booked on at least one offense for a new crime. Bookings that were not associated with a new offense (e.g., violation of probation or parole, an outstanding warrant, supervision violation, etc.) were excluded from this measure. *Any FTA* measured failure to appear at any court appearance during case processing. Additionally, we report descriptively on *any pretrial misconduct* during the pretrial period, indicated as either a new arrest (or any arrest) or FTA occurring during this period. Multivariable models additionally

controlled for *time at risk*, defined as the number of days in the community, excluding jail time, between the release date and case disposition date. On average, defendants were at risk for 189.96 days (SD = 158.48, Range: 1 to 863).

Analytic Strategy

We first conducted descriptive statistics on all study variables to assess response distributions. Then, we conducted crosstabulations of risk levels with case outcomes to examine rates of pretrial misconduct at each risk classification. Significant associations were tested using a chi-squared test of independence and effect size measured using Cramer's V. Cramer's V values of .10, .30, and .50 indicate small, medium, and large effect sizes, respectively (Cohen, 1988). Among defendants with arrests or any pretrial failure during the case processing period, we examined survival days (i.e., days from release to date of arrest or FTA) by risk classification.

To examine the predictive validity of IRAS-PAT assessments, we used a multi-pronged approach. First, we examined the Area Under the Curve (AUC) of the Receiving Operating Characteristic (ROC) curve statistics. AUC values are commonly used to evaluate the predictive accuracy of risk assessment total scores. AUC values range from .50 to 1, with .50 indicating chance levels of classification and 1 suggesting perfect classification. AUC values below .54 are typically considered poor, .55 to .63 fair, .64 to .70 good, and .71 and above excellent. These conventions have been documented in reports adopted by the Bureau of Justice Assistance, National Institute of Justice, and National Institute of Corrections and represent the benchmarks for predictive accuracy in the field of risk assessment (Desmarais & Singh, 2013). Second, we conducted a series of logistic regression analyses to examine the predictive validity of IRAS-PAT assessments for each pretrial misconduct outcome, controlling for time at risk. For reference, odds ratios of 1.50, 3.00, and 5.00 indicate small, medium, and large effect sizes, respectively (Chen, Cohen, & Chen, 2010).

Third, we conducted survival analyses using cox proportional hazard models to examine predictive accuracy as a function of time to a specific outcome. Hazard models are useful for examining not only whether or not an event occurred (e.g., whether someone had a new arrest or not) but also the length of time that someone is at risk in the community (i.e., survival time). These models are especially useful when the length of follow-up time differs across participants. Cox regression models a hazard function, which is expressed as the probability of a participant experiencing the outcome (i.e., yes; no) at a given time (i.e., the participant's survival time in the community). Cox regression models produce hazard ratios (HR), which are numerical expressions of the difference in the rate of an outcome occurring between two conditions. For inferential statistics, we used a $p<.05$ criterion to determine statistical significance.

RESULTS

Descriptives

IRAS-PAT. IRAS-PAT scores averaged 2.86 (*SD* = 1.84, Range: 0 to 9) across defendants, corresponding to a low-moderate risk classification. The frequency distribution of IRAS-PAT scores is presented in Figure 2. As shown, defendants were relatively low risk, with half of IRAS-PAT scores falling below 3 (51.1%).

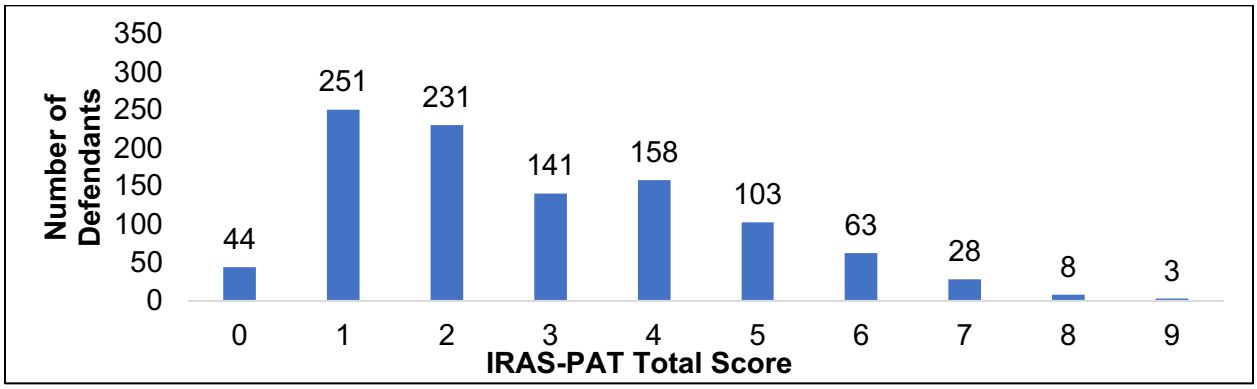

Figure 2. Frequency of IRAS-PAT Total Scores

The high proportion of defendants with low risk classifications (*n* = 526) is also depicted in Figure 3. As shown, fewer defendants were classified at moderate risk (*n* = 402), and less than one-tenth at high risk (*n* = 102).

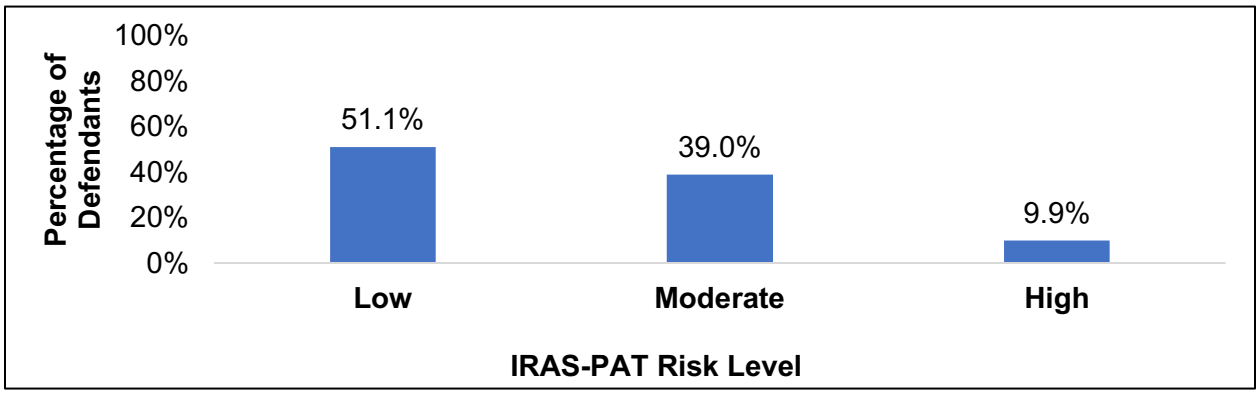

Figure 3. Frequency of IRAS-PAT Risk Estimates

Case Outcomes. Following jail release, but prior to case disposition, 19.0% of defendants had a failure to appear for any court hearing (*n* = 196) and 14.5% had at least one new arrest (*n* = 149). Slightly less than one-third of the sample had any pretrial misconduct prior to case disposition (*n* = 297, 28.8%).

Crosstabulations of Risk Level and Outcomes

Table 1 presents risk classifications crosstabulated with outcome variables. As predicted, rates of pretrial misconduct were lowest for defendants classified at low risk and highest for defendants classified at high risk. On average, rates of pretrial misconduct were 5-10 times greater for high risk defendants relative to low risk defendants. Slightly more than half of all pretrial defendants classified at high risk and released into the community prior to case disposition had some form of pretrial misconduct. For defendants who had any failure to appear prior to case disposition, high risk defendants failed to appear for a court appearance (M = 129.12 days, SD = 125.87) sooner than moderate (M = 197.56 days, SD = 173.26) and low (M = 246.28 days, SD = 207.56) risk defendants. Among defendants who were arrested for a new offense prior to case disposition, high risk defendants were arrested more quickly (M = 117.72 days, SD = 125.96) relative to moderate (M = 122.95 days, SD = 139.82) and low (M = 145.74 days, SD = 163.24) risk defendants. Among all defendants, the length of time between pretrial release and case disposition was positively associated with any FTA (r[1028] = .31, p < .001), any new arrest (r[1028] = .31, p < .001), and any arrest (r[1028] = .42, p < .001).

Case Outcomes	Risk Level						Comparison	
	Low		Moderate		High			
	n	%	*n*	%	*n*	%	X^2 (df)	Cramer's V
Any FTA	46	8.7	108	26.9	42	41.2	84.60*** (2)	.29
Any New Arrest	38	7.2	75	18.7	36	35.3	63.76*** (2)	.25
Any Arrest	55	10.5	149	37.1	65	63.7	166.59*** (2)	.40
Any Pretrial Misconduct (with Any New Arrest)	72	13.7	162	40.3	63	61.8	138.45*** (2)	.37
Any Pretrial Misconduct (with Any Arrest)	81	15.4	208	48.3	72	70.6	179.13*** (2)	.42

Note. ***p < .001

Table 1. Crosstabulations of Risk Classification and Pretrial Outcomes

Predictive Validity Analyses

AUC of the ROC. AUC values were .71 (SE=.02, 95% CI: .0.67, 0.75) for any FTA, .70 (SE= .02, 95% CI 0.65, 0.74) for any new arrest, and .76 (SE=.02, 95% CI: .73, .79) for any arrest. These values correspond to excellent levels of predictive accuracy for FTA and any arrest risk and good levels of predictive accuracy for risk of any new arrest.

Logistic Regression Models. Table 2 present results of a series of logistic regression analyses modeling case outcomes while controlling for time at risk. The results showed the strongest predictive validity of IRAS-PAT assessments for any arrest prior to case disposition. In particular, each 1-point increase in IRAS-PAT total scores was associated with a 1.70 times increase in the likelihood of arrest. Risk estimates produced good levels of predictive validity for all outcomes, with effect sizes suggesting strong predictive accuracy. For likelihood of a new arrest, defendants classified at high risk were 6.61 times more likely to be arrested for a new offense relative to low-risk defendants. Defendants classified at moderate risk were 2.31 times more likely to be arrested for a new offense relative to low-risk defendants. For FTA, defendants classified at high risk were 7.04 times more likely to FTA during the pretrial period relative to low-risk defendants. Defendants classified at moderate risk were 3.11 times more likely to FTA relative to low-risk defendant

Predictor	Case Outcomes														
	Any FTA *N* = 1030					Any New Arrest *N* = 1030					Any Arrest *N* = 1030				
	B	*SE*	Wald X^2	OR	95% CI	*B*	*SE*	Wald X^2	OR	95% CI	*B*	*SE*	Wald X^2	OR	95% CI
Total Score															
IRAS-PAT	0.36	0.05	62.18***	1.44	[1.31, 1.58]	0.33	0.05	44.25***	1.39	[1.26, 1.54]	0.53	0.05	125.56***	1.70	[1.55, 1.87]
Time at Risk	<0.01	<0.01	66.95***	1.00	[1.00, 1.00]	<0.01	<0.01	54.78***	1.00	[1.00, 1.00]	<0.01	<0.01	103.99***	1.00	[1.00, 1.00]
Risk Estimate															
High (Low)	1.95	0.26	54.16***	7.04	[4.18, 11.83]	1.89	0.28	46.18***	6.61	[3.83, 11.40]	2.87	0.27	111.82***	17.56	[10.32, 29.87]
Moderate (Low)	1.14	0.20	32.78***	3.11	[2.11, 4.60]	0.84	0.22	14.56***	2.31	[1.50, 3.56]	1.45	0.19	59.46***	4.28	[2.96, 6.19]
Time at Risk	<0.01	<0.01	65.25***	1.00	[1.00, 1.00]	<0.01	<0.01	55.60***	1.00	[1.00, 1.00[	<0.01	<0.01	105.06***	1.00	[1.00, 1.00]

Note. ‡p < .10.*p < .05. **p < .01. ***p < .001

Table 2. Logistic Regression Models of IRAS-PAT Total Scores and Risk Estimates Predicting Case Outcomes

Survival Models. Survival model results are presented in Table 3. As shown, each 1-point gain in the IRAS-PAT total score was associated with a 1.35, 1.31, and 1.27 times greater hazard of any FTA, any new arrest, and any arrest, respectively. Across outcomes, risk levels were more discriminating in predicting the hazard of any FTA versus any new arrest or any arrest. The hazard rates for defendants assessed at moderate risk were on average twice as high for all outcomes relative to those for defendants assessed at low risk. However, hazard rates for defendants assessed at high risk varied from four to five times higher than those for defendants assessed at low risk, depending on the outcome. Survival curves by IRAS-PAT risk level and outcome are presented in Figure 4.

Predictor	Case Outcomes														
	Any FTA *N* = 1030					Any New Arrest *N* = 1030					Any Arrest *N* = 1030				
	B	*SE*	Wald X^2	HR	95% CI	*B*	*SE*	Wald X^2	HR	95% CI	*B*	*SE*	Wald X^2	HR	95% CI
Total Score															
IRAS-PAT	0.30	0.04	61.50***	1.35	1.25, 1.46	0.27	0.04	40.97***	1.31	1.20, 1.42	0.24	0.03	50.92***	1.27	1.19, 1.35
Risk Level															
Moderate (Low)	0.82	0.18	21.14***	2.27	1.60, 3.23	0.72	0.20	13.10***	2.06	1.39, 3.06	0.66	0.16	17.15***	1.93	1.41, 2.63
High (Low)	1.71	0.21	62.99***	5.51	3.61, 8.40	1.53	0.23	43.14***	4.62	2.93, 7.30	1.26	0.18	46.95***	3.53	2.46, 5.07

Note. ‡p < .10.*p < .05. **p < .01. ***p < .001. HR = hazard ratio.

Table 3. Cox Regression Survival Models of IRAS-PAT Total Scores and Risk Levels Predicting Case Outcomes

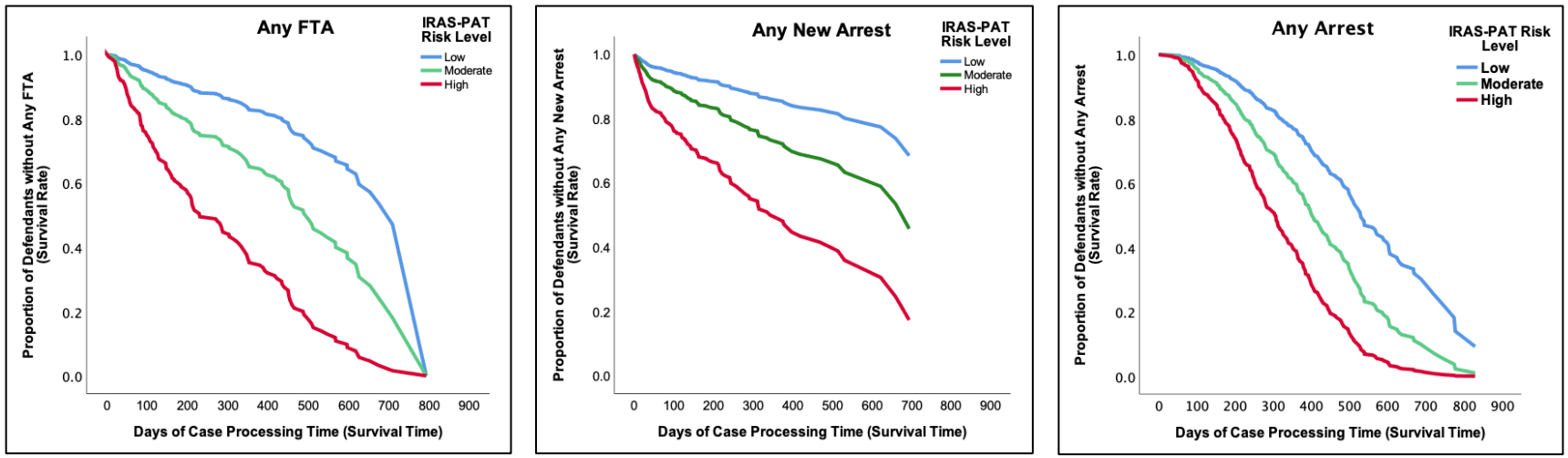

Figure 4. Survival Curves by IRAS-PAT Risk Level and Case Outcome

Item-Level Analysis

In Table 3, we present results of logistic regression models of IRAS-PAT items predicting case outcomes. Across outcomes, the strongest and most consistent item-level predictors included part-time employment or unemployment (relative to full-time employment; Item 4), residential instability (Item 5), three or more prior incarcerations (Item 3), and a recent history of one FTA (relative to no FTA; Item 2. Importantly, these item-level effects reflect the unique contribution of each item to the predictive accuracy of the IRAS-PAT, above and beyond all other items. That is, some items may show predictive utility on their own, but not contribute uniquely to the prediction of pretrial outcomes after controlling for other items. Age at first arrest (Item 1) and illegal drug use in the past six months (Item 6) did not contribute uniquely to the prediction of any of the three assessed pretrial misconduct outcomes.

Predictor	Case Outcomes														
	FTA *N* = 1030					Any New Arrest *N* = 1030					Any Arrest *N* = 1030				
	B	SE	Wald X^2	OR	95% CI	B	SE	Wald X^2	OR	95% CI	B	SE	Wald X^2	OR	95% CI
Age at first arrest – (33+)	0.69	0.42	2.67	2.00	0.87, 4.61	0.09	0.41	0.05	1.10	0.49, 2.45	0.40	0.37	1.17	1.50	0.72, 3.12
Number of FTAs – 1 (None)	0.59	0.28	4.31*	1.80	1.03, 3.14	0.77	0.29	6.98**	2.16	1.22, 3.82	0.76	0.28	7.09**	2.13	1.22, 3.73
Number of FTAs – 2+ (None)	0.14	0.40	0.12	1.15	0.52, 2.52	-0.26	0.47	0.31	0.77	0.30, 1.93	0.80	0.40	3.98*	2.22	1.01, 4.85
Three+ Prior Incarcerations (No)	0.45	0.19	5.47*	1.57	1.08, 2.30	0.52	0.21	9.98**	2.16	1.22, 3.82	1.13	0.19	35.84***	3.10	2.14, 4.49
Employed – Part time (Full-Time)	0.49	0.26	3.48‡	1.64	0.97, 2.75	0.63	0.29	4.84*	1.87	1.07, 3.28	0.79	0.25	9.51**	2.20	1.33, 3.63
Employed – Not Employed (Full-Time)	0.75	0.20	13.60***	2.13	1.42, 3.18	0.65	0.23	8.15**	1.91	1.22, 2.98	0.96	0.20	23.17***	2.60	1.76, 3.84
Residential Stability (In Residence 6 Mo)	0.70	0.20	12.69***	2.01	1.37, 2.96	0.77	0.21	13.43***	2.17	1.43, 3.27	0.79	0.19	16.85***	2.21	1.51, 3.24
Illegal Drug Use 6 Months (No)	-0.24	0.20	1.41	0.78	0.53, 1.17	-0.20	0.23	0.81	0.81	0.52, 1.27	-0.24	0.20	1.43	0.79	0.53, 1.16
Severe Drug Use Problem (No)	0.61	0.26	5.47*	1.84	1.10, 3.05	0.53	0.28	3.55‡	1.70	0.98, 2.96	0.70	0.26	7.15**	2.00	1.20, 3.34
Time at Risk	<0.01	<0.01	64.91***	1.00	1.00, 1.00	<0.01	<0.01	52.35***	1.00	1.00, 1.00	0.01	<0.01	106.36***	1.01	1.00, 1.01

Note. ‡p < .10.*p < .05. **p < .01. ***p < .001

Table 3. Logistic Regression Models of IRAS-PAT Items Predicting Case Outcomes

SUMMARY OF FINDINGS

Overall, several promising findings emerge from the present investigation:

- IRAS-PAT assessments show strong effect sizes for the prediction of pretrial misconduct outcomes.
- IRAS-PAT assessments predicted FTA and new arrest risk with similar accuracy
- IRAS-PAT items assessing employment (Item 4), residential stability (Item 5), prior incarceration (Item 3), and prior FTA (Item 2) contributed most uniquely to the prediction of pretrial misconduct items. Importantly, these findings do not suggest that other items lack predictive accuracy or fail to contribute to the prediction of pretrial outcomes in combination with other items.
- Fairly high proportions of defendants classified at moderate (40.3%) and high (61.8%) risk levels experience misconduct prior to case disposition (defined as an FTA or new arrest during the pretrial processing period).

CONCLUSION

The purpose of this report was to examine the predictive accuracy of IRAS-PAT assessments on pretrial misconduct outcomes during pretrial case processing in Monroe County, Indiana. As noted, IRAS-PAT assessments accurately predict pretrial misconduct outcomes in Monroe County and met or exceeded accepted performance standards for tools designed to assess risk of supervision violation and new offense (Desmarais & Singh, 2013). Assessments predicted each indicator of pretrial misconduct used in this study (i.e., failure to appear, new arrest, and any arrest) at nearly equivalent rates of accuracy. That is, assessments were no more or less predictive on any one form of pretrial misconduct than another. This finding is relevant since risk assessment tools may be better suited to forecast some outcomes better than others (Desmarais & Singh, 2013).

IRAS-PAT assessments were able to identify, differentiate, and place Monroe County's pretrial population into appropriate risk classifications based on the population's likelihood for pretrial misconduct. Consistent with research on risk assessment tools (Desmarais & Singh, 2013), defendant risk classifications were more discriminating predictors of misconduct in comparison to defendants' total IRAS-PAT scores. Across each of the indicators of pretrial misconduct, a small proportion of defendants classified as low risk engaged in misconduct (between 7% and 15% of low-risk defendants). Pretrial misconduct increased among defendants classified as moderate risk (between 19% and 48%) and grew even larger among high risk (between 35% and 71%). As is to be expected from evidence-based practice (National Institute of Corrections, 2009), defendants classified as high risk experienced higher rates of pretrial misconduct relative to moderate- and low-risk defendants. Monroe County has worked to develop or modify pretrial supervision and contact standards to ensure defendants are placed to appropriate levels of pretrial supervision.

Within Monroe County, four IRAS-PAT items were particularly unique predictors of pretrial misconduct. These items corresponded to domains of employment, residential stability, and criminal history. Items capturing defendants' criminal history by age of first arrest and defendants' illegal drug use were not uniquely or uniformly associated with pretrial misconduct

after accounting for the remaining IRAS-PAT items and domains. Importantly, these findings do not suggest that other IRAS-PAT items lack predictive accuracy; rather, other items do not contribute uniquely to the prediction of pretrial misconduct outcomes.

The current study is not without limitation. One of the concerns of the administration of pretrial risk assessment tools is their ability to classify defendants regardless of race, ethnicity, or sex (VanNostrand, 2007). To examine whether the IRAS-PAT produces similar predictive results among Monroe County's demographic subgroups requires years of ongoing IRAS-PAT data collections and disproportionate sampling techniques to generate adequate samples. Our research design is unable to produce sufficient subsamples that would allow us to replicate each of the statistical analysis reported here by demographic subgroup and draw sound conclusions about the predictive validity of the IRAS-PAT across subgroups. Recall, the sample represents a two-year post-IRAS-PAT integration period of pretrial operations. The sample largely consisted of Caucasian (79%) males (74%). The sample resembles Monroe County's resident population by race or ethnicity as 86% of residents are Caucasian (U.S. Census Bureau, 2019). Like most assessments of local justice systems (see, for example, Zeng, 2019), males were overrepresented in the sample. Half of the County's population is male (U.S. Census Bureau, 2019). Future revalidations and research should monitor the predictive performance of the IRAS-PAT by race, ethnicity, sex within Monroe County and across the state of Indiana.

Congruent with other studies of pretrial risk assessment tools (see, for instance, Baglivio et al., 2019; Barno et al., 2019), defendants who were unable to satisfy bond conditions and secure release from jail were not included in the sample. This pool of defendants were likely classified at higher levels of risk than the sample, faced more serious felony charges, and plausibly would have contributed to pretrial misconduct outcomes if released to the community prior to court disposition. Since the pretrial behaviors of these defendants cannot be observed, it is possible that the performance of the IRAS-PAT in Monroe County is conservatively estimated in general and specifically for high risk defendants.

Our ability to link relevant court, jail, and risk assessment records was bound by the fields captured across three different record management systems. Our sampling frame began with nearly 5,000 unique bookings and generated a sample of approximately 1,000 defendants who had secured release from jail with court case and IRAS-PAT information. While we are confident in the matched records we produced for this analysis, we are unable to speak to the generalizability of the sample to the population of Monroe County's pretrial defendants who were released from jail and are awaiting court disposition. It is likely that some eligible were excluded due to unavailable records or information that was not recorded in a manner that would facilitate cross-system merging of records.

Despite these limitations, the current study demonstrates that the IRAS-PAT is a valid tool for predicting pretrial misconduct in Monroe County. The findings also establish a critical baseline for Indiana practitioners. This study is one of the first formal validations of IRAS-PAT assessments by a third-partner research partner who was not involved in the design or development of the IRAS suite. Using a using a sample of defendants from Indiana who were assessed as part of routine practice, we found strong support for the predictive accuracy of IRAS-PAT assessments.

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