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VALIDATION OF THE COCONINO COUNTY PRETRIAL RISK ASSESSMENT TOOL

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ABSTRACT

The goal of this analysis was to determine whether the risk assessment instrument used by the Coconino County Pretrial Services is a valid predictor of the likelihood of a defendant on pretrial release failing to appear in court or being rearrested on a new charge while the initial charge was pending. The findings indicate that the instrument is not efficient at predicting either form of pretrial misconduct. No correlation was found between most of the variables included in the instrument and the outcomes of failure to appear or rearrest. Efforts to identify which variables were related using multivariate models proved untenable given problems with selection bias, resulting from the fact that only about half the defendants in the study sample were released during the pretrial period. When release rates are so low, it is not possible to identify the variation between low, medium, and high risk defendants. As a result of these selection bias problems, a new risk assessment instrument was constructed based upon research-based findings from other jurisdictions. Simulations run on the new instrument show that it is successful in sorting out Coconino County defendants by risk level. The simulations also show that no significant additional risk would be incurred by releasing defendants currently not released who resemble defendants who currently are released.

INTRODUCTION

Pretrial risk assessment instruments have been in existence for 50 years. For many years, these instruments were implemented in jurisdictions with simply the assumption that they were effective in sorting defendants into categories of risk of failure to appear (FTA) in court and rearrest on new charges. Generally, they were based upon intuition, not research. In more recent years, calls for evidence-based practices in a wide range of criminal justice endeavors has put pressure on pretrial services programs to establish, through good science, whether the tools they use to assess risks are valid, and, if not, to identify the factors that are.

The Coconino County Criminal Justice Coordinating Council identified as a high priority the validation of the risk assessment matrix used by the Coconino County Pretrial Services. The program has been using the existing risk assessment matrix for over a decade. The instrument takes into account two types of risk: danger to the community (rearrest for a new offense) and flight risk/failure to appear in court for the next hearing in the current case (FTA). The current risk assessment matrix takes over 30 factors into consideration.

This report presents the findings of an analysis of that instrument, testing to see if it is a valid measure of the risks posed by Coconino County pretrial defendants. The report is divided into several sections. The first describes the sample that was used to conduct the study. The second compares the characteristics of the Coconino County sample with defendants from other recent studies. The third section presents the analysis of the validity of the current Coconino County pretrial risk assessment study. The fourth presents a new, research-based risk assessment instrument for Coconino County Pretrial Services. The final section has some concluding thoughts.

THE SAMPLE

Sampling Method

PJI requested a list from the Coconino County pretrial services agency of all felony and misdemeanor defendants who had their first court appearance between February 9, 2009 and February 3, 2010. This time period was selected because it would allow about six months for the most recent cases – those filed in the first week of February 2010 – to reach final disposition before analysis would begin. Over 91% of the sampled cases reached final adjudication at the time that Pretrial Services submitted the final data base to PJI. This is more than adequate to ensure that we will not have findings tainted by censoring effects where some defendants have incomplete exposure to the treatment (i.e., the release).

Coconino County Pretrial Services supplied a list of 387 defendants to PJI. The list was comprised of the automated data collected in MS Excel by Pretrial Services during its regular screening process, plus additional variables on substance abuse and pretrial release outcomes that were agreed upon by PJI and Pretrial Services as supplements to the data. Upon receipt, PJI converted the MS Excel file to a Statistical Package for the Social Sciences (SPSS) datafile and a STATA datafile for analyses.

Descriptive Statistics

Table 1 shows the demographic characteristics of the sample. Nearly three-quarters of the defendants are over the age of 25. Over two-thirds have a GED or high school diploma, but no postsecondary education. The majority is employed at arrest. Approximately 20% are from out of state. Just over 10% are transients. The preponderance of defendants has resided in the same state for more than 5 years. Defendants tend not to be property owners, with the most likely form of ownership being a vehicle. Just fewer than three-quarters of defendants have a phone.

Table 1
Socio-Demographic Characteristics of Risk Assessment Validation Study Sample

	N	%
Age		
20 or Younger	36	9.3
21 to 24	63	16.3
25 to 35	143	37.0
More than 35	144	37.3
Education		
Non High School Graduate	90	23.4
High School or GED	256	66.5
College AA or Partial College	28	7.3
Four Year College Degree	11	2.9
Employment		
6 Mo. at Same Job	111	28.8
Less than 6 Mo.	114	29.5
Unemployed	161	41.7
Residential Stability		
1 Address Past 12 Mo.	180	46.8
2 or more Addresses Past 12 Mo.	124	32.2
No AZ Address	81	21.0
Living Arrangements		
Lives with Family Past 12 Mo.	73	18.9
Other Living Arrangement	271	70.2
Transient	42	10.9
Time in Geographical Area		
Less than 3 Years	48	12.4
3 to 5 Years	24	6.2
5 to 20 Years	79	20.4
20 Years or More	236	61.0
Property Ownership (Only "Yes" Responses Shown)		
Owns or is buying home/business (Danger Scale)	47	12.1
Owns or is buying home/business (Flight Scale)	54	14.0
Owns Vehicle	140	36.2
Has Access to Vehicle	147	38.0
Phone Access		
Phone in Defendant's Name	209	54.0
Pay-Per-Use Mobile	73	18.9
No Phone	105	27.1

Table 2 details the offense characteristics that brought the defendant before the court. No defendants were currently under arrest for a class 1 felony, and the largest fraction of defendants (27.6%) had only a misdemeanor current arrest. Over three-quarters of defendants had no more than three charges in their current arrest. A quarter of defendants had a current arrest where drugs were involved, just over 10% where weapons were involved, and about a third where violence was involved. Approximately one out of every five defendants had a current charge that was a warrant.

Table 2
Current Offense Characteristics

	N	%
Most Serious Charge		
Class 1 Felony	0	0
Class 2 Felony	83	21.4
Class 3 Felony	43	11.1
Class 4 Felony	63	16.3
Class 5 Felony	41	10.6
Class 6 Felony	49	12.7
Misdemeanor	107	27.6
Number of Charge Counts		
1	111	28.8
2	111	28.8
3	68	17.6
4	46	11.9
5 or More	50	13.0
Drugs Involved		
Yes	98	25.3
No	289	74.7
Drug Sale		
Yes	64	16.5
No	323	83.5
Weapon Involved		
Yes	43	11.1
No	344	88.9
Violent Crime		
Yes	121	31.3
No	266	68.7
Victim Injured		
Yes	50	12.9
No	337	87.1
Current Charge is a Warrant		
Yes	81	20.9
No	306	79.1

Table 3 shows the prior criminal history of the sample. The vast majority of defendants have no prior prison time. On the other hand, nearly 4 out of 5 defendants have a prior misdemeanor and 2 out of every 5 defendants have a prior felony. Roughly half of the defendants have a prior failure to appear. Just less than two-thirds of defendants have a prior failure to comply.

Table 3
Prior Criminal History

	N	%
Prior Prison Time		
Yes	85	22.0
No	302	78.0
Prior Misdemeanor Charges		
None	82	21.1
0-3 Nonviolent Misdemeanor or 1 Violent	79	20.4
4-10 Nonviolent Misdemeanor or 2 Violent	91	23.5
Over 10 Misdemeanors	135	34.9
Prior Felony Charges		
None	152	39.3
1-3 Felony Charges	94	24.3
4-10 Felony Charges	75	19.4
Over 10 Felony Charges	66	17.1
Prior Failure to Appear		
Yes	184	47.5
No	203	52.5
Prior Failure to Comply		
Yes	137	64.6
No	250	35.4

Table 4 depicts the current involvement of Coconino County defendants with the criminal justice system. Most defendants have only limited involvement with the criminal justice system. But 36% had a pending case when arrested for the instant charge. Thus, over a third are already exhibiting signs of risks defendants, because they come into the study by being active pretrial rearrests.

Table 4
Current Involvement with the Criminal Justice System

	N	%
On Probation or Parole at Arrest		
Yes	46	11.9
No	341	88.1
Pending Case at Arrest		
Yes	140	36.2
No	237	63.8
Active Warrant at Arrest		
Yes	56	14.5
No	331	85.5
Turned Self in for Arrest		
Yes	5	1.3
No	382	98.7

Table 5 describes the prevalence of substance abuse among Coconino County pretrial defendants. Just under half of defendants reported using alcohol. About one in ten defendants reported using drugs. About one in five defendants said that they have been previously treated for substance abuse.

Table 5
Alcohol/ Drug Treatment

	N	%
Currently Uses Alcohol		
Yes	207	46.5
No	180	53.5
Currently Uses Drugs		
Yes	44	11.4
No	343	88.6
Ever Been Treated for Substance Abuse		
Yes	83	21.4
No	304	78.6

Table 6 depicts the assessments made by the current Coconino County risk assessment matrix. Before discussing the data in the table, however, some discussion about the matrix is needed. The matrix score is not a simple summation of the flight risk and dangerousness risk score. Rather, the total risk score is a location on a matrix grid of two dimensions: flight risk in the vertical and dangerousness in the horizontal. The matrix ranges from

cells/points 1 to 400, with cell 1 having a 0,0 set of flight and dangerousness scores and cell 400 having a 19, 19 set of flight and dangerousness scores.[1] The matrix treats the values for each element of risk in the same manner, with the boundaries for each risk recommendation category forming a diagonal through the matrix.

		R	I	S	K		O	F		R	E	A	R	R	E	S	T		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
0	1	3	6	10	15	21	28	36	45	55	66	78	91	105	120	136	153	171	190	210
R 1	2	5	9	14	20	27	35	44	54	65	77	90	104	119	135	152	170	189	209	229
I 2	4	8	13	19	26	34	43	53	64	76	89	103	118	134	151	169	188	208	228	247
S 3	7	12	18	25	33	42	52	63	75	88	102	117	133	150	168	187	207	227	246	264
K 4	11	17	24	32	41	51	62	74	87	101	116	132	149	167	186	206	226	245	263	280
5	16	23	31	40	50	61	73	86	100	115	131	148	166	185	205	225	244	262	279	295
O 6	22	30	39	49	60	72	85	99	114	130	147	165	184	204	224	243	261	278	294	309
F 7	29	38	48	59	71	84	98	113	129	146	164	183	203	223	242	260	277	293	308	322
8	37	47	58	70	83	97	112	128	145	163	182	202	222	241	259	276	292	307	321	334
F 9	46	57	69	82	96	111	127	144	162	181	201	221	240	258	275	291	306	320	333	345
L 10	56	68	81	95	110	126	143	161	180	200	220	239	257	274	290	305	319	332	344	355
I 11	67	80	94	109	125	142	160	179	199	219	238	256	273	289	304	318	331	343	354	364
G 12	79	93	108	124	141	159	178	198	218	237	255	272	288	303	317	330	342	353	363	372
H 13	92	107	123	140	158	177	197	217	236	254	271	287	302	316	329	341	352	362	371	379
T 14	106	122	139	157	176	196	216	235	253	270	286	301	315	328	340	351	361	370	378	385
15	121	138	156	175	195	215	234	252	269	285	300	314	327	339	350	360	369	377	384	390
16	137	155	174	194	214	233	251	268	284	299	313	326	338	349	359	368	376	383	389	394
17	154	173	193	213	232	250	267	283	298	312	325	337	348	358	367	375	382	388	393	397
18	172	192	212	231	249	266	282	297	311	324	336	347	357	366	374	381	387	392	396	399
19	191	211	230	248	265	281	296	310	323	335	346	356	365	373	380	386	391	395	398	400

Legend:

No Fill = ROR	Orange Fill = LEVEL 2	Pink Fill = LEVEL 4
Yellow Fill = LEVEL 1	Green Fill = LEVEL 3	Blue Fill = NOR

[1] Nearly 36% of defendants exceeded the matrix range cap of 400 and were assigned a score of "500" to denote that their total risk level was so high that they "went off the grid." That over a third of defendants went off the grid is not surprising when one realizes that the grid has rather low caps (19 out of 155) on the highest point value expected for each element of risk.

Level 5-Blue Fill defendants are of special interest as these defendants technically are to have to "no release recommendation made due to high risk." As can be seen in the total risk section of Table 6, 54% of defendants fall into this "no release recommendation" category. This leads one to ask, what element of risk is driving the "no recommendation made due to high risk" assessments? The answer is the dangerousness risk element of the current risk matrix. The potential scores for both the flight risk and the dangerousness risk vary between -6 and 150[2]. However, we see that pretrial defendants are much more likely to score higher on the dangerousness risk element at every level of the total risk score.

Another way to express this is to compute a summative total risk measure and compute the fraction of the total risk contributed by each of the two separate elements of risk. While the summative score is not identical to the matrix score, it behaves similarly[3] and can serve as a good way to demonstrate the magnitude of the contribution of each element of risk to the matrix derived total risk score. As table 6 shows, on average, two-thirds of the summative version total risk is driven by dangerousness. Moreover, the lower the summative total risk, the more it is driven by the dangerousness element. This suggests that what the current Coconino County risk assessment is designed to measure is not failure to appear, but rearrest.

Given the extensive criminal histories and the predominance of felony defendants in the sample, a typical dangerousness risk assessment would not recommend for release many defendants. This is what we see in the results from Coconino County's total risk assessment. It is worth noting that there is a distinct break in both the flight risk and the dangerousness risk scores between defendants who were classified as fit candidates for non-financial release and those for whom the pretrial risk assessment dictates not issuing a recommendation due to these defendants' high level of risk. This suggests that the current risk assessment has discriminant validity - the ability to distinguish between various categories of interest to the analyst/risk assessor.

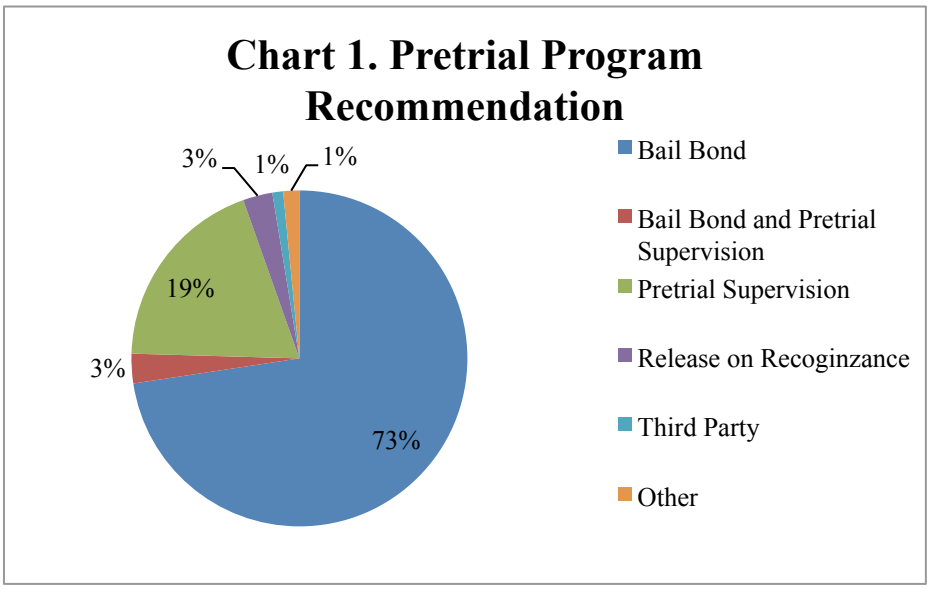
[2] The maximum score for flight risk is 152 and the maximum score for dangerousness risk is 150.

[3] The two total risk scores are correlated at .787 overall, and when one looks at the cases that are not artificially capped with "500" in the matrix total risk score, they are correlated at .984. The maximum correlation possible is 1. Either way one analyzes the relationship, the two total risk scores are statistically significantly correlated - that is, they would be correlated in 95 or more samples of Coconino County defendants out of 100 randomly drawn samples.

Table 6
Pretrial Release Risk Assessment Scores

	N	%
Total Risk (Flight & Dangerousness Combined)		
Release on Recognizance-No Fill (1-45 points)	61	15.8
Level 1-Yellow Fill (46-62 points)	18	4.7
Level 2-Orange Fill (63-120 points)	45	11.3
Level 3-Green Fill (121-193 points)	43	11.1
Level 4-Pink Fill (194-210 points)	11	2.8
Level 5-Blue Fill (211 to 400 points)	209	54.0
	Mean	**Median**
Flight Risk		
Release on Recognizance-No Fill (1-45 points)	1.49	0.0
Level 1-Yellow Fill (46-62 points)	2.28	2.0
Level 2-Orange Fill (63-120 points)	3.38	2.0
Level 3-Green Fill (121-193 points)	5.26	6.0
Level 4-Pink Fill (194-210 points)	8.09	9.0
Level 5-Blue Fill (211 to 400 points)	15.73	10.0
All Levels	10.04	6.0
	Mean	**Median**
Dangerousness Risk		
Release on Recognizance-No Fill (1-45 points)	3.43	4.0
Level 1-Yellow Fill (46-62 points)	6.72	6.5
Level 2-Orange Fill (63-120 points)	8.40	8.0
Level 3-Green Fill (121-193 points)	11.21	11.0
Level 4-Pink Fill (194-210 points)	10.91	10.0
Level 5-Blue Fill (211 to 400 points)	21.44	19.0
All Levels	14.96	13.0
Mean Percentage from Each Component of Risk	**Flight**	**Dangerousness**
Release on Recognizance-No Fill (1-45 points)	28.81	71.19
Level 1-Yellow Fill (46-62 points)	24.57	75.43
Level 2-Orange Fill (63-120 points)	27.99	72.01
Level 3-Green Fill (121-193 points)	32.09	67.91
Level 4-Pink Fill (194-210 points)	42.58	57.42
Level 5-Blue Fill (211 to 400 points)	37.29	62.71
All Levels	33.85	66.15

As we will see in Charts 1 and 2, the risk assessment classification is not identical to the pretrial program's recommendation. Chart 1 indicates that nearly three-quarters of defendants were recommended as candidates for financial release. The next largest group was recommended for pretrial supervision.



Like most pretrial programs across the nation, Coconino County's risk assessment scale does not have a "no release" category for defendants for whom no conditions or combination of conditions can reasonably assure community safety or appearance in court. Without such a category, it is not unreasonable to expect that the pretrial program will choose to recommend a form of financial release as an alternative to not issuing any recommendation at all for high-risk defendants. As we will see in Chart 2, the pretrial program does exactly that.

Chart 2 shows the risk assessment categorization by the recommendation made by the pretrial program. For every level of the risk assessment, the predominant recommendation was financial release (bail bond). If the pretrial program were making recommendations strictly according to the risk assessment, the financial release category would have the form of an inverted stair, taking an ever smaller fraction of each risk assessment categorization as one progresses from the highest risk to the lowest level of risk. We see a very weak form of this in Chart 2. This shows that the pretrial program was taking additional considerations into account beyond the risk assessment score.

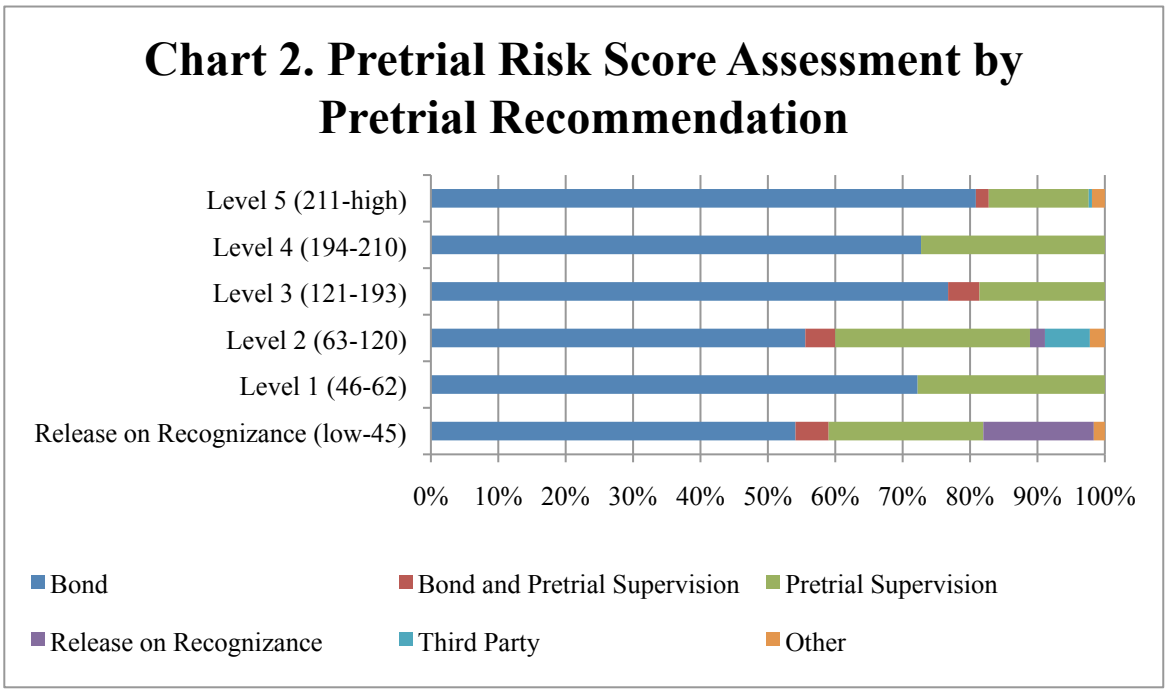


Chart 3 shows the release status of defendants. As the chart shows, almost half the defendants (47%) did not obtain release of any kind – financial or non-financial – during the pretrial period.

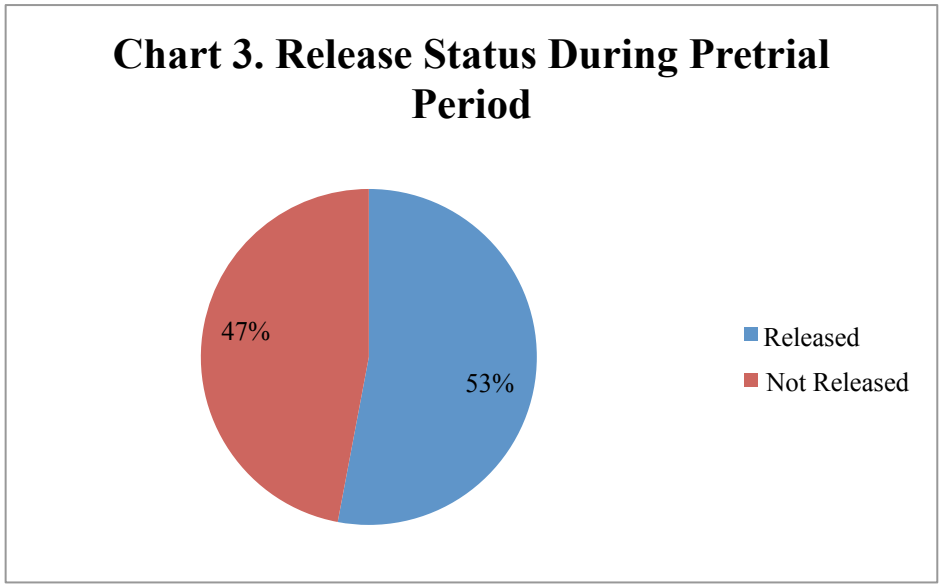


Chart 4 depicts the type of pretrial release for those defendants who were released. Nearly equal amounts of released pretrial defendants were released on recognizance and pretrial

supervision (38% vs. 39%), while only 19% of released pretrial defendants were released on bail bond.

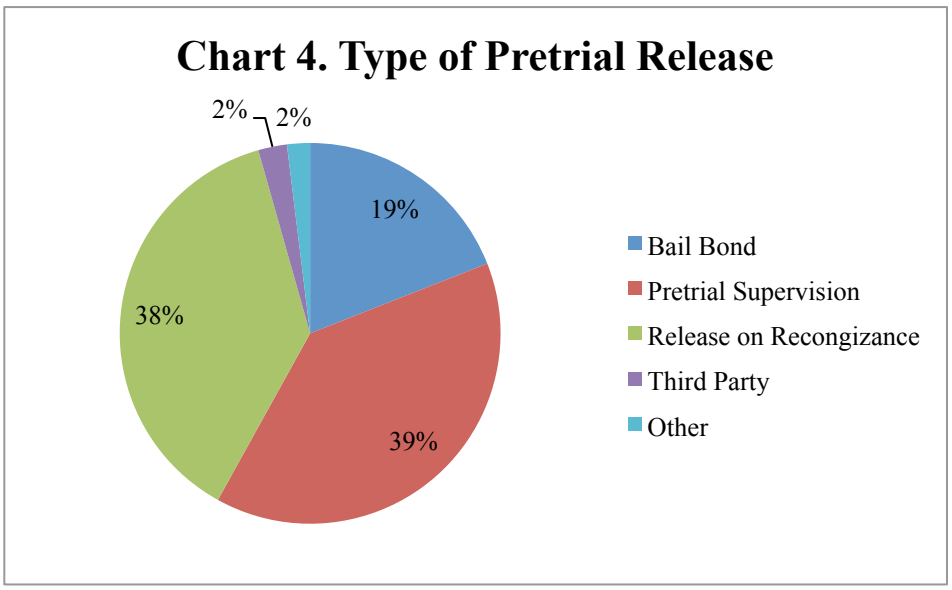


Chart 5 shows how the risk assessment classification and the release status/type compare. Release status and type do follow similar patterns to the risk classification. The highest risk defendants are the least likely to be released and the least likely to be put on release on recognizance. The lowest risk defendants are the defendants most likely to be put on release on recognizance and the least likely to be held without pretrial release. What is problematic is the distribution of release on recognizance and pretrial supervision for "mid-level" (levels 1-4) defendants. If the risk assessment was being strictly implemented, we would see that Level 4 defendants would be more likely than Levels 3, 2, and 1 defendants to be placed on pretrial supervision and less likely to be placed on release on recognizance. The exact opposite of this is occurring.

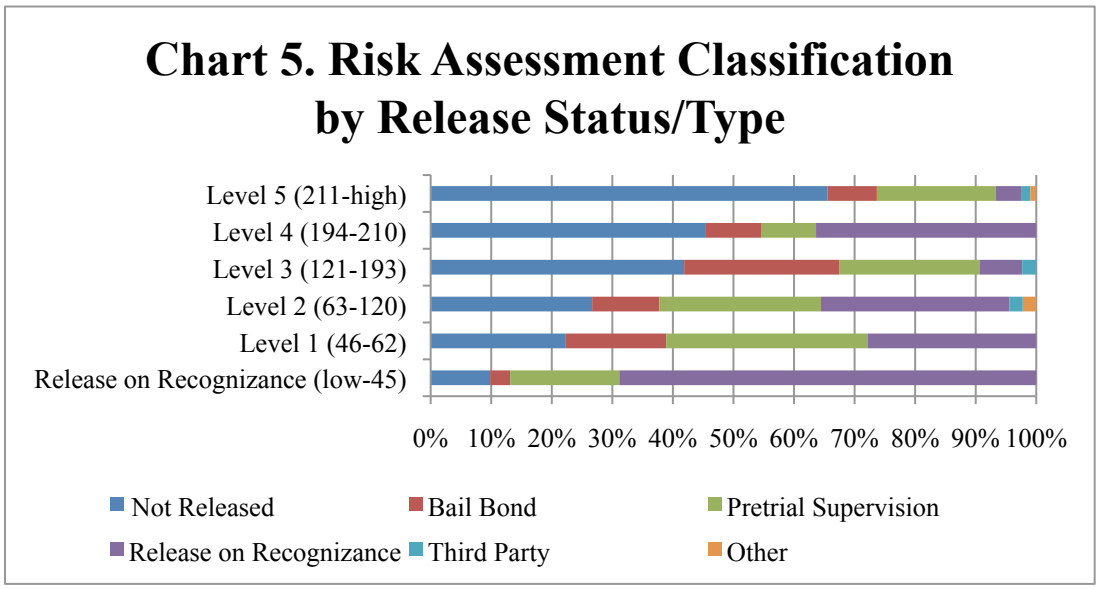


Chart 6 shows how often the pretrial program's recommendation was at variance with the release status of the defendant. Over half of the time when a financial release was recommended, the final release status was a non-release. Eleven percent of those recommended for financial release were placed on financial release. In fact, defendants recommended for financial release were more likely to be placed on pretrial supervision (17%) than financial release.

Defendants recommended for pretrial supervision were just slightly more likely to be placed on pretrial supervision (35%) than they were to be placed on release on recognizance (27%) or not released (27%). Nearly 10% of those recommended for release on recognizance were not released and nearly 20% were placed on pretrial supervision.

We cannot know from the data what precisely the court's decision was, as we are unable to distinguish between a non-release due to inability to make bail versus the court's decision to not release a defendant under any conditions. But we can draw some clear conclusions. Chart 6 shows substantial variation between the court's use of pretrial supervision and the pretrial program's recommendation. Chart 6 also suggests that the courts are not taking the pretrial programs request that a defendant not be placed on financial release as dispositive.

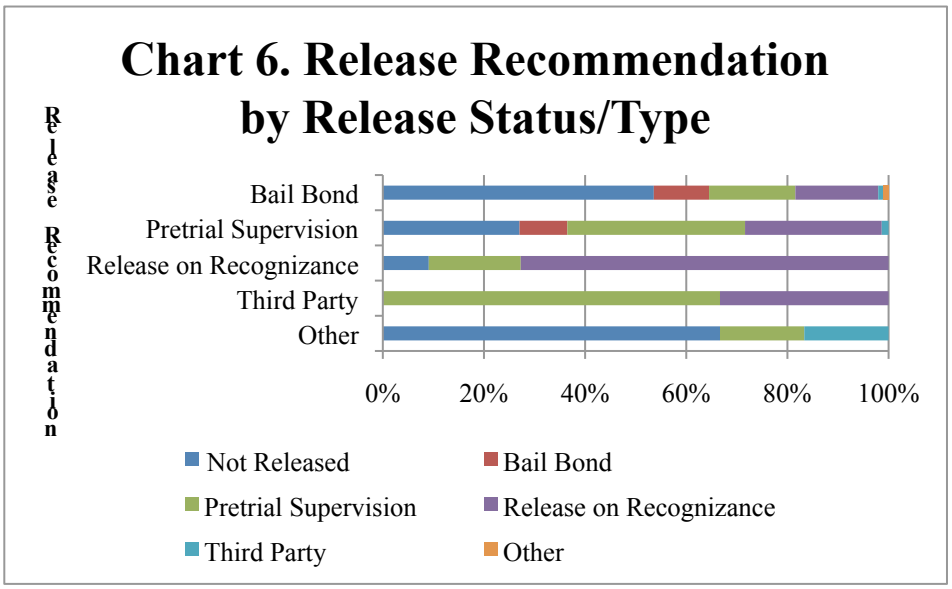


Table 7 indicates that overall, there were low levels of failure to appear (10.7%), rearrest (13.7%) or a composite failure for either type of failure (20.5%).

Table 7
Conduct on Pretrial Release

	N	%
Defendant Failed to Appear		
Yes	22	10.7
No	183	89.3
Defendant was Rearrested		
Yes	28	13.7
No	177	86.3
Any Pretrial Misconduct		
Yes	42	20.5
No	162	79.5

COMPARISON OF THESE FINDINGS WITH DATA FROM OTHER JURISDICTIONS

Previous reviews of the state of the art in pretrial risk assessments (VanNostrand 2007) have decried the tendency to treat each jurisdiction de novo, as if no useful information can be gleaned by comparing defendants in the immediate study to defendants in other studies. In point of fact, comparisons can serve an extremely useful purpose: to determine if the defendants in the current study systematically differ from defendants in other studies which would make them less likely to be predictable according to currently known predictive factors of pretrial misconduct. To this end, this section presents a comparative review of defendants in this sample to defendants in other recent studies, including a review of felony defendants in the nation's 75 largest urban counties and several major pretrial risk assessment validation studies conducted over the last decade for the state of Virginia (2003 & 2009), Hennepin, MN (2006), Maricopa, AZ (1999), New York City, NY (2003) and Allegheny, PA (2008).

A word of caution is necessary before proceeding with the comparisons. Unlike many of the jurisdictions where other risk assessment validation studies have been recently conducted, the Coconino County program targets all felonies, but only selected misdemeanors, such as DV and DUI cases. The program does not deal with most misdemeanors. This makes it distinct from the other jurisdictions such as Allegheny, PA, Hennepin, MN, and New York City, NY where the pretrial program reviews virtually all felony defendants and misdemeanants they can within staffing constraints. The state of Virginia's system takes this approach to a slightly narrower target population by stating that it is charged to conduct reviews for all defendants who are not charged with an offense punishable by death are reviewed for consideration for pretrial release. As a result, we should expect that our comparisons would reveal that the defendants reviewed in Coconino County would be more likely to be charged with felonies than defendants reviewed in other jurisdictions. This is not indicative that Coconino defendants are charged with more severe offenses, but only reflective of the Coconino County pretrial program's decision not to limit its target population.

Age

Coconino County pretrial defendants are sociodemographically similar in many respects to local pretrial defendants nationwide. Thirty-eight percent of felony defendants in the State Court Processing Statistics review of the nations' 75 largest counties are age 35 and older, while in Coconino County 37.3% of defendants are age 35 and older. However, Coconino County defendants are more likely to be between 25 and 35 than the local felony pretrial defendants in the nation's 75 largest counties (37% vs. 29%).

Education and Employment

Coconino County defendants share in common with VA and Allegheny, PA pretrial defendants that most completed high school, although over 60% of Coconino County defendants completed their high school or GED degree, making them slightly more educated than their counterparts in VA and Allegheny, PA. Similar to VA defendants,

Hennepin, MN defendants and New York City (NYC) defendants, around 40% of Coconino County defendants were unemployed (41.7% versus 36% in VA, 39% in Hennepin, MN, and 53% NYC). Coconino County defendants are slightly more likely to be transient than VA defendants (10.9% vs. 5%).

Community Ties

Coconino County defendants are much less likely than NYC or Allegheny, PA defendants to live with family (18.9% Coconino County, 60% NYC, and 47% Allegheny, PA). Unlike any other study's defendants, over 60% of Coconino County defendants were most likely to be residents of the same geographical area for over 20 years, an unusually long time. In VA the median time for defendants living in the same area is 15 years and in Allegheny, PA only 56% were country residents for more than 5 years. This may be a definitional matter though. Coconino defines "living in the same geographical area" as continuous residency in the same state. No other jurisdiction does this.

Property Ownership/Access

Almost identical to the 12% Allegheny, PA pretrial defendants who owned a home, 12.1 to 14.% of Coconino County pretrial defendants owned a home or business. Identical to VA pretrial defendants, 38% of Coconino County pretrial defendants had access to a vehicle. Like VA and NYC pretrial defendants, over 70% of Coconino County pretrial defendants had a phone (72.9% Coconino County, 76% VA, 74% NYC).

Given the similarities of Coconino County pretrial defendants to those in recent studies in that shaped the state-of-the-art in pretrial risk assessment scales during the last decade, we can reasonably expect to find that similar less complicated risk assessment instruments developed for those jurisdictions should be able to provide substantial leverage in predicting risk of flight and danger to the community in Coconino County.

Current Charge

While we saw that Coconino County defendants in this study are sociodemographically similar to defendants in other pretrial risk assessment studies, they are not similar to defendants in other studies in the nature of the severity of the current offense. This is to be expected, as it reflects the decision of Coconino County's pretrial program not to review (include in this study) a large segment of their misdemeanor defendant population. Overall, Coconino County defendants are appearing before the court on more serious charges than defendants in other studies. Unlike many jurisdictions, more than two-thirds of Coconino County defendants being considered for pretrial release have a felony as their most serious charge. For example, in VA, Hennepin, MN and in Allegheny, PA, only 34% to 36% of defendants were charged with a felony. In NYC, 52% of defendants were charged with a felony. This makes the average Coconino County defendant unusually risky by most pretrial standards.

Similarly, most of the recent risk assessment studies have been conducted in jurisdictions with a majority or a plurality of defendants with one charge and generally less than 10% with more than four charges. Over two-thirds of Coconino County defendants had more than one charge, and 13% had more than four charges. In Allegheny, PA 40% of pretrial defendants had one charge and in VA 68% of pretrial defendants had one charge. In Coconino County, only 28.8% of pretrial defendants had one charge.

The involvement of drugs in the current offense seems slightly lower than many other studies. In Allegheny, PA and NYC the defendant's most serious charge was a drug charge around a quarter of the time (27% Allegheny, PA and 22% NYC). On its face, this seems similar to Coconino County's 25.3% of defendants with drugs involved. However, that drugs are involved in an offense is a much broader definition of a drug crime than was utilized in the Allegheny, PA and NYC studies. Moreover, the Maricopa, AZ study had 39% of defendants with a drug charge.

Another indication of the greater severity of Coconino County defendants is the presence of a weapon. The 11.1% seen in Coconino County is 11 times the .3% seen in the Maricopa, AZ study, and nearly a third greater than the fraction of defendants in the Allegheny, PA study. However, it was similar to the 11.2% seen in Hennepin, MN.

Coconino County pretrial defendants are more likely to be in court for a violent crime than defendants in Allegheny, PA (12%) and VA (23%), but about as likely as NYC pretrial defendants (between 32 and 36%). Most crucially, Coconino County pretrial defendants were nearly twice as likely as Maricopa, AZ pretrial defendants (16% vs. 31.3%) to be charged for a violent crime.

Prior Criminal History

Coconino County defendants tend to have more serious prior criminal histories than defendants in other studies. Coconino County pretrial defendants are more likely than defendants in other studies to have a prior felony. While in Allegheny, PA, Hennepin, MN, NYC, and VA, 31% or less of defendants had a prior felony, in Coconino County over 60% of pretrial defendants had a prior felony. Coconino County pretrial defendants are more likely than defendants in other studies to have a prior misdemeanor. While in Allegheny, PA, Hennepin, MN, NYC, and VA, 69% or less of defendants had a prior misdemeanor, in Coconino County over 79% of pretrial defendants had a prior misdemeanor.

Prior Failure to Appear

Coconino County pretrial defendants are more likely than defendants in other studies to have a prior FTA. While in Allegheny, PA, Hennepin, MN, NYC, and VA, 31% or less of defendants had a prior FTA, in Coconino County over 47% of pretrial defendants had a prior FTA.

Current Involvement with the Criminal Justice System

Compared to other studies, Coconino County defendants are slightly more likely to have a current involvement with the criminal justice system at arrest. Almost 15% of Coconino County defendants had an active warrant, a higher rate than any other study (Allegheny, PA 2%, NYC 7%, and VA 5%). In Coconino County, 36% of defendants had a pending case at arrest, a higher rate than any other study (NYC 22% and VA 23%). However Coconino County defendants were less likely to be on probation or parole than defendants in Allegheny, PA (12% versus at least 15%).

Substance Abuse

Coconino County defendants are somewhat different than defendants in other studies with regard to substance abuse. Compared to VA pretrial defendants, Coconino County pretrial defendants are more likely to report being alcohol abusers (46.5% vs. 23%) and less likely to report being drug abusers (11.4% vs. 22%). Coconino County pretrial defendants were about as likely to be treated for substance abuse as Allegheny, PA pretrial defendants, but much more likely than VA pretrial defendants. This variation may be as much, if not more, due to local availability of treatment than any intrinsic characteristic of a pretrial defendant and any conclusions drawn should be viewed in such a light.

Pretrial Release Rates

Coconino County releases just over half of its defendants. Most comparable risk assessment studies show much higher release rates. Hennepin, MN released approximately 64% of defendants, VA released 84%, and in Allegheny, PA and NYC, over 90% of defendants were released pretrial. Coconino County's release rate is also lower than the release rate for felony defendants in large urban counties.

Pretrial Misconduct

Despite the higher prevalence of known risk factors in the Coconino County's pretrial defendants, we find that Coconino County defendants are slightly less likely to engage in pretrial misconduct than defendants in other studies. Coconino County's "failure rates" – failure to appear (11%), rearrest (14%), and either form of pretrial misconduct (21%) – are slightly lower than the numbers shown for the nation's large urban counties for felony defendants on pretrial release (18%, 18% and 33%, respectively). In fact, they are substantially lower than the known comparable numbers from other risk assessment studies cited. NYC study's failure to appear rate is approximately 16%, and the Allegheny, PA study's failure to appear rate is 22% and rearrest rate is 17%.

Overall, the comparative analysis indicates that Coconino County defendants are:

- Demographically similar to pretrial defendants in many other places around the nation;
- More likely to be charged with a serious offense (felony, violent, in connection with a weapon) than pretrial defendants in other places, which is a reflection of the

pretrial program's decision not to review several types of misdemeanants for pretrial release;

- More likely to have serious criminal histories involving felonies and failure to appear than pretrial defendants in other places;
- More likely to have an active criminal justice status at arrest than pretrial defendants in other places;
- Less likely to be released than pretrial defendants in many other places;
- Yet have similar rates of pretrial failure as compared to pretrial defendants in other places nationwide.

ANALYSIS OF THE VALIDITY OF THE COCONINO COUNTY RISK ASSESSMENT INSTRUMENT

This next section attempts to determine what components of the Coconino County risk assessment are associated with pretrial release status and pretrial misconduct. In Tables 8 and 9, all investigated relationships are coded for the direction of any statistically significant relationship found or the absence of a statistically significant relationship. A statistically significant relationship is a correlation sufficiently large enough that we can say it would be a nonzero correlation in 95 samples out of 100 samples drawn from Coconino County's pretrial defendants. A "+" indicates a significant positive correlation (as X goes up, Y goes up). A "-" indicates a significant negative correlation (as X goes up, Y goes down). "No" indicates no statistically significant relation was detected.

As Table 8 shows, several variables had a positive or negative correlation with the defendant being released during the pretrial period, but only a few variables that were positively or negatively correlated with pretrial misconduct.

Table 8
Bivariate Analysis of Variables Associated with Release and Pretrial Misconduct

+ Means Significantly More Likely - Means Significantly Less Likely, No Means No Significant Difference		
	Dependent Variables	
Independent Variables	**Release**	**Misconduct**
Socio-Demographics		
Age		
20 or Younger	No	No
21 to 24	No	No
25 to 35	No	No
More than 35	No	No
Education		
Non High School Graduate	-	No
High School or GED	No	No
College AA or Partial College	+	No
Four Year College Degree	No	No
Employment		
6 Mo. at Same Job	No	No
Less than 6 Mo.	+	No
Unemployed	-	No
Residential Stability		
1 Address Past 12 Mo.	+	No
2 or more Addresses Past 12 Mo	-	No
No AZ Address	+	No
Living Arrangements		
Lives with Family	No	No
Other Living Arrangement	No	No
Transient or No Permanent Address	-	No
Time in Geographical Area		
Less than 3 Years	No	No
3 to 5 Years	No	+
5 to 20 Years	No	No
20 Years or More	No	No
Property Ownership -- Danger Scale		
Owns or is buying home/business	+	-
Property Ownership -- Flight Scale		
Owns or is buying home/business	+	No
Owns Vehicle	+	-
No Assets	-	No
Has Access to Vehicle	No	No
Phone Access		
Phone in Defendant's Name	+	No

Pay-Per-Use Mobile	-	No
No Phone	No	+
Current Offense Characteristics		
Most Serious Charge		
Level 2 Felony	No	-
Level 3 Felony	-	No
Level 4 Felony	-	No
Level 5 Felony	-	No
Level 6 Felony	+	No
Misdemeanor	+	No
Number of Charge Counts		
1	No	No
2	No	No
3	No	No
4	No	No
5 or More	No	No
Drugs Involved	+	-
Drug Sale	No	-
Weapon Involved	-	No
Violent Crime	No	No
Victim Injured	No	-
Current Charge is a Warrant	-	No
Prior Criminal History		
Prior Prison Time	-	+
Prior Misdemeanor Charges		
None	+	-
0-3 Nonviolent Misdemeanor or 1 Violent	No	No
4-10 Nonviolent Misdemeanor or 2 Violent	No	No
Over 10 Misdemeanors	-	+
Prior Felony Charges		
None	+	No
1-3 Felony Charges	No	No
4-10 Felony Charges	-	No
Over 10 Felony Charges	-	+
Prior Failure to Appear	-	+
Prior Failure to Comply	-	No
Current Involvement with the Criminal Justice System		
On Probation or Parole at Arrest	-	No
Pending Case at Arrest	-	No
Active Warrant at Arrest	-	+
Turned Self in for Arrest	No	No
Alcohol/ Drug Treatment		
Currently Uses Alcohol	No	No
Currently Uses Drugs	No	No

Ever Been Treated for Substance Abuse	No	No

Table 9 separates the two types of pretrial misconduct, FTA and rearrest. Again, no correlation, either positive or negative, was found for most of the variables.

Table 9
Bivariate Analysis of Variables Associated with Failure to Appear (FTA) and Rearrest

+ Means Significantly More Likely - Means Significantly Less Likely, No Means No Significant Difference		
	Dependent Variables	
	FTA	**Rearrest**
Independent Variables		
Socio-Demographics		
Employment		
6 Mo. at Same Job	No	-
Less than 6 Mo.	No	No
Unemployed	No	No
Residential Stability		
1 Address Past 12 Mo.	No	No
2 or more Addresses Past 12 Mo	No	No
No AZ Address	No	+
Time in Geographical Area		
Less than 3 Years	No	No
3 to 5 Years	No	+
5 to 20 Years	No	No
20 Years or More	No	No
Property Ownership -- Danger Scale		
Owns or is buying home/business (Danger Scale)	No	+
Property Ownership -- Flight Scale		
Owns or is buying home/business (Flight Scale)	No	+
Owns Vehicle	-	No
No Assets	+	No
Has Access to Vehicle	-	No
Phone Access		
Phone in Defendant's Name	-	No
Pay-Per-Use Mobile	No	No
No Phone	+	No
Current Offense Characteristics		
Most Serious Charge		
Level 2 Felony	No	-
Level 3 Felony	No	No
Level 4 Felony	No	No
Level 5 Felony	No	No
Level 6 Felony	No	No

Misdemeanor	No	No
Drugs Involved	No	-
Drug Sale	-	-
Prior Criminal History		
Prior Prison Time	No	+
Prior Misdemeanor Charges		
None	No	No
0-3 Nonviolent Misdemeanor or 1 Violent	No	No
4-10 Nonviolent Misdemeanor or 2 Violent	No	No
Over 10 Misdemeanors	No	+
Prior Felony Charges		
None	No	No
1-3 Felony Charges	No	No
4-10 Felony Charges	No	No
Over 10 Felony Charges	No	+
Prior Failure to Appear	+	+
Prior Failure to Comply	No	+
Current Involvement with the Criminal Justice System		
Pending Case at Arrest	+	No
Active Warrant at Arrest	+	+
For variables with no significant differences among values, results not shown (Age, Education, Living Arrangements, Number of Charges, Weapon Involved, Violent Crime, Victim Injured, Current Charge is a Warrant, On Probation or Parole at Arrest, Turned Self in for Arrest, and Alcohol or Drug Treatment).		

Chart 7 reviews the types of adverse release outcomes that exist with various types of pretrial release. Defendants released on bail bond are the most likely to be rearrested, and those released on recognizance the least. Defendants placed under pretrial program supervision are the most likely to fail to appear, while defendants released on bail bond are the least likely to fail to appear.

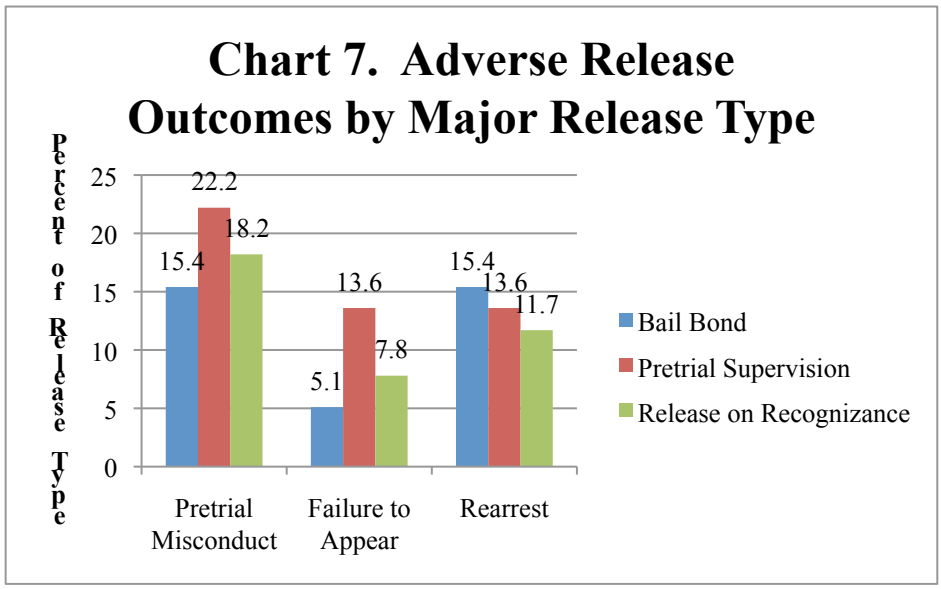


Chart 8 shows that the current risk instrument parallels release status outcomes, but is not dispositive. Well over a third of defendants in the highest risk category who are classified as too risky for a recommendation to be issued by the pretrial program are nevertheless released (see Chart 5). At the other extreme, nearly 10% of pretrial defendants the risk assessment classifies as candidates for release on recognizance are not released under any conditions.

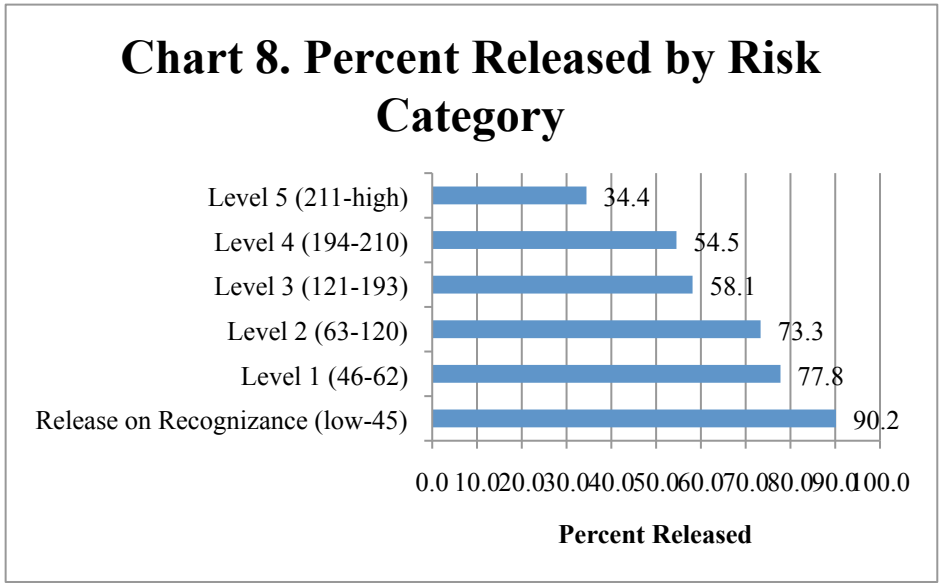


Chart 9 examines the discriminant validity of the risk assessment instrument for predicting either type of pretrial misconduct, i.e., failure to appear or rearrest. If the risk assessment instrument were predictive, the highest risk categories ought to have the highest rates of pretrial misconduct. An "inverted stair shape" ought to appear in chart 9. What we see is that this inverted stair shape does not exist.

Chart 9. Percent of Releases Engaging in Pretrial Misconduct by Risk Category

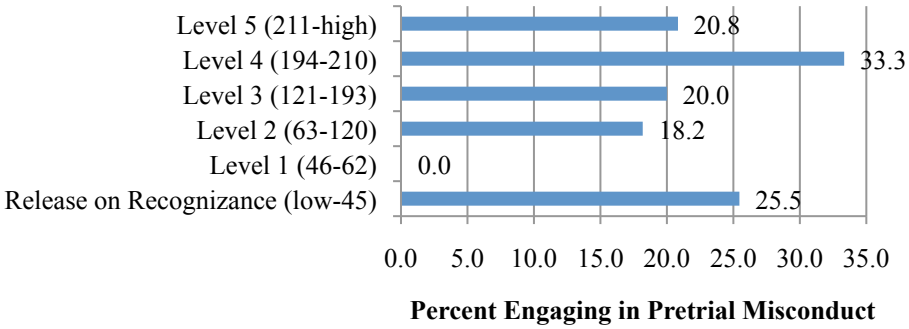


Chart 10 takes this same procedure and applies it to predicting just failure to appear. While a partial stair shape appears, it is quite distorted, with the highest levels of risk and lowest levels of risk simply not conforming to an inverted stair shape.

Chart 10. Percent Failing to Appear by Risk Category

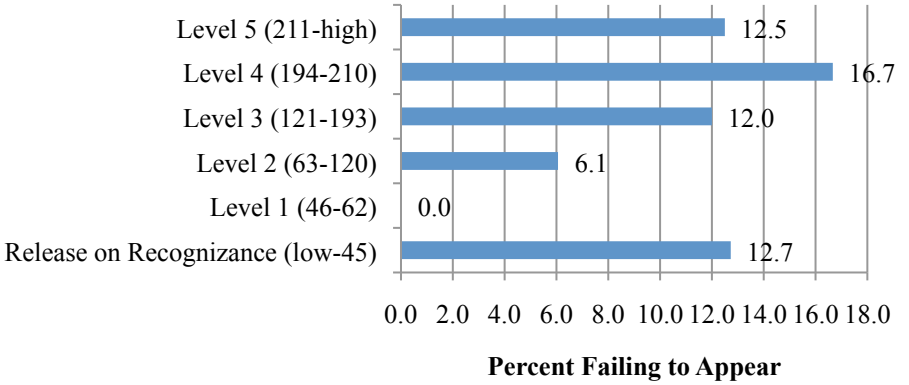
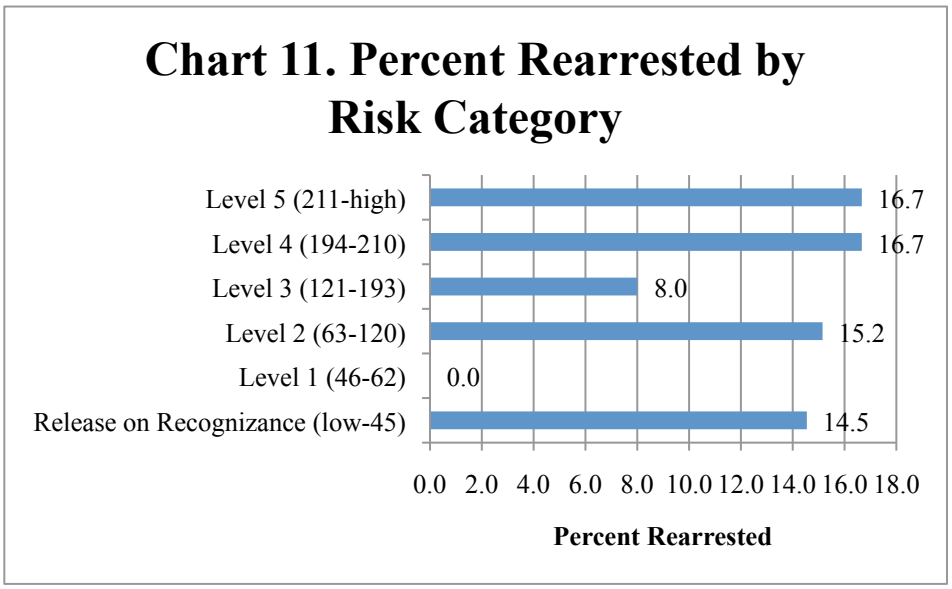


Chart 11 takes this same procedure and applies it to predicting rearrest. While stair shape appears, it is quite distorted, with levels one and three of risk not conforming to an inverted stair shape.



In sum, the current risk assessment instrument is modestly predictive of defendants' pretrial release status, but not very efficient at predicting any form of pretrial misconduct. This actually fits a well-known statistical phenomenon called selection bias. When a study is conducted under conditions where a known screening instrument is employed to select candidates for treatment (i.e., release), the factors that go into the screening instrument will serve to reduce the variation among the selected candidates for treatment on those factors. This is because if the predictors of release are the predictors of risk, and Coconino County courts only release defendants who have low risk scores, there will be limited variation in scores among released defendants on the variables normally thought to predict pretrial risk (both flight and dangerousness). When there is limited variation, there will be attenuated predictive capacity of these variables, if not the complete elimination of the predictive capacity of these variables. When the impact of such a selection process (the selection of defendants for release) is not too severe (removes only 30% or less of the sample), there are statistical corrections available for multivariate analysis: Heckman Selection Bias Correction, Two-Stage Least Squares, and Propensity Score Matching.

In the case of Coconino County, nearly 50% of defendants are not released.[4] This means that the selection bias is too severe for multivariate models to handle to enable the successful estimation of coefficients for establishing a risk assessment instrument based upon the coefficients as is typical in pretrial risk assessment studies. Evidence for this is presented in tables 8 and 9. We see factors known to predict risk of pretrial misconduct predicting pretrial release in Coconino County, but often do not predict pretrial misconduct in Coconino County. Since many of these known factors are demographic and we know that Coconino County defendants are actually typical on demographic characteristics, the inability of known demographics to predict pretrial misconduct yet predict release (e.g., education, employment, residential stability, living arrangements) is strong evidence that

[4] Bear in mind that since the Coconino County Pretrial Services does not interview most misdemeanor defendants – a population that usually has higher release rates than felony defendants – the actual pretrial release rate for the jurisdiction is likely much higher.

severe selection processes are occurring in Coconino which will render normal logistic regression and even statistical adjustments like Heckman selection bias correction predictions of pretrial misconduct ineffective.

CONSTRUCTION OF NEW RISK ASSESSMENT INSTRUMENT

Since we cannot efficiently utilize multivariate analysis to generate an improved risk assessment instrument, we turn to simulations. Starting from the current risk assessment instrument, we will pare out factors that have not been found to be predictive of either flight risk or dangerousness risk according to state of the art pretrial risk studies from other jurisdictions cited earlier in this analysis. We will also add a few known predictive factors from a review of evidence-based practices. As one final adjustment, we will simplify the weighting of predictive factors to a weight of one point per factor, with a base value of 0 for an absence for a factor. Failure rate classifications from this pared down instrument will be compared to the current instrument. If we see a more inverted stair shape with the pared instrument than with the current instrument, we can consider the pared down instrument to be an improvement over the current instrument.

According to a 2007 review of best practices in pretrial risk assessment, the following are considered "good predictors of court appearance and/or danger to the community":

- Current Charge(s)
- Outstanding Warrants at Time of Arrest
- Pending Charges at Time of Arrest
- Active Community Supervision at Time of Arrest (e.g., Pretrial, Probation, Parole)
- History of Criminal Convictions
- History of Failure to Appear
- History of Violence
- Residence Stability
- Employment Stability
- Community Ties
- History of Substance Abuse

To further elaborate, drug offenders are not known to be a greater flight risk than violent or property offenders (PJI 2007; Austin and Murray, 2008) nor are they known to consistently be a greater community safety risk than property offenders (PJI 2007). That a history of violence has been associated with pretrial misconduct should not be interpreted as having a violent charge is associated with pretrial misconduct. Evidence suggests that it is not.

This review suggests that current age should be dropped from the flight risk scale.[5] This review suggest that the drug trafficking factors, weapons involved, victim injury, child injury, victim deceased, combative/aggressive behavior, gang-related charges, turned self in and education should be dropped from the dangerousness scale.

The state-of-the-art in pretrial risk assessments currently holds that substance abuse is a risk factor for rearrest. In addition, current risk assessments weight the import of the volume of prior criminal history and current offense charges far less than the Coconino

[5] The original flight scale had a behavioral characteristics component. The dataset PJI received had no information on behavioral characteristics, so we assume that it was dropped from the scale.

County's current risk instrument. Recent studies indicate that it is the presence or absence of a prior criminal record, and the fact that there are more than ten prior criminal events (i.e., a clear case of a career criminal) that matters most for predicting dangerousness. Similarly, the fact that defendants have multiple charges, rather than how many charges beyond two matters most for dangerousness. An additional point can be added for a case with over ten charges for a case of extreme severity. Other alterations in Coconino County's risk assessment instrument also need to be examined. The instrument counts property ownership in both the flight risk and dangerousness risk scores. The weights of these factors appear to have been generated with respect to each type of risk individually. However, when placed in the current combined formulation the combined weight will overemphasize the role of these factors, rendering the instrument predictive of neither type of risk.

The resulting risk scale is:
charge count+offense charge level+on probation+pending case+active warrant+prior misdemeanor count+prior felony count+failure to appear at earlier point in current case+transient+duration of address residency+duration of employment+duration of residence in community+lack of assets+lack of phone+no vehicle access+use of drugs+use of alcohol.

Where offense charge level, prior misdemeanor count, prior felony count, duration of address residency, duration of employment, duration of residence in community all take on a trichotomous categorization (0, 1, 2), where 0 indicates the lowest risk. All other variables take on a 0,1 categorization where 0 indicates the lowest risk.

The resulting risk scale runs from 0 to 18, and is divided into 3 categories of six points apiece to create low risk (0-6), medium risk (7-12) and high risk (13-18) classifications. This results in 26.4% of defendants being classified as low risk, 61.8% of defendants being classified as medium risk, and of 11.1% of defendants being classified as high risk.

CONSTRUCTED COCONINO COUNTY RISK ASSESSMENT CRITERIA

Current Offense

1	Three or more charges
1	Most serious current charge is a level 4-6 offense
2	Most serious current charge is a level 3-2 offense
3	Most serious current charge is a level 1 offense

Criminal History

1	On Probation at time of arrest
1	Pending case at time of arrest
1	Active warrant at time of arrest
1	One to ten misdemeanors (no more than 2 violent)
2	More than ten misdemeanors
1	One to ten felonies
2	More than ten felonies
1	Prior failure to appear

Stability Factors

1	Two or more AZ addresses past twelve months
2	No AZ address
1	Transient
1	Less than six months at current job
2	Unemployed
1	Three to five years in community
2	Less than three years in community
1	No assets
1	No phone
1	No vehicle access

Social Factors

1	Abuses drugs
1	Abuses alcohol

Ranges:
0 to 6 = Low (ROR)
7 to 12 = Medium (Supervised Release)
13 to 18 = High (No recommendation for non-financial release)

The classifications are quite successful at creating the step pattern we would wish to see among Coconino County defendants who were released pretrial. The step patterns in charts 12 and 13 suggest that the new risk instrument performs better at predicting failure to appear than rearrest.

Chart 12. Percent Failing to Appear by Risk Category

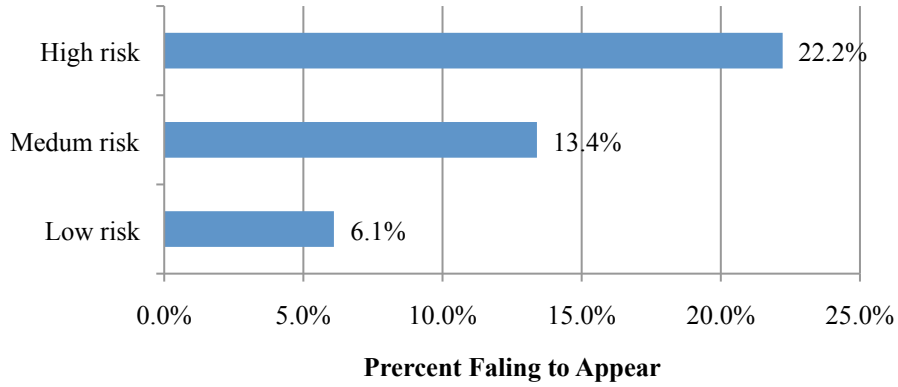
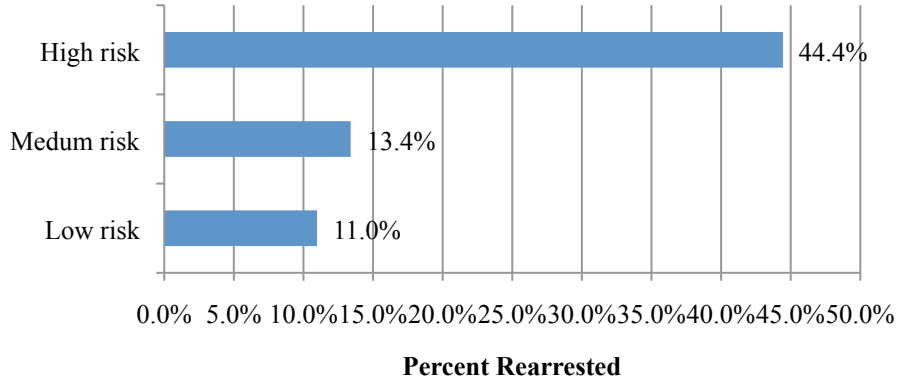


Chart 13. Percent Rearrested by Risk Category

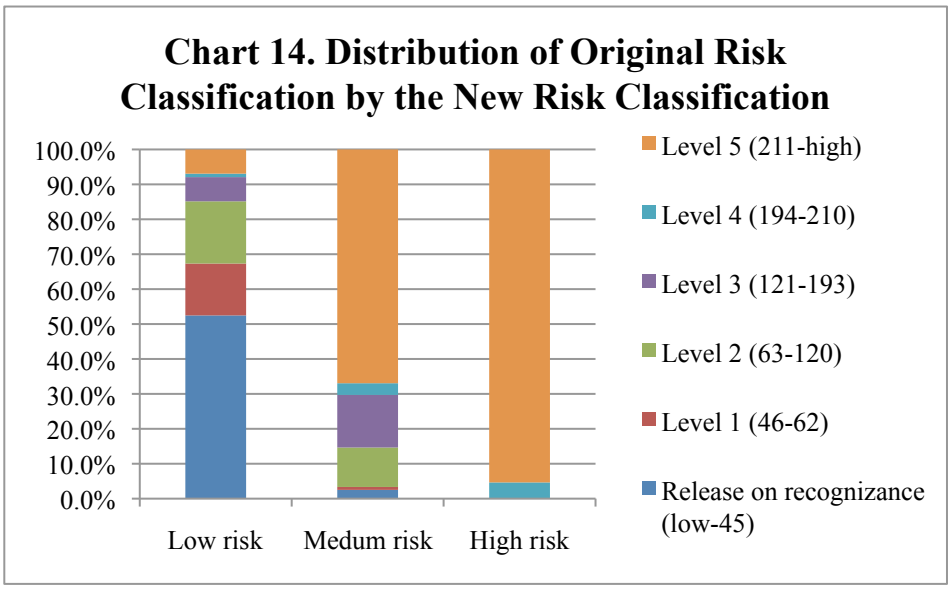


The success at classification would seem to belie the claim that multivariate analysis cannot be done effectively due to selection bias effects. A brief logistic regression analysis in STATA reveals that while the risk classification instruments do have predictive capacity - approximately 23% of the variation in failure to appear and 15% of the variation in rearrest - they are very inefficient, with only 2 or 3 factors having any useful predictive capacity. In the case of failure to appear, the lower the charge level, the more likely the defendant is to fail to appear at the 90 percent confidence level. At the 95 percent confidence level, the lack of a phone is associated with a higher likelihood of failure to appear. Only these two factors have any predictive capacity for failure to appear.

In the case of rearrest, the longer the time at the same address, the greater the likelihood of being rearrested and the shorter the time at the current job/being unemployed, the more likely the defendant is to be rearrested. Only these two factors have any predictive capacity for rearrest at the 90 percent confidence level. As can be seen, some of these multivariate conclusions are not only quite limited in their utility, but in the case of residential stability and rearrest, simply counter to all known work in the area of pretrial risk assessment. Heckman probit selection correction methods cannot be computed due to extreme collapse of variation in most of the predictor variables. This leaves us with the conclusions from the logistic regression models. If we were to recommend instruments based on the logistic regressions' coefficients, Coconino County would be done a disservice.

By utilizing the factors evidence-based practices suggest we incorporate the best of the known research and incorporate most of the few predictive factors that do exist according to an empirical analysis of Coconino County defendants. This approach safeguards Coconino against being misled by the results generated from an analysis of releases from its current limited release patterns of its pretrial system.

Chart 14 compares the old and new risk classification systems. The new risk classification places in its low risk category defendants from all levels of the old risk classification. Over 85% of defendants in the new low risk category come from the old risk classifications levels release on recognizance through level 2. More than two-thirds of the new medium risk category comes from the old risk classification level 5. Over 95% of the new high-risk category comes from the old risk classification level 5.



For purposes of evaluating the impact of the proposed risk assessment instrument, let us consider the low and medium risk category defendants as recommended for release on recognizance and pretrial supervision, respectively, while the high risk defendants are recommended for financial release. Such a scenario would result in recommending non-financial release for 146 defendants currently not released, and recommending financial release for 9 defendants currently released. This would mean that 81.1% of those currently not released would be recommended for non-financial release and 4.4% of those released would be recommended for financial release.

Chart 15 looks at the potential for change if the new risk classification was fully implemented. Twenty-one percent of high-risk defendants that are currently released would not be recommended for non-financial release. On the other hand, 53% of medium risk category defendants not currently released would be recommended for pretrial supervision, or third party supervision. An additional 19% of low risk defendants not currently released would be recommended for release on recognizance.

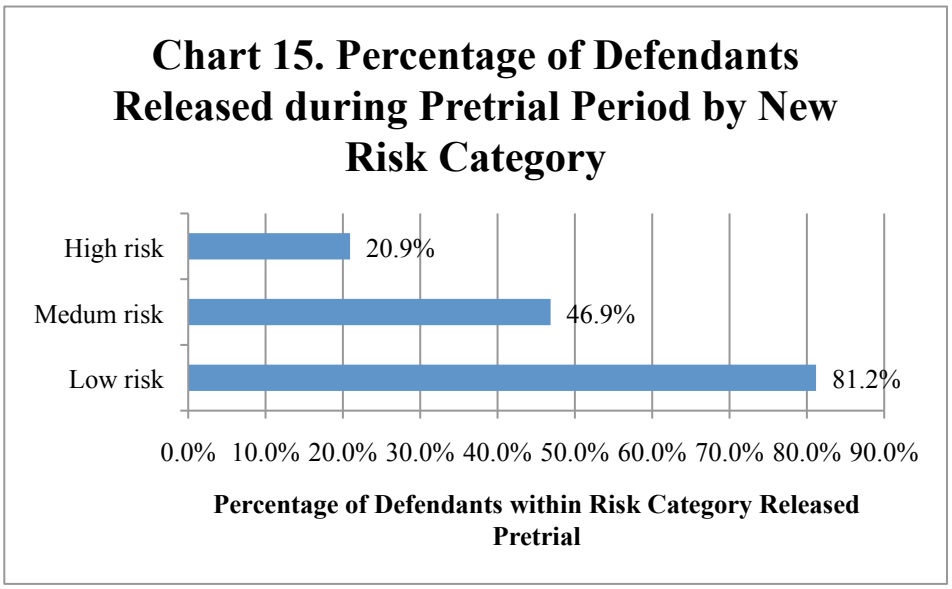


Chart 15. Percentage of Defendants Released during Pretrial Period by New Risk Category
High risk
Medum risk
Low risk
20.9%
46.9%
81.2%
0.0% 10.0% 20.0% 30.0% 40.0% 50.0% 60.0% 70.0% 80.0% 90.0%
Percentage of Defendants within Risk Category Released Pretrial

CONCLUSION

It is important to keep in mind what a pretrial risk assessment instrument can and cannot do. It can, when backed by science, effectively sort defendants into risk categories – identify which defendants are at low risk for an FTA or rearrest, which are at moderate risk, and which are at high risk. It cannot guarantee that all low risk defendants will show up for all court appearances and not be rearrested. Likewise, it is no guarantee that all high risk defendants will FTA or be rearrested if released.

In the previous section, a new pretrial risk assessment instrument is suggested for Coconino County Pretrial Services. The simulations that were run on the proposed instrument show that Pretrial Services can significantly increase the number of lower risk defendants identified for release recommendation without sacrificing higher rates of FTA and rearrest.

Several steps must now follow to assure the most effective uses of the findings of this study. First, there must be clarity about the findings among key system actors, including judges, prosecutors, defense attorneys, and pretrial program staff. To that end, PJI will work with these officials, presenting the findings in person, answering any questions and addressing any concerns. In the end, the risk assessment instrument is only going to be useful if it is used, and it will not be used if it is not understood. Second, PJI will work with Pretrial Services staff to best assure inter-rater reliability on scoring defendant risk with the new instrument. Third, over the longer term, Pretrial Services should work to enhance its information processing capability so that it can monitor outcomes (FTA and rearrest) of the new instrument and be able to report findings to the court.

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APPENDIX

Logistic Regression Models for Failure to Appear and Rearrest

Appendix Table 1

Logistic Regression Model of Failure to Appear		
Risk Factor	Logged Odds Ratio[1]	Standard Error
Current Offense		
Charge count[2]	0.17	0.56
Offense charge level[2]	-0.51+	0.31
Criminal History		
On Probation	-0.14	0.91
Pending Case	0.92	0.62
Active Warrant	1.10	0.73
Prior misdemeanors[2]	-0.08	0.57
Prior felonies[2]	-0.49	0.53
Prior failure to appear	0.74	0.71
Stability Factors		
Transient	-1.30	1.26
Duration of residency at current address[2]	0.41	0.40
Duration of current employment[2]	0.18	0.35
Duration of residence in the community[2]	0.10	0.69
Lack of assets	0.63	0.68
Lack of phone	1.81	0.58
Lack of vehicle access	0.27	0.66
Social Factors		
Abuses drugs	0.09	0.89
Abuses alcohol	0.13	0.62
Intercept/Constant	-3.49**	0.82
Log Likelihood Ratio Model Improvement	31.49**	
R-squared	0.23	
McFadden Adjusted R-squared Model Fit	-0.03	
Sample n	203	

+Difference is statistically significant at p>.05 level.
*Difference is statistically significant at p>.05 level.
** Difference is statistically significant at p>.01 level.

1 STATA utilizes the logged odds ratio to produce unstandardized coefficients.
2 See coding table for values. All residual categories have a value of zero.

Appendix Table 2

Logistic Regression Model of Rearrest		
Risk Factor	Logged Odds Ratio[1]	Standard Error
Current Offense		
Charge count[2]	-0.14	0.49
Offense charge level[2]	-0.06	0.27
Criminal History		
On Probation	0.03	0.79
Pending Case	-0.08	0.56
Active Warrant	0.69	0.65
Prior misdemeanors[2]	-0.20	0.50
Prior felonies[2]	0.60	0.43
Prior failure to appear	0.37	0.59
Stability Factors		
Transient	1.07	0.92
Duration of residency at current address[2]	-1.17*	0.48
Duration of current employment[2]	0.66*	0.32
Duration of residence in the community[2]	0.34	0.60
Lack of assets	-0.31	0.59
Lack of phone	0.09	0.52
Lack of vehicle access	0.33	0.60
Social Factors		
Abuses drugs	-0.61	0.88
Abuses alcohol	0.27	0.51
Intercept/Constant	-2.54**	0.65
Log Likelihood Ratio Model Improvement	25.34**	
R-squared	0.16	
McFadden Adjusted R-squared Model Fit	-0.07	
Sample n	203	
+Difference is statistically significant at p>.05 level. *Difference is statistically significant at p>.05 level. ** Difference is statistically significant at p>.01 level.		
1 STATA utilizes the logged odds ratio to produce unstandardized coefficients. 2 See coding table for values. All residual categories have a value of zero.		