RISK ASSESSMENT FACTSHEET

Ohio Risk Assessment System - Pretrial Assessment Tool (ORAS-PAT)

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Who created the risk assessment? Are they a public or private organization?

The ORAS was created through a partnership between The Ohio Department of Rehabilitation and Correction and the University of Cincinnati, Center for Criminal Justice Research. The ORAS-PAT is one of the "instruments" included in ORAS.[1]

How large was the training data set?

The ORAS-PAT tool was created using data from 452 adults charged with a criminal offense.

How was the training data set collected and assembled (i.e., what jurisdiction(s) is it from)?

The data came from seven Ohio counties and was collected through individual interviews with adult defendants charged with a criminal offense. These defendants had been recently referred to pretrial services during the time of data collection.

Over what time frame was the data collected?

Initial interviews were conducted between September 2006 and June 2007. In April 2008 and May 2009 outcome measures were gathered (regarding whether defendants in the initial interviews had been arrested for a new crime or failed to appear).[2]

The initial interview period "did not provide enough Ohio cases to construct and validate an assessment instrument," so more data was collected between October 2008 and March 2009.[3] Outcome measures for these cases were recorded within a yearlong period.

What factors (i.e., defendant characteristics) were included in the data set? This question pertains to all the factors that were available about defendants, not necessarily all the factors that were used to train or develop the model.

Interviews consisted of the completion of a form that gathered information on 35 items. Data was also collected through a self-report questionnaire that included "criminal thinking, drug use, medical and mental health, pro-criminal peers and family, residential stability, and employment."[4] In total, "the original pretrial data collection instruments provided over 100 potential predictors of recidivism."[5]

Does the dataset include instances of defendants who were detained? If so, does the data include outcomes for those people (i.e., was counterfactual estimation involved; if so, how)?

The dataset does not include instances of defendants who were detained.

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[1] See Source 1
[2] See Source 1, page 10
[3] See Source 1, page 14
[4] See Source 1, page 12
[5] See Source 1, page 19

Are there any known issues or errors with the data?
"Certain types of cases may be underrepresented in the population (e.g. sex offenders, Hispanic offenders, female offenders). The underrepresentation in the population leads to small numbers of these types of offenders in the sample."[6]

Another limitation is "measurement error. The major source of data collection for this study was the structured interview, which was undertaken by trained research staff from the University of Cincinnati. Further, the informed consent process identified a sample of offenders who were willing to undergo the interview process. In short, the structured interview process utilized to gather the data will likely be somewhat different than the process used by criminal justice officials to interview cases and assign risk once ORAS is implemented."[7]

In addition, the average follow-up time for measuring outcomes (recidivism and failure to appear) was 12 months. "Although an average of 12 months is adequate, research suggests that 18 to 24 month follow-up times are optimal."[8]

In what year was the risk assessment created?
The risk assessment was created between 2006 and 2009.

What factors, among all the factors in the training data, were considered in the development of the risk assessment? If not all factors were considered, how were those that were considered chosen?
All 100 factors were considered for inclusion.

How were factors that were considered ultimately chosen for exclusion or inclusion in the final model (the risk assessment itself)?
"Items gathered from the structured interviews and self-report surveys that were associated with recidivism were used to create each tool."[9]

Does the final model include as a factor(s) arrests that did not lead to convictions?
The final model does include "Three or more Prior Jail Incarcerations" as a factor, which may include incarcerations from arrests that did not lead to convictions.

Does the final model include socioeconomic factors such as housing and employment status?
Yes - the final model includes "Residential Stability" as a factor.

Does the final model include personal health factors such as mental health or substance abuse?
Yes - the final model considers "Illegal Drug Use during Past Six Months" and "Severe Drug Use Problem."

How were weights assigned to each factor included in the final model? (rounding correlation coefficients, Burgess Method, etc.)
A "modified Burgess" method was used to assign point values; the method "assigns a point (a score of 1) to the presence of the risk factor, and assigns a score of zero when it is false or not present. Some items have

[6] See Source 1, page 45
[7] See Source 1, page 45
[8] See Source 1, page 46
[9] See Source 1, page 17

multiple increasing risk scores, and as a result were scored with increasing values (i.e., 0, 1, 2)."[10] These factors were combined to create a risk scale. To be clear, the value(s) assigned to a particular factor was not based on the strength of the relationship between that factor and the outcomes.

How does the final model define outcomes (i.e., during the model development process, was there a distinct outcome defined for each type of failure (failure to appear, new crime, new violent crime, etc.) or were outcomes compounded?
There were two outcomes considered: failure to appear and rearrest. The two outcomes were compounded together in the model development process and are compounded in the final model.

What does the output of the model look like (i.e. a score on a scale of 1-10, etc.)?
The output of the model is a score on a scale of 0-9.

Does the model output risk level designations or convert raw scores into risk level designations such as "low risk," "moderate risk," and "high risk"?
The model classifies defendants into risk "categories" based on their score (for example, a score between 0 and 2 classifies a defendant as "Low Risk." These categories were created by looking for natural "cut points" where the failure rates changed.

What proportion of samples in the training data set failed at each risk score and/or level (for example, what percentage of people with a score of 5 or a label of "moderate risk" actually failed to appear)?

From Source 1:

Scores	Rating	% of Failures	% of FTA	% of New Arrest
0-2	Low	5%	5%	0%
3-5	Moderate	18%	12%	7%
6+	High	29%	15%	17%

Did the model developers assess the predictive validity of the model? If so, how (reported AUC, FPR, TPR, etc.)?
The researchers created a chart with the percentage of defendants who had a new arrest or FTA in the training set as a function of their risk category (low, moderate, or high; see chart replicated above). "The chart illustrates that each risk level is associated [with] progressively higher rates of recidivism."[11] The researchers also calculated an "r-value," which is a measure of the correlation between risk level and likelihood of recidivism.

Where is the risk assessment used?
Officials at the University of Cincinnati stated that a number of jurisdictions in many states throughout the U.S. use some of the risk assessment tools included in ORAS, but were unable to provide a precise list of

[10] See Source 1, page 17
[11] See Source 1, page 21

the jurisdictions using the ORAS-PAT tool. It is known that the ORAS-PAT is used in Ohio as well as a number of counties in California; it may be used in other jurisdictions as well.

Are the factors and weights of the risk assessment publicly available?
Yes; the factors and weights are available publicly.[12]

Does the risk assessment cost money for a jurisdiction to adopt?
According to the University of Cincinnati Corrections Institute, "There is not a cost involved for agencies who are only looking to adopt the ORAS Pre-Trial tool. However, should agencies be interested in any additional tools, we require a fee for training. While a copyrighted program of the University of Cincinnati, there are no ongoing costs to use the instrument as permission is granted to print/photocopy forms as needed to conduct assessments."

Does the adoption of the risk assessment require training? If so, by who?
As stated above, if an agency adopts both the ORAS-PAT and at least one other ORAS tool, training is required. According to the University of Cincinnati Corrections Institute, "We require that training be conducted by a UCCI certified Master Trainer (either staff member or contract employee)."

Does the risk assessment come with any sort of software or software package?
According to the University of Cincinnati Corrections Institute, "No. UCCI offers a risk assessment automated system in partnership with University of Cincinnati's IT Solutions Center, should agencies be interested, but it is not a software package that is given with the assessment training."

Does the risk assessment involve or require an in-person interview?
The risk assessment does require an in-person interview.

How does the risk assessment account for missing information?
According to the University of Cincinnati Corrections Institute, "We have staff consult the client's official record (NCIC, III) and take any collateral information into account. We also have staff utilize the information gained during the interview process."

Has the risk assessment been analyzed on non-training data for predictive validity? Has the risk assessment been analyzed with training data or non-training data for predictive power/calibration by race? Has the risk assessment been analyzed for predictive power/calibration by gender? If so, by who, when, and using what data?
Ventura County (California) is currently assessing the use of ORAS in a validation study. Results have not yet been published.

Information retrieved from:

[1]: Creation and Validation of the Ohio Risk Assessment System Final Report dated July 2009
[2]: Information from Ed Latessa, University of Cincinnati Corrections Institute
[3]: Information from Jennifer Lux and Tammy Dean, University of Cincinnati Corrections Institute

[12] See Source 1, page 49