U.S. Department of Justice
Office of Justice Programs
National Institute of Justice

National Institute of Justice

Research in Brief

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January 1996

Issues and Findings

Discussed in this study: An assessment of the effectiveness of drug testing as a means of predicting that a released arrestee will commit an additional offense or fail to appear in court during the pretrial period. Researchers analyzed data from Washington, D.C., Manhattan, New York, Dade County, Florida, Prince George's County, Maryland, Maricopa County, Arizona, and Milwaukee County, Wisconsin, for how urine test results and other factors (especially criminal records and community ties) might have a bearing on postrelease misconduct (arrests and failure to appear).

Key issues: Judges can detain or set special release conditions for defendants who are at high risk of pretrial misconduct. As one way to distinguish between those who will stay crime-free and appear for trial and those who will not, some jurisdictions test arrestees for recent drug use. Because drug testing is expensive, it is valuable for this purpose only if it can improve predictions based on other, more readily available data, such as a defendant's criminal history and community ties.

Findings: Overall, researchers found some evidence that drug test results predict pretrial misconduct. The evidence was inconsistent, however; some sites indicated

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Predicting Pretrial Misconduct with Drug Tests of Arrestees

Evidence from Six Sites

By William Rhodes, Raymond Hyatt, and Paul Scheiman

When considering a defendant for pretrial release, a judge must decide whether there is a significant probability that releasing the person before the trial will pose a danger to the public. Testing for drugs during pretrial processing may help a judge to decide whether to order supervised release, continued drug testing, drug treatment, or detention until trial. Positive results from urinalysis may be one way to identify defendants who are at high risk of pretrial misconduct (i.e., an arrest, or failure to appear for trial).

Drug testing is expensive, however. To be worthwhile, it must be able to improve predictive accuracy beyond that offered by other, often readily available data (e.g., criminal history, ties to the community) in determining who will either fail to show for trial or be rearrested following pretrial release. Because previous examinations of this issue had conflicting results, the National Institute of Justice (NIJ) sponsored a study to analyze data previously gathered from six different sites around the United States.

This Research in Brief summarizes the study methods and key findings and offers an analysis of the data.

Study methods

The data used in this study were records of pretrial misconduct of arrestees who were booked into jail at six sites: Washington, D.C. (using three settings), Prince George's County, Maryland, Milwaukee County, Wisconsin, Maricopa County, Arizona, Manhattan, New York, and Dade County, Florida (see exhibit 1).

The Washington, D.C., adult pretrial release program was the prototype for programs designed for juvenile arrestees in the District of Columbia and for defendants in Prince George's County, Milwaukee County, and Maricopa County. For these programs, the courts received urine test results[1] and randomly assigned several releasees to experimental postrelease supervision programs. Researchers also used data in Washington, D.C., collected after the experimental phase of the project.

Testing methods. The researchers used three tests of statistical significance—two

Issues and Findings

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drug tests could not predict any type of behavior and others predicted either rearrest or failure to appear but seldom both.

● *Predicting rearrest.* A positive test for opiates helped predict rearrest. A positive test for cocaine helped predict misconduct in some sites, but the effect was not statistically significant in a combined test across all sites. Positive tests for other drugs showed no consistent predictive power.

● *Predicting failure to appear.* A positive test for cocaine helped predict failure to appear. Other positive test results showed no consistent predictive power.

This study speculated that a key problem with urine test results was that they cannot distinguish between heavy and moderate drug users. This distinction is important because criminal behavior generally increases with heavy drug use. Without some measure of heavy use, the high risks among the roughly 60 percent of arrestees who test positive for an illicit substance appear indistinguishable from low risks for purposes of predicting their behavior if released. While this study did not explore the use of pretrial drug testing to identify arrestees in need of treatment and to see that they receive that treatment under judicial authority, the researchers cited this as one justification for such testing.

Target audience: Local judges, prosecutors, policymakers, and pretrial release program administrators.

Exhibit 1: ***Summary of Six Sites, Their Programs, and Their Data***[a]

Site	Subjects	Dates	Special Conditions	Drugs Tested	Number of Cases
District of Columbia *D.C. Adults, 1984*	Adults, except those arrested for Federal and minor crimes	June 1984 to Jan. 1985	Experiment: periodic testing; treatment	cocaine heroin PCP amphetamines methadone	5,689
D.C. Juveniles	Juveniles processed through lockups	Oct. 1986 to Jan. 1988	Experiment: weekly testing; bimonthly testing; monthly testing	cocaine heroin marijuana PCP	2,137
D.C. Adults, 1989–1990	Adult arrestees interviewed by NIJ Drug Use Forecasting Program	1989 to 1990	drug testing	cocaine heroin PCP other drugs methadone	1,538
Prince George's County, Maryland	Adults booked	July 1988 to Feb. 1989	Experiment: drug testing	cocaine heroin marijuana PCP	1,072
Milwaukee County, Wisconsin	Adults booked for felonies, serious misdemeanors, and outstanding warrants	Feb. 1989 to Dec. 1989	Experiment: drug testing	cocaine heroin amphetamines benzodiazepines	830
Maricopa County, Arizona	Adults booked for felonies	Beginning of summer 1988	Experiment: drug testing	cocaine amphetamines other drugs	186
Manhattan, New York	Adults booked for felonies for nondrug offenses	April to Oct. 1984	None	cocaine heroin PCP methadone	1,893
Dade County, Florida	Adults booked for felonies excluding some serious crimes	June to July 1987	None	cocaine marijuana	1,294

[a] Six diverse sites tested arrestees for recent use of several illicit substances. Sample sizes are the number of observations that entered the analysis, not the total collected. Washington, D.C., provided three different data sets, corresponding to three different settings. To avoid confusion, the first Washington setting is called "D.C. adults, 1984," denoting that the data pertain to adult arrestees in 1984. The second Washington setting is called "D.C. juveniles" because the data pertain to juvenile arrestees who were processed through lockups between October 1986 and January 1988. The third Washington setting is called "D.C. adults, 1989–1990" to indicate that the data pertain to adults who were arrested in 1989 and 1990.

for use within each site and one for use across all six sites.

- The first test used a likelihood ratio test to determine if arrestees who tested positive for recent drug use had misconduct rates that differed from arrestees who tested negative. This test did not determine if rates were higher or lower, only if they were different.

- The second used t-scores to calculate if those who tested positive for each individual drug (e.g., cocaine, heroin, PCP) had higher misconduct rates than defendants who tested negative.

- Finally, a meta-analysis combined results from across the six sites to determine if defendants who tested positive for a particular drug engaged in pretrial misconduct more frequently than those who tested negative for that drug.

In these tests, the researchers also took into account criminal history, ties to the community, participation in special supervision programs, and the length of time at risk (i.e., the amount of time between release and trial).

Drug testing results as predictors

The data showed that except for heroin use, pretrial drug testing did not appear to help predict rearrests and that except for cocaine use, testing did not help identify those who would fail to appear for trial. Even when individuals tested positive for more than one drug, testing did not improve the accuracy of predicting rearrests.

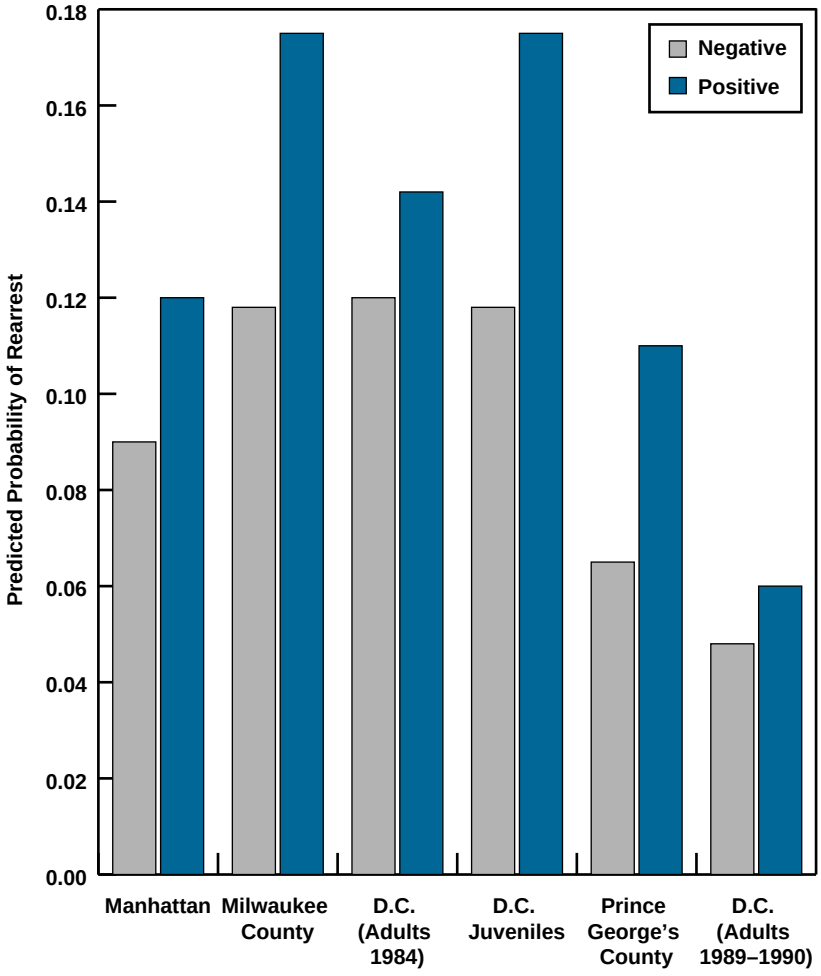
Heroin. Heroin use, as determined by urinalysis, appeared to be a predictor of rearrest. In Manhattan, Prince George's County, and Washington, D.C. (for both 1984 and 1989–90), positive tests for opiates were substantively large in predicting rearrests after pretrial release. Across the six sites, results were statistically significant (see exhibit 2).

Cocaine. Positive tests for cocaine were less conclusive. Although at some sites cocaine-positive results predicted rearrest, they were not statistically significant across the six sites. In Washington, D.C., between 1989 and 1990, cocaine-positive results among adults seemed to indicate that they could predict rearrest. However, among adults tested in 1984 and juveniles tested between 1986 and 1988, positive cocaine tests did not predict rearrest.

In Dade County, those who tested positive for cocaine were more likely to be rearrested than defendants who tested negative. But the results were not conclusive because they were barely statistically significant, and other ways of examining the data resulted in different conclusions.[2]

Positive cocaine results were not statistically significant in any of the other

Exhibit 2: ***Predicted Probability of Rearrest Within 90 Days: Those Who Tested Positive for Recent Heroin Use***

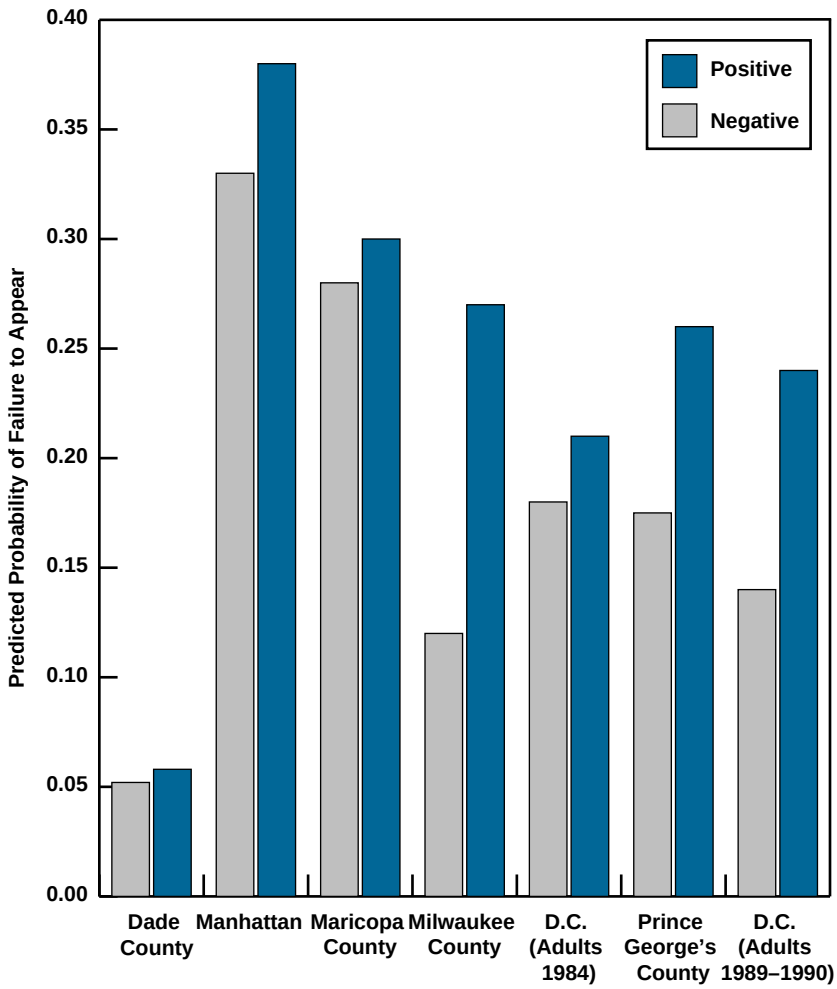


four sites. On balance, positive cocaine tests did not consistently support the assertion that it was a predictor of rearrests once other factors had been taken into account.

However, when taking other factors into account, positive tests for cocaine did predict failure to appear in court. Statistically significant results were found in Prince George's County, Maricopa County, and Washington, D.C., for adults during 1989–90 (no data were available for juveniles). When analyzing data across all six sites, results were both substantively large and statistically significant (see exhibit 3).

Other drugs. Testing for marijuana, PCP, amphetamines, and other drugs did not appear to be particularly effective in predicting rearrest or failure to appear. Two sites were exceptions: Those with positive tests for amphetamines in Maricopa County and for PCP in 1984 in Washington, D.C., were more likely to fail to appear for their court dates. Inexplicably, PCP users in 1989–90 in D.C. were more likely to show up in court than those who tested negative for this drug.

Exhibit 3: ***Predicted Probability of Failure to Appear: Those Who Tested Positive for Recent Cocaine Use***



Other predictors of pretrial misconduct

Rearrest. The study found that variables other than (or in addition to) drug test results were correlated with pretrial misconduct. A criminal history seemed to be the best predictor of rearrest; that is, there was a high correlation between the number of previous arrests (or convictions when arrests were unknown) and rearrest during pretrial release. Other indexes of a criminal record, such as the number of previous probation/parole revocations and incarcerations, had varying predictive power at different sites.

The seriousness of the initial arrest charge was found to have no effect on the probability of rearrest. Marital status and length of time living in the community did not seem to play strong roles in predicting pretrial misconduct.

Failure to appear. On the other hand, when data were available, employment and school attendance were useful indexes in predicting both rearrest and failure to appear.

Another finding was that the more serious the initial arrest charge, the greater the likelihood that the defendant would appear at court. The researchers found this difficult to explain since defendants charged with serious crimes should have stronger incentives to fail to show up at court compared with those charged with less serious crimes.

First-time arrestees

In this study, the number of prior arrests was found to be the best predictor of rearrests. So the researchers asked, "Is a drug test useful when predicting misconduct among those who have no recorded criminal history?"

No effects were found at three (Dade County, Washington, D.C., juveniles, and Manhattan) of the five sites where sample sizes were sufficiently large to support an analysis of first-time arrestees. First-time arrestees in 1984 in Washington, D.C., who tested positive for cocaine or heroin were less likely to be rearrested than first-time arrestees who tested negative for any drugs. However, first-time arrestees in 1989–90 in D.C. who tested positive for cocaine were more likely to be rearrested.

Overall, the significance of a positive correlation between a positive drug test and rearrest appeared slight. First-time drug users who tested positive for any illicit substance were better risks for release than repeat offenders who did not test positive for recent drug use.[3]

Issues and implications

Interpreting these findings is complicated by the lack of a clear theoretical basis. Drug users are not a homogeneous group.[4] Some are compulsive users while others use drugs occasionally. Criminal behavior increases with heavy drug use, but infrequent users may comprise a considerable percentage of arrestees testing positive for drugs.

The inability to differentiate serious users from infrequent users and to understand the role of drugs in the lives of arrestees may account for the inconsistency of these and other study findings. For example, in this study 18 percent of Washington, D.C., adult defendants in 1984 and 73 percent of Dade County defendants in 1987 tested positive for cocaine. Are they equivalent? In 1984, D.C. users were probably a select group using powdered cocaine, while in 1987, Dade County users probably were using crack primarily. Yet they have been considered as the same category of cocaine users when analyzing whether urine tests predicted pretrial misconduct.

Thus, one implication of these findings is that much of the ambiguity of drug-testing results derives from the inability of urinalysis to separate high-rate users from low-rate users, those who are addicted and who will commit crimes to maintain their drug needs from those who may buy drugs on a casual basis with money they earned legitimately. Several ways may exist to make this distinction:

- **Use urine test results from two or more previous sequential arrests** to establish that an arrestee is a problem user. This could only be done in areas that have established drug-testing programs, but reconstructing drug histories using a computer would be practical. Evidence from other studies supports the possibility that use of previous tests could help predict future pretrial misconduct.[5]

- **Conduct many urine tests during the pretrial period** to determine the level of drug use. Most programs gave the judge the option to continue testing during pretrial release supervision, and other researchers found that sites replicating the D.C. program tested defendants an average of 10 times before trial.[6] Such prospective screens would be less expensive if they were limited to defendants who were identified by criteria for risk that involved more than a single positive urine test.

- **Use other tests for drugs, such as hair testing.** Hair testing appears to be a better determinant of long-term drug consumption.

Future research might concentrate on determining the effectiveness of these approaches and on developing a better understanding of the role of drug use in offenders' lives. At present, in its current form, pretrial drug testing may best be used to identify those who need treatment for drug abuse.

Notes

1. Courts in Manhattan and Dade County did not receive drug test results.

2. The t-score was 1.805, which is just statistically significant at $p < 0.05$. See also Goldkamp, J., M. Gottfredson, and D. Weiland, "Pretrial Drug Testing and Arrest Risk," *The Journal of Criminal Law and Criminology*, 81:3(1990) 585–652.

3. See Smith, D., and C. Polsenberg, "Specifying the Relationship Between Arrestee Drug Test Results and Recidivism," *The Journal of Criminal Law and Criminology*, 83:2(1992)364–77. They analyzed the 1989–90 data for District of Columbia adults and reported that a positive test for recent cocaine use was highly predictive of being rearrested, especially for first-time arrestees. However, they also reported that these first-time arrestees with positive cocaine tests did not have higher rearrest rates than those who had negative drug tests but prior criminal records. (The researchers are indebted to Jan Chaiken for making this observation.)

4. Chaiken, M., and B. Johnson, *Characteristics of Different Types of Drug-Involved Offenders*, Washington, D.C.: U.S. Department of Justice, National Institute of Justice, 1988.

5. See Toborg, M., J. Bellassai, A. Yezer, and R. Trost, *Assessment of Pretrial Urine Testing in the District of Columbia*, Washington, D.C.: U.S. Department of Justice, National Institute of Justice, 1989; Visher,

C., "Using Drug Testing to Identify High-Risk Defendants on Release: A Study in the District of Columbia," *Journal of Criminal Justice*, 18(1990)321–32. They reported that defendants who failed multiple drug tests during pretrial release were most likely to engage in pretrial misconduct. This also points to the possibility that retrospective drug tests may be equally useful.

6. Bureau of Justice Assistance, "Estimating the Cost of Drug Testing for A Pretrial Services Program," Washington, D.C., U.S. Department of Justice, Bureau of Justice Assistance, 1989.

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NCJ 157108

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