The Maryland Adult Offender Population Urine Screening (OPUS) Program

Executive Summary

By

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This project replicates the findings from our 2005 Adult Offender Population Urine Screening (OPUS) Pilot Study in a statewide sample of probationers and parolees in Maryland. The Adult OPUS methodology is designed to provide local jurisdictions with a rapid and cost effective method for obtaining an indication of the availability and recent use of various drugs by offenders. This advance is possible because Adult OPUS relies upon expanded urinalysis of specimens already routinely collected and analyzed by staff at the Division of Parole and Probation (DPP). While DPP tests each specimen for a small panel of drugs (marijuana (THC), opiates, cocaine, PCP and benzodiazepines), Adult OPUS tests specimens for over 30 drugs. Adult OPUS therefore may provide a state with a tool to rapidly take a snapshot of the drugs likely to be used by high risk offenders in specific jurisdictions.

The 2005 Adult OPUS Pilot Study successfully sampled and tested 299 specimens collected by DPP staff in offices in six Maryland jurisdictions (Baltimore City and Baltimore, Howard, Prince George's, Charles and Washington counties) and sent to one of the three DPP labs (Guilford Laboratory) for testing. CESAR researchers easily and rapidly sampled the specimens and sent them to an independent laboratory (FRIENDS Medical Laboratory), to be screened for over 30 substances. No names or personal identifying information were recorded.

The pilot study yielded initial support for the feasibility of the Adult OPUS procedures. The expanded testing showed that the DPP screen was successful in identifying almost all (97%) of the drug users who tested positive in the expanded screen. However, the use of prescribed drugs, including buprenorphine, methadone, and oxycodone, was missed by the smaller, DPP drug screen. In addition, not a single specimen tested positive for methamphetamine, indicating that the widely predicted methamphetamine epidemic was not apparent in this population in Maryland. The findings showed considerable geographic face validity, in that the pattern of drugs detected agreed with the pattern of treatment admissions for specific drug problems.

The current study used the OPUS methodology to collect and analyze a larger, statewide sample of over 1,000 specimens submitted to the three DPP sponsored labs. The current study aimed to determine if this methodology could successfully be used to sample enough specimens from the smaller, more rural areas of the state. We sought to collect 15 drug DPP positive and five DPP drug negative specimens from each of the 55 DPP collection sites and to send them to our research lab for analysis for over 30 drugs. Six research questions were addressed. Each question and a brief summary of the findings appear below:

1. How feasible is it to obtain a statewide sample of urine specimens from parolees and probationers?

We found that it was possible to work effectively with staff at the three laboratories used by DPP to systematically obtain 1,061 analyzable specimens representing 45 sites. The only significant limitation to the method was that some rural sites did not generate sufficient drug positive specimens each month to allow the collection of the targeted number of drug positive specimens within the limited study period. Future implementations of this methodology should review prior test results from each site to determine how long a data collection period would be necessary to obtain a minimum number of drug positive specimens. The full study report provides a detailed description of the OPUS methodology and the lessons learned about how to apply it.

2. What drugs were detected in the specimens?

Approximately one half of the specimens collected were positive for only one drug in our extended screen, and about 25% were positive for two or more drugs. The drugs detected by the extended screen were primarily those for which DPP tests (marijuana, cocaine, benzodiazepines and opiates). This was expected because we over-sampled specimens that the smaller, DPP screen had identified as positive. Among the drugs that DPP does not test for, the prescription drugs buprenorphine (9%) and oxycodone (9%) were most likely to be detected. Because these are legally prescribed drugs, it is impossible to determine whether a positive urinalysis for these drugs resulted from legal or illegal use.

It is noteworthy that buprenorphine (9%) was more likely to be detected than the other drug commonly used to treat heroin addiction, methadone (5%), which has been available in Maryland for many more years. Approximately 83% of the buprenorphine positive specimens and 76% of the oxycodone positive specimens were also positive for other drugs. (This high percentage of positives for other drugs was expected because most of the sampled specimens had already tested positive for at least one of the DPP panel drugs). Nevertheless, the fact that almost one half (45%) of the buprenorphine positive specimens contained morphine and 27% contained cocaine, raises questions of whether persons receiving buprenorphine need treatment for other drugs. Almost one fifth (19%) of the specimens containing buprenorphine also tested positive for benzodiazepines, a drug that is considered to be dangerous in combination with buprenorphine. About one third (35%) of the oxycodone positive specimens contained benzodiazepines and 10% contained methadone. The fact that amphetamines were rarely detected in this statewide sample, especially MDMA and methamphetamine, provides evidence that the use of these drugs is relatively rare in this population in Maryland.

3. How do the test results from specimens obtained from the Guilford lab in the present study compare with the results found in the original 2005 Adult OPUS pilot study?

We found considerable similarity in the types and amounts of drugs found in specimens submitted to the Guilford Lab in the current study and in our 2005 Pilot Study. The only statistically significant differences uncovered were increases in the percentage testing positive for buprenorphine (5% vs. 13%, $p<.001$) and benzodiazepines (5% vs. 10%, $p<.05$). The significant increase in positives remained for buprenorphine, but not for benzodiazepines, after we excluded the five sites which we over-sampled because of their higher buprenorphine positive rates in the 2005 Pilot Study. The considerable stability of the estimates of recent drug use for almost all of the other drugs studied in the two time periods, supports the potential use of the Adult OPUS methodology for tracking possible changes in drug use and availability across the state.

4. Are there regional differences in the drugs detected?

There was considerable variation in the types of drugs detected across Maryland. Opiates and buprenorphine were detected most commonly in specimens submitted by the DPP collection sites in Baltimore City, Baltimore County and Anne Arundel County, but PCP was detected almost solely in Prince George's County. These differences probably reflect the varying availability and use of these drugs across the state by this high risk population. The findings might be used in conjunction with other drug use indicators to plan targeted local law enforcement, treatment, and prevention activities.

5. How does the geographic pattern of the test results compare with statewide patterns of treatment admissions and manufacturers' sales of prescription drugs*?*

When comparisons were possible, the urinalysis results did not show great discrepancies from what is generally known from treatment admissions about the nature of drug problems across the state. For example, Prince George's County had the highest percentage of PCP positives and PCP substance mentions at the time of admission for treatment. In addition, opiates and buprenorphine were more likely to be found in DPP offices around Baltimore, where heroin-related admissions are concentrated. We conclude that drug treatment mentions provide some support for the construct validity of the OPUS results by providing a measure of the relative availability of use of specific drugs by probationers/parolees across the state. Nevertheless, an advantage of the Adult OPUS data is that it can be collected and updated more rapidly and with greater geographic specificity than is routinely possible with treatment admission statistics.

We also examined the number of dosage units legally sold to retail outlets in each county. We anticipated that counties receiving the largest number of dosage units might have the largest percentage of probationers/parolees legally or illegally using and testing positive for these drugs. However, no systematic relationships were found.

6. Does the DPP screen identify most of the persons detected by the expanded screen?

As we found in our 2005 Pilot Study, the current study determined that the DPP five drug screen detected 96-97% of all of the *users* that were ultimately detected by our expanded drug screen. Nevertheless, the drugs most likely to be missed by the DPP screen were oxycodone, buprenorphine and LSD. Among persons who tested negative for the DPP screen, buprenorphine and LSD were the drugs most likely to test positive in the expanded screen. By adding these drugs to their screen, DPP would pick up about two thirds of the small number of users missed by their screen.

Conclusions and Recommendations

Increases in use of an illegal drug in the community tends to show up first in high risk populations such as offenders, and forms the basis for using offender urinalysis results to provide advance warning of drug epidemics. However, obtaining statewide samples of urine specimens from an offender population is expensive and time consuming. This first statewide test of the Adult OPUS methodology has demonstrated the feasibility of accessing and analyzing urine specimens routinely collected by DPP to achieve these goals. The Adult OPUS results can probably be used not only to monitor the availability and use of drugs by offenders across Maryland, but to detect emerging substances rapidly.

To implement a monitoring system based on Adult OPUS, Maryland should repeat this statewide data collection annually or semiannually. This system would provide an indication of the dispersion of specific drugs across the state and would enable DPP to assess whether changes need to be made in their drug testing protocol. However, the identification of possible new drugs of abuse is only the initial, most immediate benefit of the Adult OPUS methodology. The next step is for the State to begin to answer the important questions raised by the findings.

For example, given Maryland's interest in expanding the use of buprenorphine to treat heroin addiction, the following questions about this drug are especially pertinent. Why has buprenorphine use increased since our 2005 pilot study? How much is legitimate or illegitimate use and how are persons obtaining the drug for illegitimate use? Why is benzodiazepine use often occurring with buprenorphine use? Do doctors and patients need more warnings about the possible dangers of their combined use? Given the multiple drugs detected in persons positive for buprenorphine, should doctors who prescribe buprenorphine to this population also focus on treating their other drug problems? Similar questions might be asked regarding oxycodone use in this population.

The unique promise of the Adult OPUS methodology is that, in addition to raising such questions about the local drug patterns it uncovers, it also points the way for answering them. For example, Maryland researchers could now launch studies with probationers/parolees assigned to the seven DPP offices found to have the largest rates of drug positives for buprenorphine. Confidential research interviews with samples of probationers/parolees could yield invaluable information about local drug use and availability.

The Adult OPUS methodology can enable any state to more rapidly identify the emergence and spread of new drugs of abuse than any other data system currently available. Using the findings from the Adult OPUS study, investigators can quickly turn their attention to the exact locations where harmful drugs are becoming available. In addition, as was the case with methamphetamine, the Adult OPUS results can prevent a state from making costly expenditures to combat a suspected drug threat that never materializes. By moving ahead with annual Adult OPUS studies and conducting studies of the drug use uncovered, Maryland could assume national leadership in how to design more effective law enforcement, treatment, and prevention programs.