National Institute on Drug Abuse

SERVICES RESEARCH REPORT

Monitoring Drug Use in the Community Through a Jail Urine Screening Program

S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration

The Services Research Reports and Monograph Series are issued by the Services Research Branch, Division of Resource Development, National Institute on Drug Abuse (NIDA). Their primary purpose is to provide reports to the drug abuse treatment community on the service delivery and policy oriented findings from Branch-sponsored studies. These will include state-of-the-art studies, innovative service delivery models for different client populations, innovative treatment management and financing techniques, and treatment outcome studies.

This guide was produced under NIDA contract No. 271-77-1215, Work Order No. 01 to Creative Socio-Medics Corporation, 8330 Old Courthouse Road, Vienna, Virginia 22180. The guide was written by Philip Richardson, Ph.D. Other staff members who made significant contributions to the implementation and analysis of study materials for this project were Mark J. Morein and John G. Phin, Ed.D.

Publication Number (ADM) 80-903
Printed 1979

FOREWORD

Monitoring drug abuse patterns at the community level has been a major problem confronting those who must allocate resources to treatment and enforcement. Such events as "heroin epidemics" and the sudden appearance of new drugs are usually apparent only when they are well under way and, consequently, decisions to deal with these problems are made under conditions of extreme urgency. Indicators such as those provided by a jail urine screening system, described in this document, offer planners at the community level information which may help to detect incipient drug abuse problems and enable them to make timely decisions to deal with these and associated problems. Information on drug abuse patterns is always likely to be fragmentary, and should be interpreted in the light of other available data and with an appreciation of the limitations of such information. Nonetheless, the jail-based urine screening approach has been shown to be useful in identifying emerging drug abuse problems.

Frank M. Tims
Project Officer
Services Research Branch
Division of Resource Development
National Institute on Drug Abuse

CONTENTS

MONITORING DRUG USE IN THE COMMUNITY THROUGH A JAIL URINE SCREENING PROGRAM

A GUIDE FOR DRUG ABUSE PLANNERS

INTRODUCTION

To perform their roles effectively, local drug abuse planners must have reliable information on drug abuse patterns and trends in their communities. The National Institute on Drug Abuse (NIDA), in collaboration with other Federal agencies, has instituted several data systems which can be used by local planners to monitor patterns of drug abuse in given geographic areas. Among these data systems are the Drug Abuse Warning Network (DAWN) and the Client Oriented Data Acquisition Process (CODAP).[1]

In its efforts to assist local planners in developing additional sources of information on drug use patterns in their communities, NIDA recently sponsored a study which examined the utility and feasibility of establishing urine screening programs in local jail facilities.[2] As conceived by NIDA, these programs, which would be set up and managed on a local basis, could be useful to local planners in two ways:

1) data generated by a jail urine screening program would provide local planners with a valuable perspective on drug use patterns and trends in their communities.

Currently, there are many communities in the United States which are not included in the DAWN or CODAP reporting systems. In these communities, a urine screening program which monitored drug use among jail populations could provide planners with valuable clues about the nature and extent of the drug problem in their areas. In communities which are currently included in the DAWN or CODAP systems, a urine screening program would complement DAWN and CODAP in ways which would provide a more comprehensive picture of local drug use patterns. During the feasibility study, it was found that jail urine screening programs have the capacity to detect patterns of drug use not readily detected by the DAWN or CODAP systems.

2) by providing detailed information on drug abuse patterns among arrestee populations, a urine screening program would assist local officials in planning and administering diversion programs for drug-dependent offenders in their communities, and would prove useful for the evaluation of such programs.

In recent years, many communities across the United States have instituted diversion programs for drug-dependent criminal offenders. Information obtained from a jail urine screening system would be of considerable value to local officials in planning, administering and evaluating these programs. Data supplied by a screening program, for example, would provide an accurate picture of drug problems

---

[1] The DAWN system is based on information supplied by medical examiners and by hospital emergency room staff in selected metropolitan areas. Medical examiners provide data on drug-related deaths (e.g., overdose deaths) in their communities, while the staff of hospital emergency rooms supply information on patients admitted for drug-related emergencies.

The CODAP system compiles data on clients admitted to federally supported drug treatment programs. The data system includes information on patterns of drug abuse among treatment clients and on specified client characteristics.

[2] The feasibility study was conducted between September 1977 and May 1978.

among arrestee populations and could be used to improve the targeting of services provided by diversion programs. Specifically, local planners would be able to utilize the data to determine the typical demographic characteristics and offense patterns of arrestees with histories of drug use. In addition, a jail urine screening program would be of use for identifying potential treatment clients among arrestee populations. Currently, most diversion programs rely primarily on self-report information to identify potential clients. A urine screening program might serve as a substitute for current methods of identifying drug users among arrestee populations, or, alternatively, might be used in combination with such methods. Finally, by analyzing long-term trends in the data supplied by a jail urine screening program, local planners would be able to evaluate the impact of diversion programs on levels of drug-related crime in their communities.

This guide is intended for use by local officials who are interested in setting up jail urine screening programs in their communities. The guide discusses specific uses of the data generated by urine screening programs and describes the procedures involved in setting up screening programs at the local level. The material presented in the guide is based on the findings of the feasibility study. During this study, urine screening programs were set up on a pilot basis in four urban counties: Dade County, Florida (Miami), Maricopa County, Arizona (Phoenix), Erie County, New York (Buffalo), and King County, Washington (Seattle). Approximately 2,000 urine specimens were collected from arrestees at these four sites during the course of the study.

Section II of the guide describes the utility of urine screening programs for State and local officials. Sections III, IV and V focus on specific aspects of the feasibility of setting up jail urine screening programs and include a discussion of such factors as data collection procedures, urinalysis systems and cost factors. Appendix A of the guide presents tabulations of the data collected during the feasibility study.

THE VALUE OF A JAIL URINE SCREENING PROGRAM FOR DRUG ABUSE PLANNERS

The urine screening programs established during the feasibility study provided an opportunity to assess the usefulness of such programs for local drug abuse planners. At each of the four study sites, urine specimens were collected from arrestees during a one or two month period and were then analyzed for a variety of drugs by independent laboratories. Subsequently, local drug abuse and criminal justice officials were asked to comment on the findings and to discuss the value of the data for their planning and management activities. This section summarizes the principal uses of jail urine screening programs for local planners and highlights some of the specific findings of the feasibility study.

Jail Urine Screening Programs as a Source of Information on Drug Use Patterns and Trends in Local Communities

A jail urine screening program can be particularly useful to local planners if the program can detect patterns of drug use in the community which are not readily detectable through existing sources of information. One of the goals of the feasibility study was to assess the utility of jail urine screening programs as a source of data on local drug use patterns by comparing the urinalysis findings in each county with data generated by the DAWN and CODAP systems. The urinalysis results and the DAWN and CODAP data for Dade, Maricopa and Erie counties are presented in appendix A.[3]

The most remarkable finding of the feasibility study was the relatively high incidence of propoxyphene[4] use detected by the urine screening programs in each county. In Maricopa County, for example, propoxyphene was the drug most commonly detected

[3]Data for King County are not included because fewer than 100 urine specimens were collected at that site during the feasibility study.

[4]Propoxyphene is usually sold under the trade name Darvon.

by the urine screening program during both January and February 1978, and accounted for 30 (39.0 percent) of the 77 drug mentions recorded by the program during the two month period. In Dade County, propoxyphene was the second most common drug (after morphine/quinine) detected by the urine screening program during the two month data collection period, and accounted for 29 (15.0 percent) of the 193 drug mentions recorded by the screening program during the period. Likewise, propoxyphene was the second most common drug detected by the urine screening program in Erie County. In each of the three counties propoxyphene figured far more prominently in the urinalysis data than in either the DAWN or CODAP data.[5,6]

These findings indicate that a jail urine screening program does detect different patterns of drug use in a community than does either the DAWN or CODAP system. One factor which may explain the differences between the urinalysis findings and the DAWN and CODAP data is that the three data sources probably differ in their capacity to detect specific kinds of drug abuse. The relatively large number of barbiturate mentions recorded by the DAWN system in the three counties,[7] for example, may be a reflection of the fact that barbiturates have a relatively high overdose potential. In contrast, drugs which have been adjusted pharmacologically to reduce overdose potential (such as certain types of propoxyphene) may be underrepresented in the DAWN system in relation to other types of drugs. Likewise, the predominance of opiate mentions in the CODAP data (see appendix A) is probably a result of the fact that drug treatment services in most communities are organized to give priority to heroin users. Drugs such as propoxyphene, on the other hand, may be underrepresented in the CODAP system in relation to other drugs since propoxyphene use is probably unlikely to result in frequent admissions to drug treatment programs.

The data collected during the feasibility study illustrate the potential value of a jail urine screening program for local planners. Data which showed a relatively high incidence of propoxyphene among jail admissions, for example, might alert local officials to the possibility of misuse of the drug in their community. Having identified propoxyphene as a possible drug of abuse, local officials might wish to interview arrestees who tested positive for the drug to determine whether the drug was being used for legitimate medical reasons, or whether it was being used for such purposes as managing heroin withdrawal.[8] In cases where propoxyphene was being misused, officials might wish to ask arrestees how they obtained the drug. If it were found that the propoxyphene was coming from legitimate sources, officials might wish to determine whether the drug was being prescribed by one or two physicians, or whether there was a general pattern of overprescribing in the community. This type of information might be of value in giving local officials time to begin dealing with the problem before it became widespread.

During the feasibility study, a number of officials in Maricopa County expressed interest in the finding that propoxyphene was the most commonly used drug among arrestees during the data collection period. Several officials speculated that propoxyphene was being used by local heroin users as a substitute drug when heroin was in short supply. These officials stated that the findings, if confirmed by an ongoing urine screening program, might lead local agencies to consider an information campaign for prescribing physicians or to investigate the possibility of diversion of propoxyphene from local detoxification programs.

---

[5] Several of the drugs recorded by the DAWN and CODAP systems were not tested for in the urine screening program. These drugs included marijuana/cannabis, minor tranquilizers (librium, valium, etc.), methaqualone, inhalants, and phencyclidine (except in Erie County).

[6] The CODAP system does not record propoxyphene mentions under a separate category. These mentions are included in the category of "Other Opiates."

[7] See appendix A.

[8] Several recent studies have indicated that propoxyphene may be a common substitute drug among heroin users in certain parts of the United States. See, for example, Racquel Crider, "Heroin Substitutes Report," in Proceedings of the Community Correspondents Group, Meeting Five, December 1978 (NIDA), Volume 2, appendix E.

The Use of Jail Urine Screening Programs for Planning, Administering and Evaluating Drug Diversion Programs

In the past two years, many communities in the United States have set up diversion programs designed to meet the needs of criminal offenders with drug problems. Many of these programs have been established under the Treatment Alternatives to Street Crime (TASC) program initiated in 1971 by the Law Enforcement Assistance Administration (LEAA). The primary objective of diversion programs is to reduce the amount of drug-related crime in a community by referring drug-dependent offenders to community treatment programs. Over the past few years, both NIDA and LEAA have encouraged State and local planning agencies to devote greater attention to diversion programs and similar prevention efforts.

The data supplied by an ongoing jail urine screening program could be extremely valuable to local officials in planning and evaluating drug diversion programs. In most communities, local planners have little systematic information on drug use patterns among arrestee populations. In the majority of cases, the only source of data on drug abuse among arrestees are the client files maintained by local diversion programs. These files cannot necessarily be relied upon to provide representative data on drug abuse problems among arrestees because, in many communities, eligibility for admission to diversion programs is restricted to individuals who have been arrested for non-violent offenses or to persons who do not have extensive criminal records. In addition, the files maintained by diversion programs contain no information on arrestees who are not drug users. The files cannot, therefore, be used to draw comparisons between drug-dependent arrestees in regard to such characteristics as age, ethnicity, employment history, or criminal offense patterns.

Data supplied by an ongoing jail urine screening program would provide a reliable picture of drug use patterns among arrestees and could be used to develop a "profile" of drug-dependent offenders in a particular community.[9] This information would assist local planners in ensuring that the treatment services offered by diversion programs are being effectively targeted.

During the feasibility study, a number of local officials stated that a urine screening program would be useful to them in planning diversion and treatment programs for criminal offenders. The results of the feasibility study, for example, were of interest to the Arizona State Department of Corrections, which had recently received funding to set up drug treatment programs within its correctional facilities. The Department had anticipated that their programs would be targeted toward the heroin abusing career criminal. A representative of the Department indicated, however, that on the basis of the feasibility study findings, a less costly program, targeted toward offenders with multiple drug abuse problems, would be proposed for consideration. The director of the Maricopa County TASC program stated that a jail urine screening program would provide a valuable resource for planning the targeting of treatment services. According to the Director, the TASC program, like other agencies in Maricopa County, had focused on the heroin user perhaps to the exclusion of other potential clients. The Director indicated that the feasibility study findings, if supported by an ongoing screening program, might lead the TASC program to focus its efforts on the polydrug user in addition to the heroin user.

An ongoing jail urine screening program would be useful not only for planning diversion programs, but also for identifying arrestees for referral into treatment. The majority of TASC programs in the United States currently rely on interviews with incoming arrestees to identify potential treatment clients. While interview procedures are probably a reliable means of identifying arrestees who are in

[9] As an example of this type of analysis, table 6 in appendix A depicts drug use patterns by arrest charges for the Dade County sample during January 1978.

need of treatment, a urine screening program would provide valuable supplemental data on drug use among arrestees and on their specific treatment needs. In addition, the data produced by a urine screening program would provide a basis for evaluating the reliability of existing screening and referral procedures.

Finally, a jail urine screening program would be useful to local planners and officials in assessing the overall impact of diversion programs on levels of drug-related criminal activity in their jurisdictions. If, for example, a new diversion program were instituted in a community, the data provided by a urine screening program would assist local planners in determining whether the new program was having any effect on the amount of criminal activity attributable to drug users in the community. Likewise, a urine screening program would be useful to local planners in assessing the impact of new policies or procedures adopted by diversion programs in their communities.

IMPLEMENTING AND MANAGING A JAIL URINE SCREENING PROGRAM

The feasibility study provided an opportunity to highlight the major issues and and problems involved in establishing efficient urine screening programs in local jail facilities. This section reviews some of these issues and problems and presents options and recommendations for local planners who are interested in setting up jail urine screening programs in their communities.

Jail Systems

In establishing a jail urine screening program designed to monitor drug use patterns among arrestees, local officials must first become familiar with the organization of jail and lock-up facilities within their jurisdictions. Many communities in the United States have more than one jail facility and it will often be necessary for local planners to select one or two of these facilities for participation in a jail urine screening program.

In general, jail systems are organized on the basis of counties and municipalities. With few exceptions, each county and large municipality in the United States has its own independent jail system. This situation may present a problem for local planners whose jurisdiction extends to several counties or includes a municipality large enough to have its own jail facilities. In such cases, cost limitations may require that some of the jail systems be excluded from the urine screening program.

An additional problem is posed by the fact that some municipal and county jail systems have more than one booking and lock-up facility. In many large cities, for example, the majority of misdemeanor arrestees are booked at local precinct lock-ups, and only felony arrestees are taken to the central jail facility. In these cities, local planners can considerably reduce the cost of implementing a urine screening program by focusing on felony arrestees rather than misdemeanor arrestees. In such cases, for example, planners may elect to set up screening systems in the central jail facility and in two or three of the precinct lock-up units.

In small-to-medium size communities, the situation is less complex. Most of these communities have a single central jail facility where all arrestees are brought for booking, and planners can establish a comprehensive urine screening program by setting up a screening unit in the central facility.

In the case of county jail systems, local planners may wish to set up screening units in regional lock-up units as well as in the central county jail. Unlike the precinct units of most large cities, the regional facilities of a county jail system usually process all felony and misdemeanor arrestees in a specific location. If local planners wish to establish a urine screening program which will provide data representative of the county as a whole, they will have to establish screening units in these facilities.

After selecting the jail facility or facilities where urine screening is to be implemented, local planners will have to enter into negotiations with the appropriate authorities to obtain permission to proceed with the program. The experience of the feasibility study made it clear that negotiations may have to be conducted not only with jail authorities but also with the district attorney's office and with local council officials. In general, local planners are more likely to obtain

permission for a jail urine screening program if they agree to provide criminal justice officials with periodic summaries of the data collected by the program.

Sampling Guidelines

For reasons of cost, local planners may choose to base their urine screening programs on a sampling of incoming arrestees at each jail facility. Sampling is not recommended for jurisdictions where the monthly number of jail admissions is relatively small (i.e., fewer than 200). In these cases, it is best to obtain urine specimens from all arrestees. However, in jurisdictions where the number of admissions exceeds 200 per month, local planners may find it cost-effective to implement various sampling systems.

The choice of sampling criteria is primarily a function of local preference. Some jurisdictions, for example, may choose to focus on felony arrestees as the population being monitored and to screen only a small percentage of misdemeanor arrestees. Other jurisictions may prefer to focus on specific types of arrest categories, such as burglary or robbery arrests. Alternatively, planners may decide to sample incoming arrestees on a purely random basis.

While sampling criteria are largely a function of what local planners wish to achieve from a urine screening program, certain guidelines should be observed in setting up sampling procedures. First, if a urine screening program is to be based on a random sampling of jail admissions, the sampling procedures should take account of fluctuations in arrest activity between different hours of the day and different days of the week. It has been shown, for example, that arrests for many types of offenses occur more frequently at certain hours of the day and on certain days of the week than at other times. Arrests for violent crimes and for drunk driving, for example, typically occur more frequently during evening hours and weekends than at other times of the day or week. If, as part of a sampling plan, data are collected at randomly selected hours of the day or on randomly selected days of the week, the possibility exists that persons arrested for such offenses as homicide, assault or drunk driving will be underrepresented in the sample. If such persons typically have disproportionately high or low drug positive rates, the overall drug use patterns indicated by the screening program may not be representative of all arrestees entering a particular jail facility. One approach to resolving this problem would be to obtain monthly data on total arrest activity in each facility and to adjust the sampling procedures to ensure that all arrest categories or periods of arrest activity are adequately sampled.

A second guideline to be observed in establishing sampling procedures is that if planners are interested in monitoring drug use among specific types of arrestees (e.g., female arrestees), the sampling procedures should ensure that an adequate number of these arrestees are represented in the overall sample. If the sub-groups in question represent only a small proportion of total jail admissions, the optimal procedure is to "oversample" these groups in comparison to other groups. A jail urine screening program, for example, might sample 50 percent of all female arrestees but only 20 percent of all male arrestees.

A third guideline for establishing sampling criteria pertains to the question of sample sizes. The larger the number of arrestees screened each month by a urine screening program, the greater is the likelihood that the urinalysis findings will reflect actual drug use patterns among arrestees as a whole. The issue of sample size is especially important if planners wish to use a urine screening program for such purposes as evaluating the impact of diversion programs on rates of drug use among arrestees. Assume, for example, that planners wish to assess the impact of a new drug diversion program on heroin use rates among arrestees, and that during the six month period following the implementation of the diversion program they find that the heroin use rate among arrestees sampled by the urine screening program declines from 10 percent to 7 percent. In this situation, the size of the sample of arrestees screened each month will be an important factor in determining whether the change was "statistically significant" (i.e., reflected an actual decline in heroin use among all arrestees) or was merely the result of chance factors associated with sampling. It is recommended that if planners wish to use a urine screening program for purposes of

evaluating the impact of local drug diversion or treatment programs, they should consult a statistician to obtain guidance on appropriate sample sizes. Statistical consultants are usually available at local universities or colleges and at other local organizations and agencies.

Data Collection Procedures and Response Rates

One of the objectives of the feasibility study was to examine alternative data collection procedures for a jail urine screening program. Of particular concern was the problem of ensuring that a high percentage of incoming arrestees would consent to give urine specimens. If, in an ongoing urine screening program, a significant proportion of arrestees refuse to present urine specimens, the data collected by the program will be unreliable for purposes of monitoring overall drug use patterns among arrestees, especially since the rate of refusal will probably be higher among drug users than among non-drug users.

The feasibility study provided an opportunity to examine some of the factors which appear to affect response rates among arrestees. During the study, high response rates were achieved in three of the data collection sites: Maricopa County (87 percent), Dade County (90 percent) and Erie County (90 percent). In King County, however, only 30 percent of incoming arrestees agreed to present urine specimens.

The low response rate in King County was apparently the result of the logistical arrangements which were made for collecting urine specimens at that site. In Maricopa, Dade and Erie counties, jail officials permitted the data collectors to request urine specimens during the actual booking process (i.e., as arrestees were being brought into the jail). At these sites, each arrestee was approached on an individual basis and asked to give a urine specimen before being placed in a holding cell. In King County, jail officials would not permit data collectors to ask for urine specimens during the booking process. The data collectors had to approach arrestees after they had been booked and placed in cells. In the King County Jail, most incoming arrestees were placed in group holding cells. It was the experience of the data collectors that a refusal on the part of one arrestee in a group holding cell would usually result in refusals on the part of all arrestees in the same cell.

For this reason, it is recommended that, in implementing a jail urine screening program, local planners should arrange for urine specimens to be collected during the booking process. This arrangement may prove more costly than a system in which urine specimens are requested from arrestees after they have been placed in holding cells, since data collectors may have to be on duty for a longer period of time in order to obtain the required quota of urine specimens. However, unless steps are taken to ensure a high response rate among arrestees, the urine screening program will have limited utility.

The experience of the feasibility study does not provide a completely reliable basis for predicting what will happen to response rates in the context of a long-term urine screening program, since urine specimens were collected for only a two month period. It is likely, in fact, that as arrestees within a particular jurisdiction become more familiar with urine screening procedures, a steadily increasing percentage may refuse to provide urine specimens.

The experience of the urine screening program of the Washington, D.C. Superior Court Testing Unit provides some confirmation of this view.[10] The purpose of this Unit, which began operations in 1970, is to provide the Superior Court with information about drug use patterns among arrestees in the District of Columbia. The information provided by the Unit is taken into consideration by the Superior Court when making decisions about pre-trial release and sentencing. The staff of the Testing Unit found that between 1971 and 1976 only 1.1 percent of incoming arrestees refused outright to provide a urine specimen, but that 10.9 percent reported that they were unable to present a specimen (Table 1). The Unit's staff also found

[10] See, Nicholas J. Kozel and Robert L. DuPont, Criminal Charges and Drug Use Patterns of Arrestees in the District of Columbia, NIDA Technical Paper, 1977.

TABLE 1

URINALYSIS STATUS OF ADMISSIONS
TO THE D.C. SUPERIOR COURT LOCK-UP
DECEMBER 1971 - APRIL 1975

Status		
Specimen obtained and analyzed	37,397	84.5
Inability to present specimen	4,801	10.9
Refused to present specimen	489	1.1
Insufficient specimen for analysis	50	0.1
Unknown	1,504	3.4
TOTAL	44,223	100.0

Source: Kozel and DuPont, op. cit., p. 19

that during 1974 and 1975 there was an increase in the number of arrestees reporting an inability to provide a specimen. Some observers of the testing program have suggested that many of these cases were actually "refusals" on the part of arrestees who did not wish the court to view their action as an unwillingness to participate in the program.

As indicated above, the experience of the feasibility study does not provide a basis for predicting whether a problem of low response rates will necessarily occur in the context of an ongoing urine screening program. One possible approach to the response rate problem would be to establish a program in which participation by arrestees was mandatory. In fact, however, it is probably impossible to establish an effective mandatory program, since arrestees who report an inability to provide a urine specimen cannot be compelled to do so. It is likely, in effect, that the optimal approach to the problem of low response rates is to focus on the logistics of the data collection process and to implement data collection procedures which appear to encourage high response rates among arrestees. In addition, the likelihood of refusals will probably be reduced if arrestees are informed of the purpose of the screening program and if it is made clear to them that the results of the urine tests will remain confidential.

Sources of Data on Arrestees

In addition to monitoring drug use patterns among arrestees, a jail urine screening program can provide valuable information on the socio-demographic characteristics and criminal offense patterns of arrestees with drug abuse problems. One of the goals of the feasibility study was to identify potential sources of such information and to determine whether the information would be readily available to local planners. During the study, the following potential sources of data were identified:

- Jail Booking Log

The booking log is a record of all persons admitted to a jail facility. In the majority of jail facilities, the booking log contains information on the sex, ethnicity, age and current arrest charge of each incoming arrestee.

- Police Reports

In some cases, local planners may wish to obtain information about specific details of the offenses for which each individual was arrested. This type of information is not usually recorded in a jail booking log but can be obtained from local police department files.

- NCI/ACI Computer Network

This network is routinely used by police departments and prosecutors to obtain information on the prior arrests and convictions of arrestees. If local planners wish to make use of this information, arrangements will have to be made with local police agencies and prosecutors to obtain access to the data.

- Pre-trial Services Agency Files

In most jurisdictions, persons who have been arrested are routinely interviewed by the staff of a pre-trial services agency to determine whether they should be recommended for release on bail or on personal recognizance pending the disposition of their cases. Arrestees are usually asked to provide information about such matters as their length of residence in the community, their employment status and their occupation. This kind of information is subsequently used to determine whether they are good "risks" for pre-trial release.

In most jurisdictions, a certain proportion of arrestees are not interviewed by pre-trial services agency staff. These include persons who are ineligible for pre-trial release because of the nature of the offense for which they were arrested and persons who have been arrested for minor misdemeanor offenses and who are released on the authority of the jail commander. The information collected by pre-trial services agency staff, however, represents a valuable resource for local planners who are interested in obtaining as much information as possible on the characteristics of arrestees with drug abuse problems.

To a great extent, cost factors will determine the amount of information which local planners can collect on incoming arrestees. The least expensive source of data on arrestees is the jail booking log, since the information contained in the booking log can be transcribed directly by staff members while they are collecting urine specimens from arrestees. If local planners wish to collect systematic information on the employment patterns or prior criminal records of arrestees, however, higher costs can be anticipated, since additional staff time will be required for this task.

Data Collection Personnel

One of the initial tasks involved in setting up a jail urine screening program is the selection of appropriate personnel to collect urine specimens and to record data on arrestees. While police or corrections officers assigned to jail duties represent the most convenient manpower resource for this purpose, a number of objections were raised by jail officials during the feasibility study to the use of uniformed officers as data collectors. Several officials stated that it would be necessary to rewrite duty orders and that the additional tasks assigned to jail officials might result in union problems. Some officials cited the shortage of available staff.

As a result of these objections, uniformed jail personnel were not used as data collectors during the feasibility study. In Maricopa, Dade and Erie counties, staff members from local TASC programs served as data collectors, while in King County (which had no TASC program) part-time nurses from the jail infirmary collected the urine specimens.

The choice of appropriate staffing for a jail urine screening program will be influenced by local preferences and options. If local planners wish to use on-duty jail officers as the primary data collectors, the kinds of objections raised by jail officials during the feasibility study will have to be resolved. If local planners cannot or do not wish to use uniformed officers as data collectors, consideration should be given to the use of social service workers who have experience working in a correctional environment. These social service workers may include TASC program staff, social workers, nurses or health paraprofessionals. During the feasibility study, the use of social service workers proved to be an effective means of collecting data. The staff of local TASC programs, for example, were able to achieve a high response rate among incoming arrestees.

If non-uniformed personnel are used as data collectors in a jail urine screening program, however, some attention must be paid to potential security problems. Arrangements must be made to ensure the physical

safety of data collectors and to prevent disorders from occurring during the data collection process. On the basis of the feasibility study experience, it appears that security problems can probably be minimized if the data collectors are employees of the jail facility and have experience working in a correctional setting. In addition, the risk of security problems can probably be reduced if urine specimens are collected during the routine booking process. If arrestees are asked to provide urine specimens after they have been placed in holding cells, it may be necessary to move arrestees from the holding cells to a bathroom facility in order for them to provide the urine specimens. This arrangement will probably increase the likelihood of security problems within the jail facility.

Legal Issues

During the feasibility study, several local officials expressed concern about the legal aspects of urine screening programs. Jail officials and district attorneys, for example, wished to ensure that urine screening procedures would not violate the constitutional rights of arrestees.

In implementing a jail urine screening program, three principal guidelines should be followed to ensure the protection of the legal rights of arrestees:

- The program should be based entirely on voluntary participation by arrestees.

It was noted above that a mandatory urine screening program is probably infeasible on practical grounds. In addition, any efforts to institute a mandatory screening program will almost certainly be declared unconstitutional by local courts. For this reason, a jail urine screening system should not impose any type of sanction on arrestees who refuse to provide a urine specimen.

During the feasibility study, officials in two jurisdictions - Dade County and King County - specified not only that the screening program should be voluntary but also that written consent forms should be used.[11] In those counties, arrestees were read a statement informing them of the purpose of the program and indicating that they had the right to refuse to participate. Arrestees who agreed to provide a urine specimen were asked to sign a statement indicating that they understood their right to refuse.

While written consent forms are one means of ensuring that arrestees understand the voluntary nature of a urine screening program, their use by local communities is optional. On the basis of the feasibility study experience in Dade County, however, it appears that consent forms can be used effectively without necessarily precluding a high rate of participation by arrestees. In setting up a jail urine screening program, therefore, local planners may wish to use a consent form similar to the one used during the feasibility study.

- Steps must be taken to ensure that the urinalysis results cannot be used against arrestees in criminal proceedings.

There are several areas within the criminal justice system in which the results of urine tests are routinely taken into account in adjudicative proceedings. In the context of diversion programs, for example, criminal courts are legally permitted to use the results of urine tests for purposes of identifying drug-dependent arrestees. Efforts to use the results of a mass urine screening program as a basis for initiating criminal proceedings against arrestees, however, will likely be declared a violation of fourth amendment restrictions on powers of search and seizure. For this reason, procedures must be implemented to ensure that the data collected by a jail urine screening program cannot be used as a basis for criminal prosecution. The most effective way of guaranteeing that the data are not used in this manner is to obtain a formal ruling from local courts stating that the results of the urine tests cannot be subpoenaed for use as evidence against arrestees.

- Arrangements must be made to guarantee the confidentiality of the urinalysis data.

In implementing a urine screening program, local planners must ensure that the urinalysis results for individual arrestees remain confidential. If the screening program is to be used to identify clients for diversion into treatment, planners are obliged

[11] A copy of the consent form used in these counties is contained in appendix B.

by Federal regulations to guarantee the confidentiality of the files on individual arrestees.[12] If the objective of the screening program is simply to provide data that can serve as an indicator of local drug use patterns, it will not be necessary to maintain a record of the names of individual arrestees. In this case, each arrestee who provides a urine specimen can be assigned a code number. These code numbers can be used when recording the urinalysis results and other relevant data on arrestees. A system of code numbers was used during the feasibility study to record data on arrestees in each of the four study sites.

URINALYSIS SYSTEMS

In setting up a jail urine screening program, local planners must select an appropriate urinalysis system for testing the urine specimens collected from arrestees. In choosing an appropriate system, planners must take account of the convenience, scope, accuracy, and cost of the various systems, as well as their own specific needs and resources.

Currently, there are several urinalysis techniques in common use. These techniques fall into two general categories:

- techniques which require the use of laboratory equipment and which are usually referred to as "off-site" techniques. Among these techniques are thin-layer chromatography (TLC) and gas chromatography (GC). Thin-layer chromatography was the technique used to test urine specimens collected during the feasibility study.

- techniques which can be performed in a non-laboratory setting ("on-site") as well as in a laboratory. The most commonly used on-site technique at the present time is EMIT (Enzyme Multiplier Immunoassay Technique).[13]

This section of the guide will describe the logistics of these two types of urinalysis systems and will examine their advantages and disadvantages in the context of a jail urine screening program.[14]

Logistical Factors

If the jail facility where the urine screening program is to be implemented has the necessary laboratory equipment and trained staff, local planners can use such techniques as TLC and GC in the jail itself. If the jail facility does not have a laboratory, planners can choose either to analyze urine specimens on-site by means of such techniques as EMIT, or to have the urine specimens delivered to a commercial laboratory for analysis. If local planners wish to use an on-site testing procedure, they must make arrangements to rent the required equipment from the supplier, and to purchase the reagents used in the testing process. In addition, they must hire an individual to operate the equipment. In the case of procedures such as EMIT, the technician does not have to have laboratory experience and can be trained to use the equipment in less than a day. Finally, planners must make arrangements for space to be provided for the on-site testing.

If local planners wish to use off-site laboratory testing procedures, they will have to contract with a commercial laboratory and arrange to have the urine specimens delivered to the laboratory by messenger or by mail. Commercial laboratories typically provide their clients with urine bottles, labels and pre-paid mailing cartons as part of their service. Unless arrangements are made to have urine

---

[12] Revised Federal regulations governing the confidentiality of alcohol and drug abuse patient records were published in the Federal Register on July 1, 1975. Sections 2.39 and 2.39-1 of the regulations apply specifically to criminal justice system referrals. A copy of the regulations can be obtained by writing to the National Institute on Drug Abuse.

[13] Information on the EMIT system can be obtained from Syva Corporation, Palo Alto, California.

[14] The discussion of urinalysis systems in this section is based in part on material presented in A Guide to Urine Testing for Drugs of Abuse by Don H. Catlin (Special Action Office for Drug Abuse Prevention, 1973).

specimens delivered to the laboratory on a daily basis, local planners will have to allocate space for the storage of urine specimens collected from arrestees. Generally, urine specimens can be stored without refrigeration for up to one week before being sent to the laboratory for analysis.

Scope

In the present context, the "scope" of a urinalysis technique refers to the number of different substances which the technique is able to detect. A principal advantage of techniques such as TLC and GC is that they have greater scope than on-site procedures such as EMIT. Using TLC, for example, the laboratory which analyzed most of the urine specimens collected during the feasibility study was able to detect as many as 29 substances in its standard initial screen. These substances included the following:

ANALGESICS

Propoxyphene	(Darvon)
Pentazocine	(Talwin)

ANTIHISTAMINES

Diphenhydramine	(Benadryl)

HYPNOTICS AND SEDATIVES

Amobarbital
Butabarbital
Pentobarbital
Phenobarbital
Secobarbital
Aprobarbital

OPIUM ALKALOIDS

Codeine	
Morphine	(Heroin)

SYNTHETIC NARCOTICS

Levo-Alpha-Acetylmethadol	(LAAM)
Methadone	(Dolophine)
Meperidine	(Demerol)
Hydromorphone	(Dilaudid)

STIMULANTS

Cocaine	
Amphetamine	
Methamphetamine	
Phenylpropanolamine	
Phentermine	(Ionamin)

TRANQUILIZERS

Amitriptyline	(Elavil, Triavil, Elafon)
Chlorpromazine	(Thorazine)
Thioridazine	(Melleril)
Trifluoperazine	(Stelazine)
Promethazine	(Phenergan)
Perphenazine	(Trilafon)
Hydroxyzine	(Atarax)

ADULTERANTS

Quinine	
Procaine	(Novacain)

The same laboratory was able to detect the following additional substances on special request, again using thin-layer chromatography:

HYPNOTICS

Methaqualone	(Quaalude)

MINOR TRANQUILIZERS

Diazepam	(Valium)
Chlordiazepoxide	(Librium)
Oxazepam	(Serax)
Flurazepam	(Dalmane)
Clorazepate Dipotassium	(Tranxene)

In contrast to techniques such as TLC, on-site immunoassay procedures can detect only those substances for which a particular urine assay has been developed. The EMIT system, for example, has developed assays for seven generic substance categories: opiates, methadone, cocaine, barbiturates, amphetamines, benzodiazepines (minor tranquilizers) and propoxyphene. While EMIT has a high degree of specificity in discriminating between these categories of drugs, it cannot detect substances which do not fall under the seven generic categories. In addition, EMIT and other immunoassay procedures do not have the capacity to differentiate between substances which are subsumed under the same generic category. The EMIT barbiturate assay, for example, cannot discriminate between different types of barbiturates. Likewise, the EMIT opiate assay does not differentiate between morphine and codeine.

The limitations of EMIT procedures in regard to scope may not pose a serious problem for planners who wish to use the technique for a jail urine screening program. The seven generic substance assays developed by EMIT, for example, may prove

sufficient for local planning needs. If planners wish the screening program to have the capacity to discriminate between drugs within these generic categories, however, techniques such as TLC are to be preferred.

While procedures such as TLC and GC have a greater scope than the on-site immunoassay procedures, the accuracy of a particular urinalysis technique in discriminating between different substances may vary according to the skills of the technician, the condition of the apparatus and the adequacy of quality control procedures at a specific site. Although TLC can detect a broader range of drugs than the EMIT system, for example, the interpretation of EMIT test results requires fewer skills on the part of the technician than the interpretation of TLC results. Regardless of the technique which is selected for use in a jail urine screening program, therefore, local planners must ensure that the accuracy and reliability of the testing system are routinely evaluated. This issue is dealt with in greater detail below in the discussion of the accuracy of urinalysis procedures.

Sensitivity

In comparison to TLC or GC, one of the principal advantages of immunoassay techniques is their high degree of sensitivity in detecting specific kinds of substances. The sensitivity of a urinalysis technique can be measured in terms of the amount of a drug which has to be present in a urine specimen before the technique can reliably detect it. The greater the sensitivity of a urinalysis technique, the greater is its capacity to detect relatively small amounts of a substance in urine specimens. Consequently, a highly sensitive urine test can detect drugs for longer periods of time following ingestion by the subject than tests which are not highly sensitive.

Tests of the sensitivity of EMIT assays indicate that the technique has a greater sensitivity than TLC in detecting opiates in urine specimens, but that the two techniques are about equally sensitive in detecting such drugs as barbiturates and amphetamines.[15] If local planners are interested primarily in heroin abuse patterns among arrestees, therefore, they may prefer to use EMIT assays rather than thin-layer chromatography. In many cases, laboratories will perform EMIT assays to test for opiates, while using TLC to test for other substances.

Generally, the more sensitive a urinalysis procedure, the less likely it is to produce "false negative" results by failing to detect drugs which are actually present in a urine specimen. Some of the immunoassay tests which claim a high degree of sensitivity, however, have been found to produce a high percentage of false positive results. This phenomenon occurs because tests which claim a high degree of sensitivity sometimes have a limited capacity to discriminate between substances with similar pharmacological structures. In considering the use of techniques which claim a high degree of sensitivity, therefore, local officials should ensure that the overall reliability of the technique has been clearly established.

Accuracy

The accuracy of a urinalysis system depends not only on the particular technique which is used, but also on the proficiency of the technician and the reliability of the testing equipment. Regardless of the urinalysis technique which is selected for use in a jail urine screening program, therefore, local planners must ensure that the accuracy of the testing procedures is periodically evaluated. In addition, planners should rely as far as possible on corroborative testing systems in which test results are routinely confirmed through secondary analysis.

In regard to this question, the use of laboratory procedures has certain advantages over the use of on-site procedures. Firstly, many laboratories routinely use a corroborative testing system to confirm a certain proportion of test results. The laboratory which analyzed most of the urine specimens collected during the feasibility study, for example, used TLC for its basic urine screen and subsequently confirmed all positive test results through a secondary analysis. The laboratory also provided a service in which immunoassay procedures were used to test for trace quantities of opium alkaloids. It is recommended that planners who wish to use an independent laboratory to test urine specimens should select a laboratory which employs corroborative testing procedures of this type.

[15] Ibid., pp. 8-9, 16.

A second advantage of using laboratory procedures is that, under U.S. Public Health Service regulations, all laboratories which perform urine tests for federally funded drug treatment programs are required to participate in a proficiency rating system operated by the Center for Disease Control (CDC). Under this rating system, CDC periodically distributes a set of urine specimens to each participating laboratory. Some specimens contain no drugs, while others contain one, two or three drugs. The laboratories are required to analyze the specimens and submit their findings to CDC, together with a description of the testing procedures used in the analysis. Laboratories are rated according to a system which assigns penalties for false positive and false negative results. The final rating for each laboratory is expressed in terms of a percentage which describes the laboratory's proportion of correct results. Recent proficiency ratings for the two laboratories used in the feasibility study are presented in Table 2. Laboratory A was used to test urine specimens collected in Maricopa, Dade and King counties, while Laboratory B was used to test urine specimens collected in Erie County.

TABLE 2

CDC PROFICIENCY RATINGS: 1977

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Average
Laboratory A	100%	100%	100%	100%	100%
Laboratory B	Unknown	100%	91%	100%	97%

If local planners wish to use an independent laboratory to test urine specimens, they should select a laboratory which has a consistently high CDC rating. The Single State Agency (SSA) for Drug Abuse in each State may be able to provide planners with information on current CDC laboratory ratings. Alternatively, planners may obtain a copy of laboratory proficiency ratings directly from CDC[16] or may ask a particular laboratory to provide information on its recent CDC ratings. If possible, planners should select a laboratory which has current proficiency ratings of 90% or more.

If local officials decide to use on-site testing procedures such as EMIT, the reliability of the testing system should be regularly assessed through off-site evaluation procedures. It is recommended that a "split-half" procedure be used for this purpose. Under this procedure, a sample of urine specimens will be selected and each specimen will be divided in half. One half of each specimen will be analyzed on-site, while the other half will be sent to an independent laboratory, and the results of the two procedures will be compared. It is recommended that, during the first month of the screening program, all urine specimens collected from arrestees be analyzed by the split-half procedure. Subsequently, at least 10% of all urine specimens should be analyzed by this procedure.

The split-half analyses will provide a measure of the accuracy of on-site testing procedures and will assist planners in determining whether the procedures need to be modified. If the screening program is being used to identify treatment clients, planners should take steps to ensure that the testing procedures are not producing false positive results and that the rate of false negatives is kept to a minimum. In cases where the screening program is being used simply to provide an indicator of local drug use patterns, planners may find that a lower accuracy rate is acceptable, but, in such cases, testing procedures should be reviewed if the accuracy rate falls below 90%.

It should be noted that while procedures such as EMIT are traditionally used for on-site urine testing, EMIT assays can be

[16] Inquiries about laboratory proficiency ratings should be addressed to: Clinical Chemistry and Toxicology Section, Building 6, Room 316, Center for Disease Control, Atlanta, Georgia 30333.

performed in a laboratory setting. Accordingly, local planners who wish to use EMIT procedures and, at the same time, take advantage of the CDC laboratory rating system, can arrange to have the EMIT assays conducted at an off-site laboratory.

Time Required to Obtain Test Results

A major advantage of on-site procedures such as EMIT is that they can provide test results within a few minutes after urine specimens have been obtained. In the case of laboratory procedures, time must be allowed for the urine specimens to be delivered to the testing laboratory and for the test results to be sent back from the laboratory to the data collection site. If a local laboratory is used, it may be possible to arrange for the laboratory to pick up urine specimens at a specific time each day and to deliver the test results by messenger within 24 hours. If officials decide to use a laboratory which is not locally situated, the urine specimens and test results will have to be delivered by mail. While most commercial laboratories facilitate mailing procedures by providing pre-paid cartons as part of their service, at least two to three days will usually be required for the specimens to be delivered to a laboratory by mail. After the urine specimens have been analyzed, an additional one to two days will be required for the test results to be mailed back to the data collection site. As a special service, most laboratories will provide test results by telephone immediately after the tests have been completed. This procedure, however, can be expected to add considerably to the cost of the urine screening program.

The amount of time required to obtain urine test results may not be of major importance if the primary purpose of a jail urine screening program is to provide an additional indicator of community-wide drug abuse patterns. If this is the major objective of the program, delays of up to one or two weeks in obtaining test results will be acceptable and an independent laboratory can be used. If the primary goal of the urine screening program is to identify clients for diversion into treatment programs, the use of independent laboratories will probably still be feasible because of the amount of time usually required to dispose of criminal cases. In such situations, however, local planners may prefer to use on-site procedures to obtain immediate test results on potential clients.

Cost

Local planners who wish to use a commercial laboratory to analyze urine specimens should first obtain cost estimates from several different laboratories. The prices charged by commercial laboratories for urinalysis usually vary according to the number of urine specimens analyzed per month. The laboratory which analyzed most of the urine specimens collected during the feasibility study charged $1.90 per specimen on the basis of a rate of 1,000 tests per month. The second laboratory, however, charged $4.50 per specimen for a rate of less than 100 specimens per month. In both cases, these prices included the cost of postage, urine bottles and mailing cartons.

In most cases, the cost of on-site testing can be expected to exceed the cost of laboratory analysis. To conduct on-site testing using EMIT, a separate reagent must be used for each urine assay. These reagents generally cost between $0.50 and $1.00 each. In the case of the EMIT system, therefore, the cost of conducting the seven EMIT assays on each urine specimen can be expected to vary between $3.50 and $7.00. In certain circumstances, local planners may find on-site procedures to be less costly than laboratory procedures. If, for example, the number of urine specimens to be analyzed each month is very small, the prices charged by a laboratory may exceed the cost of on-site tests. In addition, on-site procedures will be less costly if local planners are interested in analyzing urine specimens for only one or two types of drugs.

COST FACTORS

In estimating the cost of implementing a jail urine screening program, the following cost items must be taken into account:

- labor costs, including the salaries of data collectors and clerks
- urinalysis costs

- data processing costs
- miscellaneous costs, including the costs of photocopying and clerical supplies

The actual cost of implementing a urine screening program will also depend on the scope of the program, i.e., the number of arrestees screened by the program each month and the amount of data collected on each arrestee.

As a means of assisting local officials to estimate the cost of implementing a urine screening program in their communities, this section presents three hypothetical program models together with itemized cost estimates for each model. The first two models describe relatively large-scale screening programs in which 400 arrestees are sampled each month. The third model describes a small-scale program appropriate for a rural county or small-to-medium size community. In this model, 150 arrestees are sampled each month.

Model 1: Implementation in a Large Urban County by a Local Drug Abuse Umbrella Agency

Program Scope

The county has a central jail facility where all felony arrestees and about 25% of all misdemeanor arrestees in the county are brought for booking. Since local planners are interested primarily in felony arrestees, a urine screening program is set up only in the central jail facility. Data are collected on the demographic characteristics, current arrest charges and prior criminal record of each arrestee who provides a urine specimen. About 400 urine specimens are collected each month.

Staffing

The drug abuse umbrella agency has negotiated with jail officials to have on-duty corrections officers collect the urine specimens from arrestees. An extra officer is assigned to the booking desk during the first four hours of the morning shift (8 A.M. to 12 P.M.) and the last four hours of the evening shift (8 P.M. to 12 A.M.) to collect the specimens. After urine specimens have been collected, non-uniformed data clerks transcribe data on arrestees from the jail booking log to data collection forms. One day per week is set aside for data clerks to transcribe information on prior criminal records to the data forms and to enter the results of urine tests. During the second week of each month, data clerks are assigned the task of preparing reports containing tabulations of the data collected during the previous month.

Urinalysis Procedures

The umbrella agency has contracted with a local laboratory to test all urine specimens collected by the program. As part of its service, the laboratory provides specimen bottles and cartons. Urine specimens are delivered to the laboratory daily by data clerks, and the results are mailed to the jail facility within one week.

Data Processing

The umbrella agency has contracted with a local university computer center for keypunching, machine editing, and computer runs. On a weekly basis, data clerks bring the data collection forms to the computer center and pick up printouts.

Annualized Costs(Dollars)

Supervision	
.5 person-years	10,000
Data Collection	
Corrections Officers	
1 person-year	15,000
Data Clerks	
2 person-years	20,000
Urinalysis	
(400 urines/month; $3.00 per test)	14,400
Data Processing	3,000
Other	200
(e.g., photocopying, mileage, postage)	
TOTAL	62,600

Model 2: Implementation in Three Communities by a State Drug Abuse Executive Branch (Single State Agency

Program Scope

The State agency implements urine screening programs in the central jail facilities of three medium size cities within the State. Data are collected on the demographic characteristics, arrest charges and prior criminal records of arrestees. About 400 urine specimens per month are collected at each site.

Staffing

Each of the three cities has a diversion program for arrestees with drug abuse problems. These programs have screening units located in the central jail facilities. Program staff are assigned to screening functions for two eight hour periods per day, from 8 A.M. to 4 P.M. and from 4 P.M. to 12 A.M. The State executive agency has negotiated with the directors of the three programs to have program staff collect urine specimens during their shifts. Under this arrangement, an extra program staff member is assigned to the booking desk during the first four hours of the morning shift and the last four hours of the evening shift to collect the urine specimens from incoming arrestees. Data clerks are hired to transcribe data from the jail booking log, to obtain information on prior criminal records and to record urine test results.

Urinalysis Procedures

The State agency has contracted with a commercial laboratory to analyze the urine specimens collected at all three sites. Since the number of urine specimens analyzed each month exceeds 1,000, a discount rate of $2.00 per test is available. The laboratory provides specimen bottles and pre-paid mailing cartons to each data collection site and mails the test results on a weekly basis to the State agency.

Data Processing

Data processing for each of the three urine screening programs is handled by the State's central computing facility. Data collection forms are mailed to the facility by local data clerks on a weekly basis. Staff members of the State agency are responsible for handling computer output and preparing monthly statistical reports.

Annualized Costs (Dollars): Three Cities

Supervision	
State Manager .2 person-years	4,000
Directors of Diversion Programs .6 person-years	12,000
Data Collection	
Staff Members of Diversion Programs (1 person-year per site) 3 person-years	36,000
Data Clerks (1 person-year per site) 3 person-years	30,000
Clerical	
State Office 1 person-year	10,000
Urinalysis (1,200 urines/month; $2.00 per test)	28,800
Data Processing	4,000
Other (e.g., photocopying, mileage, postage)	600
TOTAL	125,400
Cost per site	41,800

Model 3: Implementation in a Small-to-Medium Size Community by a Local Drug Abuse Administrative Agency

Program Scope

The community has a central jail facility where all arrestees are brought for booking. About 150 arrestees enter the facility each month and urine specimens are requested from all arrestees. Data are collected on the demographic characteristics, current arrest charges and prior criminal record of each arrestee.

Staffing

The administrative agency has negotiated with jail officials to have corrections officers collect the urine specimens. An extra officer is assigned for three hours each day to collect the urine specimens. The officer requests urine specimens from arrestees who have been placed in holding cells and from arrestees who are admitted to the jail during the three hour shift. After urine specimens have been collected, a non-uniformed data clerk transcribes demographic data on arrestees from the jail booking log. One day per week is assigned for the data clerk to obtain information on prior criminal records and to record the results of the urine tests. During the second week of each month, the data clerk tabulates the data collected during the previous month and prepares a report.

Urinalysis Procedures

The administrative agency has contracted with a commercial laboratory for analysis of the urine specimens. The urine specimens are mailed to the laboratory on a weekly basis by the data clerk.

Data Processing

Since only 150 urine specimens are collected each month, computerized data processing is not required. Data are tabulated manually by the data clerk.

Annualized Costs (Dollars)

Supervision	
.2 person-years	4,000
Data Collection	
Corrections Officer	
.4 person-years	6,000
Data Clerk	
.5 person-years	5,000
Urinalysis	
(150 urines/month; $3.00 per test)	5,400
Other	
(e.g., photocopying)	50
TOTAL	20,450

The three program models outlined above include only rough estimates of the actual costs of implementing urine screening programs. The first two models demonstrate that certain costs can be reduced if different urine screening programs are able to share the same facilities. In Model 2, for example, the three sites had significantly lower average costs for urine testing and data processing than the program described in Model 1. In addition, the average cost per site for supervisory and clerical functions was lower in Model 2 than in Model 1 because some of these functions were centralized in the State agency.

Interested readers are referred to Drug Abuse Testing: Successful Models for Treatment and Control in Correctional Programs, American Correctional Association, 4321 Hartwick Road, Suite L-208, College Park, Maryland 20740.

TABLE 1

DRUG MENTIONS RECORDED BY THE
URINE SCREENING PROGRAM, THE
DAWN SYSTEM AND THE CODAP SYSTEM
DADE COUNTY, JANUARY 1978

URINE SCREENING PROGRAM

SUBSTANCE	MENTIONS	% OF TOTAL MENTIONS
Morphine/Quinine	39	44.3
Cocaine	11	12.5
Methadone	10	11.4
Propoxyphene	8	9.1
Phenothiazines	7	8.0
Barbiturates	4	4.5
Atarax	3	3.4
Benadryl	3	3.4
Amphetamines	1	1.1
Demerol	1	1.1
Tigan	1	1.1
Total	88	100.0

Number of urines analyzed: 358
Number of drug positive urines: 67 (18.7%)

DAWN

SUBSTANCE	MENTIONS	% OF MENTIONS
Cannabis	230	15.1
Alcohol	184	12.1
Valium	149	9.8
Methaqualone	121	8.0
Barbiturates	116	7.6
Heroin	80	5.3
Cocaine	67	4.4
Phencyclidine	56	3.7
Other Opiates	45	2.9
Other Stimulants	27	1.8
Propoxyphene	16	1.1
Methadone	8	0.5
Other	421	27.7
Total	1520	100.0

CODAP (949 Mentions, 415 Admissions)

SUBSTANCE	MENTIONS	% OF MENTIONS
Heroin	233	24.9
Cannabis	220	23.5
Cocaine	145	15.5
Barbiturates	96	10.3
Methaqualone	70	7.5
Other Opiates	47	5.0
Other Stimulants	34	3.6
Phencyclidine	27	2.9
Alcohol	22	2.4
Valium	19	2.0
Methadone	13	1.4
Other	23	2.5
Total	949	100.0

TABLE 2

DRUG MENTIONS RECORDED BY THE
URINE SCREENING PROGRAM, THE
DAWN SYSTEM AND THE CODAP SYSTEM
DADE COUNTY, FEBRUARY 1978

URINE SCREENING PROGRAM

SUBSTANCE	MENTIONS	% OF TOTAL MENTIONS
Morphine/Quinine	44	41.9
Propoxyphene	21	20.0
Barbiturates	9	8.6
Cocaine	9	8.6
Phenothiazines	8	7.6
Methadone	6	5.7
Codeine	2	1.9
Phenmetrazine	2	1.9
Amphetamines	1	1.0
Atarax	1	1.0
Demerol	1	1.0
Talwin	1	1.0
Total	105	100.0

Number of urines analyzed: 430
Number of drug positive urines: 82 (19.1%)

DAWN

SUBSTANCE	MENTIONS	% OF MENTIONS
Cannabis	201	14.6
Alcohol	155	11.3
Barbiturates	118	8.6
Methaqualone	96	7.0
Valium	86	6.2
Heroin	82	5.9
Other Opiates	59	4.3
Phencyclidine	49	3.6
Cocaine	49	3.6
Other Stimulants	20	1.4
Propoxyphene	18	1.3
Methadone	12	0.9
Other	431	31.3
Total	1376	100.0

CODAP (756 Mentions, 334 Admissions)

SUBSTANCE	MENTIONS	% OF MENTIONS
Heroin	184	24.3
Cannabis	160	21.2
Cocaine	131	17.3
Barbiturates	64	8.5
Methaqualone	56	7.4
Other Opiates	42	5.6
Phencyclidine	27	3.6
Valium	26	3.4
Other Stimulants	22	2.9
Methadone	11	1.5
Alcohol	8	1.1
Other	25	3.3
Total	756	100.0

TABLE 3

DRUG MENTIONS RECORDED BY THE
URINE SCREENING PROGRAM, THE
DAWN SYSTEM AND THE CODAP SYSTEM
MARICOPA COUNTY, JANUARY 1978

URINE SCREENING PROGRAM

SUBSTANCE	MENTIONS	% OF TOTAL MENTIONS
Propoxyphene	10	28.6
Morphine/Quinine	7	20.0
Barbiturates	6	17.1
Methadone	6	17.1
Codeine	2	5.7
Atarax	1	2.9
Elavil	1	2.9
Phenmetrazine	1	2.9
Phenothiazines	1	2.9
Total	35	100.0

Number of urines analyzed: 404
Number of drug positive urines: 34(8.4%)

DAWN

SUBSTANCE	MENTIONS	% OF MENTIONS
Heroin	140	19.3
Tranquilizers	97	13.4
Alcohol	79	10.9
Other Opiates	53	7.3
Barbiturates	47	6.5
Amphetamines	22	3.0
Other Sedatives	20	2.8
Propoxyphene	19	2.6
Marijuana/Hashish	9	1.2
Inhalants	7	1.0
Methadone	5	0.7
Cocaine	5	0.7
Other	204	28.2
Total	724	100.0

CODAP (314 Mentions, 237 Admissions)

SUBSTANCE	MENTIONS	% OF MENTIONS
Heroin	196	62.4
Marijuana/Hashish	27	8.6
Barbiturates	22	7.0
Alcohol	19	6.0
Amphetamines	16	5.1
Other Opiates	10	3.2
Cocaine	7	2.2
Hallucinogens	7	2.2
Tranquilizers	4	1.3
Other Sedatives	3	0.9
Non Rx Methadone	2	0.6
Other	1	0.3
Total	314	100.0

TABLE 4

DRUG MENTIONS RECORDED BY THE
URINE SCREENING PROGRAM, THE
DAWN SYSTEM AND THE CODAP SYSTEM
MARICOPA COUNTY, FEBRUARY 1978

URINE SCREENING PROGRAM

SUBSTANCE	MENTIONS	% OF TOTAL MENTIONS
Propoxyphene	20	47.6
Barbiturates	7	16.7
Phenothiazines	3	7.1
Phenmetrazine	3	7.1
Atarax	2	4.8
Cocaine	2	4.8
Amphetamines	1	2.4
Dilaudid	1	2.4
Elavil	1	2.4
Methadone	1	2.4
Morphine/Quinine	1	2.4
Total	42	100.0

DAWN

SUBSTANCE	MENTIONS	% OF MENTIONS
Heroin	108	17.2
Tranquilizers	99	15.7
Alcohol	69	11.0
Other Opiates	41	6.5
Amphetamines	32	5.1
Barbiturates	31	4.9
Propoxyphene	26	4.1
Other Sedatives	15	2.4
Marijuana/Hashish	10	1.6
Cocaine	8	1.3
Hallucinogens	7	1.1
Methadone	4	0.6
Other	179	28.4
	629	100.0

CODAP (254 Mentions, 178 Admissions)

SUBSTANCE	MENTIONS	% OF MENTIONS
Heroin	144	56.7
Other Opiates	28	11.0
Marijuana/Hashish	17	6.7
Alcohol	16	6.3
Amphetamines	11	4.3
Barbiturates	10	3.9
Inhalants	7	2.8
Cocaine	7	2.8
Hallucinogens	5	2.0
Tranquilizers	3	1.2
Other Sedatives	3	1.2
Non Rx Methadone	3	1.2
Total	254	100.0

Number of urines analyzed: 392
Number of drug positive urines: 37 (9.4%)

TABLE 5

DRUG MENTIONS RECORDED BY THE
URINE SCREENING PROGRAM, THE
DAWN SYSTEM AND THE CODAP SYSTEM
ERIE COUNTY, FEBRUARY 1978

URINE SCREENING PROGRAM

SUBSTANCE	MENTIONS	% OF TOTAL MENTIONS
Morphine/Quinine	11	20.4
Propoxyphene	7	13.0
Barbiturates	7	13.0
Phencyclidine	6	11.1
Codeine	6	11.1
Methadone	4	7.4
Amphetamines	3	5.55
Phenylpropanolamine	3	5.55
Elavil	2	3.7
Doriden	2	3.7
Phenothiazines	2	3.7
Demerol	1	1.9
Total	54	100.0

Number of urines analyzed: 150
Number of drug positive urines: 40 (26.7%)

DAWN

SUBSTANCE	MENTIONS	% OF MENTIONS
Tranquilizers	43	21.7
Alcohol	31	15.6
Other Sedatives	15	7.6
Other Opiates	13	6.6
Barbiturates	13	6.6
Phencyclidine	11	5.5
Propoxyphene	6	3.0
Marijuana/Hashish	5	2.5
Amphetamines	4	2.0
Cocaine	3	1.5
Heroin	2	1.0
Hallucinogens	2	1.0
Other	50	25.2
Total	198	100.0

CODAP (248 Mentions, 114 Admissions)

SUBSTANCE	MENTIONS	% OF MENTIONS
Marijuana/Hashish	52	21.0
Alcohol	47	18.9
Heroin	32	12.9
Tranquilizers	24	9.7
Other Opiates	21	8.7
Hallucinogens	20	8.1
Barbiturates	13	5.3
Amphetamines	10	4.0
Other Sedatives	8	3.2
Cocaine	6	2.4
Non Rx Methadone	5	2.0
Over the Counter	2	0.8
Other	8	3.2
Total	248	100.0

TABLE 6

DRUG MENTIONS RECORDED BY THE URINE SCREENING PROGRAM, BY ARREST CHARGES, DADE COUNTY, JANUARY 1978

	Total Arrests	Drug Positive	Percent	Morphine/Quinine	Methadone	Propoxyphene	Cocaine	Phenothiazines	Barbiturates	Other
Homicide	3	1	33.3					1		
Rape	4	0	0.0							
Robbery	22	3	13.6	2	1	1			1	
Aggravated Assault	21	2	9.5	1				1		
Burglary	40	9	22.5	6	1	1	3	1	1	
Larceny-Theft	63	14	22.2	11	2	1	5			
Other Assaults	15	3	20.0	1			1			2
Forgery/Fraud	7	4	57.1	3	2		1			
Stolen Property	5	3	60.0	2	2		1			
Weapons Offenses	13	1	7.7	1						
Marijuana	24	6	25.0	3	1	2			1	
Other Drugs	7	2	28.6	1	1		1			
Drugs: Type Unknown	18	7	38.9	4	1	1	1			2
Prob'n/Parole Viol'ns	7	3	42.9	3						2
FTAs/Warrants	92	19	20.7	11	3		3	5		2
Gambling	2	0	0.0							
Vandalism	2	0	0.0							
DWI	14	1	7.1						1	
Drunkenness	9	2	22.2			1				1
Disorderly Conduct	3	1	33.3			1				
Loitering	14	4	28.6	2		1				1
Prostitution	1	1	100.0	1						
Procuring	1	0	0.0							
Sex Offenses	1	0	0.0							
Contributing to Delinquency of Minor	1	0	0.0							
Trespass	6	1	16.7	1						1
Federal Hold	31	1	3.2							1
Fugitive/Escape	14	1	7.1	1			1			
Fleeing	1	0	0.0							
Resisting Arrest	13	1	7.7							2
Traffic	19	2	10.5	2						
Other	2	1	50.0	1						
Unknown	1	1	100.0	1						1

APPENDIX B

CONSENT FORM USED
IN DADE AND KING COUNTIES

URINALYSIS PROGRAM CONSENT FORM

THE FOLLOWING STATEMENT IS TO READ TO THE ARRESTEE:

WE ARE TAKING PART IN A NEW RESEARCH PROGRAM. WE WANT TO COLLECT A URINE SAMPLE FROM YOU. THE RESULTS OF THE URINE TEST WILL BE CONFIDENTIAL AND YOUR NAME WILL NOT BE PLACED ON THE URINE BOTTLE. THIS PROGRAM IS COMPLETELY VOLUNTARY. WILL YOU GIVE US A URINE SAMPLE?

IF THE ARRESTEE AGREES TO GIVE A URINE SAMPLE, HE/SHE MUST BE ASKED TO READ AND SIGN THE FOLLOWING STATEMENT:

I AGREE TO GIVE A URINE SAMPLE. I UNDERSTAND THAT THIS PROGRAM IS COMPLETELY VOLUNTARY.

(Arrestee's Signature) X_____

(Witness) X_____

☆U.S. GOVERNMENT PRINTING OFFICE: 1980-311-246/1176

DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE

ALCOHOL, DRUG ABUSE, AND
MENTAL HEALTH ADMINISTRATION
5600 FISHERS LANE
ROCKVILLE, MARYLAND 20857

OFFICIAL BUSINESS
Penalty for private use, $300

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF H.E.W.
HEW 396

THIRD CLASS
BULK RATE

NOTICE OF MAILING CHANGE

☐ Check here if you wish to discontinue receiving this type of publication.

☐ Check here if your address has changed and you wish to continue receiving this type of publication. (Be sure to furnish your complete address including zip code.)

Tear off cover with address label still affixed and send to:

Alcohol, Drug Abuse, and Mental Health Administration
Printing and Publications Management Branch
5600 Fishers Lane (Rm. 6C-02)
Rockville, Maryland 20857

DHEW Publication No. (ADM) 80-903
Printed 1979

END