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Urinalysis as Part of a Treatment Alternatives to Street Crime (TASC) Program

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Monograph

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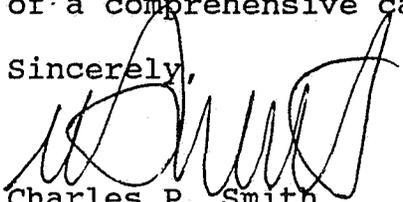
Washington, D.C. 20531

I am pleased to present this practical guide for establishing and operating a urine testing program, when urine testing is a component of a Treatment Alternatives to Street Crime (TASC) program.

The Bureau of Justice Assistance (BJA) has identified TASC as one of 11 "certified" programs eligible for block grant funding under the Justice Assistance Act of 1984 and the Anti-Drug Abuse Act of 1986. BJA's program brief for TASC identifies 10 program elements and performance standards as "critical" to the proper operation of a TASC program. Element 9 is "documented policies and procedures for random urinalysis and other physical tests."

This monograph examines the issues, processes, and procedures involved in establishing a urine testing program. It is a primer to get the process started. Although it will not provide all of the answers, this monograph gives the TASC program manager a foundation for beginning urine testing, when urinalysis is part of a comprehensive case management program.

Sincerely,



Charles P. Smith
Director

Table of Contents

| | Page |
|--|------|
| Acknowledgements | i |
| Introduction | 1 |
| Instituting a Urine Testing Program | 3 |
| Why Conduct Urinalysis? | 3 |
| Drug/Crime Linkage | 3 |
| How Urinalysis Fits into TASC. | 3 |
| The Role of Urine Testing | 4 |
| Uses and Misuses of Test Results. | 4 |
| What are the Legal Issues? | 5 |
| Constitutionality of Collecting Urine Samples. | 5 |
| Reliability/Accuracy of the Technology. | 5 |
| Chain of Custody | 5 |
| Court Testimony. | 6 |
| Testing of Juveniles. | 7 |
| Operating a Urine Testing Program. | 9 |
| Conducting the Tests - The Technology. | 9 |
| On-Site vs. External Testing. | 10 |
| On-Site Testing | 11 |
| Costs | 11 |
| Staff Selection and Training. | 11 |
| Proficiency Testing | 12 |
| Health and Hygiene Risks. | 12 |

| | |
|---|-----------|
| External Testing | 12 |
| Selecting a Laboratory | 12 |
| Collecting Specimens | 13 |
| Handling Specimens | 13 |
| Standard Operating Procedures | 13 |
| Summary | 15 |
| Glossary | 17 |
| Endnotes | 19 |
| Resource List | 21 |

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Specifically, we thank Linda Tyon and the National Consortium of TASC Programs for the time devoted to the development and review of this document. Mildred Henderson spent many hours with us reviewing, writing and rewriting both the technical aspects and the program considerations for this

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Beth A. Weinman
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Introduction

For TASC (Treatment Alternatives to Street Crime) programs, establishing a urinalysis program, with its different legal, technical, programmatic, and medical considerations, can be one of the most demanding aspects of program implementation. TASC programs, operating between the criminal justice and treatment systems, must be particularly certain that their urine testing policies, procedures, and technologies are of the highest standards. In TASC programming, urinalysis is not used solely for identification and surveillance of drug use. Urinalysis is also used for effective offender monitoring, and it provides objective documentation of the therapeutic progress of an individual TASC client.

Urinalysis is generally accepted as a reliable, effective tool to detect and monitor drug abusers in the criminal justice system. Research completed in 1984 for the National Institute of Justice on arrestees in New York City and Washington, D.C., found that observation and assessment of offenders, even by trained professionals, are not as effective as urine testing for identifying drug users. Of 75 probationers studied, 28 percent were identified as drug-involved through professional observation while 56 percent of these same individuals tested positive for drugs through urine testing.¹

As the demand for urine testing for drug abuse has increased, so have the issues that need to be considered when establishing a urine testing program. For example:

- o The purpose of urinalysis in the TASC process
- o The constitutionality of collecting urine samples
- o Chain of custody
- o Legal challenges to the process
- o Court testimony
- o Juvenile testing
- o Urine testing technologies and methodologies
- o On-site vs. external testing
- o How to select an external laboratory
- o Random vs. scheduled collections
- o Uses and misuses of test results

This monograph examines the issues, processes, and procedures involved in establishing a urine testing program. It is a primer to get the process started. Although this monograph will not provide all of the answers, it will provide the foundation for a urinalysis project as part of a comprehensive case management program.

Instituting A Urine Testing Program

Why Conduct Urinalysis?

Drug/Crime Linkage: Urinalysis has been used in a number of national research projects to explore the link between drugs and crime. The National Institute of Justice (NIJ) sponsored research in Washington, D.C. and New York City in 1984, with follow-up studies in 1986, which revealed a far higher level of drug use among arrestees in those two cities than had previously been assumed. Urine tests of some 14,000 persons arrested in both cities showed that more than half had been using illegal drugs. Further, the tests revealed a high incidence of multiple drug use with nearly one third of drug using arrestees in Washington, D.C. and close to two fifths of those in New York City showing evidence of use of more than one drug.² Data from the D.C. project also indicated "...that drug using arrestees are 50 percent more likely to be rearrested before trial than non-drug users."³

As further evidence of the drug/crime linkage, Ball, Shaffer, and Nurco reported that heroin addiction in the United States is associated with exceedingly high crime rates, and many of the offenses are serious and destructive.⁴ Each addict in the study committed offenses some 255 days a year while "on the street." It was determined that the start of addiction among those studied was associated with a high level of criminality, that the high rate continued over numerous subsequent periods of addiction, and that criminality decreased over successive non-addictive periods.

How Urinalysis Fits into TASC: Ten organizational and operational elements are identified and defined in the Bureau of Justice Assistance's program brief on Guidelines for Implementing and Operating Treatment Alternatives to Street Crime (TASC) Programs.⁵ These elements have been found critical for successful TASC programming. Four of the five operational elements can be accomplished, at least in part, by incorporating urinalysis within a TASC program. The elements are:

Element 7: Screening procedures for early identification of TASC candidates within the justice system.

Element 8: Documented procedures for assessment and referral.

Element 9: Policies, procedures, and technology for monitoring TASC clients' drug use/abuse -- through urinalysis or other physical evidence.

Element 10: Monitoring procedures for ascertaining clients' compliance with established TASC and treatment criteria and regular reporting to referring justice system components.

Element 7 requires documented procedures for initial screening and identification of TASC clients from the total pool of detainees, arrestees, and offenders in the criminal justice system. TASC seeks drug using clients from that pool. At the point of initial screening, a baseline urine sample can be collected to document drug use and to identify the types of drugs involved.

Element 8 requires documented procedures for assessment and referral. Assessment involves confirming the client's drug-dependent status and determining the appropriateness of a specified type or modality of substance abuse treatment. Again, the client's baseline urinalysis will complement the written assessment and help ensure appropriate referral to treatment.

It should be noted that in both elements 7 and 8, urinalysis is only part of a total procedure for screening and assessment. Other tools must complement urinalysis for a complete history of the client's drug-dependent status and criminal justice involvement.

Urinalysis is basic to program elements 9 and 10, which require reliable technology for monitoring TASC client drug use status to ascertain compliance with

TASC and treatment criteria, and to report client progress to referring justice system components on a regular basis. Urinalysis is required to accomplish these elements. In addition, urinalysis is used to provide objective documentation to the courts which helps to ensure a credible monitoring system.

For a detailed discussion of the TASC critical elements, please refer to the TASC Program Brief, available from the Bureau of Justice Assistance, 633 Indiana Avenue, N.W., Washington, D.C. 20531.

The Role of Urine Testing: The overall goal of urine testing in TASC programs is to change client behavior and thereby reduce criminal activities. Urine testing, as part of TASC, has a three-phase role. First, urinalysis is a component of the initial screening to identify potential candidates for TASC services. Second, after the screening process, urinalysis is used to provide baseline information on the nature of a client's drug dependency and thereby allows appropriate referrals to treatment services. Finally, urinalysis is used to monitor treatment progress and provide credible and timely information on a client's continued use of or abstinence from specific drugs. As part of the monitoring phase, urine testing may also be used therapeutically to assist a client's treatment plan.

Thus, urinalysis is useful as both a diagnostic tool for screening and assessing potential TASC clients and as a therapeutic and monitoring tool for reinforcing case management and treatment goals.

Uses and Misuses of Test Results: Any program that undertakes urinalysis has the responsibility for ensuring that test results are used carefully and appropriately.

Urinalysis results are used to maintain credible and timely information on a client's use or abstinence from specific drugs. Results may be communicated to appropriate criminal justice personnel (e.g., judges, parole and probation officers) in accordance with the nature of the court order and/or the client's voluntary release of information to designated agencies.

Urinalysis results can be a positive part of treatment and/or TASC services if the results are presented appropriately to the client. For example, should a client who continues drug use during treatment deny

such use, positive urinalysis results can be used to confront the denial. Even occasional use can be spotted before the client falls back into a pattern of regular use. Urine testing often provides a way for clients to survive drug-free. It may help them to resist peer pressure to use drugs, and if a random collecting and testing program (see Collecting and Handling Specimens) is used, the daily phone call to ascertain whether a urine sample is due reminds them that they are part of the program every day.

Overall, test results that are timely and properly used are essential for working with people who, by the very nature of their addiction, are impulsive. Unless the results are available within a very short time, the clients may not connect the consequences to the action. A response time of no more than 48 hours, and preferably less, is recommended.

Extreme care must be taken to avoid misusing urinalysis results. Among the common misuses of test results are:

1. Using test results too quickly and too punitively, without confronting the client.
2. Using test results too narrowly (e.g., one dirty urine equals jail). Drug abuse is fraught with relapse.
3. Failing to detect the drugs the client is using. It is important to identify a client's potential for drug use and his/her drugs of choice, as well as to know the combinations of drugs that may be in vogue. A baseline urinalysis and occasional full screens are recommended.
4. Failing to impose customary sanctions when testing shows drug use can weaken an agency's credibility and effectiveness.
5. Failing to maintain confidentiality. Federal regulations require that all urinalysis results be kept confidential. A written confidentiality policy is essential for all staff involved in the collection and testing process. Additionally, all disclosures of test results must be authorized in writing. If and when results are transmitted by telephone, only designated staff should give and/or receive test results, and all results transmitted by telephone should be followed up in writing.

What are the Legal Issues?

TASC programs must be aware of the legal issues surrounding urinalysis and should seek legal counsel when setting up their urinalysis programs. In a recent article on drug testing in Washington, D.C.'s Pretrial Release Program, three major categories of legal issues relating to urinalysis were identified: "the constitutionality of collecting urine samples; challenges to the reliability of the technology; and challenges based on chain of custody."⁶

Constitutionality of Collecting Urine Samples: Legal issues regarding urine collection vary according to the status (i.e., pretrial or posttrial) of the TASC client. Pretrial arrestees are individuals who have been charged, but not convicted of a crime. Because of the special status of pretrial clients, TASC programs must be especially cautious in applying consequences and sanctions to this population. Pretrial clients have the full protection of constitutional guarantees, including the Fourth Amendment's prohibition against unreasonable search and seizure, the Sixth Amendment's guarantee of the right to counsel in criminal proceedings, and the Fourteenth Amendment's right to due process. In a 1981 publication on drug testing, the American Correctional Association (ACA) cautions that "...urinalysis for pretrial detainees may present unique problems not present in any post-conviction context."⁷ Even in voluntary urinalysis programs such as TASC, ACA warns that the courts will look at the circumstances surrounding the urinalysis agreement, particularly if there is any attempt at coercion.⁸ Especially for pretrial clients, TASC programs must ensure that the clients consent to urinalysis voluntarily and with full understanding of the collection procedures, client responsibilities, and the consequences of refusal, failure, and/or positive test results. Since TASC programs seek referrals of clients from the criminal justice system at the earliest possible point, many TASC clients may fall into this pretrial category.

For those clients who have already been convicted of a criminal offense, there is far less risk of legal challenges on the constitutionality of urine collection and testing than for pretrial clients. A Supreme Court ruling (*Robinson vs. California*, 1962) defined chemical addiction as an illness and held that States could force offenders to submit to treatment and apply criminal sanctions for failure to comply with the treatment program.⁹ The courts have generally

ruled that the amount of evidence needed in parole and probation revocation hearings is not nearly as great as that required in other types of legal proceedings. A judge must be "reasonably satisfied" (evidence a reasonable person would accept to support a conclusion) that a violation of parole or probation conditions has occurred. This is, undoubtedly, more permissive than the "proof beyond any reasonable doubt" standard required in criminal trials and the civil standard that requires that both the quality and quantity of evidence in support of a position be more convincing than the evidence offered in opposition.

Thus, among convicted clients, legal precedence allows the criminal justice system to require treatment as a condition of sentencing and to impose sanctions for an offender's failure to comply. TASC clients mandated to case management and urinalysis monitoring as a condition of parole or probation can face punitive sanctions as a result of failure to comply with urinalysis. As with pretrial clients, convicted clients must be made aware of the possible consequences of refusal, failure, and/or positive results.

Reliability/Accuracy of the Technology: None of the technologies or methods commonly used to detect drugs in urine is 100 percent accurate all of the time. According to Mr. William C. Collins, an expert in correctional law and a former Senior Assistant Attorney General for the State of Washington, "the burden of proof for convicted offenders in proceedings such as probation or parole revocation hearings is far lower than that of a criminal trial. Therefore, especially in those contexts, courts are willing to find that a less than 100 percent accurate test result meets the relevant burden of proof to show a violation of a condition of release." Mr. Collins cites the following cases in support of that opinion: *Spence vs. Farrier* 807 F.2d 753 (8th Circuit, 1986); *Peranzo vs. Coughlin* 675 F. Supp. 102 (SDNY, 1987); and *Smith vs. State* 208 So.2d 482 (Georgia, 1983).

Chain of Custody: Chain of custody procedures are perhaps the most important aspect of a urinalysis program. Chain of custody is a legal term that refers to the procedures and policies that govern collecting, handling, storing and testing of urine samples, disseminating results, and retaining samples in a manner that ensures confidentiality and accuracy. Strict chain of custody procedures are needed to

ensure that the results are correctly matched to the person who donated the specimen. Starting at the time of collection, a urine sample's chain of custody must be documented and protected.

At a minimum, the chain of custody in a TASC program should cover the following elements:

- o Client consent - Clients must sign an informed consent form for participation in TASC. They must be told the exact procedures to be followed in the urine testing program, the consequences of refusal or failure to provide a urine specimen within a specified time period, and the consequences of a positive result.
- o Release of information - In accordance with Federal confidentiality requirements, the client must understand the purposes for release of information. And, the client must consent in writing for this disclosure to specified individuals or agencies.
- o Collection process - Urine collection must be observed. Observations will help ensure that the sample sent for testing belongs to the client and that the sample is not tampered with or altered. Specimens must be properly labeled on the container and not the lid, and then placed in a secure area for subsequent testing. Collection should be documented on an appropriate form that is completed by the staff person who observed the collection.
- o Test documentation - Test results should be recorded on an appropriate reporting form. Documentation should include the client identifier number, the date and time of the test, what drugs were tested for, what testing method was used, results, and the signature of the person conducting the test.

Chain of custody documentation answers the question: Were the specimen and the reported results correctly matched? Sound procedure requires that the sample be secured in a manner which ensures that it cannot be tampered with. Sound procedure further requires that each time a sample changes hands or is moved from one place to another, the sample is documented and kept in a secure area to ensure against inadvertent or intentional switching with another sample.

Before a urine testing program is put into operation, chain of custody procedures must be clearly defined. Programs setting up a urinalysis program can seek assistance from a variety of sources (see Resource List) for aid and advice in developing chain of custody procedures and policies.

Court Testimony: Courtroom testimony is most often sought as a result of the TASC client's failure to comply with conditions imposed by the court, TASC, or the treatment provider. Therefore, TASC staff involved in urine surveillance, testing procedures and the case management/reporting of urine results to criminal justice authorities must be prepared to defend both the chain of custody and the drug testing methodology used. If a TASC client has been terminated from the program as a result of continued positive urinalysis results, it is important that staff be knowledgeable in all matters that relate to chain of custody, TASC monitoring policies and procedures, and confirmatory testing information. TASC staff are not required to be legal experts on constitutionality issues or specific aspects of the technology used, however.

For actual testimony, there are certain preparatory actions that can be taken:

- o Know the chain of custody employed by your individual program or the treatment program of record. Specifically, be familiar with:
 - Procedures for specimen collection;
 - Type of technology used for specimen analysis;
 - How a positive specimen result is confirmed;
 - Procedures for reporting this information to the court; and
 - Documentation stipulating each of these steps/procedures.
- o Be prepared. Review the file. Be aware of the chronology of events and dates of significance.
- o Familiarize yourself with Federal and state confidentiality rules and regulations.

Also, while testifying:

- o Do not assume the court's knowledge of urinalysis testing or technology.

- o Do assume that the defense attorney will question your credibility.
- o Stay calm. Do not become defensive.
- o Answer questions directly and to the best of your ability. Do not answer questions of which you are unsure of the answer.
- o Be professional.

Testing of Juveniles: TASC programs that target juvenile offenders and accept referrals of juveniles from the criminal justice system need to consider whether urinalysis can and should be applied to this population. A wide range of issues must be addressed before undertaking juvenile testing. For example, some states require parental consent before the urine samples of juveniles can be tested for drugs while others do not. In Washington, D.C., juvenile courts can act in a parental role and thus order urine drug testing without the prior consent of the juvenile's parents. In fact, the Washington, D.C. juvenile courts

have broader authority over such issues than do adult courts.

Other issues such as who can be tested, how tests are conducted (including how observation of urination takes place), and how test results are used may also need to be considered. Both the Phoenix, Arizona TASC Program and the Washington, D.C. Pretrial Release Program have established successful urine testing programs for juveniles. TASC programs considering urine testing for drug use by juveniles may want to contact these agencies (see Resource List) for in-depth information on the juvenile testing issue. In any case, it is imperative that the legal ramifications of juvenile testing in a given state or jurisdiction be explored and understood before initiating a urine testing program for juveniles. The City or County Attorney, the Presiding Judge of the Juvenile Court, and Legal Assistance Branch of the Juvenile Court may be contacted to determine municipal codes or state statutes relating to the testing of juveniles.

Operating A Urine Testing Program

Conducting the Tests - The Technology

The most frequently used procedures for determining drug use through urinalysis fall into two broad categories: chromatography and immunoassay.

Chromatography is a method of chemical analysis in which substances in a sample (such as drugs in urine) are separated by extracting or causing them to attach to some type of material or particles. The separated substances are then identified and measured.

The chromatography procedures commonly used to detect drugs in urine are thin-layer chromatography (TLC) and gas chromatography/mass spectrometry (GC/MS). In thin-layer chromatography, a measured amount of a urine specimen is put onto a glass plate that has been coated with a thin layer of a material to which components can become attached (such as silicon). The coated plate is put into a container that has a special chemical solution in it. The chemical solution moves up the plate and the components of the urine sample are separated according to their different abilities to migrate. The separated components can then be identified by spraying the plate with a solution that causes the components to develop a color. The technician interprets color and migration patterns to determine the presence of specific drugs. Thin-layer chromatography is not readily adaptable to on-site use, but the materials used are relatively inexpensive. However, it is not as sensitive as other methods. Other substances in the urine may interfere with proper identification of the drug in question, and results are highly subjective based on the individual technician's interpretation of the color and migration patterns.

In GC/MS, a gas such as helium or nitrogen transports the urine sample to a column where the materials are to be measured and separated. The gas then transports the separated components onto a detector for identification and measurement.

The detector in GC/MS procedures is known as a mass spectrometer. It identifies a substance by its

"mass to charge ratio." The mass spectrum of a substance is specific for that particular substance. GC/MS is a very sensitive procedure. However, it requires highly technical, expensive equipment that is not easily adaptable to on-site use, and it can be properly run only by highly-trained technicians.

Immunoassays use antibodies to detect the presence of drugs. An antibody is a protein that will react only with a specific substance (such as a specific drug) or group of very similar substances. The substance with which the antibodies react is called an antigen. A label or tag is attached to a sample of the drug being tested. The tag is a substance that can be identified and measured after the antigen/antibody reaction takes place. The drug containing the tag is called "tagged antigen." Commonly used immunoassay tags include radioactive material, enzymes, or fluorescent material (i.e., material that glows). Tagged antigen, urine that may contain the drug in question (untagged antigen), and antibodies that react specifically against the drug being tested are mixed together. The tagged antigen and the untagged antigen compete to react with the antibodies, and the free or unused tag that remains is considered an indicator of the presence or absence of the drug in question.

The immunoassay procedures used in urinalysis differ primarily by the tag used and the method of detecting unused tagged antigen. In enzyme immunoassay (EIA), an enzyme (a protein that helps chemical reactions take place both within and outside of the body) is used as the tag. The change in enzyme activity in the tagged antigen, antibody, and urine mixture serves as an indicator of the amount of drug present in the urine sample. EIA procedures are sensitive, readily adaptable to on-site use, more expensive than TLC but less expensive than GC/MS, and tests can be performed by trained paraprofessionals. Reagent costs are inexpensive, but instrumentation costs vary.

Fluorescence polarization immunoassays (FPIA) use a substance that "glows" or fluoresces as its tag. The tag is subjected to polarized light, and the degree of

polarization is measured to indicate the drug present. As with EIA, FPIA methods, which are relatively inexpensive, are sensitive and readily adaptable to on-site use, but other substances present in the urine sample may also fluoresce thus interfering with measurement of a specific substance. Polarization, however, helps reduce the degree of interference.

In radioimmunoassays (RIA), the antigen is tagged with a radioactive substance. Drug presence is indicated by measuring the amount of radioactivity present after the antibody, tagged antigen, and urine sample react with one another. RIA procedures can detect small amounts of drugs in a sample, and interference by other substances is not a problem. However, only specially trained, licensed technicians and laboratories can work with radioactive materials, and special requirements must be met in disposing of the radioactive materials. In addition, there are several different steps and instruments used in analyzing the samples. Reagent costs are inexpensive but instrumentation costs are expensive since several different instruments are needed. Thus, RIA procedures are not suited for on site-use.

On-site vs. External Testing

One of the most important decisions to be made when establishing a urine testing program within TASC is whether to test urine samples on-site (in-house) or to send specimens to an external or commercial laboratory for testing. Issues such as turnaround time from receipt of specimens to receipt of results, direct and indirect costs, staff availability and training, technology/methodology choice, anticipated volume of testing, facilities and space allocation all play a major role in the decision-making process.

In on-site testing, a laboratory is set up at the designated TASC facility and staffed by TASC personnel. Some advantages of on-site testing are:

- o Rapid access to test results - Test results can be obtained immediately, and the normal turnaround time need not be greater than 24 hours. When working with drug offenders, it is critical to respond rapidly to positive test results. Delays reduce the relevance of urine testing.

- o Greater control over chain of custody - Because fewer people handle specimens from the collection process through the testing and reporting processes, and because specimens never have to leave the facility in which they were collected, a much tighter chain of custody can be maintained.
- o Cost-effective for large volume testing - For testing over 200 samples per month, an on-site testing program provides the benefits of reduced costs. Programs can test for selected drugs based on a client's drug use history, with occasional full screen testing as necessary. This procedure maybe less expensive than the packaged tests offered by most external laboratories. Additionally, costs are reduced as the testing volume increases since reagents (the chemicals used in the tests) are considerably less expensive when purchased in large quantities.

In external testing, urine specimens are sent to a commercial laboratory for testing. Advantages of using an external laboratory include:

- o Highly trained technical staff - In a well selected external testing facility, urinalysis is conducted by individuals with the knowledge, training and experience to allow for a greater degree of confidence in test results.
- o Availability of expert witnesses - Because of their credentials, laboratory staff can be confidently called upon to serve as expert witnesses and answer technical questions in legal proceedings.
- o Wider range of testing options - An external laboratory will have the facilities, equipment, and staff to utilize a variety of testing methodologies and thus be able to accurately test for a greater variety or combination of drugs.
- o Cost-effective for small volume testing - It may be more cost-effective for a program that collects fewer than 200 samples per month to send the samples to an external laboratory. Reagents can be very expensive in small volumes, and many commercial laboratories sell packaged tests such as ten preselected drug screens for a flat fee.

Thus, a preselected testing package could service a small operation in a more cost-effective manner.

When one looks at the advantages of on-site and external testing, it is obvious that the positives for one testing site choice become negatives for the other. For example, it is unlikely that highly trained technicians whose sole job is to conduct laboratory tests would be a part of a TASC program's staff. In fact, for the technologies that are designed for or adaptable to on-site use, it would be more cost-effective to train selected persons from existing staff to conduct the tests, thus sacrificing some levels of knowledge and expertise. Also, because of the need for highly sophisticated and expensive instruments and equipment for certain methods, an on-site facility does not have the range of testing options found in an external laboratory. On the other hand, however, when specimens leave the facility in which they are collected and are sent to an external laboratory, TASC staff lose chain of custody control. The TASC staff must depend on the staff of the external laboratory to have the same level of understanding and concern for strict chain of custody as the TASC staff does. When specimens are tested externally there may be a much greater time lapse between specimen collection and receipt of results. External facilities usually require a 48- to 72-hour turnaround time. Delays can reduce the relevance of urine testing.

On-site Testing

Costs - If a decision is made to establish an on-site testing program, items such as equipment and supplies (including reagents, collection bottles, gloves, disinfectants, and distilled water) must be purchased. Most manufacturers of testing equipment allow the leasing of their equipment, and the lease cost may be reduced as the quantity of reagents purchased increases. In fact, some manufacturers may offer a pricing package where there is no fee for lease when major quantities of reagents are purchased.

Leasing equipment may be preferable to purchasing, especially in the initial stages of setting up an on-site program. If leasing is considered, programs will want to ensure that the manufacturer's leasing package provides the following:

- o The company maintains the equipment at no cost;

- o No major capital investment is required for start-up;
- o Lease payments are spread over the year and may be adjusted or waived as volume increases; and
- o Leased equipment may be purchased later at a depreciated cost.

In addition to lower start-up costs, leasing of equipment ensures that if a decision is made in the future to discontinue or change the testing operation, the program will not be saddled with obsolete equipment for which there is very little market nationwide. Other expenses that must be considered include staff time required for court testimony should test results be challenged and the setting up of a secure area where specimens can be stored (refrigerated and/or frozen), where reagents and supplies can be stored, and where test results can be filed.

Staff Selection and Training: To qualify for and be selected as laboratory staff, individuals should be willing to perform repetitive work, be detail-oriented, have a basic understanding of computers, appreciate and practice strict hygienic techniques, and have a positive attitude toward the work involved.

Many of the companies that manufacture drug testing instruments and reagents provide training on how to operate the instruments and run the tests. Usually the entry level training is inexpensive, and the trainees may receive an operating certificate upon completion of the training course. Most companies also provide advanced level training courses. Typically, the advanced training covers operating and understanding the equipment, discussing various drug testing techniques and methodologies, interpreting results, and professional drug testing practices, such as record keeping. While entry level training is a good introduction for all staff involved in the urine testing program, advanced training is recommended for all supervisory staff and urinalysis technicians. In addition to staff training, manufacturers also provide technical assistance and troubleshooting in the on-site laboratory for technical problems that might arise when operating the drug testing equipment.

In addition to the drug testing training offered by the manufacturers, comprehensive in-house training

that covers agency procedures and policies, hygiene and safety precautions, laboratory maintenance and clean-up procedures, and preparation for court testimony should be provided by TASC management.

Proficiency Testing - To maintain the credibility of the testing staff, the procedures, the equipment, and the results, the on-site staff should participate in quarterly proficiency testing. Proficiency testing involves analysis of urine samples supplied to the laboratory by a proficiency agency. The samples may or may not contain drugs. Urinalysis technicians test the samples for the presence or absence of drugs, identify the drugs that are present, and return the results to the proficiency agency for scoring. Proficiency tests are provided for a fee by the American Association of Bioanalysts, the American Association of Clinical Chemists, and the College of American Pathologists. (See Resource List for a listing of proficiency testing agencies.)

Health and Hygiene Risks - Infection control techniques and safety precautions must be part of the training program for all staff involved in urine testing. There is no evidence that the Acquired Immune Deficiency Syndrome (AIDS) can be transmitted through urine. However, viruses such as hepatitis A and B have been found in urine samples, and there is a risk of transmitting these diseases if proper handling techniques are not used.¹⁰ The following precautions should be observed in the on-site laboratory:

- o Avoid contact with urine and skin by using gloves when handling specimens.
- o Clean up spills immediately using soap, water and disinfectant on all surfaces where the spill occurred.
- o Avoid hand to mouth contact in the laboratory -- do not eat or smoke.
- o Set up a regular regimen of hand washing, disposal of gloves immediately after use, and washing hands again after gloves are removed.
- o Clean urine and chemicals from all instruments and equipment.
- o Regularly monitor adherence to infection control techniques and safety precautions.

It is crucial that proper hygiene and cleanliness standards are established, understood, and practiced at all times.

External Testing

Selecting a Laboratory - If after considering the issues a decision is made to use an external testing facility, it is essential to select a laboratory that will best suit the needs of the TASC program. Not all commercial laboratories operate in a manner that will stand up to legal challenges, so it is important to have a set of criteria and guidelines by which to judge and select a commercial laboratory. Issues to consider in the selection process include:

- o Laboratory certification and proficiency - While there is no nationwide certification process for urine drug testing at this time, there are laboratories that participate in voluntary proficiency programs. Such voluntary participation can serve as an indicator of the laboratory's commitment to accuracy.
- o Chain of custody procedures - Look for evidence that the laboratory staff understands the need for and is committed to maintaining a tight chain of custody.
- o Staff qualifications - Are staff members professionally trained and certified?
- o Quality assurance (QA) - Quality assurance procedures provide constant monitoring of all aspects of the laboratory operation from receipt of specimens through reporting of results. An acceptable laboratory will have written QA procedures.
- o Expert testimony - Will the laboratory provide experts to describe and defend drug testing methods and defend the validity of results should legal challenges arise?
- o Costs - Are packaged tests of a given number of preselected screens available for a flat fee? Are materials such as specimen bottles, sealers, and mailing or transporting containers included at no extra cost?
- o Range of tests - What testing methodologies are used, and what drug tests can be run?

- o Turnaround time - What is the time period from receipt of samples to receipt of results? Can telephoned results be available in 48 hours or less?

Collecting Specimens

Another of the many decisions to be made in a urine testing program is whether urine samples will be collected and tested randomly or according to a pre-established schedule.

With scheduled testing, clients are given specific dates and times when they must provide a urine sample for analysis. In random testing, clients are required to provide a urine sample on notice. Each collection method has its advantages and disadvantages. Scheduled collections are less confusing to the clients than are random collections, and they are easier for agency staff to set up and maintain. Perhaps the major drawback of scheduled collections is that it is possible for clients to tailor their drug use to conform to a pattern of scheduled urine collections in order to escape detection.¹¹ To compensate for individuals who attempt to outwit a scheduled system of collection, urine samples need to be collected at least two -- preferably three -- times per week versus four to six times per month with random collections. The need for increased frequency of testing makes scheduled collections more expensive than random collections.

In a random collection system there is a greater chance to detect drug use because clients have less of an opportunity to tailor their use. In many of the agencies that collect urine samples randomly, clients are assigned a color. They are instructed to phone in daily to a taped message that tells them if their assigned color is scheduled for collection that day. The rate of collection and testing averages four to six times per month per client, thus making random collection two to three times less expensive than scheduled collection. Random collections are not free of drawbacks; perhaps the greatest of which is that if they are to be truly random, they are difficult and tedious to establish and maintain without the aid of a computer. Without computerization, patterns of collection that are easily discernable by the clients may develop. Care must also be taken to keep track of how frequently any given client or group of clients is tested to avoid under-testing one group while over-testing another during a given time period.

In either a scheduled or a random collection system, full drug screens that test for a comprehensive list of possible drugs of abuse will need to be run on an intermittent basis (such as every fourth test run), while one or two known drugs of abuse can be tested more regularly. Client profiles and drugs in vogue in a given area dictate which drugs should be tested for on a routine basis.

Handling Specimens

When clients are scheduled for urine testing, the donation of urine must be observed by a designated staff person (of the same sex as the client) in order to ensure that the sample to be tested belongs to the client and has not been tampered with. Prior to specimen collection, the specimen bottle must be properly labeled. Information such as client number or other identifier, date, time, and staff observer should be typed or written in indelible ink on a waterproof label. The label should be affixed to the bottle, not its cap. The designated staff observer should escort the client to the toilet, hand the client the labeled specimen bottle, observe the urination, and immediately take control of the bottle when the client has finished. The observer should cap the bottle and seal the cap with tape which is then initialed by both the observer and the client while they are still in the toilet facilities. The observer should then deliver the specimen to a secure storage area for subsequent on-site testing or submission to an external laboratory.

During the collection process, the specimen bottle should be handled only by the observer and the client. The client should handle the bottle only during urination and when initialling the cap.

Standard Operating Procedures

Whether an agency operates an on-site testing facility or sends its urine specimens to an external laboratory, it must have written procedures and policies for the urine testing program. Because the essentials of each program differ, the operating procedures need to be developed to address each individual agency's program.

Written standard operating procedures serve to protect an agency against legal challenges to the urine testing program and provide documentation of the proper functioning of the testing program.

Summary

This discussion of urinalysis as an aspect of TASC programming is intended to be a useful starting point for TASC agencies wishing to establish a urine testing program or make changes to an existing one. Because many questions and issues may still be unanswered, a resource list of contacts has been included. The reader is encouraged to contact these resources for advice and guidance.

In TASC programs, urinalysis has been most effective when used as a component of a comprehensive case management program. Testing of urine specimens should not be undertaken unless the process is clearly defined and all of the elements are in place for collection, handling, testing, retention, and use of results.

Glossary

Case Management Plan: an individualized scheme for securing, coordinating, and monitoring the appropriate treatment interventions and ancillary services for each TASC client's successful TASC, treatment, and justice system outcomes.

Chain of Custody: the policies and procedures that govern collection, handling, storage, and testing of a urine specimen and dissemination of test results in a manner that ensures that the specimen and the results are correctly matched to the person who donated the specimen and that the specimen is not altered or tampered with from the point of collection through the reporting of test results.

Chromatography: a procedure used to identify substances, such as drugs of abuse in urine, based on separating or extracting the substances, allowing them to move or migrate along a carrier, and then identifying them.

External Testing: the testing of urine specimens by professional technologists or technicians at a commercial laboratory located away from TASC facilities.

Immunoassay: a procedure used to identify substances, such as drugs of abuse in urine, based on the competition between tagged and untagged antigen to combine with antibodies. The uncombined, tagged antigen is an indicator of the drug present in the urine specimen.

On-site Testing: the testing of urine specimens within TASC facilities using paraprofessional technicians.

Random Collection: obtaining client urine specimens for testing without the client's prior knowledge of when a specimen will be requested.

Scheduled Collection: obtaining client urine specimens for testing according to an established schedule.

Turnaround Time: the amount of time that elapses between receipt of a urine specimen in the laboratory and the availability of test results.

Urinalysis: the chemical analysis of urine to determine the presence or absence of substances. In the TASC setting, the substances being determined are drugs of abuse.

Endnotes

1. NIJ Research in Brief, Dr. Eric Wish, Ph.D., National Institute of Justice, October, 1985.
2. NIJ Reports, SNI 199.
3. Ibid.
4. "The Day-to-Day Criminality of Heroin Addicts in Baltimore," John C. Ball, John Shaffer and David Nurco, Drug and Alcohol Dependency, Elsevier Scientific Publishers Ireland, Ltd. 1983, p. 119.
5. Treatment Alternatives to Street Crime (TASC) Programs, Bureau of Justice Assistance Program Brief, January, 1987.
6. "Drugs and Crime: Controlling Use and Reducing Risk Through Testing." John A. Carver, J.D., NIJ Reports, SNI 199, p.7, September/October, 1986.
7. Drug Abuse Testing: Successful Models for Treatment and Control in Correctional Programs, "Chapter III, Legal Considerations in Urinalysis Screening," American Correctional Association, 1981.
8. Ibid.
9. Treatment Alternatives to Street Crime (TASC) Programs, Bureau of Justice Assistance Program Brief, January, 1987, p. 5.
10. Conversation with Dr. Charles Schade, National Institute on Drug Abuse Medical Epidemiologist.
11. Urine Testing for Drugs of Abuse, National Institute on Drug Abuse Research Monograph 73, 1986.

Resource List

The following list identifies only a few of the many experts in the field of urine testing.

Urinalysis/TASC Programs

L. Foster Cook, Director
Birmingham TASC Program
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(205) 324-0637

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Barbara A. Zugor
Executive Director
TASC of Maricopa County, Inc.
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Urinalysis/Pretrial Services

Jay Carver, Director
D.C. Pretrial Services Agency
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Washington, D.C. 20001
(202) 727-2911

John Jordan, Director
Drug Detection and Monitoring
D.C. Pretrial Services Agency
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Washington, D.C. 20001
(202) 727-6491

Timothy Murray
Director of Pretrial Services
Department of Corrections
1500 N.W. 12th Avenue
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(305) 547-7903

Urinalysis/Corrections

Hugh Alcott, District Supervisor
Department of Corrections, Parole Division
6736 Laurel Canyon Blvd.
North Hollywood, CA 91606
(213) 736-3691

Keith Rothschild, Director
Corrections Treatment Program
Drug Detection Unit
2600 Center Street, N.E.
Salem, OR 97310
(503) 378-5026

Urinalysis/Technology

Mark Fisher, Product Manager
Abbott Labs
Abused Drugs & Toxicology Systems
P.O. Box 15202
Irving, TX 75015
(214) 257-6553
(800) 527-2547
(FPIA Technology)

Clara Puccini
Technical Service Department
Roche Diagnostics
1 Sunset
Montclair, NJ 07042
(800) 526-1247
(RIA Technology)

SYVA Company
Technical Consultation Department
P.O. Box 10058
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(800) 227-8994
(415) 960-0720
(EIA Technology)

Urinalysis/Research and Evaluation

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Urinalysis/Clinical Laboratories

Morris Chedekel
Supervisor of Substance Abuse
Urinalysis
New York State Substance Abuse Services
Bureau of Laboratories & Testing
80 Hanson Place
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(718) 636-0400

Lori DeWeese, Marketing Manager
PharmChem Laboratories, Inc.
3925 Bohannon Drive
Menlo Park, CA 94025
(415) 328-6200

Urinalysis/Employee Testing

Dr. Michael Walsh
National Institute on Drug Abuse
Office of Workplace Initiatives
Rm.10A-53
5600 Fishers Lane
Rockville, MD 20857
(301) 443-6780

Gloria Harris, Chief of Departmental Drug Office
Department of Transportation
Office of the Secretary, M-19
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Proficiency Testing Agencies

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