Chapter 6

The Fundamentals of Drug Testing

Paul Cary, M.S.

I. [§6.1] INTRODUCTION

Effective abstinence monitoring of drug court clients through the use of drug-detection procedures is essential for program success. Drug testing provides an objective means of determining recent drug use. As the drug court judiciary works to define behavioral expectations by establishing compliance boundaries required for continued client participation, drug testing serves to monitor participant behavior so that the court may direct intervention strategies that promote an abstinent lifestyle. In order for case adjudication to be appropriate, consistent, and equitable, drug detection procedures must produce results that are scientifically valid and forensically defensible. This section will highlight some of the fundamental components necessary for developing and maintaining a successful drug-testing program.

II. [§6.2] DRUG TESTING RATIONALE

Key Component 5 of the Ten Key Components (included on page 217 of this benchbook) states: "Abstinence is monitored by frequent alcohol and other drug testing."[1] The benefits of drug testing in a therapeutic court environment are numerous. Drug testing:

Drug testing can provide courts with the data to aid clients in achieving recovery goals.

- Provides a deterrent to future drug usage—a therapeutic tool as participants develop and refine their coping and refusal skills aimed at rejecting new drug use opportunities;
- Identifies clients who are remaining abstinent and guides incentives or rewards;
- Identifies drug court participants who have relapsed, allowing for (1) rapid intervention, and (2) effective utilization of finite court resources by targeting those participants who most need assistance;
- Provides incentive, support, and accountability;
- Serves as an adjunct to treatment.

Achieving success in overcoming substance abuse often focuses on guiding clients up and out of despair while at the same time assisting them in avoiding a disastrous relapse. Successful abstinence monitoring via drug testing can provide drug courts with the requisite data to aid in attaining these recovery goals.

III. [§6.3] SPECIFICITY IN THE CLIENT CONTRACT

Defining client expectations in a drug court setting begins before the first sample is ever collected. The client contract should serve as an instructional instrument—both detailing the court's benchmarks and the participant's obligations associated with

the drug-testing process. The following examples are designed to provide greater specificity to the language of the drug court client contract as it relates to abstinence monitoring. Sample contract language includes the following:

Establish clear, written rules for drug testing.

> *I understand I will be tested for the presence of alcohol and other drugs in my system on a random basis according to procedures established by the drug court team and/or my treatment provider.*
>
> *I understand that I will be given a location and time to report for my test.*
>
> *I understand that it is my responsibility to report to the assigned location at the time given for the test.*
>
> *I understand that if I am late for a test, or miss a test, it may be considered as a positive test for alcohol or other drugs and that I may be sanctioned.*
>
> *I understand that if I fail to produce a urine specimen or if the sample provided is not of sufficient quantity, it may be considered as a positive test and that I may be sanctioned.*
>
> *I have been informed that the ingestion of excessive amounts of fluids can result in a diluted urine sample, and I understand that my urine sample will be tested to ensure the sample is not diluted.*
>
> *I understand that if I produce a diluted urine sample it may be considered as a positive test for alcohol or other drugs and that I may be sanctioned.*
>
> *I understand that substituting or altering my specimen or trying in any way to modify my body fluids or other specimens for the purposes of changing the drug-testing results will be considered as a positive test for drugs/alcohol and will result in sanctioning and may be grounds for immediate termination from drug court.*

Clearly establishing the court's ground rules in advance and communicating those expectations to participants (and staff) promotes compliance, reduces confusion, and mitigates concerns over potential sanction inequalities.

IV. [§6.4] SPECIMEN OPTIONS

Rapid technological advances in drug testing over the last decade have resulted in the development of reliable and accurate testing methods in a variety of specimens. The types of specimens that can routinely be used for court-mandated drug detection purposes are numerous. However, each specimen is unique and offers a somewhat different profile of a client's drug-use behavior over time. In addition, each specimen has distinct strengths and weaknesses when used in a criminal-justice

environment. Table 1 illustrates some of the major characteristics associated with common drug-testing specimens.

Table 1. Advantages and Disadvantages of Drug-Testing Specimens

Specimen	Detection Period	Advantages	Disadvantages
Urine	Provides a profile of both current and recent past substance usage. Detection time generally calculated in days for most drugs (excluding alcohol). See Table 4 which outlines additional detection window estimates.	• Provides detection for both recent and past usage. • Sample is generally available in large quantities for testing. • Drug and metabolites are highly concentrated; therefore easily detectable using both laboratory-based and on-site testing devices. • Numerous inexpensive testing options including on-site testing. • Uniform forensic criteria supported by years of court/legal case law and adjudication. • Established cutoffs.	• Invasive "witnessed" collection procedures required—necessitates same gender observed collections. • Specimen is susceptible to tampering via dilution or adulteration. • Drug concentration influenced by fluid intake; savvy clients may consume copious fluids to alter testing results. • Sample collection process can be time consuming. • Urine drug levels provide no interpretive data (no dose/concentration relationship).
Sweat (Patch)	Measures current (ongoing) drug use following patch application; past exposure not detected. Patch is FDA approved to be worn for up to 7 days.	• Ability to monitor 24/7 for extended periods, which provides a significant adjunct to the therapeutic process. • Relatively client tamper-proof. • Use has participant acceptability due to noninvasive approach. • Increased deterrent to drug use. • Cross-gender collections.	• Cannot detect prior drug exposure. • Limited collection devices and testing laboratories. • Potential risk of contamination during patch use. • Can be removed. • Limited number of drugs detected. • No on-site testing.
Oral Fluid (Saliva)	Provides recent usage detection. Many drugs cannot be detected beyond 24 hours after use.	• Noninvasive, cross-gender collections. • Specimen tampering reduced. • Data may relate to behavior/performance. • On-site testing available (but not recommended).	• Short detection window. • Specimen collection can be time consuming. • Limited collection devices and testing facilities. • Cutoffs not well established. • Limited number of drugs detected. • On-site testing devices pose forensic concerns regarding accuracy and reliability.

Specimen	Detection Period	Advantages	Disadvantages
Hair	Provides past drug usage only; detection period up to 90 days. Does not provide recent drug-use information (hair required to grow out of scalp prior to sample acquisition).	• Extended detection period. • Noninvasive, cross-gender sample collection. • Reduced specimen tampering. • No biohazard issues. • No poppy seed interference.	• Increased cost per sample tested. • Inability to detect recent drug usage. • Limited number of testing facilities. • No on-site testing. • Continuing concerns regarding ethnic, hair-color bias. • Use of "body" hair forensically controversial. • Testing may not detect single drug use event. • Date of drug use cannot be assessed.
Blood	Detects very recent usage of abused substances; detection time often measured in hours following use.	• Results both qualitative and quantitative may provide behavior/performance data in select circumstances such as driving while impaired (DWI). • Specimen tampering eliminated.	• Invasive sample collection—venipuncture required by medical staff. • No on-site testing. • Traditional urine-testing methods not applicable to blood analysis. • Limited sample volume can be obtained. • Detection of abused drugs in blood difficult for many laboratories due to low levels of drug. • High potential for false negative results. • Specimen not recommended for drug court abstinence monitoring.
Eye Scanning/ Pupilometer Instruments	Designed to determine impairment, recent use monitoring client only. Detection time measured in hours.	• No specimen collection. • On-site devices, immediate results. • Ease of operation.	• Monitors impairment rather than abstinence. • Short detection window. • May require additional specimen collections to confirm positives. • Not peer reviewed. • Devices may detect client fatigue as "positive."

There is no perfect drug-testing specimen—each has advantages and disadvantages, and each provides a somewhat different picture of a client's drug use history. Despite the variety of specimen types, urine remains the specimen of choice for drug court abstinence monitoring. With its longstanding history, urine is accepted as the gold standard for drug testing. In addition to the advantages listed in Table 1, most of the published scientific literature and legal/court precedence associated with drug testing has been established with urine. Further, its widespread use in workplace testing has resulted in standardized certification of urine-testing laboratories that has culminated in recognized quality practices. Urine has taken on additional importance with the advent of alcohol metabolite testing, such as ethyl glucuronide (EtG) and ethyl sulfate (EtS), which is discussed in greater detail later in this chapter.

Although urine may represent the specimen of choice for drug testing, sweat, oral fluids, and hair have also been accepted as alternative or complementary specimens for criminal justice applications. Transdermal alcohol detection devices (worn as ankle bracelets) have also demonstrated effectiveness for both detection and deterrence. Some of these alternative specimens have acknowledged benefits over urine particularly in their reduced susceptibility to tampering and the elimination of direct observation of collections (which require same-gender collectors). But, as noted in Table 1, there are also disadvantages associated with alternative specimens that the entire drug court team must take into account.

Factors to be considered in selecting a drug-testing specimen include goals of the monitoring program; personnel collecting the sample (level of training); volume of testing (which often influences the cost per test); list of drugs to be screened (not all drugs can be easily detected in every specimen type); turnaround time for results (critical for effective therapeutic intervention); and availability of testing. The overall cost associated with drug testing can vary widely between specimen types and between laboratory-based versus on-site testing devices. The adage "you get what you pay for" is especially relevant to drug testing. Drug courts should evaluate cost-benefit differences closely before choosing a specimen type or a testing method. Those courts relying on a lowest bid request for proposals (RFP) should develop those requests with sufficient detail and safeguards to ensure the integrity of the testing. The ability to access drug-testing results quickly and obtain expert technical assistance in addressing questions or concerns should not be overlooked.

When selecting a method of testing, consider:

- *Program monitoring goals*
- *Personnel availability and training*
- *Volume*
- *Drugs to be tested*
- *Report time*
- *Cost*

The choice of a drug-testing specimen must be veiwed in both a forensic and therapeutic context. Obviously, the court wants to ensure that drug-testing results are valid and legally defensible. But in a problem-solving court, the judiciary also needs to make certain that a

drug-testing specimen is *therapeutically* beneficial—a result that will support recovery. It is not sufficient for a specimen (or test) to simply provide an accurate profile of a client's drug use. It must also provide those results in a time frame that allows for rapid intervention using therapeutic measures in order to maximize behavioral change.

As an example of this therapeutic imperative, consider the advantages and disadvantages of hair as a specimen for drug testing in a drug court environment. While the ability of this specimen to extend the detection window back ninety days is a significant advantage, this benefit is tempered by the fact that hair testing does not have the ability to detect recent drug usage. Depending on the client, it may take anywhere from seven days to two weeks for head hair to grow out of the follicle (the part of the scalp that grows hair by packing old cells together) and obtain sufficient length for sampling. In other words, drugs cannot be detected or tested in a hair sample until approximately two weeks after the use of the drug. Consequently, if the goal of drug court is rapid therapeutic intervention in order to successfully modify behavior, hair testing does not serve this purpose well. Sanctioning a client several weeks after the prohibited drug use event likely promotes little behavioral change. The client's ability to link the offending behavior and the court-directed consequence is undoubtedly limited; therefore, the therapeutic value of a sanction (or incentive) is significantly diminished.

Oral fluid drug testing in the criminal justice environment has received considerable attention because the collection of this specimen is noninvasive, eliminates the need for same-gender collectors, and specimen tampering is significantly reduced. However, here again, the therapeutic aspects of oral fluid drug testing must be considered. While promotional efforts to market oral fluid testing may suggest otherwise, the scientific literature generally concludes that the drug detection window for abused substances in oral fluids is approximately twenty-four hours. Put another way, if a client smokes marijuana on a Monday morning, cannabinoids will likely not be detectable on Tuesday afternoon using oral-fluid-detection approaches. This limited detection window constrains the court's ability to provide a surveillance strategy that effectively monitors long-term abstinence and may hamper the use of meaningful incentives and sanctions.

The judiciary has relied on blood-testing data for decades in making sentencing decisions, most notably, the interpretation of blood alcohol concentrations for the purposes of establishing intoxication and impairment. However, blood testing for abused substances is generally *not* recommended and should be avoided for client surveillance in a drug court environment. Unlike urine testing, which tests primarily for drug metabolites using a longer detection window, blood analyses often attempt to identify the parent (unmetabolized) drug compound. For many abused substances, the parent drug is only detectable for a matter of hours, rendering blood testing not amenable to an abstinence monitoring program. Blood also represents a rather dirty specimen because it contains protein, blood cells, lipids, etc., and is obtainable in only limited quantities, making blood a much more challenging drug-detection matrix. The use of traditional urine assays to screen blood samples is strongly discouraged because urine cutoffs are not appropriate for the concentrations of drugs in blood (producing many false negative results). Blood drug testing is more commonly employed in medical examiner death investigations or in driving while impaired by drugs (DWI-D) cases.

V. [§6.5] SAMPLE COLLECTION ISSUES

Particularly for urine, sample collection procedures may represent the single most important component of a credible drug court abstinence monitoring program. Failure to collect a valid sample puts at risk the court's confidence that the testing accurately reflects client drug-use behavior. If clients, in order to avoid detection of surreptitious drug use, tamper with their sample, then procedures and provisions put in place to ensure quality results may be rendered useless. Requiring two essential elements can significantly enhance valid urine sample collections: random client selection and witnessed collections.

For testing to correctly assess the drug use patterns of program participants, it is crucial that samples be collected in a random, unannounced manner. The more unexpected and unanticipated the collection regime, the more accurately the testing results will reflect the actual substance use of a drug court client population. Drug courts need to appreciate the value of the element of surprise from an abstinence monitoring standpoint (relapse detection). If clients never know when they are going to be tested, then opportunities for them to use drugs during known testing gaps are reduced. As a result, unexpected collections have a better chance of identifying new use if it has occurred. Further, if clients never know when they are going to be tested, opportunities for them to engage in sample tampering strategies to avoid detection are also reduced. Some testing protocols mistake frequency for thoroughness. In other words, believing that testing three to four times per week (e.g., Monday, Wednesday, Friday) is equally sufficient and effective coverage may be erroneous because it is on a predictable schedule. Courts that relinquish the element of surprise do so at their own risk and may fall victim to creative clients who may find opportunities to subvert the program's objectives.

Test as often as you can afford, but twice a week is the minimum.

Another strategy that diminishes the opportunity for participants to engage in sample tampering tactics is limiting the time period between client notification of a drug test and the time that the sample collection actually occurs. While there are numerous factors that constrain the court's sample collection timing and a client's ability to travel to the collection site, it is important to limit the interval between notification and collection. The more effective a court is at shrinking this time period (should be no longer than a few hours), the greater the success of the program's deterrent and monitoring efforts.

Developing multiple and evolving techniques to randomize the sample collection process is essential. The use of code-phone or automated call-in systems and surprise home contacts are just two techniques to further randomize the sample collection process. The American Probation and Parole Association's drug-testing guidelines state: "The greatest weakness of scheduled collections is that clients may also schedule their drug use to escape detection."[2] Similarly, the Drug Court Clearinghouse and Technical Assistance Project at American University, funded by the Office of Justice Programs, recommends as follows: "Random testing prevents participants from planning ahead and avoiding detection."[3]

The importance of witnessed collections (for urine monitoring) cannot be overemphasized. Urine collections that are not witnessed (direct frontal observation) may be of little or no assessment value in determining a client's recent drug use history. Courts must understand the nature of the disease that is substance abuse. The ramifications of a positive drug test (sanction, imprisonment, etc.) combined with the denial component of substance abuse are sufficient motivations for clients covertly using drugs to tamper with their sample to produce a false negative finding. The success of testing procedures is predicated on a valid specimen. The most successful guarantee that clients will produce a legitimate specimen is direct observation of collections. Drug courts can employ the best testing methods available; however that testing may be worthless if the sample has been tampered with by the participant prior to the analysis. Courts should be creative in establishing evolving procedures designed to create multiple sample collection schemes. For example, this may involve altering the days and times of the week for collection, collecting a client sample early in the day and another unscheduled sample later that same day, collecting samples on sequential days, or collecting samples during surprise home contacts. When reviewing progress reports prior to drug court, a judge should be mindful of whether testing dates appear to be consistent with predetermined testing schedules.

A witnessed urine collection necessitates same-gender observation. It is understood that this obligation can pose a hardship for some programs with a disproportionate number of male clients and female staff or vice-versa. However, because of the importance of direct observation, court programs should be committed to developing appropriate solutions. Support agencies (treatment, law enforcement, schools, healthcare providers, etc.) should be enlisted to assist court staff with problematic collection situations. Many drug courts have a primary collection agency such as probation or treatment. These collection services can be augmented, by agreement or contract, with other agencies to increase the number of collections or aid in same-gender collections. In any case, when more than one agency is collecting samples for drug court, it is important for the program to review collection protocols carefully to ensure consistency.

The frequency of court-mandated drug screening is largely dependent upon specimen type, but is also dictated by client compliance, program phase, and court resources. Drug testing should be performed as often as the court budget will allow, particularly in the early stages of the program—when the court is establishing client expectations and boundaries. For comprehensive surveillance, urine drug testing should be performed at least twice per week. Not all drug court participants require testing at the same frequency. Individuals suspected of tampering and those clients with behaviors that suggest relapse should be tested more often (progressive testing strategies). Programs should strive to design testing patterns that fit the drug use profiles of the individuals being tested. All drug court clients are different—drug of choice, duration of use, motivation to succeed in the program, access to therapeutic resources, life skills, etc. It is useful to incorporate these unique aspects in creating client-specific testing regimens. For example, if a client's drug of choice is cocaine (a drug with a rapid elimination profile), that participant may require drug testing at an increased frequency in order to maintain sufficient abstinence surveillance. Consultation with drug court team members can provide valuable insights when developing client testing schedules.

The recognition that drug court samples represent forensic evidence necessitates appropriate specimen handling and possession protocols. Correctly annotated custody and control documents, tamper-evident sample seals, and locked storage compartments should be compulsory. Laboratory results are often called into question not because of scientific-related deficiencies, but because of the inability to establish a simple chain of custody.

VI. [§6.6] SELECTING THE DRUGS TO BE TESTED

The drugs included in abstinence monitoring detection should be a reflection of the substances being abused or used within the community or jurisdiction of the court. While laboratories and on-site vendors will offer predesigned drug-testing panels, the court should evaluate the population being tested and determine the most appropriate substances to be screened. Seeking input from law enforcement and treatment professionals can aid in the development of a suitable drug screening list. At a minimum, drug courts should consider screening for amphetamines, barbiturates, benzodiazepines, cannabinoids (marijuana), cocaine, opiates, and alcohol. Certain substances, such as steroids, inhalants, and hallucinogens, are difficult to detect using routine methods, or the testing can be cost prohibitive.

VII. [§6.7] TESTING METHODS

The drug detection methods used for drug court proceedings should meet three important criteria. The drug tests should be:

- Scientifically valid (utilize methods that employ proven technologies accepted by the scientific community and evaluated in peer-reviewed journals);
- Legally defensible (able to withstand legal challenge and have an established court track record that has undergone legal/judicial scrutiny);
- Therapeutically beneficial (able to provide an accurate profile of clients' drug use, produce rapid results for appropriate court responses, and quick treatment intervention as required to change behavior and support recovery).

The analytical process used by most forensic drug-testing programs utilizes a 2-step approach. The preliminary step (screening) is designed to differentiate samples that contain no detectable drugs from those samples that produce a reaction in the initial testing phase. Using urine as the sample for drug testing, this screening can be performed on-site (utilizing rapid test devices or instrumentation) or via laboratory-based testing. Samples that produce an initial positive determination (usually conducted by an immunoassay-based test) are often referred to as "presumptively positive." However, given that structurally similar substances can produce a positive test reaction in the absence of the target compound (actual drug being assayed), it is necessary to validate positive screening results in order to rule out the potential of a false positive by performing a confirmation procedure.

The second step, confirmation, is the process by which the positive results of the screening test are authenticated by reanalysis of the sample by an alternative testing method. Put another way, samples that are positive by the screening assay are double-checked using a second, *different* test to ensure that the first test was indeed accurate. Gas chromatography-mass spectrometry (GC-MS) provides chemical fingerprint identification of drugs and is recognized as the definitive confirmation technology. Confirmation of a presumptive positive test is one of the surest techniques to eliminate false positive results. A confirmation policy adds a greater level of fairness and certainty to the drug-testing process, while at the same time minimizing potential legal issues concerning the validity of test results. Unless a client admits to using the drug identified by the screening procedure (whether on-site or laboratory-based), confirmation of presumptive positive tests should be mandatory.

The imposition of sanctions can be traumatic for clients and can even be disturbing for court professionals with vested interests in their clients' success, particularly if there are concerns about the validity of the test results. A positive drug test is often the stimulus for court-imposed consequences. Doubts regarding the accuracy and reliability of drug-testing procedures can exacerbate those concerns over participant punishment. The confirmation of positive test results provides a large measure of confidence to the court's decision-making process and allows the judiciary to sanction clients without fear of wrongful or inappropriate penalties.

Client excuses or explanations for a positive drug test often include claims that over-the-counter (OTC) medications are the source of the "erroneous" results. And indeed, some OTC products can result in cross-reactivity or interference with testing that relies primarily on immunoassay methods. Regrettably, there is no master list that compiles all of the known medications and their propensity to cause false positive drug-testing results. Each drug method, from each manufacturer, has its own unique specificity toward potentially interfering compounds. As previously stated, confirmation of positive results resolves nearly all of these concerns. Questions related to cross-reactivity and specificity on screening tests should be directed to the drug test manufacturer. But beyond that, no drug court client should be allowed to consume OTC medications, poppy seeds, homeopathic preparations, vitamins, or supplements without express approval from the court. In addition, the prohibition of these products should be included in the drug court client contract.

It is understood that confirmation testing can represent an additional cost to the court. However, many programs shift this burden to the drug court participant. Clients' willingness to pay for their own confirmation procedure may indicate the sincerity of their denial. Making drug court clients pay for confirmation may also provide therapeutic leverage to break the denial process by encouraging admission of use of prohibited substances. This leverage can often be enhanced by program policies that increase the severity of imposed sanctions associated with a confirmed positive result (i.e., client is informed that sanctions will be doubled if usage is denied and the screening result is subsequently confirmed as positive). The cost of confirmation testing may be waived or reimbursed to clients in the event of a failure to confirm the result. Confirmation,

however, should not be withheld because a client cannot pay up front; find alternative forms of "payment" such as volunteer work. All clients should have equal access to confirmation and should clearly understand that they will be responsible for the cost if it is indeed positive.

Uncertainty in testing results can have a devastating effect on a drug court's ability to create lasting behavioral modifications in clients and can be discouraging to drug court personnel responsible for treatment, case management, and sanction imposition (judges). When drug testing is performed on site, within the purview of the court, it becomes the responsibility of the court, and ultimately the judge, to guarantee that the testing is accomplished in a forensically acceptable manner. Vigilance is required to ensure that quality testing products are used, that competently trained staff members perform the testing, and that resources for confirmation are readily available.

Regardless of the skill level of drug court personnel, the accuracy and reliability of results using on-site drug-testing procedures will likely not be equivalent to results obtained from a qualified forensic drug-testing laboratory. Research studies evaluating on-site testing versus laboratory-based analysis support this conclusion. This is not to suggest that on-site drug testing is somehow inherently imprecise and unreliable. The value of near-instant results is undeniable. The ability of the court to swiftly respond in an effort to enhance behavioral change is well recognized. However, precautions need to be taken to make certain that the client does not suffer untoward consequences because of the court's desire to achieve speedy results. The importance of confirmation of on-site positive tests cannot be overstated; however, it should again be noted that an on-site positive test might result in the client admitting to recent drug use. The use of effective on-site testing devices that have demonstrated accurate and reliable characteristics is also very important. Table 2 lists the advantages and disadvantages of on-site versus laboratory-based drug testing.

Judges should be aware of the significant concerns posed by drug testing performed outside the purview of the court. In an effort to refute court-mandated drug-testing results, on occasion, clients may attempt to obtain testing from alternative sources not under the court's control or supervision. Client advocates who believe (rightly or wrongly) that the court's procedures are flawed may encourage these alternative tests. The admission of these client-generated drug test results should only rarely be allowed into court proceedings as exculpatory evidence, and only under clearly defined conditions. The court rarely has insight into how these alternative tests were performed, under what circumstances the samples were collected, or even whether the sample tested belongs to the client in question. If the court requires independent validation of a positive test, the retesting should always be conducted on the original specimen—not one collected at a later time. Therefore, the court should arrange for all positive samples to be retained under proper custody and control procedures for some finite period of time following testing. Frozen or refrigerated sample retention, either by the off-site laboratory or by on-site testing personnel, for several weeks should allow sufficient time for independent testing to be requested, if necessary.

Table 2. On-Site Versus Laboratory-Based Drug Testing

Type	Advantages	Disadvantages
On-Site Drug Testing	• Rapid result turn-around time (quick reward for drug-free behavior or quick justification for sanctions). • Ease of use technology. • Potential for reduced testing costs. • No capital equipment expenditures. • Reduced training costs. • Elimination of specimen transport and storage issues.	• Increased cross-reactivity and interference (potential false positive results). • On-site testing often does not include quality control. • On-site testing often does not include testing for diluted samples (creatinine) and adulteration testing. • Testing personnel competency is often not assessed. • Reduced flexibility in testing panels (limited number of drugs tested). • Potential privacy or conflict-of-interest concerns.
Laboratory-Based Drug Testing	• Testing often provided by professionally trained technologists. • Use of approved scientific methods. • Integrated quality assurance. • Confirmation testing more readily available. • Creatinine and adulteration testing more readily available. • Toxicology expertise/forensic competency. • Established custody and control procedures.	• Increased result turn-around time (compared to on-site testing). • Additional sample handling and shipment required. • Potential increased cost per test. • Difficulty in accessing data and information from large corporate laboratories.

VIII. [§6.8] RESULT INTERPRETATION

The drug court judiciary should recognize that there is often a gap between the questions that legal professionals would like to have answered by drug testing and the answers that the scientific community can legitimately provide. All too often court personnel draw unwarranted or unsupportable conclusions from drug-testing results that would not withstand scientific challenge or legal scrutiny. While it may be unnecessary for a drug court judge to be knowledgeable about the arcane analytical aspects of the procedures employed to detect substance use, it is critical that the bench serve as a gatekeeper for the proper interpretation of drug-testing results. Failure to maintain a forensic evidentiary standard with regard to the use of drug-testing results invites controversy, challenge, and criticism.

Drug-testing cutoff levels represent an important safeguard designed to ensure the reliability of testing results. Simply put, there is no drug-testing procedure that can determine whether there is a single molecule of a drug in a client's system and each drug and each drug test has a limit of detection. Below that limit, the test cannot accurately discriminate between samples that are absolutely drug free and samples that may have a

trace amount of drugs present. In other words, at concentrations below the cutoff, drug tests can become unreliable at detecting the presence (or absence) of drugs. As a result of these analytical limitations, the goal of achieving a true zero-tolerance drug-testing program is unattainable.

A search for standardized drug-testing cutoff levels designed specifically for criminal justice programs will yield few results. Most drug-testing products (for laboratory and on-site use) use testing cutoffs that comply with workplace drug-testing mandates. While not explicitly intended for drug courts, employment-related cutoff levels routinely work well for criminal justice applications. It is recommended that drug courts utilize standardized drug-testing cutoffs. Remember, these cutoff levels were not established to frustrate the judiciary. Standardized cutoffs serve as an important safeguard both in terms of maintaining evidentiary standards and protecting client rights. These cutoffs represent an important legal and technological benchmark designed to ensure that drug testing is both scientifically accurate and legally defensible.

The court must maintain a forensic evidentiary standard for drug test results.

Every day drug courts grapple with two seemingly disparate imperatives—the need for rapid therapeutic intervention (sanctioning or incentivizing designed to produce behavioral change) and the need to ensure that the evidentiary standards, crafted to protect client rights, are maintained. Although administrative decision making in a drug court environment (or a probation revocation hearing) may not necessitate the same due process requirements and protections that exist in criminal trials, as professionals we are obliged to ensure that court decisions have a strong evidentiary foundation. Lowering cutoffs in an effort to catch clients using drugs covertly can produce unintended consequences for your program.

Commonly accepted drug-testing cutoff levels for use with drug court clients are outlined in Table 3. Note that confirmation cutoffs that utilize GC-MS methods are generally lower than those of the initial screening method. By design, confirmation is more sensitive and selective than screening techniques.

Isn't any amount of drug in a client's sample a violation worthy of sanction? This question provides clear delineation between the *punishment* model of drug testing and the *therapeutic* model. In the punishment model, the goal of testing is to identify client behaviors that require some form of retribution-type consequences (e.g., probation revocation, incarceration). By contrast, the therapeutic model is designed to enhance behaviors that lead to recovery. Learning to grapple with addiction is a gradual process. The step-wise reduction and eventual elimination of client resistance to change is critical. Given that drug testing is a large component of the drug court experience, its perceived fairness is also critical to outcomes. Unfortunately, drug testing has the potential to build resistance, particularly if a client is falsely accused by a test (or court policy) that stresses a zero tolerance approach. From a therapeutic perspective, it may be better to let a client get away with one, rather than risk a false accusation that could lead to the reestablishment of client resistance. The result of resistance may be learned helplessness and the loss

of engagement by the client with the drug court process. This is not to suggest that clients should not be held responsible for contractual violations. Consequences for prohibited behavior are also critical to outcomes. But, the prudent use of drug-testing results can certainly enhance the path to recovery.

Table 3. Commonly Accepted Drug Testing Cutoff Levels

Drug	Screening Cutoffs (in ng/mL)	Confirmation Cutoffs (in ng/mL)
Amphetamines	500 or 1000	500
Barbiturates	200 or 300	100–300
Benzodiazepines	200 or 300	100–300
Cannabinoids	20–50	15
Cocaine Metabolite	150 or 300	150
Opiates[4]	300	100–300
Phencyclidine (PCP)	25	25
Alcohol	variable	10 mg/dL

Drug-testing results reported as *none detected* or *negative* indicate that no drugs or their breakdown products (metabolites) were detected in the analyzed sample at the cutoff level of the test. This does not necessarily indicate that there are no drugs present. A negative drug test may not always indicate abstinent behavior. It is not uncommon for an individual's urine to contain a level of drug below the cutoff point. In other words, negative does not mean zero—thus samples yielding a drug concentration below the cutoff level of the test are defined as "negative" or "none detected" because the test may not be capable of reliably detecting the drug at concentrations below the cutoff. Generally speaking, a reported negative test result should not be interpreted in any manner other than negative. Attempting to evaluate results below the cutoff (e.g., borderline negatives) is fraught with pitfalls and may have untoward forensic consequences. Based on a negative test result, two interpretations are possible:

- The client is not using a drug that can be detected by the test;

OR

- The client may be using one of the drugs detected by the test *but*:
  - is not using a sufficient dose to be detected;
  - is not using the drug frequently enough to be detected;
  - the urine is being collected too long after drug use (i.e., the drug has been eliminated from the body);
  - the urine sample tested was diluted or otherwise tampered with;
  - the drug test was not sufficiently sensitive to detect the drug's presence;
  - the client is using a drug not on the list of substances being tested.

Because of the many potential interpretations of negative test results that are inconsistent with client abstinence, negative tests should always be assessed in the context of a client's overall program compliance (or lack thereof). It is not necessary for the court to

second-guess every negative sample or to withhold incentives and other positive reinforcement for encouraging behaviors. But the court is reminded that drug testing is a tool. It is not and should not be the sole assessment instrument of client conduct or the only determiner of therapeutic measures such as rewards and sanctions.

Establish a baseline of abstinence.

Positive urine drug test results indicate that a drug or its metabolite has been detected. In other words, the drug was present at a concentration at or above the cutoff level of the testing method. If the preliminary screen is positive for one or more drugs, confirmation is highly recommended prior to the imposition of sanctions unless the participant acknowledges the use.

Negative results produced by one specimen type (i.e., oral fluid) that are in conflict with another specimen type (i.e., positive urine test) require careful examination. While seemingly at odds, a positive and a negative test result on the same client, with samples collected in close proximity but using two different specimen types, may indeed be consistent depending upon each specimen's window of detection. Consultation with a toxicologist or qualified laboratory personnel may alleviate potential confusion associated with apparently disparate results.

The concept of a client's abstinence baseline is useful in a therapeutic court context. The abstinence baseline can either be a point at which a client has demonstrated his or her abstinence from drug use via sequentially negative testing results (*actual* baseline), or a court-established time limit after which a client should not test positive if that client has abstained from drug use (*scientific* or *theoretical* baseline). Each baseline has importance in a court-mandated drug monitoring program and can be used to establish compliance benchmarks. Drug court participants may be deemed to have reached their actual abstinence baseline when they have produced two consecutive urine drug tests both yielding negative results. Any positive drug test result following the achievement of an actual baseline indicates new drug exposure. The scientific or theoretical approach uses a court-established detection window for those drugs being screened. This scientific or theoretical baseline can be established using reference detection window databases such as in Table 4. Individuals who continue to produce positive drug test results beyond the established detection window maximums are subject to sanction for failing to remain abstinent during program participation.

A negative drug test may not always indicate abstinent behavior.

By establishing abstinence baseline parameters through consensus with drug court team members, and by alerting clients to the court's expectations, many potential benefits can be realized. These include operating procedures with a definitive result interpretation policy; reducing court indecision associated with clients who continue to produce positive results; increasing drug court team agreement on confounding cases; administering consistent consequences across the court's docket; and reducing

implausible client excuses. No abstinence baseline should replace the utilization of client-specific facts for case adjudication. Drug test results are only one of many assessment tools available to the drug court team. Courts should continue to critically evaluate a client's level of compliance on a case-by-case basis using all of the behavioral data available to the court in addition to testing results.

IX. [§6.9] URINE DRUG LEVELS

Drug detection methods used by drug courts are *qualitative*. That means that the purpose of the test is to determine the presence or absence of a drug in the sample being tested. Either a drug test is positive (drug presence at or above the cutoff concentration) or negative (none detected; drug level below the cutoff concentration). Most drug detection methods are not designed to produce *quantitative* results—i.e., how *much* drug is present in the sample. It is recognized that in the criminal justice system, the use of urine drug levels to evaluate client drug use patterns may be widespread and longstanding. However, because courts rarely have the necessary toxicology or pharmacology expertise, the routine use of urine drug levels by court personnel in an effort to define substance abuse behavior and formulate appropriately measured sanctions is a practice that can result in inappropriate, factually unsupportable conclusions and a decision-making process that lacks a sound scientific foundation.

The scientific rationale for discouraging the use of urine drug levels is both technical (issues associated with the testing methodologies) and physiological (how the human body processes drugs). First, technical: qualitative drug tests, particularly immunoassays, are not linear. Therefore, the urine drug concentrations reported by these screening tests are likely not very accurate or precise. Second, many initial screening tests detect both the presence of parent drugs and their metabolites simultaneously, meaning the numeric result reported represents a total concentration of the mixture of similar drug components. Therefore, attempting to evaluate a urine drug level based upon a total drug concentration measurement (of continually changing concentrations) is not possible.

The interpretive challenges associated with a client's physiology are equally daunting. Drug concentrations in the urine are present in proportion to the total amount of liquid in the sample tested. If the urine is diluted, the concentration of the drug is reduced, and when the urine is more concentrated, the drug concentration is increased. Urine volume or output is highly variable and is influenced by a variety of factors. Urine drug levels may vary widely within a day or between days even with no additional drug exposure as a result of fluid intake alone. As mentioned in the previous paragraph, initial screening tests for drugs detect both the presence of parent drugs and their metabolites concurrently. These drugs are eliminated from the body at differential rates, thus varying the overall test response, making any attempt to evaluate these changing urine drug levels to assess patterns extremely problematic.

Simply put, urine drug concentrations are of little or no interpretive value in assessing a client's past drug history or current use behavior. The interpretation of urine drug levels is highly complex and even under the best of circumstances, provides only limited information

regarding a participant's drug use. Further, such interpretations can be a matter of disagreement even between forensic experts with the requisite knowledge and training to render such opinions. Therefore, in order to maintain a solid evidentiary standard, drug court programs routinely interpreting urine drug levels are encouraged to transition to a strictly qualitative result format (i.e., results simply reported as positive or negative).

While the transition to a nonnumerical drug report format may be difficult, there are benefits. First and foremost, the court moves forward secure in the knowledge that its rulings have a strong scientific basis and are forensically sound. Second, the court no longer has to attempt to interpret data that is not interpretable. Third, courts that have eliminated the use of urine drug concentrations have reported greater confidence in their decision-making process. Making decisions based entirely on either positive or negative reports removes the judicial ambiguity associated with manipulating numbers that few individuals, if any, in the court environment are trained to understand. Lastly, the use of urine drug test results that do not rely on concentrations adds additional fairness and equity to the rewards and sanctions process of the drug court. By removing the unpredictable urine drug levels from the decision-making equation, courts eliminate the unsupportable foundation on which these interpretations are based.

Attempting to extract information from a drug test result in order to develop conclusions about urine drug concentrations, however well-intentioned, cannot be supported by the science and represents an adjudication practice that is simply not forensically defensible. It is not possible to fully explore the many aspects of this critical issue within the confines of this manual. However, a detailed examination of this issue is available.[5]

X. [§6.10] DRUG DETECTION TIMES

The length of time a specific drug can be detected in a sample is difficult to predict and varies between individuals. The drug detection window is dependent upon a number of factors including chemical/pharmacological properties of the drug itself, the specimen being analyzed, individual client characteristics, duration and frequency of drug use, dosage or concentration of exposure, time between drug use and sample collection, and the sensitivity and specificity (cutoff) of the testing method. The impact of these factors undoubtedly explains the wide variations that can be seen in tables purportedly showing the detection window of drugs in urine. With all of these variables (unknowns), it is not easy to calculate with certainty the detection time of any specific drug in a particular individual. Nonetheless, certain generalities can be advanced. These generalities are based on a synthesis of scientific information and published data and are presented in Table 4 for urine as the specimen. (Detection times by specimen type are presented in Table 1.)

Because of fat solubility and subsequent delayed elimination from the body, marijuana poses unique sanctioning challenges related to continued positive cannabinoid test results (i.e., continued excretion from prior usage vs. recent reexposure). Prolonged cannabinoid positive results can impede therapeutic intervention, thwart timely judicial sanctioning, and foster the denial of marijuana usage by drug court participants.

Establishing a reasonable and pragmatic detection window for cannabinoids can assist court professionals in reducing the complexities associated with marijuana-testing results. For a complete review of these issues refer to National Drug Court Institute's "The Marijuana Detection Window."[6]

Table 4. Drug Detection Windows

Drug	Approximate Drug Times in Urine
Amphetamines	1–4 days
Barbiturates	1–7 days
Benzodiazepines	1–7 days
Cannabinoids[7]	At 50 ng/mL cutoff: • up to 3 days for single event/occasional use • up to 10 days for heavy chronic use At 20 ng/mL cutoff: • up to 7 days for single event/occasional use • up to 21 days for heavy chronic use
Cocaine Metabolite	1–3 days
Opiates	1–4 days
Phencyclidine (PCP)	1–6 days
Alcohol (as ethyl alcohol) ————————- **as alcohol metabolites EtG/EtS**	variable, usually measured in hours ————————- at the 500/100 ng/mL cutoff: 24–48 hours

XI. [§6.11] SPECIMEN TAMPERING

The ramifications of a positive drug test (sanction, program expulsion, imprisonment, etc.), combined with the denial component of substance abuse, often create circumstances whereby clients feel the need to "beat the drug test" by tampering with the sample. Sample tampering represents a significant challenge to the court's mission and can threaten to undermine the legitimacy of the court's policies and procedures, as well as its decisions. Savvy drug court clients are constantly gleaning information about drug testing from a variety of sources in an explicit effort to thwart the monitoring efforts of the court. Table 5 outlines the basic urine tampering approaches and control strategies.

While witnessed sample collections can significantly reduce tampering, it is recommended that all urine samples tested for drug court purposes include testing for creatinine. Sample dilution is by far the most common tampering technique. Diluting urine is simple and cheap and is designed to produce a sample that has a watered down drug concentration that will fall below the drug testing cutoff, thus fabricating a false negative

Table 5. Urine Tampering Approaches and Control Schemes

Type	Method Description	Control Strategy
Precollection Dilution	Consumption of large volumes of fluid just prior to sample collection in an effort to dilute urine drug concentrations to below the screening test cutoff, thus producing false negative results (flushing, water loading, hydrating).	Perform creatinine levels on all drug court samples to assess specimen validity. Samples with creatinine concentrations of less than 20 mg/dL are generally considered dilute and test results do not accurately reflect a client's drug use history.
Postcollection Dilution	Addition of liquid (water, colored fluid) to sample post collection in an effort to dilute urine drug concentrations to below the screening test cutoff, thus producing false negative results.	Direct observation/witnessed collection should preclude most postcollection dilution and determine creatinine levels.
Adulteration	Addition of chemical agents (liquids or powders) to sample (postcollection) designed to disrupt testing procedures or to mask the presence of drugs.	Specimen validity testing (SVT)[8] are specialized tests capable of detecting chemical adulteration agents. Available from most drug-testing laboratories; on-site "instant" SVT devices are also available.
Substitution	Replacing client urine sample with a substitute "look-a-like" sample: • Biological substitution (e.g., another person's "clean" urine, dog urine) • Nonbiological substitution. (e.g., replacing urine with apple juice, Mountain Dew, water with food coloring)	Use of SVT combined with creatinine testing; most nonbiological samples will result in minimal creatinine concentrations.

result. Creatinine is a biological waste material that is produced by muscle metabolism. The measurement of creatinine allows the determination of the strength or concentration of a client's urine sample.

Dilute urine samples (with creatinine levels less than 20 mg/dL) are not normal occurrences. It is unusual for a healthy individual to produce a sample with a creatinine level of less than 20 mg/dL. Therefore, urine samples from drug court clients that yield a creatinine concentration of less than 20 mg/dL should be considered as *dilute* samples. Because the sample is dilute (more like water than urine), the drug test is not able to detect the presence of drugs that may be present because the drugs have been diluted to below the cutoff point of the assay. In cases of dilute samples, *negative* or *none detected* results should not be interpreted as indicating no drug use or abstinent behavior. Positive drug test results from a dilute sample, however, are considered valid because the donor was apparently not able to dilute the sample sufficiently to deceive the test.

A 2005 study that assessed over 22,000 subjects (with urine samples taken from adults and children, different ethnic groups, and at various times throughout the day) determined that the average, normal urine creatinine in the U.S. is 130 mg/dL. While the incidence of dilute urine samples is not commonplace in the general population, in populations known to be drug tested (e.g., criminal justice), the incidence of low

creatinine levels increases significantly. The diluting of urine samples by consuming large volumes of fluid is easy and common in drug court populations; therefore, many courts sanction accordingly for repeat dilute samples. Drug courts are also advised to place a dilute sample prohibition into participant contracts and inform participants that diluted samples are considered unacceptable.

The rapid (over a period of sixty to ninety minutes) intake of two to four quarts of water or other liquid beverages is sufficient to produce urinary creatinine levels of less than 20 mg/dL and result in a sufficiently watered down specimen that no longer reflects recent drug usage behavior. But this is a general guideline because the exact amount of fluid necessary to produce a dilute urine sample is dependent upon many variables, including a person's metabolism, amount of fluids regularly consumed, dietary habits, and occupation.

The important concept is that a creatinine level of less than 20 mg/dL associated with a drug test is *nearly always* an attempt by the donor to avoid drug-use detection, regardless of how much liquid was consumed in order to achieve this result. While it is possible for an individual to unintentionally consume sufficient liquid to produce a diluted sample, this should be viewed as the exception rather than the rule. For clients who work outside (e.g., construction workers) in hot, summer weather and ingest large amounts of fluid, the court should consider testing these clients before they go to work or on their days off.

The bottom line is that the court cannot allow clients (new or veterans) to continue to produce low creatinine samples without some sort of escalating sanction. There is no standardized response to diluted samples. Rather, there is a wide spectrum of judicial responses. Adjudicating a diluted sample as a positive result is one common approach. Some programs allow a single diluted sample per phase (or per quarter) without sanction. Other programs treat a diluted sample as more egregious than a positive sample because it is often indicative of intentional tampering. However a court decides to handle the diluted sample issue, programs should also respond with additional therapeutic interventions when diluted samples are identified.

Participants should receive a sanction for water loading and other attempts at tampering with the test.

Urine creatinine level patterns can also be used to uncover ongoing sample tampering. Normal urine creatinine levels do not demonstrate extreme fluctuation. Therefore, clients producing rapidly changing and significantly high and low urine creatinine levels from day to day (or from collection to collection) are indicative of potential specimen tampering. If a client is capable of producing a sample with normal urine creatinine levels some of the time and subsequently exhibits low creatinine levels on other occasions, this suggests that the dilute collections are not associated with a disease-related problem. Other tampering control measures that can be used by the court include:

- Developing challenging collection strategies (e.g., minimize access to water sources, require hand washing *prior* to sample donation, require the removal of outer clothing (coats), no backpacks, purses, hats, etc., pockets turned inside out);
- Instituting unannounced/random collections;

- Observing collections directly (full-frontal witnessed);
- Training collection staff to be observant (inspect sample);
- Measuring sample temperature (reject if not 90°–100° F);
- Keeping staff abreast of tampering techniques;
- Employing specimen validity tests designed to identify sample adulteration.

XII. [§6.12] CLIENT EXCUSES

Every judge will hear a myriad of client excuses offered to explain why a drug-testing result is positive. Many of these excuses will have a "dog ate my homework" quality. Clients offer implausible excuses for many reasons: denial as part of the disease process, the learned behavior of chronic dishonesty, risk taking or manipulative behavior, paranoia (co-occurring disorder issues), threat of court sanctions, or resistance to change. First, in response to client excuses associated with a positive drug test, courts should not assume the role of excuse evaluators (i.e., attempting to determine if every client excuse has legitimacy). Clients need to be held responsible for their behavior and for maintaining a drug-free physiology. If the drug testing is performed appropriately and confirmation is used to validate screening results, how or why the drug got into the client's sample is largely irrelevant. A positive drug test puts the participant in violation and sanctions should be imposed. As a practical matter, the court does not have the time or resources to evaluate every excuse or to argue with each client who concocts an inventive story.

Second, while assessing each excuse for authenticity is not recommended, evaluating client excuses for therapeutic progress may be useful. Client explanations that include self-admissions such as "I accidentally used" may represent signs of behavioral change—self-reporting versus complete denial. Some excuses may also suggest mental health issues (paranoia, hallucinations) and potential co-occurring disorders.

XIII. [§6.13] ALCOHOL ABSTINENCE MONITORING ETG AND ETS

A new approach to monitoring client alcohol abstinence offering an extended detection window involves urine testing for two compounds: EtG and EtS. EtG and EtS are ethyl alcohol metabolites (biomarkers) that allow the detection of recently consumed alcohol in persons who have agreed to abstain from drinking. Both of these metabolites remain in the body considerably longer than alcohol itself. While methods measuring alcohol in breath, urine, saliva, and blood provide a detection window only for a matter of hours, EtG/EtS testing can extend the detection window of recently consumed alcohol to a couple of days. This extended detection window is especially useful for alcohol abstinence monitoring by DWI courts.

EtG/EtS testing is becoming increasingly available from drug-testing laboratories and represents a major breakthrough in alcohol abstinence monitoring. However, because alcohol is ubiquitous in our environment, concerns have been raised about the ability to

differentiate between purposeful alcohol consumption (in violation of compliance standards) and unintended alcohol exposure. In other words, has the capability to employ this highly sensitive testing procedure to detect recent ethyl alcohol exposure outpaced the ability to appropriately interpret test results in a forensically defensible manner? These concerns are not unlike similar drug-testing issues associated with passive inhalation of marijuana smoke or positive urine opiate results from poppy seed ingestion.

Therefore, establishing appropriate EtG/EtS cutoff levels is critical. A cutoff for EtG/EtS should be considered inversely proportional to a program's willingness to consider alternative sources of alcohol exposure other than covert ingestion in violation of program rules (i.e., lower cutoffs for programs with considerable flexibility in handling positive results, and higher cutoffs for courts with strict, unyielding sanctioning policies in response to EtG/EtS positives).

Because the concerns associated with incidental, environmental, casual, or inadvertent alcohol exposure (producing measurable EtG/EtS urine levels) are the source of much current research, there is no universally accepted urine EtG/EtS cutoff. At present, the general consensus is that a 500 ng/mL cutoff for EtG and a 100 ng/mL cutoff for EtS avoids false detections from nearly all known incidental exposures. It is further recommended that drug courts utilize specific EtG/EtS client contracts. These contracts can serve to educate, alert, and advise drug court clients of the unintended sources of alcohol that could produce positive urine EtG/EtS test results. It can also list the numerous commercial products that contain ethyl alcohol and provide a catalog of substances that should be avoided while in a drug court program.

XIV. [§6.14] CONCLUSION

The law is not black and white and neither is science. Negative drug test results do not guarantee that a drug court client is abstinent (impossible to prove a negative), even if that client continues to produce negative tests. Positive drug-testing results can document prohibited substance use by clients in violation of court-mandated agreements, but confirmation is required to obtain the certainty required for appropriate sanction. The drug court model is built upon a foundation that provides maximum flexibility to team members as they apply innovative strategies designed to succeed where other legal remedies have failed. While this flexibility is an important client-management tool, basic evidentiary standards for the admissibility of scientific data into the court's proceedings must be maintained. Unfortunately, as drug courts experiment with a variety of therapeutic interventions and struggle with sanction and incentive decisions, this evidentiary foundation may become compromised. This is particularly true of the drug-testing component utilized by problem-solving courts.

It is understood that the court cannot be expected to fully comprehend all of the technical nuances associated with the multitude of drug detection modalities. Nor can the court be expected to apply the many physiological variables associated with the pharmacology of abused drugs in the human body. However, by using drug-testing results in a forensic context, the drug court judge assumes and accepts the responsibilities (and liabilities)

associated with that scientific knowledge—its use and misuse. Therefore, it is incumbent upon each judge to determine the appropriateness of the drug tests results and their interpretation in dispensing justice.

The court must trust the drug-testing results in order to function in a fair and impartial manner.

The court is urged to recognize that drug testing, as an abstinence monitoring strategy, is a *tool*. And, that drug testing is but a single assessment option available to the court. Too often, courts become myopic regarding drug-testing results—leading to incentive and sanction decisions that are driven exclusively by whether a drug test is positive or negative. The court would be wise to consider all of the behavioral data available from the drug court team members. While drug testing itself is an analytical endeavor, the judiciary must consider the therapeutic ramifications of these results when adjudicating to support recovery.

Providing an accurate, reliable, and effective drug-testing program, combined with the therapeutic utilization of results designed to change behavior and support recovery, represents the bookends of judicial responsibility in a drug detection program.

A. [§6.15] Ten Principles of a Good Testing Program

The ten most important principles of a successful drug-testing program can be summarized as follows:

1. Design an effective drug detection program, place the policies and procedures of that program into written form (drug court manual), and communicate the details of the drug detection program to the court staff and clients alike.
2. Develop a client contract that clearly enumerates the responsibilities and expectations associated with of the court's drug detection program.
3. Select a drug-testing specimen and testing methodology that provides results that are scientifically valid, forensically defensible, and therapeutically beneficial.
4. Ensure that the sample-collection process supports effective abstinence monitoring practices including random, unannounced selection of clients for sample collection and the use of witnessed/direct observation sample-collection procedures.
5. Confirm all positive screening results using alternative testing methods unless participant acknowledges use.
6. Determine the creatinine concentrations of all urine samples and sanction for creatinine levels that indicate tampering.
7. Eliminate the use of urine levels for the interpretation of client drug-use behavior.
8. Establish drug-testing result interpretation guidelines that have a sound scientific foundation and that meet a strong evidentiary standard.
9. In response to drug-testing results, develop therapeutic intervention strategies that promote behavioral change and support recovery.
10. Understand that drug detection represents only a single supervision strategy in an overall abstinence-monitoring program.

If universally adopted, these ten principles will sustain drug courts as models of effective and appropriate jurisprudence far into the future.

---

1 National Association of Drug Court Professionals. 1997. Defining drug courts: The key components. Washington, DC: Office of Justice Programs, U.S. Dept. of Justice. Available at www.allrise.org.

2 American Probation and Parole Association. 1988. *Drug Testing Guidelines and Practices for Adult Probation and Parole Agencies* (p.33). Washington, DC: Bureau of Justice Assistance, U. S. Department of Justice.

3 Robinson, Jerome J., and James W. Jones. 2000. *Drug Testing in a Drug Court Environment: Common Issues to Address* [NCJ #181103, p.10]. Washington, DC: Office of Justice Programs, Drug Court Clearinghouse and Technical Assistance Project at American University. Available at http://www.ncjrs.gov/pdffiles1/ojp/181103.pdf.

4 Federally mandated workplace testing guidelines provide for an opiate cutoff level of 2000 ng/mL, which is not recommended for abstinence monitoring programs. At a cutoff level of 2000 ng/mL, opiate relapse may be difficult to identify. Consult your laboratory or on-site vendor to ensure an appropriate opiate cutoff is being used.

5 National Drug Court Institute. 2004. *Urine Drug Concentrations: The Scientific Rationale for Eliminating the Use of Drug Test Levels in Drug Court Proceedings* [Drug Court Practitioner Fact Sheet, Vol. IV, Issue 1]. Alexandria, VA: Author.

6 National Drug Court Institute. 2006. *The Marijuana Detection Window: Determining the Length of Time Cannabinoids Will Remain Detectable in Urine Following Smoking: A Critical Review of Relevant Research and Cannabinoid Detection Guidance for Drug Courts* [Drug Court Practitioner Fact Sheet, Vol. IV, Issue 2, April 2006]. Alexandria, VA: Author.

7 The only timeframe in which an individual's chronic marijuana use (possibly leading to extended cannabinoids elimination) is relevant is during a client's admission into the drug court program. Following the initial detoxification phase, the extent of a client's past chronic marijuana usage does not influence the cannabinoid detection window as long as appropriate supervision and drug monitoring for abstinence continues on a regular basis. Therefore, the consequences of chronic marijuana usage on cannabinoid detection are effectively limited to the initial entry phase of the program. Detailed cannabinoid detection information available in NDCI Fact Sheet, Volume IV, Issue 2, April 2006

8 Specimen validity tests (SVT) are specialized analyses designed to identify chemical substances the presence of which is inconsistent with normal human urine.