

## Integrating Drug Monitoring into Substance Use Counseling: A Case Report

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### Introduction

A consensus is emerging that clinical drug testing may play a critical role in the treatment of substance use disorders [1,2]. Relative to the use of clinical drug testing in chronic pain patients, there may be a therapeutic component in treating SUDs. For example, according to American Society of Addiction Medicine:

A knowledgeable clinician can use drug testing to verify self-reports, confirm diagnoses, identify denial and minimization of drug and alcohol use, enhance motivation for treatment, measure biological adaptation, assist in development of treatment planning, monitor treatment response, document treatment effectiveness and outcomes, support patient advocacy by validating abstinence from alcohol and drug use, and validate adherence in taking prescribed controlled substances [1].

Although the use of clinical drug testing in the treatment of SUDs is increasingly recommended and intuitively appealing, it has yet to be widely studied. In this report, we first provide some context regarding different types of drug testing, followed by a case report and discussion that illustrates and integrates some of these concepts in the clinical setting.

Drug testing can be most easily understood in terms of two broad categories. Immunoassay (IA) screens are mainly class based, originating in forensic and workplace applications, representing a public-health model in which a test with limited sensitivity and specificity is expected to detect only a subset of illicit substance use in order to reduce public harm -- such as keeping intoxicated truck drivers off the road. In contrast, the focus in clinical drug testing is on treating the individual patient [3]. Mass spectrometry, often referred to as definitive testing (e.g., [1]), is uniquely suited to this task because it precisely identifies many individual medications, illicit drugs, and relevant metabolites, some of which cannot be detected with IA screens. The difference in sensitivity can also be profound where, for example, the standard concentration cutoff used to determine if a specimen is positive for cocaine or opioids is typically 300 ng/ml with IA based tests, cutoffs as low as 50 ng/ml can be achieved with LC-MS/MS [4]. Not surprisingly, recent data has shown high rates of clinically false negatives with IA relative to LC-MS/MS [5-7]. For example in one study, specimens accurately identified as positive for cocaine, opiates, and benzodiazepines by LC-MS/MS were missed by IA 40%, 29.9%, and 36.5% of the time, respectively [8]. Thus, definitive mass spectrometry is capable of detecting a wider range of substances, with longer windows of detection, and with much greater sensitivity and specificity that could lead, for example, to identifying a substance-abuse relapse earlier in treatment when the patient may be more responsive to intervention. The following case report illustrates the importance of understanding different types of drug testing and some

of the challenges and opportunities for integrating it therapeutically into treatment.

### Case report

A substance use treatment center in a major metropolitan area decided to switch from a laboratory employing traditional immunoassay (IA) based drug testing, to a laboratory that utilized a liquid chromatography, tandem mass spectrometry (LC-MS/MS) testing methodology with dramatically greater sensitivity and specificity [3]. The switch was prompted by a need to respond to the growing use of synthetic and newer drugs of abuse in its service area. The center's services included in-patient, out-patient, and residential programs, all of which offered individual counseling, 12 step groups and medication assisted treatment.

The change in testing method was indeed impactful but not without challenges for the treatment program and its community of patients and providers. Due to the increased accuracy and breadth of drugs detected by the definitive LC-MS/MS method, many patients believed to be sober and achieving their therapeutic goals were, instead, discovered to be continuing to use illicit drugs and non-prescribed medications. There was a widespread sense of shock in the community. Many of the providers, unaware of the high rates of clinically false negatives inherent to the IA method, were initially unprepared to deal therapeutically with so many "new relapses" all at once [7,9]. Many of the patients, either "in denial" or trying to forestall legal and other consequences of their ongoing but previously hidden drug use, were adamant that the results were incorrect. The community was polarized between those who continued to support these "exemplars of sobriety" and those who realized that the community as a whole had a long way to go in their collective efforts to recover.

The administrators of the program remained resolute. Having done their homework, they recognized that the results were accurate and they resolved the complaints and took steps to "heal" the community and, ultimately, the culture of the program changed. Admission nurses described the revamped testing program to new patients and discussed how there was little or no chance that ongoing drug use would not be detected. They counseled patients to reflect on the new testing procedure if they were tempted to use, and to view it as a potential aid to becoming more mindful of the consequences of use. While some misconceptions and lack of knowledge about testing were initially exposed amongst the counselors, they subsequently attended in-service informational sessions on clinical drug testing. These sessions increased not only their awareness and expertise with regard to the various methods of drug testing, but also how best to use the results to develop a more collaborative effort with their patients to achieve a successful therapeutic outcome [3].

The following case example occurred prior to the cultural shift in the community. People with substance use disorders have well-documented deficits in planning, anticipating consequences of drug use, and fully acknowledging the extent and nature of their problem [10-12]. Highly accurate drug-testing performed on a schedule commensurate with an individual's specific risk of relapse can augment group and individual counseling efforts in the context of a recovery program [2]. The following patient vignette highlights some of the reasons why counselors need to be well-versed with drug testing -- enough to enable them to utilize the results in a therapeutic fashion, possibly to recognize an ongoing or imminent relapse, and to provide effective interventions.

### Patient vignette

A 27 year old single mother of a nine year old daughter was court remanded to the center for treatment of cocaine abuse. She was referred to the outpatient program and was given provisional custody of her daughter, pending her ongoing participation in the program and recovery. At the height of the uproar in the community triggered by the revelations that many "model patients" were using drugs, a faction of the community promised to "fight the false positives." In a counseling session she confided in her counselor that she was disillusioned that some of her role models were not sober. She went on, "You know I would never use drugs...I don't want to lose custody of (my daughter)." However, she continued, she was "afraid of having a false positive (result) in one of her subsequent tests." The counselor, not yet secure in her knowledge that positive results with LC-MS/MS are virtually never false, responded by simply inquiring about the patient's feelings and fears about "false positives" and the possibility of being falsely accused of using drugs again. Two weeks later, on her very next testing, the patient tested positive for cocaine.

With the benefit of hindsight, this case illustrates several potentially important missed therapeutic opportunities. First, because the counselor was uncertain about the improbability of "false" positives with this type of testing, she unwittingly reinforced the patient's secret hope that a positive result could be interpreted as false. Moreover, the counselor's lack of certainty reduced the potential value of her using accurate drug monitoring as a therapeutic element in their work together. This is analogous to the scale itself representing a weight-loss intervention: The mere knowledge of being monitored has the power to modify many behaviors, but there must be confidence that the method of monitoring is veridical and reliable [13].

With a greater knowledge of drug testing, this counselor might also have been able to correct the patient's misconceptions about false positive results in the larger community. False positives do occur with IA, which is why such positive results are often confirmed with mass spectrometry. However, since the laboratory they were now using omitted the IA step in nearly all cases, preferring to rely almost exclusively on mass spectrometry, she could have known that false positives were a near impossibility. By not allowing the veracity of the test from becoming a distraction to therapy, she might have been able to move more confidently to the more pressing issue of helping her client overcome the disillusionment she felt regarding her role models, and replace it with further education about the chronic, relapsing nature of the disease. In turn, this education might have helped the patient better understand her ongoing need for vigilance, accountability and honesty in her recovery efforts. The other patients had presumably perfected methods for avoiding detection of their drug use with the traditional IA based laboratory. The patient herself

could have learned that "fooling the test is tantamount to fooling yourself."

Perhaps more importantly, with the uncertainty about the reliability of drug testing now less of a confounding treatment issue, the counselor might have more easily heard the patient's communication as an implicit confession of her ongoing drug use or an expression of her fear that she was in danger of imminent relapse. The threat of guilt or shame with the therapist and family members is an obstacle to admitting relapses and may be associated with denial [14]. Mindful of the association of shame and relapses, a counselor can be vigilant for indirect signs of relapses and potentially construct collaborative interventions aimed at building on the therapeutic alliance and validating the patient's emotional dilemma [15]. In the current case study, a possible intervention, given a collaborative and trusting therapeutic alliance, could have been, "It sounds like you may be trying to tell me that you are using or thinking of using, and you're afraid of how I'll react." In either case, had this patient been able to be more open with her counselor about her underlying fears and uncertainty, steps could have been taken to help her avoid or address a relapse, such as intensifying her participation in groups and meetings, and/or increasing the frequency of her individual sessions. We have seen other cases where a patient in a similar position, initially denying continued drug use but eventually persuaded by the test's accuracy, and encouraged by a counselor's nonjudgmental efforts to be helpful, finally admit to ongoing use. This new degree of openness can lead to a deeper engagement in therapy and ultimately move those patients closer to their treatment goals.

### Conclusion

Addiction counselors can make better therapeutic use of drug testing in their work. Doing so requires a basic understanding of the differences between immunoassay (IA) based and definitive mass spectrometry, both in terms of their respective sensitivity and specificity that give rise to the potential for false positives and clinically false negatives with IA tests [7,8]. It may be helpful to bear in mind that all in-office, point of care devices rely solely on immunoassay, and many laboratories utilize any one of several versions of immunoassay that all share the same fundamental limitations. There are a number of excellent resources that counselors can use to gain a better understanding of drug testing [1,7,16,17].

This case report and the experience at the treatment facility suggests that it may be helpful for counselors to provide information to clients and patients in treatment about some of the differences between IA screens and definitive mass spectrometry, such as the difference in cutoffs, which can help explain why many "new" accurate positives may be revealed when making a change from an IA based method to definitive testing. Counselors can also better prepare themselves by enquiring what methodologies their laboratory uses. For example, does their laboratory use definitive mass spectrometry only to confirm positive results of IA-type tests, as many laboratories do? If so, they can be alert to the likelihood that many true positives are routinely being missed, similar to that of in-office, point-of-care "cups." In contrast, if definitive testing is being used as the "first line" testing method, counselors can be confident in the accuracy of the test. By conveying that confidence to patients and clients in a supportive and non-judgmental manner, there is the potential to avoid distracting and unproductive dialogue in favor of moving more directly to the relevant emotional issues around substance use and potential relapses. Counselors have an opportunity to confidently use the potentially

powerful tool of drug testing in a therapeutic manner to help clients and patients better achieve their substance-use goals.

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