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Deterrence and urinalysis of probationers

James Pierre Perdue

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DETERRENCE AND URINALYSIS
OF PROBATIONERS

by

James P. Perdue Jr.
Bachelor of Arts
University of Nevada, Las Vegas
1986

A thesis submitted in partial fulfillment
of the requirement for the

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ABSTRACT

Deterrence and Urinalysis of Probationers

by

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Professor of Criminal Justice
University of Nevada, Las Vegas

Urinalysis of offenders under community supervision has become a standard procedure for probation offices in the United States. The District of Nevada reports proportionally half the rate of positive urine tests compared to the national average. The current research utilized a survey and field study of the offenders under federal supervision in the District of Nevada who were court ordered to submit to urine testing. The research addresses questions regarding deterrence and the accuracy of the urine testing program. Results indicate that there was little difference between groups of offenders who reported using drugs while in the testing program. A comparison of the office testing procedures and the field tests indicated little difference in the rates of positive tests. This suggests a very accurate testing program. These findings lend support to the hypothesis that the drug testing program is deterring offenders from using drugs.
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CHAPTER I

INTRODUCTION

Drug testing is a relatively new and evolving technology that has become entrenched in our society. In 1996, more than 15 million Americans were drug tested, which is an increase of more than 50 percent from the previous five years, at a cost of 600 million dollars. In 1994, drug testing in the private sector increased as much as 305 percent since 1987 (Staples 1997). Urine testing has become a tool of many employers during the pre-employment process and it is extensively utilized in all phases of the criminal justice system.

From the years 1998 to 2000, the United States Probation System, in 94 separate judicial districts, obtained and analyzed an average 634,330 specimens per year at an average cost of $7.5 million annually. Over the same time period, the District of Nevada submitted an average of 8,992 specimens for testing per year at an average cost of $86,978 annually. The point of presenting figures relating to the cost of analyzing specimens is to question the expenditure of large sums of tax dollars to identify drug users and what benefits are derived. Britt et.al. (1992) and Goldkamp and Jones (1992) stated that the primary goal of the testing programs was to reduce pretrial misconduct (i.e. failure to appear, rearrest). Anecdotal opinions of probation and parole officers regarding
urine testing of offenders on probation, parole and supervised release indicate that urine testing is a crucial tool to assess the risk of offenders.

The primary purpose of urine testing is clear, to identify drug users, subsequently treat them for possible drug addiction, and prevent further criminality that could be caused by drug use. The secondary purpose of urine testing is to deter offenders from using drugs which could lead to addiction and to sanction those drug abusers to correct the noncompliant behavior. Without empirical data, it is only speculation as to the extent deterrence has on offender drug use.

Vito, Wilson and Holmes (1993) conducted research on the Jefferson County Kentucky Parole and Probation Substance Abuse Program and attempted to find any relationship between drug testing and recidivism with offenders. Jefferson County implemented the program in 1988 and the researchers examined results from a four-year period. A total of 2,991 urine specimens were obtained from offenders believed to be at risk for drug use. In 1992, 1,664 offenders were identified as probable drug abusers. The rate of initial positive tests for the first year was 59 percent, the second year 41 percent and the third and fourth years both were 35 percent (Vito, Wilson and Holmes 1993). The authors concluded that random testing can have a deterrent effect on drug use, as the program was attributed to lowering the rate of drug abuse in the population of offenders. In addition, their study examined offenders who tested positive for drug use and were referred to treatment. Only 4 percent of the offenders who completed treatment were reincarcerated compared to a 20 percent incarceration rate for those who did not complete treatment. Caution should be given to the stated results of their study as the authors did not provide information on what controls were used to support the conclusion that drug
testing had a deterrent effect. Did offenders find ways to circumvent the testing system, or did the influx of drugs in the area decrease in subsequent years? Murakawa (1988) evaluated the Contra Costa County, California Intensive Supervision program and the use of urine testing and found that only 19 percent of the probationers were actually deterred from further drug use. Murakawa concluded that urine testing was an effective surveillance and identification tool, taking into consideration the hard core nature of the population under intensive supervision.

The United States Probation Office for the District of Nevada utilizes a program of drug testing that incorporates counseling and punitive sanctions to treat and correct drug use. If offenders violate the rules of supervision by using drugs they are simultaneously referred to a treatment facility for outpatient counseling and punished in the form of a sanction such as community service or home confinement. The percentage rate of positive tests in this district are approximately half of the national average. The lower rate in the District of Nevada is of concern as it must be established whether it is the result of deterrence or an inaccurate program.

To further explore the discrepancy between the District of Nevada and the national average this research will survey participants in the drug testing program to collect data with regard to their experience in the drug testing program. This paper will attempt to answer the following research questions. First, what influenced offenders to either use or refrain from drug use while in the program? Second, what is the relationship between offender's attitudes and opinions about the drug program and their decision to use drugs while in the testing program? Third, is the office testing program accurate in that it prevents offenders from using evasive behaviors to avoid detection of drug use? Fourth,
what types of evasive behaviors are being used and to what extent are offenders using evasive behaviors to circumvent the testing system? Answers to these questions will aid in the evaluation of the District of Nevada’s drug testing program.

This paper will proceed with an overview of the deterrence doctrine in Chapter 2. Chapter 3 will describe probation supervision, drug usage, and the system for detection in the District of Nevada. Chapter 4 will explain the research methods and procedures utilized in this study. Chapter Five will present the results of bivariate analysis while Chapter 6 will complete the paper with a discussion of results and the primary conclusion that can be derived from this study.
CHAPTER II

LITERATURE REVIEW

The Deterrence Doctrine

The deterrence doctrine has been the basis for criminal justice law and policy since the inception of prescribed rules that govern man’s behavior. Jack Gibbs provides a simplified definition of deterrence as an omission of an act as a response to the perceived risk and fear of punishment for contrary behavior. This can be said for controlling or training the future actions of those who are perceived at risk of committing an act that is not within the prescribed norms. However, Gibbs is quick to point out the many problems in arriving at a concrete definition that is commonly agreed upon. Deterrence is described as an inherently unobservable phenomenon. “We never observe someone omitting an act because of the perceived risk and fear of punishment” (Gibbs, 1975, p.3).

During the mid-eighteenth century many social and philosophical changes were occurring in Europe. Social philosophers from the Utilitarian perspective were advocating a rethinking of the established concepts of law and justice. They believed human behavior was inherently useful with purpose and reason. They believed laws and punishment are necessary in society, however, they should be parsimonious and punishments should only
be slightly more severe than the possible reward gained from committing a crime. It was believed that the sanction should punish the offense not the soul of the offender. In the late 18th century, Cesare Beccaria, the founder of the classical school, and British philosopher Jeremy Bentham, voiced their opinions regarding the legal system.

In disagreement with the system of the time, Beccaria authored a book on criminal reform titled, “On Crimes and Punishment.” Beccaria speaks specifically about deterrence as a purpose of punishment. “The purpose of punishment, then is nothing other than to dissuade the criminal from doing fresh harm to his compatriots and to keep other people from doing the same” (Beccaria, p.23). In addition, Beccaria spoke of the proportion between crimes and punishment. He was actually criticizing the brutality of the system of criminal punishment, however, he understood that the penalty for an act must exceed the pleasure to be gained from the act. He also understood that penalties should increase proportionally to the severity of the act. “If an equal punishment is meted out to two crimes that offend society unequally, then men find no stronger obstacle standing in the way of committing the more serious crime if it holds a greater advantage for them” (Beccaria, p16).

Bentham also disagreed with the legal system of his day and in 1789, he published “An Introduction to the Principles of Morals and Legislation,” one of the basic texts of Utilitarianism. Bentham describes mankind as being controlled by two sovereign masters, pain and pleasure. “It is for them alone to point out what we ought to do, as well as to determine what we shall do” (Bentham 1789, p.17). Bentham proposed that lawmakers must take into consideration the pain and pleasure elements when enacting laws. Bentham stated that the general object of all laws is to prevent mischief. Although
Bentham said that punishment was the suggested deterrence to prevent mischief, he recommended limiting the amount of punishment. Like Beccaria, he recommended punishment in proportion to the crime committed, but he too understood that the punishment must exceed the pleasure or reward for committing the crime. "The value of the punishment must not be less in any case than what is sufficient to outweigh that of the profit of the offense" (Bentham, 1789, p. 170). In other words, to deter an individual from committing an offense, the punishment must be greater than the potential profit. Bentham also mentioned certainty and proximity as deficiencies that must be addressed in the formulation of laws that are to deter illegal acts. With regard to certainty and proximity, Bentham reasoned that for punishments to be effective, the certainty and proximity of detection must be factored into the degree of punishment. If the certainty of detection for a particular crime is less than for another crime, the punishment must be increased to deter potential offenders from committing the less detectable offense. This increase in severity of punishment is believed by Bentham to balance the two offenses making them equally unattractive to the potential offender.

Beccaria's and Bentham's writings both relied on the assumption that man is a rational being and all his actions are based on rational choice. Deterrence theory is thus based on this premise that man logically calculates his actions and weighs the potential gain from committing an act against the punishment he will receive if the crime is discovered.
Types of Deterrence

Traditionally, deterrence is discussed in reference to two types, general and specific.

"General deterrence is defined as conformity among the law abiding produced by fear of being caught and receiving a formal sanction (for example, fine, prison sentence, death)" (Hawkins, 1989, p. 142). An example of general deterrence would be an individual citizen who, aware of the law regarding robbery and the punishment for such an offense, refrains from committing the act of robbery out of fear of the punishment.

General deterrence targets the potential criminal as citizens become aware of an individual being punished for an act and they are thereby discouraged from committing similar acts. The difficulty in determining of general deterrence is the inherent invisibility of the mechanisms involved. For instance, it is very difficult to determine whether the citizen omitted the act out fear of punishment or if the act was even contemplated.

General deterrence is said to apply to the masses, as it allows a society to remain ordered and civilized. Many proponents of general deterrence believe that if the mechanisms that comprise the phenomenon were not working, society would be dysfunctional.

Specific deterrence is defined as those individuals who have committed an act and have been punished for that act. Thus, they will be deterred from committing the act again. Gibbs expands the definition of specific deterrence, "the omission or curtailment of some type of criminal activity by an individual throughout a period because in whole or part he or she has been accused of a crime for which someone was punished, and he or she is therefore unwilling to risk someone being punished again" (Gibbs, 1975, p.34). The period of time Gibbs refers to begins after the punishment of someone, as a response to their criminal act. An example of specific deterrence at work would be an individual who
commits a robbery, is caught and then is punished. Following his punishment, he refrains
from committing additional robberies out of fear of experiencing similar punishment he
received previously.

Gibbs proposes alternative definitions or types of deterrence which attempt to
improve on the broad definitions of general and specific deterrence. Gibbs defines
absolute deterrence, “where an individual has refrained throughout life from a particular
type of criminal act because in whole or in part he or she perceived some risk of someone
suffering a punishment as a response to the crime.” With this definition, Gibbs states that
some individuals may be totally deterred by the threat of punishment, others only partially
and others not at all. From this Gibbs provides a definition of restrictive deterrence,

“the curtailment of a certain type of criminal activity by an individual during some
period because in whole or in part the curtailment is perceived by the individual as
reducing the risk that someone will be punished as a response to the activity, even
though no one has suffered a punishment as a consequence of that individual’s
criminal activity” (Gibbs, 1975, p.33).

This can be understood as a shoplifter who curtails or restricts the number of petty
thefts he will commit in order to reduce the cumulative risk of punishment, as frequent
thefts will increase the chance of being detected. The amount or value of merchandise
that the shoplifter steals could also increase the risk of being detected, thus he will restrict
his activity out of fear of punishment.

Beccaria and Bentham, proposed that the deterrent effect of any sanction was a
function of its certainty, celerity and severity. The increase or manipulation of these three
elements has dominated the discussion of the deterrence doctrine in the literature since
the mid eighteenth century. Certainty is described as the chance that a punishment will be
imposed for an act. Severity is the amount of harm, deprivation, or unpleasantness
represented by the punishment, and celerity is the swiftness or the length of time between
the illegal act and the onset of punishment. Each characteristic possesses its own elements
which affect the efficacy of deterrence. Gibbs states that without certainty, the elements
of severity and celerity of deterrence are irrelevant. If there is no certainty of being
detected for an act, the severity of punishment or the swiftness with which the
punishment is carried out is irrelevant. Gibbs further concludes that deterrence depends
on the perception of the certainty rather than the objective certainty. The objective
certainty is the actual probability of being caught committing an act and the perceived
certainty is the individual's perception or belief that he or she will be caught. The
objective certainty of detecting shoplifters may be minimal, but by placing video cameras
throughout the department store, the perceived certainty of detection is increased in the
eyes of the potential shoplifter. Several studies have suggested that the probability or
perceived probability of punishment for failure to conform to societal norms is a key
factor that determines behavior (Chiricos and Waldo, 1970; Clark, 1969; Jensen, 1969;
Logan, 1971, 1972; Ross et al., 1970; Tittle, 1969; Tittle and Rowe, 1973; Waldo and
Chiricos, 1972).

Although certainty is believed to be an important variable in the efficacy of
deterrence, in a study examining certainty of arrest and crime rates, Tittle (1974)
determined that certainty of punishment must reach a critical level before there is a
noticeable change in volume of crime. In essence, an arrest is considered a negative
sanction in itself, and the arrest rate of an area, when it reaches a certain threshold, will
have a negative effect on the amount of crime in that area.
Parole, Probation, and Deterrence

Probation is a criminal justice sentence for committing a criminal act that provides the offender an opportunity to remain in the community and function without a term of incarceration in a penal institution. There are exceptions, such as a short jail sentence or boot camp incarceration as a condition of probation, but for the majority of offenders who are granted probation, no prison or jail time is experienced. Parole is the early release of convicted persons from prison incarceration, usually due to good conduct while in the institution. Most offenders are released on parole due to prison overcrowding. In November 1987, the federal government abolished parole for any offense committed after that date. Parole in the federal system still exists for all offenders who were convicted of committing crimes prior to November 1987. Supervised release was implemented in place of parole and it is made a part of the judgement and commitment order at the time of sentencing. Supervised releasees fall under the jurisdiction of the sentencing court and not a parole board. Terms of supervised release are generally from one to five years and the conditions are almost identical to probation.

Probation and especially parole and supervised release can be described as punishments that fall under specific deterrence. Parolees in most cases have already served a major portion of their sentence incarcerated, and any deterrence is derived from the threat of being revoked and sent back to the institution. Probationers, for the majority have experienced a short stay in local detention following arrest and have experienced a taste of the potential punishment if their probation is revoked. In addition, the sentencing experience is believed to have a startling effect that does constitute minor punishment if the offender feared incarceration and received probation.
Research on the Efficacy of Deterrence

Researchers in the field of criminal justice continually debate the appropriate method of measuring the presence of any deterrent effect that may exist as a result of legislation or social policy with regard to crime. Many researchers contend that aggregate level studies are sufficient to assess any effect deterrence may have on the increase or decrease of crime rates. Aggregate level studies examine relationships or correlations between rates of arrest, rates of conviction, sentencing data and crime rates. Individual level studies are believed to provide more insight into the cognitive processes of the individual. Thus, provide a better assessment of any deterrent effect. Individual studies ask individuals directly what they perceive, for instance the likelihood of arrest and the severity of punishment for a given offense. Self-reported data are then obtained to ascertain whether individuals actually had committed (or intended to commit) those acts.

There has been voluminous amounts of research in the area of capital punishment and deterrence. It is so controversial, that any work that analyzes deterrence as it applies to human behavior, must at least briefly discuss studies of capital punishment. The three following sections examine each area individually.

Aggregate Level Studies

Much criticism of previous research stems from the level of aggregation for studies of deterrence. The city, state, and national aggregation of data assumes that the perceptive certainty of punishment is passed by the media and government agencies. “Parker and Grasmick (1979) present evidence that subjective estimates of the certainty of arrest for
burglary depend strongly on the experiences of oneself and one's friends" (Bursik, et al. 1990, p.433). This indicates that the primary method through which an individual becomes aware of the certainty of arrest, is personal experience and information passed on by his immediate social circle. Bursik, Grasmick and Chamlin conducted a study in 1990, over 100 weeks in five Oklahoma City neighborhoods and they did not find any support for the deterrent effect of arrests on subsequent illegal behavior. It can plainly be seen from the voluminous amount of research regarding the deterrence hypothesis that the question as to whether "deterrence works" continues to be controversial. Zedlewski (1983) found that the determination of results depended on the model structure, unit of analysis and the time frame. Different sources of data may provide varied results regarding any deterrence effect. This is highlighted by Zedlewski’s varied results when analysis was conducted using the FBI’s Uniform Crime Reports and data from the National Criminal Survey.

"The most glaring disparities in findings occurred with respect to the question of whether "deterrence works." UCR-based estimates of the effects of certainty and severity of punishment on crimes rates suggested that deterrence was an ineffective crime-control policy. NCS-based estimates suggested, in contrast, that certainty of punishment was a highly effective policy instrument: a one percent change in arrest probability would induce a 1.8 percent reduction in property offense rates" (Zedlewski, 1983, p.273).

David Nagin in 1978, published, "General Deterrence: a Review of the Empirical Evidence," in which he critiqued more than twenty published analyses of the deterrence hypothesis. Nagin prefaced his critique by stating that although each analysis may have some merit and may be identifying some deterrent effect, the nature of deterrence and the present design of research models have not provided solid empirical evidence of deterrence at work. "Yet despite the intensity of the research effort, the empirical
evidence is still not sufficient for providing a rigorous confirmation of the existence of a deterrent effect" (Nagin, 1978, p.135). Nagin went on to state that the most important aspect of the research is that the evidence is "woefully inadequate" for estimating any magnitude of whatever deterrence effect may exist.

Additional research of a possible deterrent effect was conducted utilizing mandatory jail term legislation for drunk driving offenders. It was proposed that "get tough" legislation would deter individuals from drinking and driving, thus reducing the number of automobile accidents involving fatalities. As of 1988, forty-two states had enacted legislation that mandated jail sentences for convicted drunk drivers. Ross (1990) analyzed data from the state of Arizona which in 1982 enacted legislation that mandated particularly severe penalties for drunk drivers. Ross concluded that,

"Increasing the severity of threatened punishment for drunk drivers through mandatory jail sentences does not appear to have been a successful deterrent in Arizona. We found no significant reduction in the measure of drunk driving when the law was implemented" (Ross, et.al., 1990, p.166).

Individual Level Studies

A great deal of research has been conducted at the individual level as well as the aggregate level previously discussed. Hollinger and Clark (1983) in their study of "Deterrence in the Workplace," found that deterrence may operate within a formal organization such as a company, to deter company theft. The threat of termination from employment or social ostracization does act as a deterrent in certain groups of employees. They found that older men were less likely to steal from the company than younger men.
Women were less likely to steal from the company than men. Perceived certainty and severity of sanctions were also found to be interrelated,

"these data suggest an additive interrelationship between perceived certainty and severity— that the highest degree of deterrent effect is yielded when both certainty and severity are perceived to be high. Furthermore, the situation of high certainty and low severity yields a greater deterrent effect than the converse situation of low certainty and high severity"(Hollinger, 1983, p.414).

Hollinger offered several possible reasons for the differences in levels of deterrence for gender and age. These differences could aid in the explanation of a finding of no deterrent effect in aggregate level studies. A deterrent effect may be operating, but without control for variables such as age and gender, the effect may be missed.

Grasmick and Bryjak (1980) examined the perceived severity of punishment using self reports of illegal behavior. They hypothesized that where perceived certainty of arrest is high, perceived severity of punishment will be inversely related with illegal behavior. The researchers refined their operationalization of perceived severity by noting flaws of previous researchers who asked respondents if they believed a specific penalty to be severe. It was observed that different respondents perceive the same penalty, such as a $100 fine, as severe or not so bad. Therefore, Grasmick and Bryjak asked respondents to imagine the penalty for the offense if caught and state whether it was, “no problem at all, hardly any problem, a little problem, or a big problem.” This refinement of perceived severity proved to be a more reliable measure and supported their hypothesis, “Our analysis suggests that perceived severity of punishment if arrested is a significant variable in the social control process, having an inverse effect on involvement in illegal behavior”(Grasmick, 1980, p.486). Grasmick noted that the deterrent effect was concentrated among those who believe the certainty of punishment is high. He further
stated that people are more influenced by their perception of certainty when the perceived severity of punishment is severe as opposed to being trivial. In essence, if a person perceives his chance of arrest for shoplifting high, but perceives the severity of penalty as low, he will not likely be deterred from committing the theft. On the other hand, if his perception of arrest is high and his perception of penalty is also high, he may be deterred from committing the crime.

In an attempt to study deterrent effects of formal sanctions on criminal behavior, Piliavin (1986) tested a rational choice model of crime data that was collected from respondents utilizing a longitudinal design. Piliavin utilized three populations of persons at high risk of formal sanctions, as previous research has typically utilized populations of high school or college students with dependent variables of non-serious forms of deviance, such as marijuana use and petty theft. From 1975 to 1979, the researchers collected data from persons participating in the National Supported Work Demonstration which was created for persons with severe employment problems. The three groups mentioned earlier were, adult offenders who had previously been incarcerated, known adult drug users and adolescents 17 to 20 years of age who were high school dropouts. Piliavin collected data that pertained to both acquired serious deviant behavior and the individuals who committed the acts. Piliavin found that across all samples and for both measures of illegal activity, both formal and personal risks of punishment have virtually no impact on criminal behavior. The results of the study, “explicitly refute the hypothesis, proposed by Silberman (1976) and Tittle (1977,1980), that the threat of legal punishment deters persons who are less committed to conventional morality” (Piliavin,
1986, p. 115). Piliavin further stated that the results may suggest that the rational-choice model may oversimplify the cognitive process behind criminality.

Klepper and Nagin (1989) conducted research of the deterrent effect by analyzing perceptions of certainty and severity with tax noncompliance as the deviant behavior. Vignettes were constructed and presented to respondents utilizing a plumber who would receive checks for payment of services that would not be reported as income to the government. The vignettes also used exaggerated charitable donations as a variable. These two variables were manipulated in different vignettes to range in value to increase or decrease the amount of risk in not reporting them. Respondents for each scenario were asked, the chance the Internal Revenue Service would catch at least half of the unreported income, (2) the chance the plumber would be criminally prosecuted if at least 50 percent of the unreported income was detected, and (3) the likelihood they would take the risk of the gamble if in the plumber's position. The results suggested that the perceived threat of detection and the fear of prosecution are powerful deterents for many participants in the study. Certainty of punishment plays an important role in the deterrent effect. The possibility of criminal prosecution (severity) was also found to have a pronounced deterrent effect. "In the conventional nomenclature of the deterrence literature, our findings suggest that both the certainty and severity of punishment are deterents, whereas prior findings suggest only the former is an effective deterrent" (Klepper, 1989, p. 741).

In assessing the research of any deterrent effect, capital punishment is perhaps the most widely researched criminal justice policy. The following section briefly addresses a continued controversy to determine whether capital punishment does in fact perform its most commonly stated goal of deterring would-be killers.
Capital Punishment and Deterrence

Capital punishment as a deterrent to the crime of homicide is a heavily debated issue. The debate is perhaps hundreds of years old and numerous studies have been conducted on this issue. It is literally a life and death issue for many death row inmates. Sellin (1959) found no discernable effect that executions reduce homicide rates. On the opposite side of the argument, Ehrlich (1975), found that for every execution of an offender the lives of eight potential victims might have been saved. Passell’s study (1975) found “no reasonable way of interpreting the cross-section data that would lend support to the deterrence hypothesis” (Passell, 1975, p.61-80).

David Phillips (1980) studied the weekly homicide rates in England following executions. He found that homicides were suppressed briefly after an execution. However, the rates actually rose higher than the baseline for the weeks following the first week after the execution.

Evaluation of the Deterrence Doctrine

The fundamental problem of the deterrence doctrine is the inability to confidently isolate the effect. Gibbs (1975) provided an excellent example of this problem of isolating any deterrence effect in research:

“Consider an individual contemplating an act and assume that the individual (1) views the act as contrary to law, (2) knows the prescribed punishment, (3) perceives the punishment as severe, and (4) estimates the actual imposition of the punishment as certain. If the individual commits the act, then the threat of punishment clearly did not deter him or her. However, even if the individual refrains, the omission could be attributed to (1) the dictates of personal conscience, (2) the individual’s recognition of and respect for the social (extralegal) condemnation of the act, and/or (3) the fear of some extralegal consequence (e.g., stigma). So we have a paradox-
regardless of what the individual does (commits or omits the act), it is not evidence of deterrence.”

This discussion indicates that any evidence proposed to support the deterrence theory could be criticized as spurious. Other unseen variables may have resulted in the omission of a criminal act. Deterrence theory is also said to be flawed as it is based on the idea that citizens make decisions based on rational thought and it neglects the spontaneous act or behavior that is beyond the control of the individual. Deterrence, if working, is an invisible function. If a man commits an illegal act, deterrence is said to have failed. However, if he refrains from committing an act, how do we know that he contemplated committing the act in the first place. Deterrence may have had nothing to do with his decision process. If he was deterred by the threat of possible punishment, the researcher may not be able to observe and measure the behavior with validity. Hawkins (1989) puts forth three reasons why a person may fail to break the law: Habituation is defined as conformity. The illegal act was never envisioned. Therefore, criminal sanction has no chance to operate. Enculturation is defined as the socialization of the person to respect the law and authority it represents. People feel the law is a good idea and would not think of violating it. Stigmatization is the fear of loss of respect or status. This is the informal negative sanctions that follow the detection and punishment of an illegal act. Shame in the community is said to drive this person not the fear of the legal sanction.

In addition to the problem of spurious relationships that may exist in research of deterrence, individual perceptions of certainty, severity and celerity must be ascertained. Research has indicated that the public has varied knowledge regarding possible sanctions for criminal acts. “If a deterrent is to be effective, a potential criminal must know which
penalties apply to which crime" (Biddle, 1969:355). A survey conducted by the California State Assembly (1968) indicated that California residents were ignorant of the statutory penalties for different crimes. Although, an individual may not know the exact penalty, he may be deterred from the understanding that he will be punished in some way. The difficulty is assessing which individuals will be deterred from similar sanctions. One person may perceive one year in jail as very harsh, however, another individual may not perceive three years as harsh. Parker and Grasmick (1979) offer further support to indicate that individuals do not accurately estimate the potential costs and rewards of criminal behavior. The mass media portrays only news worthy criminal acts that do not typify those individuals who become involved in the system. They may overestimate or underestimate the possible penalty for a crime due to biased media reports or television programs. To establish that there was a deterrent effect at work, the researcher must establish that the respondent had an accurate perception of the potential sanction and the researcher must be certain that he or she is measuring a similar perception for all respondents.

Deterrence is an unseen phenomenon and establishing any causal order is not possible outside of a theoretical construct. Gibbs (1975) notes, "deterrence cannot be defined so that the phenomenon denoted is subject to observation or measurement in any direct sense." Different theories of deterrence are only testable within that particular theory. Therefore, generalizations are often not possible outside of the theory. Arguments in the literature abound regarding the most important aspect of deterrence, certainty or severity. From the literature review it can be seen that a scenario with high certainty but
trivial levels of severity do not deter deviant behavior. Other researchers argue that high levels of severity alone will deter deviant behavior.

Additionally, establishing any causal order regarding crime rates with certainty and severity is very difficult as they may be interacting simultaneously. "Increases in rates of crime may overburden existing legal machinery, resulting in lowered punishment rates due to limited sanctioning capacity of the criminal justice system" (Pontell, 1978, p. 9). If the system becomes overburdened, offenders are released or not arrested due to the inability of the system to handle the number of cases. "The assumed causal order-lowered certainty of punishment leads to higher crime rates-may in fact be reversed. Higher crime rates (for whatever reason) cause a lowered certainty of punishment" (Hawkins, 1989, p. 151).

Additionally, difficulties arise when assessing the import of deterrence on the dependent variable and specifying the differences between absolute and restrictive deterrence. As discussed earlier, absolute deterrence is total abstinence from deviant behavior, however, when this is not observed the intervention is labeled as failing when in fact restrictive deterrence may have been involved, meaning that deviant behavior was lessened due to the intervention.

Finally, Hawkins (1989) describes a serious threat to deterrence research, the regression effect. Hawkins defines the regression effect as, "...the statistical probability that events extremely distant from the mean are likely, over time, to move toward the mean (regress toward the average)." A perceived successful intervention that is believed to have reduced fatal automobile accidents, such as a crackdown on drunk driving by police officers, may have had nothing to do with the decline, when in fact, the decline in
deviant behavior would have decreased regardless of the intervention, due to the regression effect.

Most criminal legislation and criminal justice policy focuses on deterring offenders or potential offenders from committing criminal acts. Parole and probation policies also focus on deterrence through community supervision mandated by law. Convicted persons lose certain rights, such as the protection from warrantless searches. Deterrence is believed to be a factor in the offender’s decision processes as a prison sentence may result from the failure to follow rules or conditions of supervision.
Probation Supervision and Drug Usage

Probation and parole agents occupy a unique position in the criminal justice system. The requirements of the profession mandate a duality of duties, as the agent must balance social work skills with law enforcement skills in order to protect the community. He or she must aid the parolee in the transition from the institution to the community after incarceration. In the case of probationers, the agent must supervise offenders in a similar manner except the probationer typically has not served an extended sentence of incarceration. The aid provided is often in the form of networking with the myriad of social services agencies as well as employers in the community. These clients often exhibit a plethora of social problems, such as drug and alcohol abuse, failure to maintain employment, marital problems, low level education and poverty. A primary goal of the agent is to give the offender the social tools necessary to overcome the stigma of conviction and function within the norms of society.

The law enforcement duties are in the form of active supervision in the community through the use of surveillance and unannounced visits to the offender. Networking with other law enforcement agencies is performed to identify offenders who do not exhibit the
desire to alter their criminal lifestyle. Negative associations with other offenders are often discovered through this networking and subsequently investigated. Collateral contacts with families, co-workers and neighbors provide the agent with information that may require a law enforcement type of investigation. The agent will investigate information that indicates criminal activity of the offender while under supervision and will effect the arrest of probationers and parolees who commit additional crimes or violate the conditions of supervision.

The most common violation that the probation and parole agent confronts, is drug and alcohol abuse. Evidence of drug usage is a violation that is problematic for the agent as it is a violation of law and technically a new crime has been committed (federal law mandates that persons under federal supervision for probation or supervised release must have their supervision revoked if the offender is found to possess a controlled substance). On the other hand, drug usage is considered a sickness that can be controlled through appropriate substance abuse counseling programs (providing the offender is amenable to a change in lifestyle).

It is commonly agreed that drug abuse is a major problem confronting the supervision of offenders under a court order of probation or parole. The community is placed under substantial risk when an offender’s drug abuse goes unchecked or runs rampant. “Urine analysis of arrestees in 24 U.S. cities uncovered one or more illegal substances in the specimens of 36%-79% of the tested males and 45%-79% of the tested females” (O’Neil, 1992). In addition to this method of assessment, self-report studies of prison inmates adds weight to this data. “A large-scale national survey of alcohol use patterns in state prison inmates identified a history of daily alcohol abuse in 20% of the
sample, with one in three inmates reporting that he was under the influence of alcohol at the time of the commission of the confining offense (Bureau of Justice Statistics, 1983a). Two additional studies highlight poignantly the affect drug abuse has on crime.

"Eckerman, Bates, Rachal, and Poole (1971) determined that 45%-80% of the arrests for robbery in Washington D.C. and New York City, respectively, were of persons who either used or were dependent on heroin" (Walters, 1994, p.3). Inciardi (1979) reported that 356 heroin addicts living in Miami, Florida were responsible for 118,134 felonies during a one year period.

Probation and parole officers must seriously address drug and alcohol abuse by offenders as studies indicate that a majority of persons arrested were under the influence of some type of chemical substance, be it alcohol or drugs. The substances may not have caused the illegal behavior. However, they may have adversely affected the judgement of the individual who would not have otherwise committed the act, or perhaps the substance abuse may have aggravated the circumstances. Liability issues are a serious consideration of probation and parole agencies. Probation officers who do not address drug usage by offenders may find themselves defending against litigation in civil court. For instance, if an offender provides a urine specimen that indicates drug usage and the agent does not refer the offender to counseling, subsequent criminal actions that the offender commits could result in a negligence suit against the probation officer. If the offender commits a crime while under the influence of drugs or commits vehicular homicide while under the influence, this could be considered failure to supervise and the probation agency could be held liable. Thus, the goal of every probation and parole agency is to identify offenders who abuse drugs and alcohol and address the violations through counseling or arrest.
Substance Abuse Detection

Probation and parole agents have the duty to identify offenders who indulge in the use of illegal drugs in order to rehabilitate them or ultimately protect the community. Rehabilitation is only possible if the offenders remain clean and sober during the treatment phase, otherwise the rhetoric of the substance abuse counselor will fall on deaf ears. The officer is then presented with the problem of how to identify an offender who is using drugs and refer him or her to treatment before the offender is beyond help, which will place the community at risk, financially or physically.

There are many methods for detecting substance use by offenders. Visual identifiers are good indicators of drug use. However, the average monthly contact with offenders by probation officers allows too much time between contacts to rapidly identify a problem and implement treatment. In addition, visual identifiers may provide clues to drug usage by offenders but, unless the tests are performed by a drug recognition expert, they are not considered solid evidence for use in court. The evidentiary demands presented at revocation hearings require the utilization of scientifically proven methods of drug detection. Hair tests, blood tests, perspiration tests and urine tests are the most common. There are certain core substances that are the focus of testing procedures. The most common substances are THC a chemical found in marijuana, cocaine, opiate derivatives (i.e., heroin, morphine and synthetics), methamphetamine/amphetamine, PCP (angel dust), LSD (acid), benzodiazepines (xanax, and Valium), barbiturates and alcohol. Other methods must be implemented that are efficient, and accurate but allow for infrequent contact with the offender.
Hair tests involve the physical removal of hair from the body or head of an offender. Hair tests can essentially indicate drug usage as far back as the hair sampled is long. These tests are expensive in comparison to other methods and detection of alcohol is not possible.

Perspiration tests are still fairly new and expensive. They involve the offender physically wearing a patch for seven to ten days which collects perspiration. The patch is removed and sent to the testing facility to be analyzed. The cost is relatively high and will only indicate whether there was usage during the time period of 7 to 10 days. However, the offender may have used many times in this time frame. In addition the sweat patch is not able to detect the use of alcohol and they are currently under review by the manufacturer for accuracy of detection of certain types of drugs.

Blood tests are expensive and are considered to be the most intrusive method. They are commonly utilized for uncooperative suspects arrested for felonies involving driving under the influence of alcohol. Blood tests often only provide a very recent history of drug usage, typically usage within hours. The drug will leave the blood as it is filtered out to be excreted in other bodily fluids in a matter of hours. If the offender used a substance the previous day, it will most likely not be in the blood. Thus, hair, perspiration or urine provide superior methods of detection.

Urinalysis is the most common and cost-effective method of monitoring offenders. Urine testing may be performed at any location in the community where a lavatory is present. The offender is given a specimen bottle and voids urine as he or she would at a doctor’s office. The sample is sealed as evidence and forwarded to a laboratory for analysis. It is not as intrusive as there is no pain compared to the withdrawal of blood and
the offender is not losing hair resulting from hair tests. In addition, the offender is not required to wear a sticky patch on the skin.

Urine testing is considered most effective when the offender has little or no advance warning of the impending requirement to submit a sample. Efficient methods are continually sought by agents to notify offenders to report for submission of a sample at the same time maintaining the randomness of testing. The following section describes a method utilized by the Federal Probation Office in many judicial districts throughout the country.

The Code-A-Phone System

The United States Probation Office in the District of Nevada utilizes urine testing as its primary method of detecting drug abuse among offenders under supervision. At the present time approximately 1,085 offenders are under probation, supervised release or parole supervision. Approximately, 221 offenders participate in a random system of urine testing that requires 2 to 4 urine tests per month. This amounts to approximately 8 to 10 thousand specimens per year. Offenders have different requirements for the number of specimens needed, as offenders begin the program submitting four specimens per month and are eventually reduced to two if there are no indications of drug usage. The cost to the taxpayer amounts to approximately $95,000 per year. In addition to the cost of the analysis of the urine specimens, a position of a laboratory technician was created in 1997, whose duties were to obtain the urine samples from the offenders when they reported to the office. This position costs the taxpayer approximately $35,000 per year. In 1999, a second technician position was added to accommodate the increasing workload.
The Code-a-Phone system implemented by the Federal Probation Office is a method of urine testing that simply utilizes an adapted telephone answering machine that offenders must call every day at a specified time. The code-a-phone system utilizes a quasi-random system of notification for urine specimen submission, which is theorized to prevent the offender from predicting when a test will be required. Each offender is provided a card with a phone number and color (i.e., red, orange green, etc.). The answering machine is programmed so offenders, when listening to the message, will hear if their particular color has been selected. If the offender’s color is mentioned as “the day’s color,” the offender must submit a urine specimen for testing by close of the following day.

This system is based on a theory of deterrence, as the offender is made aware that if he submits a urine specimen that indicates drug usage, negative sanctions will be implemented. The severity of sanctions are such that the offenders are made aware that their freedom will be in jeopardy if they are found to have used illegal drugs.

In order to determine if the Code-a-phone system acts as a deterrent, certainty and severity need to be measured as to the perceptions of probationers and parolees. As noted in the literature review, a primary problem of measuring certainty of deterrence is assessing the perception of certainty. The problem of assessing the appropriate measure of perceived certainty is not at issue with the population under study in this paper. Offenders are made acutely aware at the time of sentencing and the initial meeting with the probation officer that violations of the conditions of supervision, (illegal drug usage for the purposes of this study) will not be tolerated. The sentencing court advises the offender of his responsibilities and the probation officer meets with the offender after
sentencing to review the conditions in detail. With regard to this study, the offender is specifically advised that the submission of urine specimens will be required and the offender is advised that some type of action will be taken if drug use is detected. Certainty of punishment is only questioned if the program is not able to efficiently identify drug users or offenders have little confidence in the program’s ability to detect drug use.

It is believed that this warning of “zero tolerance” (negative sanction for any violation of substance abuse conditions) will deter offenders from returning to the use of drugs and prevent casual users from becoming addicts, which will make them more amenable to treatment.

"Many individuals who are tempted by a particular form of threatened behavior will, according to this theory, refrain from committing the offense because the pleasure they might obtain is more than offset by the risk of great unpleasantness" (Zimring 1973).

Most offenders, immediately following sentencing, possess a fear of the conditions of supervision. They soon learn through experience and discussion with other offenders that drug usage can go undetected if testing is not required, lessening the deterrent effect of probation revocation. Thus, the perceived certainty of detection is not present. Gibbs states that without certainty, the elements of severity and celerity of deterrence are irrelevant. With the use of the Code-a-Phone system the element of certainty is increased making the detection of drug usage more definite. The offender should be deterred from using illegal controlled substances as he will not know from day to day when a urine test will be required and he will refrain from violating the conditions involving no drug usage.
Again, severity is addressed with offenders at the time of sentencing and the initial meeting with the probation officer. The sentencing judge warns the offender of the possible sentence if probation is revoked and the probation officer addresses this and the possible modification of conditions should violations occur. Parolees and supervised releasees, more than probationers are aware of the certainty and severity of punishment as they have most likely seen fellow inmates return to the institution prior to their own release. Information of the probation system flows rapidly in the institution, making everyone aware of the consequences of violations while on supervision.

Efficacy of the Code-A-Phone

In evaluating the urinalysis program and any deterrence effect that may be present, a question must be asked. Is the Code-a-phone system fool-proof? Are there ways offenders can use illegal substances, still provide specimens and still avoid detection, lessening the certainty element of deterrence? Offenders have been caught attaching different apparatus to their bodies with “clean urine” (another person’s specimen) to avoid detection. Commercial companies sell products that reportedly mask the substances in the urine making detection impossible. They are openly marketed on radio stations, the internet and written publications. They are popularly marketed in most tobacco shops that specialize in narcotics paraphernalia. Offenders may attempt to flush their system by consuming large quantities of fluids, which will render the metabolites of illicit substances in the urine undetectable. Most experts agree that the consumption of large quantities of fluids greatly increases the ability of the drug user to avoid detection through urine testing. Test subjects who drank 1 gallon of water after marijuana and cocaine uses
submitted false negative urine samples (Cone 1994). Offenders have also reported that they can time the approximate day when a sample will be required and use drugs accordingly. Various substances metabolize and are expelled by the body at different time intervals. Thus, it is possible for an offender to use cocaine or methamphetamine two times per week and avoid detection. These substances in particular are known to only stay in the body for up to seventy-two hours after use. THC, the active drug contained in marijuana, on the other hand, has been detected in the urine of subjects thirty days from the date of use. Timing behavior is an example of restrictive deterrence discussed by Gibbs. Offenders have decreased their consumption to avoid detection, but they are still committing the deviant behavior. Appendix I contains information regarding the time frame officers consider when utilizing urine testing to detect drugs in the urine.

The focus of this study will be to utilize a research design that will determine if the code-a-phone system is an effective deterrent to drug usage and whether it is cost effective to continue the present testing procedure. The following section examines issues that must be addressed prior to selecting a research design that will provide empirical evidence of whether a deterrence effect is operating or not.

Problems in Assessing Deterrence With This Program

With these issues in mind, this study takes into consideration that some offenders who are required to provide urine specimens may have only a minor history of drug use, and once placed on probation would not contemplate using drugs. Others may refrain due to a lifestyle change following arrest or perhaps before their involvement in the instant
offense, resulting in supervision. We do not know objectively if each participant is
tempted to use drugs while on supervision. If there are offenders who fall into this
category, the urine testing procedure does not deter them as there is no temptation to
deter. A self-report survey will be administered to the participants in an attempt to assess
the temptation of drug usage among the participants.

An additional problem is assessing the perception of severity across the population
being studied, as probationers with modest criminal backgrounds will likely not have the
same perception of punishment as supervised releasees or parolees. In other words, a
sanction such as curfew or home confinement may not be perceived equally by two
different offenders.

Severity of punishment is a major criticism of the urine testing program. Officers
have a sanctions procedure following the discovery of illegal drug use. The sanctions
range from admonishment to incarceration. The level of sanction implemented by the
supervising officer depends on the characteristics of the case, for instance: type of drug
being abused, criminal history of the offender, the risk the offender poses to the
community and willingness to seek counseling for the illegal drug use. This range of
sanctions may affect the severity of punishment as one offender may discover that
minimal sanctions were imposed on another offender as a result of illegal drug usage. If
this offender does not perceive this sanction as severely negative, he may not be deterred
from using drugs. The officer in particular may not exhibit a punitive attitude toward drug
usage and he or she may use a more therapeutic approach, which could limit any negative
perception the offender has of being punished for future drug usage.
Those who promote the disease concept of drug and alcohol abuse would criticize the deterrence theory by stating that drug abusers are not deterred by the possible punishment resulting from their actions as they are driven from an uncontrollable urge and rational thought is not a part of the decision process. Research indicates that high rates of recidivism are found among drug addicts and their actions are, "relatively unaffected by either the threat or imposition of punishment" (Andenaes, 1974 p.84).

The absence of rational thought in drug using offenders is considered, however, the Code-a-Phone is designed to identify drug users and subsequently refer the offenders for treatment before drug addiction takes control. In other words, the majority of the offenders who test positive for the use of drugs are believed to be in the early stages of drug abuse and early intervention is believed the key to preventing drug abuse. Andenaes (1974) concluded from Howard Becker's study of marijuana users that even though specific deterrence with regard to the convicted drug addict may fail, general deterrence may operate effectively to prevent potential users from becoming addicts."Another weakness in the mechanism of deterrence is the fact that threats of future punishment, especially if apprehension is uncertain, do not have the same motivating power as the desires of the moment" (Andenaes, 1974 p.55).
CHAPTER IV

RESEARCH METHODS AND PROCEDURES

Data Source and Study Sample

Permission to collect data for this research project was granted by the Office of Sponsored Programs at the University of Nevada, Las Vegas on October 20, 1999 (OSP #383s0899-081s). The population under study in this project consisted of probationers, parolees and supervised releasees supervised by the United States Probation Office in Las Vegas, Nevada. The United States Probation Office in the District of Nevada supervises approximately 1,082 adult offenders who are convicted of various crimes ranging from petty offenses such as driving while intoxicated to felony offenses such as murder. The primary research site for this project was the United States Probation Office, where the offenders were required to report to submit urine specimens and the research instrument was administered. The first phase of the project required officers to make unannounced contacts in the field with offenders and obtain urine specimens.

In this phase of the project a random sample of 30 offenders was removed from the list of 221 offenders who were required to submit urine specimens for the detection of illicit substance abuse. The group of thirty (30) offenders removed from the code-a-
phone testing system were tested by officers in the field and they were given no prior notice when they would be required to submit a urine specimen.

In the second phase of the study, 221 offenders who were required to participate in the urine testing program were targeted for the administration of the research instrument. Of the 221 participants, 186 offenders volunteered to complete the instrument, 19 offenders failed to report for urine testing during the two weeks the survey was conducted and 16 offenders refused to participate in the study, resulting in a response rate of 84% (See Table 1). The research instrument used in this study included items related to offender demographics, offense of conviction, criminal history, drug use history, history of drug use while in the program, attempts at subterfuge, number of positive specimens and other variables to assess opinions of the testing program (see Appendix 1 for data instrument).

Research Hypothesis

The main purpose of this study is to investigate the relationship between sanctions utilized by the United States Probation System in the District of Nevada and deterrence of illicit drug usage of the offenders under supervision. The secondary purpose of the study is to evaluate the urine testing program as a deterrent to illicit drug usage and its ability to detect offenders who are abusing illicit substances. Over the last 3 years the rates for positive drug tests have been more than 50 percent below the national average for the 94 federal districts. The rates of positive drug tests are presented in Table 1.
Table 1: Positive Drug Testing Rates

<table>
<thead>
<tr>
<th>Year</th>
<th>National Average # of specimens</th>
<th>% Positive</th>
<th>District of Nevada # of specimens</th>
<th>% Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>680293</td>
<td>9.0</td>
<td>8452</td>
<td>3.8</td>
</tr>
<tr>
<td>1999</td>
<td>616460</td>
<td>9.3</td>
<td>8686</td>
<td>3.6</td>
</tr>
<tr>
<td>2000</td>
<td>606858</td>
<td>8.9</td>
<td>9840</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Given this relatively low percentage of positive urine tests submitted in the District of Nevada compared to the national average for all 94 federal districts, I hypothesize that the percentage of offenders who are abusing illicit drugs is higher than is currently being detected through the use of the code-a-phone system. The field-tested group of offenders in the study should reveal a higher percentage of positive urine tests than the group who remained in the code-a-phone testing program. This might be a result of the code-a-phone allowing for a 24 hour period before the test is submitted, giving the offender the opportunity to utilize some type of subterfuge to avoid detection. Such a window is not available under normal field testing.

The policy of the United States Probation Office is to impose graduated sanctions for illicit drug usage in order to deter offenders from abusing drugs and becoming threats to the community or themselves. To determine if the code-a-phone deters offenders from drug usage, respondents were asked about their confidence in the program's ability to detect illegal drugs. If offenders have no confidence in the ability of the drug testing program to detect illicit drug usage, they will not be deterred by sanctions that may be imposed if they submit a positive specimen. Following the administration of the self
report instrument, the actual ability of the testing program must be evaluated. The field-testing phase will compare the rates of positive urine tests to the parent group.

Variables

Dependent Variables

In the District of Nevada, the rate of positive urine tests is below the national average and to measure variables through official file documentation would only provide information on offenders who have tested positive for drug usage. The suspicion that many drug using offenders are not being detected is addressed here through the use of self report data on drug abuse. Participants were asked if they had used illegal drugs while in the drug testing program, how many times they had used, and what illicit drug was consumed. The main dependent variable USEPROGR was coded as a yes or no answer if the offender had used drugs since being placed in the testing program.

Also of interest in the study was the extent to which program participants were deterred from alcohol use. The use of alcohol is also prohibited for all offenders who participate in the urine testing program. Respondents were asked to indicate if they were aware of this policy, (AWNOBOOZ). Anecdotally, when confronting offenders with the violation of consuming alcoholic beverages, they often state an unawareness of the alcohol prohibition. The offender's awareness would obviously have a relationship with their compliance with this rule. Two other variables were examined; If they had used alcohol while in the testing program (USEBOOZE), and the average number of times alcohol was used per week while in the program (BOOZEWEE). Coding and descriptive statistics for the dependent variables used in the study are presented in Table 2.
Table 2: Self-Reported Use of Illegal Drugs and Alcohol While in Drug Monitoring Program

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Coding</th>
<th>%</th>
<th>Mean</th>
<th>Std Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>USEPROGR</td>
<td>Used Illegal Drugs While in the Program</td>
<td>No=1, Yes=2, Missing=6</td>
<td>79.4</td>
<td>19.6</td>
<td></td>
</tr>
<tr>
<td>(N=180)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOWMANUS</td>
<td>Number of Times Used Drugs</td>
<td>1</td>
<td>40.0</td>
<td>2.54</td>
<td>2.005</td>
</tr>
<tr>
<td>(N=35)</td>
<td></td>
<td>2</td>
<td>28.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>11.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>2.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>2.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>2.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>11.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRUGS1</td>
<td>Type of Drug Used</td>
<td>Marijuana=1</td>
<td>41.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=24)</td>
<td></td>
<td>Cocaine=2</td>
<td>16.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methamphetamine=3</td>
<td>37.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other=12</td>
<td>4.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POLY2</td>
<td>Multiple Drug Use While in Program</td>
<td>2 or more drugs</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=14)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AWNOBOOZ</td>
<td>Knowledge of Alcohol Prohibition</td>
<td>Yes=1, No=2</td>
<td>78.6</td>
<td>21.4</td>
<td></td>
</tr>
<tr>
<td>(N=182)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USEBOOZE</td>
<td>Used Alcohol During Program</td>
<td>No=1, Yes=2</td>
<td>69.6</td>
<td>30.4</td>
<td></td>
</tr>
<tr>
<td>(N=181)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOOZEWEE</td>
<td>Number of Times Used Alcohol Per Week</td>
<td>1</td>
<td>50.8</td>
<td>1.93</td>
<td>1.40</td>
</tr>
<tr>
<td>(N=65)</td>
<td></td>
<td>2</td>
<td>26.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>15.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>3.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;6</td>
<td>4.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A high percentage of offenders (79.4%), reported that they had not used controlled substances since being placed in the testing program. Of the 20.6 percent of offenders who reported using drugs since placement in the program, the mean number of times offenders used drugs was 2.54. Slightly more than two thirds of the drug abusers (63.1%) reported ingestion of only one type of drug, with the majority using marijuana followed by methamphetamine and cocaine respectively. More than one third (36.8%) of the drug abusers used two or more drugs.

The majority of offenders acknowledged the alcohol prohibition 78.6%. A higher proportion of offenders reported using alcohol (30.4%), compared to the reported rate of drug abuse (20.6%). The mean number of times respondents reported using alcohol was 1.93.

Independent Variables

Demographic information was collected on gender, race, and level of education. Variables to describe the present criminal conviction and past criminal history were collected to examine any relationship with criminal history and drug use while in the testing program. The experience an offender has in the criminal justice system may have some influence on the extent to which the threat of detection and sanctions have on drug use. This relationship could show that those with more criminal convictions are more prone to use illicit drugs or that these individuals are more deterred from using drugs as they have been sanctioned in the past.

To examine any relationship between the type of crime committed and the use of drugs and alcohol, offenders were asked to report their current offense of conviction.
Violent offenders are typically perceived as having less impulse control and to be more desperate than more sophisticated offenders who commit fraud. Offenders who have less impulse control might not be affected by any deterrence of the drug program or the sanctions that follow detection. Drug offenders might have more access to and experience with using illicit substances than other offenders. The current offense (CONVICTI), was coded as either a violent offense, drug offense, property offense, weapons offense, or misdemeanor. Violent offenses included all offenses of robbery, assault/battery, homicide and threats. Property offenses included all theft, fraud, wire fraud, credit card fraud and money laundering. Drug offenses consisted of all felony drug possession, trafficking, distribution and conspiracy. Weapons offenses included all felony weapons offenses, such as ex-felon in possession of a firearm or possession of fully automatic weapons not registered with the Bureau of Alcohol, Tobacco and Firearms. Misdemeanors included all offenses such as Class A misdemeanors and those petty offenses that occur on federal property. Misdemeanor offenders who are sentenced to supervision in the federal system are primarily the result of those petty offense and misdemeanor crimes that occur on federal property, such as driving under the influence of alcohol and simple possession of drugs within the boundaries of military installations or national parks.

The total number of felony and misdemeanor convictions, (FELONIES/MISDEMEAN) was also included in the analysis. These two variables attempted to measure the criminal background of offenders and any relationship with the use of drugs and alcohol while in the program. Except for driving under the influence of alcohol, most traffic offenses are not considered criminal in nature. The coding for all descriptive variables of the sample, can be viewed in Table 3.
Table 3: Description of Sample (N=186)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coded</th>
<th>%</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENDER (N=186)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>male=1</td>
<td></td>
<td>84.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>female=2</td>
<td></td>
<td>15.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RACE (N=177)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White=1</td>
<td></td>
<td>62.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American=2</td>
<td></td>
<td>20.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic=3</td>
<td></td>
<td>10.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian=4</td>
<td></td>
<td>3.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native American=5</td>
<td></td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDUCATION (N=177)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some High School=1</td>
<td></td>
<td>16.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>44.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School/G.E.D.=2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some College=3</td>
<td></td>
<td>34.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College Degree=4</td>
<td></td>
<td>4.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONVICTION (N=182)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violence=1</td>
<td></td>
<td>10.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property=2</td>
<td></td>
<td>35.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug Offense=3</td>
<td></td>
<td>39.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weapons=4</td>
<td></td>
<td>3.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Misdemeanor=5</td>
<td></td>
<td>11.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRIOR FELONIES (N=185)</td>
<td>Number</td>
<td>1.5</td>
<td>1.11</td>
<td></td>
</tr>
<tr>
<td>PRIOR MISDEMEANORS (N=184)</td>
<td>Number</td>
<td>1.3</td>
<td>1.74</td>
<td></td>
</tr>
</tbody>
</table>

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A history of substance abuse and ongoing treatment participation may also be important determinants of drug abuse while in the program. Measures were thus included for both variables. Offenders were asked if they had ever in their life used illegal drugs (LIFESUSE1). The presence of outpatient drug treatment (DRUGCOUN) while in the testing program was collected to examine if any relationship exists with drug use while in the program. A documented history of substance abuse (HISTORY) typically describes an individual who has experienced some type of problem in their life due to illicit drug or alcohol abuse. It may be in the form of a prior arrest for drug use or possession or an admission of drug usage at any time in the criminal justice system. This documented history is the primary reason an offender is placed into the drug program. However, many offenders are placed into the program simply because the sentencing judge may believe that substance abuse may be the root cause of the criminal behavior.

Offenders who report using illicit drugs in their life are believed to have a history of abusing either single or multiple drugs. Anecdotal statements of offenders indicate that many offenders have a drug of choice and have no experience with other illegal substances. Respondents were asked if they only used a single drug (SINGLDRU) or multiple drugs (POLYABU2) in their lives. How many times offenders used drugs per week (TIMESWEE) is the measure of an offender’s involvement in the drug subculture or the possible level of addiction. Codes and statistics for variables describing substance history and current substance abuse treatment experiences are presented in Table 4.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Coded</th>
<th>%</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIFEUSE1</td>
<td>Ever Used Illegal Drugs</td>
<td>Yes=1</td>
<td>94.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=186)</td>
<td></td>
<td>No=2</td>
<td>5.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SINGLDRU</td>
<td>Type of Illegal Drug Used</td>
<td>Marijuana=1</td>
<td>69.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=52)</td>
<td>(Single Drug)</td>
<td>Cocaine=2</td>
<td>15.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methamphetamine=3</td>
<td>7.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other=4</td>
<td>7.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIMESWEE</td>
<td>Number of Times Used Illegal Drug Per Week</td>
<td>1</td>
<td>22.1</td>
<td>3.93</td>
<td>2.65</td>
</tr>
<tr>
<td>(N=163)</td>
<td></td>
<td>2</td>
<td>18.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td>15.3</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>11.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>3.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>6.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;7</td>
<td>21.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POLYABU2</td>
<td>Multiple Drug Use</td>
<td>2 to 4</td>
<td>60.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=123)</td>
<td></td>
<td>5 to 8</td>
<td>22.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9 to 12</td>
<td>17.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HISTORY</td>
<td>Documented History of Drug Use</td>
<td>Yes</td>
<td>67.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=186)</td>
<td></td>
<td>No</td>
<td>32.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRUGCOUN</td>
<td>Mandatory Drug Counseling</td>
<td>No</td>
<td>46.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=186)</td>
<td>While in Program</td>
<td>Yes</td>
<td>53.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
94.1% of the offenders reported using illegal drugs at some time in their life. SINGLDRU was collapsed into four categories: marijuana, cocaine, methamphetamine and other, (due to the low numbers of offenders who reported use of other substances). As expected, offenders reported using marijuana as the single most common drug of abuse, (69.2%), followed by cocaine, methamphetamine and other, respectively. POLYABU2 was also collapsed into following groups: 2 to 4 drugs, 5 to 8 drugs, 9 to 12 drugs. The majority of poly-drug abusers (60.2%) reported using 2 to 4 different drugs in their life with the percentage decreasing as the number of drugs increased. Offenders reported the mean number of times per week drugs were used as 3.93 times. More than two-thirds of the offenders reported a documented history of drug abuse. A slightly greater proportion of offenders reported mandatory participation in drug counseling (53.2%) as those not required to attend (46.8%)

Self-reported drug test submissions and evasive behavior data were collected to analyze the effectiveness of the program. The rate of self-reported positive tests was compared to the rate of positives reported by the testing program. If there is a significant difference in the positive rate of field tests compared to the in-office program, self reported methods of evasive behaviors could explain the discrepancy. The number of specimens an offender has submitted (URINESPE) indicates their length of experience in the testing program and is important in the analysis of the program.

Evasive behavior or subterfuge was measured using four variables. STALLPOS measured if offenders ever failed to provide a urine specimen if he/she believed it would be positive for drug use. If the offenders reported that they had failed to provide a sample, a follow up question addressed whether that failure was due to the failure to report to
submit a specimen (FAILSHOW) or if offender stated to the staff an inability to urinate at the time of the test (STALL). FLUSHSY measured if offenders ever consumed large quantities of liquids to flush the bodily systems prior to submitting a sample. Many over the counter products purport to mask the presence of metabolites or drugs in the urine. Offenders were asked whether they had used over the counter products to mask drugs contained in the urine (MASKSAMP). Probation staff have reported observing offenders wearing different types of apparatus to submit another person’s “clean urine” to avoid detection. Therefore, offenders were asked to indicate if they had ever used an apparatus attached to the body to conceal someone else’s urine in order to submit a negative test, (APPARATU). Coding of these variables and descriptive statistics are presented in Table 5.
Table 5: Self-Reported Drug Test Submissions and Evasive Behaviors While in the Program

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Coding</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>URINESPE (N=184)</td>
<td>Number of Urine Specimens Submitted</td>
<td>0 1.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 to 5 8.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 to 10 8.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 to 15 8.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>16 to 20 8.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>21 to 25 6.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>26 to 30 7.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Greater than 30 50.5</td>
<td></td>
</tr>
<tr>
<td>STALLPOS (N=180)</td>
<td>Failed to Give Sample</td>
<td>no=1 95.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>yes=2 5.0</td>
<td></td>
</tr>
<tr>
<td>FAILSHOW (N=12)</td>
<td>No Show for test Stalling Tactics</td>
<td>no=1 58.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>yes=2 41.7</td>
<td></td>
</tr>
<tr>
<td>FLUSHSYS (N=184)</td>
<td>Attempted to “Flush” system</td>
<td>no=1 92.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>yes=2 7.1</td>
<td></td>
</tr>
<tr>
<td>MASKSAMP (N=183)</td>
<td>Use of over-the-counter products to mask drug use</td>
<td>no=1 94.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>yes=2 5.5</td>
<td></td>
</tr>
<tr>
<td>CHAPATTE (N=148)</td>
<td>Change Pattern of Abuse.</td>
<td>Yes 7.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No 92.6</td>
<td></td>
</tr>
<tr>
<td>DRCHOICE (N=180)</td>
<td>Alter Drug of Choice</td>
<td>Yes 3.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No 43.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A 52.8</td>
<td></td>
</tr>
<tr>
<td>APPARATU</td>
<td>Used Apparatus to submit someone else’s urine</td>
<td>Yes 99.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No .5</td>
<td></td>
</tr>
</tbody>
</table>

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Slightly over half of the participants reported submitting more than 30 urine specimens (50.5%), indicating a high level of experience in the drug testing program. Offenders are tested from 2 to 4 times per month. Therefore, approximately 50 percent of the respondents have been subject to drug testing for at least 30 weeks. Evasive behaviors were rarely reported. Approximately 7 percent (7.1%) of the respondents reported changing their drug of choice to avoid detection. It must be noted that only 6 respondents reported this evasive behavior. Similar results were observed (7.4%) for offenders who reported changing their pattern of drug usage to avoid detection. Only 5 percent of the participants reported failing to provide urine specimens when they believed they would test positive for drug usage. Of the 5 percent of offenders who failed to submit, a slightly greater proportion of offenders utilized stalling tactics (54.5%) compared to failing to report (41.7%). The use of masking products was reported by 5.5 percent of the respondents. The most common of all the evasive behaviors was the drinking of fluids to flush the bodily system at 7.1 percent.

The evaluation of the drug testing program made it necessary to evaluate the participants according to their confidence in the ability and accuracy of the program to detect drug usage. We would expect a lack of deterrence if offenders do not have confidence in the program to detect their illicit drug usage. However, if offenders possess a high degree of confidence that the program is procedurally sound and accurate, it is expected that they would be deterred from illicit drug usage. It is accepted that this measure is difficult to capture and assess. However, the low rates of detection coupled with the low rates of self-reported drug usage indicate some deterrent effect. Offenders were asked to report how many urine specimens they submitted and how many times they
had tested positive for drug usage (UAPOSITI). Falsely identified positive specimens were also considered as a measure of the accuracy of the program. Offenders were asked to report how many of their specimens were falsely identified as positive for drug usage (FALSEPOS). Other variables used to evaluate the program included offender opinions regarding accuracy and their confidence in both urine testing (CONFIDUA) and sweat testing (CONFIDSW). The window of notification of a pending urine test was measured by the opinions of offenders as to whether the 24 hour notice (DAYNOTIC) was a sufficient amount of time to remove drugs from the bodily system prior to submitting a test. Respondents were asked if they perceived drug testing (TESTDETE), or the threat of prison (PRISDETE) as a deterrent to drug usage. The coding and statistics describing self-reported effectiveness of the drug monitoring program are presented in Table 6.
Table 6: Self-Reported Effectiveness of Drug Monitoring Program

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Coding</th>
<th>%</th>
<th>Mean</th>
<th>Std Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UAPOSITI</td>
<td>Positive Test for Drugs</td>
<td>0</td>
<td>68.7</td>
<td>.67</td>
<td>1.42</td>
</tr>
<tr>
<td>(N=182)</td>
<td></td>
<td>1</td>
<td>17.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>6.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>4.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;6</td>
<td>3.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TESTDETE</td>
<td>Report that drug testing deterred drug use</td>
<td>Yes=1</td>
<td>31.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=179)</td>
<td></td>
<td>No-2</td>
<td>68.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRISDETE</td>
<td>Did the threat of prison deter drug usage</td>
<td>Yes=1</td>
<td>53.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=180)</td>
<td></td>
<td>No-2</td>
<td>46.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCURATE</td>
<td>Feel testing program is accurate?</td>
<td>Yes</td>
<td>86.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=176)</td>
<td></td>
<td>No</td>
<td>13.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FALSEPOS</td>
<td>Test positive when in fact it was negative?</td>
<td>Yes</td>
<td>12.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=181)</td>
<td></td>
<td>No</td>
<td>87.3</td>
<td></td>
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</tr>
<tr>
<td>CONFIDUA</td>
<td>Rate of Confidence/ Urine Testing</td>
<td></td>
<td>8.53</td>
<td></td>
<td>2.49</td>
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<tr>
<td>(N=161)</td>
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<tr>
<td>CONFIDSW</td>
<td>Rate of Confidence/ Sweat Patch</td>
<td>l=min</td>
<td>8.43</td>
<td></td>
<td>2.77</td>
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<tr>
<td>(N=111)</td>
<td></td>
<td>10=max</td>
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<td></td>
<td></td>
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<tr>
<td>DAYNOTIC</td>
<td>One Day Notice</td>
<td>Yes</td>
<td>11.8</td>
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</tr>
<tr>
<td>(N=170)</td>
<td></td>
<td>No</td>
<td>88.2</td>
<td></td>
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</tbody>
</table>
A high proportion of offenders (86.4%) had the opinion that the testing program is an accurate program. In addition to the accuracy, the mean confidence level of offenders for both urine testing and sweat testing was 8.53 and 8.43 respectively on a 1 to 10 scale (1 representing no confidence and 10 representing high confidence). Those two measures indicate a somewhat high level of confidence in the program to identify drug usage. A high proportion of offenders (88%) did not feel that 24 hours notice was enough time to remove drugs from the bodily system prior to the submission of a test. It is interesting to observe that a high proportion of offenders (68.7%) stated that they were not deterred from drug usage by the testing program. There are other factors to study in consideration of this observation. Perhaps offenders are not deterred from drug usage as they are not tempted to use drugs. It is conceivable that a high proportion of offenders are not deterred because drugs are no longer an issue in their life. One variable that might explain this high proportion is the high proportion of offenders who stated that they are deterred from drug usage due to the threat of incarceration (53.9%). It is possible that offenders are actually deterred by the drug testing program as the offender perceives the most likely sanction resulting from positive urine test submissions is incarceration.

The Field Study

Data was collected from two different groups of offenders on federal supervision who have been ordered by the court to participate in drug testing. A group of 30 offenders was randomly selected from the 221 participants in the code-phone program. This group was removed from the code-a-phone system and tested without any announcement once per week on random days in the field for thirty days. An officer visited each offender in
the field and advised the offender that he or she had two hours to void into the specimen container. This group’s positive rate (the percentage of positive tests for the use of drugs) would then be compared with the positive rate for the remaining group of 191 participants. The remaining 191 offenders continued to be urine tested in the ordinary course using the code-a-phone system. Offenders called an answering machine every day after 5:30pm and if their assigned color was heard on the message they were required to submit a urine specimen the following day. It was necessary to distinguish between the targeted number of specimens and the actual number of specimens obtained. Both groups presented different obstacles which prevented the acquisition of the target number. In the field test group, officers were forced to try to locate offenders in the early morning hours to ensure contact with them. Otherwise, offenders were more difficult to locate to obtain samples. Other duties of officers would take priority over obtaining samples. These duties might be an emergency with another case under supervision, court appearances or training. Offenders in the field were often unable to urinate on demand which occupied officers at one location for an inordinate amount of time, preventing them from other contacts. The only obstacle within the code-a-phone group was offenders failing to report for testing. Data collected regarding the two urine testing groups is presented in Table 7.
<table>
<thead>
<tr>
<th>No. of Offenders (N=221)</th>
<th>Targeted No. of Specimens</th>
<th>No. of Specimens Acquired</th>
<th>% not acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code-A-Phone</td>
<td>191</td>
<td>495</td>
<td>470</td>
</tr>
<tr>
<td>Field Study</td>
<td>30</td>
<td>120</td>
<td>104</td>
</tr>
</tbody>
</table>

It was observed that the field study resulted with more than twice the proportion (13%) of urine specimens not acquired as compared with the code-a-phone group (5%). The acquisition of samples is a major issue in the evaluation of the program. With regard to the detection of illicit substances, it may be more effective to obtain samples in the field with no notice to the offender, however the costs and efficiency are important considerations.

Following the collection of each sample the urine specimens from each group were tested using the same procedure. They were tested for specific gravity and then screened for illicit drug use for the following controlled substances; marijuana, cocaine, methamphetamine/amphetamine, opiates and PCP. The specific gravity test is utilized to eliminate the chance of an offender flushing their bodily system thereby diluting their urine specimen. Specific gravity is obtained by comparing the weight of a drop of distilled water (1.000) to the weight of a drop of urine (Elbert 1997). This rapid test uses a clinical refractometer to determine if the offender had flushed their bodily system with fluids to avoid detection. The test is performed by extracting a drop of urine from the specimen and placing it in the clinical refractometer and reading the range indicated by the device. The acceptable range for a sample is 1.003 to 1.040. The District of Nevada
has set a slightly higher minimum of 1.005 to reduce the chance of false negative results. Anything below 1.005 indicates the sample was possibly diluted by drinking a large amount of fluids. Any specimen with low specific gravity was rejected and the offender was required to supply a second sample until the specific gravity was in the acceptable range. The longer the person is asked to wait without drinking fluids the greater the metabolites concentrate in the urine. An offender is typically required to wait at least thirty minutes and until the level of metabolites becomes more concentrated in the urine which usually produces an acceptable specific gravity. If the second sample is still diluted, the process is repeated until an acceptable sample was obtained.

If a specimen registered positive in the screening process it would then be packaged using a chain of custody form and sent to Pharmchem Laboratories for confirmation using gas chromatography mass spectrometry otherwise referred to as GCMS. Following the confirmation of a positive test, Pharmchem Laboratories forwarded documentation to the probation office where this data was logged into a computer database.

This study design was to determine if offenders would feel more free to use illicit substances without the threat of random testing through the code-a-phone. The twenty four hour notice given to offenders prior to their specimen submission could hypothetically allow for manipulations of the system to avoid detection. Anecdotal information from offenders and the District of Nevada’s below average positive urine rate has created much discussion among staff members regarding the validity of the testing system. This design attempts to measure many of the possible factors which influence a particular offender’s decision to use illicit drugs.
CHAPTER V

RESULTS

Field Study Results

The design of the field testing study was to eliminate the ability of offenders to utilize evasive type behaviors to avoid being detected by the drug testing program. If the hypothesis is true, the rate of offenders detected for illicit drug usage in the field would be greater than the rate for detection by the code-a-phone system, as offenders would not have the twenty four hour notice to flush their system, use masking products, attach an apparatus to their body, or fail to report for testing. The only option for offenders to manipulate the system would be to refuse to test by stalling.

Each group was separated into two categories. The first measures the number of positive specimens identified and the second measures the number of offenders who submitted positive urine tests. The purpose of analyzing the two different variables was to take into consideration that one offender may submit more than one positive sample during the testing period. This method allowed for a more thorough analysis of the results. The results of the field test study are presented in Table 8.
Table 8: Rates of positive urine specimens for illicit drug usage.

<table>
<thead>
<tr>
<th>Testing Group</th>
<th>No. of Offenders/Specimens Identified</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code-a-Phone Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of specimens</td>
<td>18</td>
<td>3.8</td>
</tr>
<tr>
<td>No. of offenders</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Field Testing Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of specimens</td>
<td>5</td>
<td>4.8</td>
</tr>
<tr>
<td>No. of offenders</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>

Only one percent more of the offenders were detected as using illicit drugs in the field study sample (10%), when compared with the code-a-phone group, (9%). The one percent disparity between the two groups is questionable as one of the offenders identified in the field test group tested with positive results for the use of marijuana. It is highly probable that this offender who used marijuana would have been detected by the code-a-phone system due to the longevity of THC metabolites remaining in the body after use. Many offenders test positive for the presence of THC metabolites from several days to four weeks after one ingestion of marijuana.

Evasive behaviors to avoid detection were reported as a very rare occurrence and this is supported by the lack of any significant difference in the rates of offenders identified as using illicit drugs between the two test groups. These two separate measures indicate that the code-a-phone program is somewhat accurate so far as offenders are not subverting the testing procedures on any significant scale. The code-a-phone program’s twenty-four hour notification has not failed to deter offenders from drug usage and increased the need for them to resort to evasive behaviors to avoid detection. The self-report data supports this
inference and is illustrated in the opinions of the participants presented in Tables 4 and 5. Offenders reported rare incidents of evasive behaviors and expressed high confidence in the program as being accurate. Only 5 percent of the offenders (N=180) reported failing to submit urine specimens when they believed the specimen would result in the positive detection for drug usage. Of the number of offenders who indicated that they failed to submit a sample, six stated that they stalled by stating they “could not urinate,” and four offenders failed to report to the probation office for testing. One of the offenders reported both evasive behaviors.

Failing to report for urine testing is an obstacle for the program to identify drug users, and it is noted that offenders may have legitimate reasons for failing to report for a urine test, such as work schedule, transportation problems or irresponsibility. This number is minimized due to the policy of the probation office to treat failures to report in the same manner as a positive specimen. Offenders are limited to a maximum of six violations of the drug treatment program before probation revocation proceedings are pursued. After each violation, offenders are admonished and sanctioned with graduated punishments to bring them into compliance with the rules of the program. Over the duration of the field study, 5 percent (25 specimens) of the code-a-phone group were not submitted due to failure to report. This number is considered acceptable compared to the percentage of urine specimens that were not obtained by officers performing the field test study, 13%.

Additionally, the field study resulted in a higher percentage rate of failure to obtain samples and at a much higher cost. Laboratory technicians are paid a substantially less salary than probation officers to do the same task the officers performed. Officers
utilized government vehicles or were paid mileage to visit the offenders in the field. Many offenders were not contacted at the first location forcing the officers to travel to additional locales to obtain one specimen. Without the aid of a timework study, it can be safely stated that it is more cost effective to have many offenders report to one location than have a few officers travel to many locations to reach similar results.

Bivariate Analysis

The majority of variables in this study were coded in a dichotomous manner except for EDUC2, RACE2, CONVICT2, TIMEWEE and URINSPE2, which were coded with more than two categories. Cross tabulations and Pearson’s Chi square tests were used to assess bivariate relationships between the independent variables and the dependent variables. If significant relationships are observed between any of the independent variables USEPROGR or USEBOOZE, the null hypothesis of statistical independence can be rejected.

TIMESWEE was analyzed first as a continuous variable and then collapsed in a dichotomous manner. The continuous variables BOOZEWEE and TIMESWEE were analyzed using an independent samples t test with the dependent variables. No significant relationships were observed. Nine predictor variables exhibited statistical significant relationships with the dependent variable USEPROGR and eight predictor variables exhibited statistical significant relationships with USEBOOZE. Variables which represent evasive behaviors and illustrate statistical significant relationships were separated from the standard predictor variables for purposes of discussion.
Table 9 presents Chi square results which show statistically significant relationships for variables other than evasive behaviors and drug use while in the program. The result of a Chi square test show that the use of drugs while in the testing program (USEPROGR) is statistically significant with whether offenders had used alcohol (USEBOOZE) while in the program. Approximately twice the percentage of offenders reported using alcohol and drugs, 30.9%, where 16.7% of the offenders reported only using drugs. The results of a chi-square test indicate that the percentage of drug using offenders who were required to attend counseling (DRUGCOUN), was approximately twice that of those who were not required to attend counseling. Statistical significance was also observed between the dependent variable and whether the drug testing program deterred (TESTDETE) offenders from using drugs. The percentage of those who say they were deterred were more than twice as likely to use drugs (35.2%) than those who said they were not deterred.

Table 10 presents the Chi square results of offenders who self-reported the use of alcohol (USEBOOZE) and the predictor variables. The results of a Chi square test indicate that a greater proportion of alcohol using offenders (38.9%) stated that prison deterred them from drug use (PRISDETE) than not (22.5%). The relationship between whether the drug testing program helped offenders refrain from drug use and alcohol use is statistically significant. Results from a Chi square test indicate that a greater proportion of alcohol users (40.5%) stated that the drug testing program helped them refrain from drug usage than not (20.3%). A similar relationship was observed with alcohol abusing offenders (36.7%) who stated that drug counseling was beneficial in helping them refrain from drug usage as compared to those who stated it was not helpful (18.4%).
Tables 11 and 12 present the Chi square results of the dependent variables USEPROGR and USEBOOZE, with the predictor variables which describe evasive behaviors, respectfully. The hypothesis states that offenders who self-report drug usage will not be deterred due to the use of evasive behaviors which allow avoidance of detection. The results of a Chi square test indicated that a significant relationship exists between offenders who used drugs and stated they changed their drug of choice to avoid detection (83%) and those drug users who did not (28.9%). A similar relationship was observed for alcohol users who stated they changed their drug of choice to avoid detection (83.3%) and those alcohol users who did not (26.0%). A greater proportion (63.6%) of drug users stated that they changed their pattern of drug use to avoid detection (CHAPATTE) and (21.2%) did not change their pattern. A similar relationship was observed for alcohol users (63.6%) who changed their pattern of drug use compared to those who did not (30.6%).

A significant relationship was observed between offenders who stated that they used an apparatus and used drugs (100%) when compared with those drugs users who did not (20.2%). It must be noted that the number of offenders who admitted to using an apparatus was only one. This could possibly skew that analysis due to the lack of the expected count. A Chi square test indicated a significantly higher proportion (60.0%) of drug users who stated they used a masking product when compared with drug users who reported they did not (18.6%).

The evasive behavior of flushing is of particular concern in the study as it poses the greatest threat of reducing the effectiveness of the drug detection program (Elbert 1997). With both dependent variables drug use and alcohol use a significant relationship was
observed with offenders who flushed their system. A higher proportion of drug users who stated they had flushed their bodily system (69.2%) was observed compared to drugs users who stated that had not (17.0%). Although still significant, a smaller gap was observed between alcohol users who flushed (69.2%) and alcohol users who did not (27.4%).

Very similar results were observed for the dependent variables and the predictor variable representing stalling tactics. A significantly higher proportion of drugs users stated that they have failed to submit specimens when they believed they would be positive (66.7%) than those drug users who did not stall (18.7%). A higher proportion of alcohol abusers stated used stalling tactics (66.7%) than alcohol abusers who did not stall (28.2%). The rest of the predictor variables did not result in statistical dependent relationships with the dependent variables.
Table 9: Bivariate Relationships Between Drug Use While in the Program and Predictor Variables (N=186)

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>No Drug Use</th>
<th>Used Drugs</th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SEX</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>78.9%</td>
<td>21.1%</td>
<td>.148</td>
</tr>
<tr>
<td>Female</td>
<td>82.1%</td>
<td>17.9%</td>
<td></td>
</tr>
<tr>
<td><strong>EDUC2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; H.S.</td>
<td>81.5%</td>
<td>18.5%</td>
<td>.616</td>
</tr>
<tr>
<td>H.S.</td>
<td>78.2%</td>
<td>21.9%</td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>83.3%</td>
<td>16.7%</td>
<td></td>
</tr>
<tr>
<td><strong>RACE2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>80.2%</td>
<td>19.8%</td>
<td>.143</td>
</tr>
<tr>
<td>Afri-American</td>
<td>78.4%</td>
<td>21.6%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>82.1%</td>
<td>17.9%</td>
<td></td>
</tr>
<tr>
<td><strong>FELONIE2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>79.4%</td>
<td>20.6%</td>
<td>.002</td>
</tr>
<tr>
<td>No</td>
<td>78.9%</td>
<td>21.1%</td>
<td></td>
</tr>
<tr>
<td><strong>MISDEME2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td>80.2%</td>
<td>19.8%</td>
<td>.028</td>
</tr>
<tr>
<td>NO</td>
<td>79.2%</td>
<td>20.8%</td>
<td></td>
</tr>
<tr>
<td><strong>HISTORY</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td>77.5%</td>
<td>22.5%</td>
<td>.833</td>
</tr>
<tr>
<td>NO</td>
<td>83.3%</td>
<td>16.7%</td>
<td></td>
</tr>
<tr>
<td><strong>DRUGCOUN</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td>72.9%</td>
<td>27.1%</td>
<td>5.386**</td>
</tr>
<tr>
<td>NO</td>
<td>86.9%</td>
<td>13.1%</td>
<td></td>
</tr>
<tr>
<td><strong>CONVICT2</strong></td>
<td></td>
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</tr>
<tr>
<td>Violence</td>
<td>63.2%</td>
<td>36.8%</td>
<td>3.619</td>
</tr>
<tr>
<td>Property</td>
<td>82.3%</td>
<td>17.7%</td>
<td></td>
</tr>
<tr>
<td>Drugs</td>
<td>81.7%</td>
<td>18.3%</td>
<td></td>
</tr>
<tr>
<td>Weapons/Mis</td>
<td>79.2%</td>
<td>20.8%</td>
<td></td>
</tr>
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</table>

(Table continues)
(Continued)

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>No Drug Use</th>
<th>Used Drugs</th>
<th>( \chi^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIFESING</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARIJUANA</td>
<td>81.8%</td>
<td>18.2%</td>
<td>.255</td>
</tr>
<tr>
<td>Other</td>
<td>87.5%</td>
<td>12.5%</td>
<td></td>
</tr>
<tr>
<td>POLYLIFE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>76.0%</td>
<td>24.0%</td>
<td>2.631</td>
</tr>
<tr>
<td>No</td>
<td>86.4%</td>
<td>13.6%</td>
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</tr>
<tr>
<td>TIMWEE4</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1 to 4</td>
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<td>20.2%</td>
<td>.573</td>
</tr>
<tr>
<td>&gt; 5</td>
<td>74.5%</td>
<td>25.5%</td>
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<tr>
<td>TESTDETE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>64.8%</td>
<td>35.2%</td>
<td>9.845***</td>
</tr>
<tr>
<td>No</td>
<td>85.7%</td>
<td>14.3%</td>
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</tr>
<tr>
<td>PRISDETE</td>
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<td></td>
<td></td>
</tr>
<tr>
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<td>51.8%</td>
<td>48.2%</td>
<td>1.515</td>
</tr>
<tr>
<td>No</td>
<td>63.6%</td>
<td>36.4%</td>
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</tr>
<tr>
<td>SANCT2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
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<td>36.4%</td>
<td>1.0795</td>
</tr>
<tr>
<td>No</td>
<td>76.7%</td>
<td>23.3%</td>
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</tr>
<tr>
<td>SANCT1</td>
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</tr>
<tr>
<td>Yes</td>
<td>62.2%</td>
<td>37.8%</td>
<td>1.718</td>
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<tr>
<td>No</td>
<td>74.6%</td>
<td>25.4%</td>
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</tr>
<tr>
<td>URINSPE2</td>
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</tr>
<tr>
<td>0 to 10</td>
<td>90.3%</td>
<td>9.7%</td>
<td>5.305</td>
</tr>
<tr>
<td>11 to 25</td>
<td>85.4%</td>
<td>14.6%</td>
<td></td>
</tr>
<tr>
<td>&gt; 26</td>
<td>73.6%</td>
<td>26.4%</td>
<td></td>
</tr>
</tbody>
</table>

(Table Continues)
(Continued)

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>No Drug Use</th>
<th>Used Drugs</th>
<th>$\chi^2$</th>
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</thead>
<tbody>
<tr>
<td>USEBOOZE</td>
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<td></td>
</tr>
<tr>
<td>Yes</td>
<td>69.1%</td>
<td>30.9%</td>
<td>4.588**</td>
</tr>
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<td>No</td>
<td>83.3%</td>
<td>16.7%</td>
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<tr>
<td>PROGHLP2</td>
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</tr>
<tr>
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<td>81.3%</td>
<td>18.8%</td>
<td>2.714</td>
</tr>
<tr>
<td>No</td>
<td>69.4%</td>
<td>30.6%</td>
<td></td>
</tr>
<tr>
<td>BENEFICI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>74.6%</td>
<td>25.4%</td>
<td>.090</td>
</tr>
<tr>
<td>No</td>
<td>77.1%</td>
<td>22.9%</td>
<td></td>
</tr>
<tr>
<td>ACCURATE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>80.8%</td>
<td>19.2%</td>
<td>2.474</td>
</tr>
<tr>
<td>No</td>
<td>66.7%</td>
<td>33.3%</td>
<td></td>
</tr>
<tr>
<td>NODESIRE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>81.4%</td>
<td>18.6%</td>
<td>1.291</td>
</tr>
<tr>
<td>No</td>
<td>73.0%</td>
<td>27.0%</td>
<td></td>
</tr>
</tbody>
</table>

***=p<.05, ****=p<.01
Table 10: Bivariate Relationships Between Alcohol Use While in the Program and Predictor Variables (N=186)

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>No Alcohol Use</th>
<th>Used Alcohol</th>
<th>( \chi^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWNOBOOZ</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>73.8%</td>
<td>26.2%</td>
<td>6.277***</td>
</tr>
<tr>
<td>No</td>
<td>52.6%</td>
<td>47.4%</td>
<td></td>
</tr>
<tr>
<td>SEX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>69.7%</td>
<td>30.3%</td>
<td>.007</td>
</tr>
<tr>
<td>Female</td>
<td>69.0%</td>
<td>31.0%</td>
<td></td>
</tr>
<tr>
<td>EDUC2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; H.S.</td>
<td>79.3%</td>
<td>20.7%</td>
<td>1.721</td>
</tr>
<tr>
<td>H.S.</td>
<td>66.2%</td>
<td>33.8%</td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>68.7%</td>
<td>31.3%</td>
<td></td>
</tr>
<tr>
<td>RACE2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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*** = p < .05, ** = p < .01

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Table 11: Bivariate Relationships Between Drug Use While in the Program and Predictor Variables Representing Evasive Behaviors (N=186)

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<td></td>
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**=p<.05, ***=p<.01
Table 12: Bivariate Relationships Between Alcohol Use While in the Program and Predictor Variables Representing Evasive Behaviors (N=186)

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**p<.05, ***p<.01

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CHAPTER VI

DISCUSSION AND CONCLUSION

Discussion

Bivariate analyses of the relationships between the dependent variable, drug use while in the program (USEPROGR), resulted in three significant relationships with the standard predictor variables and six significant relationships with predictor variables representing evasive behaviors. Bivariate analyses of the relationships between the dependent variable, alcohol use while in the program (USEBOOZE) and the standard predictor variables resulted in four significant relationships and four significant relationships were observed for the predictor variables representing evasive behavior. Additionally, one more predictor variable had a significant relationship with the variable USEBOOZE, Offender awareness of the alcohol prohibition (AWNOBOOZ) indicated that almost twice the proportion of alcohol using offenders were not aware of the prohibition. Perhaps this is due to an inconsistency of officers and counselors who do not explain the prohibition of alcohol to offenders. Differences in enforcement might also be an explanation as some officers may be more lenient when they observe offender drinking or be too intimidated to enforce the policy. Anecdotally, I have heard many offenders
make the claim that they were not aware when in fact the policy had been explained. However, the anonymity of this study should have allowed respondents to be honest with their answers. Alcohol prohibition is a very important issue, as offenders are prohibited from consuming alcohol as drug users in treatment will often substitute illegal substances for alcohol or even prescription medication. Alcohol arguably causes more societal harm than illegal drugs. It is not surprising to note that the percentage of drug using offenders who also used alcohol while in the program is twice that of drug users who did not consume alcohol. Informing offenders of the prohibition and enforcing it, is an issue which requires further study.

Secondly, I would like to address the standard predictor variables. The most interesting result of this study is that there is little if any difference between the groups of drug abusing offenders. This evaluation is attempting to take into consideration all aspects of the drug testing program. A deterrent effect could be inferred if relationships exist between variables that measure deterrence and offenders who use drugs. The percentage of offenders who used drugs in the program and also stated they were deterred from drug usage was over twice that for the drug users who reported not being deterred. The drug counseling program appears to be an important feature of the program, as there was twice the percentage of drug using offenders who reported that drug counseling was helping them refrain from using drugs than not. This may sound contradictory in that offenders reporting drug use while in the program also report treatment as helpful. However, it is important to note that offenders are often tested even though they are not in treatment. Relapse is very common and offenders are then placed into treatment. It is at this point that I infer that treatment is helpful to these individuals. Offenders who
reported using alcohol in the program similarly reported that treatment was beneficial and helped them refrain from drug usage. Of the offenders who reported using alcohol in the program, twice the percentage of offenders reported a history of abusing drugs 1 to 4 times per week when compared with those who used drugs more than five times per week. It is possible that the heavier drug abusers did not use alcohol consistently in the past and it never became a part of their lives or perhaps, the offenders with a history of serious drug abuse are more serious about treatment and also refrain from using alcohol. This issue requires further study.

The analysis indicates that within the groups of drug abusing offenders, evasive behaviors are used, although small in proportion to the overall sample. Five of the six evasive behavior variables resulted in significant relationships with the dependent variable USEPROGR. Four of the six indicated relationships with the dependent variable USEBOOZE. Two important variables to consider when evaluating the code-a-phone program are offenders changing their drug of choice (DRCHOIC2) and changing their pattern of drug use to avoid detection (CHAPATTE). The proportion of drug using offenders who reported changing their drug of choice was significantly higher (83.3%) than that for drug users who did not (28.9%). The proportion of drug using offenders who stated that they changed their pattern of drug use (63.6%) was three times that of drug users who stated that they did not change their pattern (21.2%). Very similar results were observed for drug using offenders and alcohol using offenders who reported flushing their system to avoid detection. Additionally, the proportions for both drug and alcohol abusing offenders who reported using stalling tactics was significant when compared to those who did not. There was a relationship between drug use while in the program and
offenders who reported using an apparatus to submit someone else’s urine, however, only one offender reported using an apparatus and this small number does not allow for the true comparison of percentages.

This study has provided empirical evidence of the validity of the United States Probation drug testing program and its use of the code-a-phone system. It appears there is little difference between the rate of offenders identified as using drugs in the field test group and the code-a-phone test group. Only 1 percent difference was observed between the code-a-phone group (9%) and self reported drug users who submitted drug specimens in the field (10%). It was decided to analyze the percentage of offenders identified as opposed to the percentage of positive specimens to exclude offenders who might test with positive results on multiple tests which originated from the same incident of drug use. Marijuana, in particular, will remain in the system for extended periods of time and be reported as multiple positive tests when the offender only used on one occasion. Officers do take this factor into consideration when sanctioning offenders and through the analysis of nanograms per milliliter, specimens can be distinguished as coming from the same incident or a subsequent use of the drug.

As stated in the previous chapter, the field test group was randomly selected from the parent group. Although not randomly sampled, the United States Probation data base of narcotics testing has rendered information relating to all urine specimens obtained in the field for the eleven months following the field test study. Officers in the normal course of duties do obtain urine specimens in the field in addition to the code-a-phone system. It is interesting to note that over the eleven months following the study, the rate of positive urine specimens obtained in the field was 4.1%. It would be expected that this
rate would be higher as officers tend to field test offenders in the field who they believe are actively abusing drugs. However, this group’s rate is consistent with the randomly sampled field test group and the code-a-phone group.

Other factors must be operating to reduce the drug usage of offenders in this district when compared with the national average. Also considering that 94.1 percent of the offenders stated they had used illegal drugs at least one time in their lives. The mean number of times offenders used illicit drugs per week was 3.93. More than two thirds (67.2%) stated that they had a documented history of substance abuse. This is a high risk group for relapse and yet the overall majority reports that they have not used drugs while only 19.6 percent self reported using drugs since being placed in the program. It is noted that the rate of self reported drug use is significantly higher than the rate of positives observed in the field test (10.0%). It is conceivable that offenders have used drugs since being placed into the drug testing program and have not been detected. Certain drugs such as methamphetamine are passed through the body very rapidly. It is expected that offenders use drugs any number of times before detection and the law of probability typically provides miscalculation by the offender and a positive test is detected. It would be highly probable that a number of offenders who have relapsed by using drugs, and who were not detected, were however deterred from continued use. The deterrence could have come in many forms, such as conversation with other offenders in the office regarding experiences after detection. Perhaps the drug counselor reached the offender and drug use was discontinued.

This study lends support to the hypothesis that offenders are deterred from using drugs due to the drug testing program and the sanctions that follow detection. A
significantly higher proportion of offenders who used drugs in the program stated that the testing program deterred them from drug use. Of the offenders who used alcohol in the program a higher proportion stated that the threat of prison deterred their drug usage.

The majority of variables representing evasive behaviors, although resulting in significant relationships with whether or not offenders used alcohol and drugs while in the program, were actually reported on a rare basis when considering the drug and alcohol abuse history of this group. According to the data collected, 88.2 percent of respondents did not believe the 24 hour notification was enough time to remove drugs from the body to avoid detection. Although scientific data suggests otherwise, the offender's beliefs are what is being measured.

Conclusions

There is support for the District of Nevada's drug testing program. When considering all the features of the program from the randomness of the code-a-phone to the offenders watching the specific gravity test and screening in the office, it appears that the District of Nevada's procedures are reducing the overall rate of drug use when compared with the national average. The national average rate of positive tests might actually be higher than is reported. Many districts do not test for specific gravity or utilize standard procedures for collection that are as stringent as those used by Nevada. The District of Nevada's staff follows a thorough and consistent set of procedures to acquire specimens. If all procedures are followed by the testing staff, offenders are perhaps deterred from the possibility of using evasive behaviors to avoid detection. Offenders
who also possess a high confidence in the program’s ability to detect drug usage, will be deterred from drug usage as they believe there is a high probability of detection.

Other features of the program were supported as valid, specifically the code-a-phone system. Its randomness is more consistent and requires less planning than expecting all supervision officers to randomly test offenders in the field. Staff members had previously stated that the code-a-phone was failing in its ability to detect offender’s drug usage and that the only effective way to identify drug users was through field tests. The data does not support those statements. There was virtually no difference in the rate of positives for the two groups. Although, it is recommended to utilize field testing for individual offenders who are considered high risk for drug use or require intensive supervision. However, the time saving feature of the code-a-phone is of particular concern for officers who are required to focus their attention on other crucial supervision issues. The time they would have expended contacting and collecting urine specimens in the field is spent concentrating on other duties. The cost is of concern as well. Contacting offenders in the field is more costly and straining on manpower than requiring them to report to the office. It also places accountability on the offender by requiring them to be responsible and to be more of an active participant in the program.

Additionally, the proportion of urine tests not acquired in the field is more than twice the proportion not acquired in the office. It would be more costly to the office and more taxing on manpower to attempt the acquisition of the majority of urine specimens in the field. The code-a-phone is an efficient and effective method of notifying offenders that they must report for urine testing.
An anecdotal statement by an offender was that he was “beating” the testing program when he was on pretrial supervision with our sister agency. He stated that the agency never tested offenders Friday through Sunday and he would use his drugs on Thursday night and perhaps Friday, and by Monday his urine would be dilute enough to render a negative test. He stated that he did this continuously while under their supervision. He went on to state that due to the randomness of the probation office’s testing procedures and the 7 day per week program, he would not attempt to utilize a similar pattern of drug use. It is paramount in the design of a program that all areas of possible exploitation be considered. Just as inmates in an institution study the movements and procedures of staff, offenders on supervision do the same. They will attempt to exploit any procedure that is not followed and search for ways to circumvent the system. Program coordinators should remain diligent in their efforts to constantly evaluate and improve the testing program to deter offenders from drug usage.
APPENDIX I

DURATION OF DETECTION ABILITY OF DRUGS IN URINE

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<th>Substance</th>
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<tr>
<td>Methamphetamines</td>
<td>48 hours</td>
</tr>
<tr>
<td>Barbiturates- Short Acting</td>
<td>24 hours</td>
</tr>
<tr>
<td>Intermediate Acting</td>
<td>48-72 hours</td>
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<tr>
<td>Long Acting</td>
<td>7 days or more</td>
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<tr>
<td>Benzodiazapines</td>
<td>3 days (therapeutic dose)</td>
</tr>
<tr>
<td>Cocaine Metabolites</td>
<td>2-3 days</td>
</tr>
<tr>
<td>Methadone</td>
<td>3 days</td>
</tr>
<tr>
<td>Codeine/Morphine</td>
<td>48 hours</td>
</tr>
<tr>
<td>Propoxyphene/Norpropoxyphene</td>
<td>6-48 hours</td>
</tr>
<tr>
<td>Cannabioids (marijuana) single use</td>
<td>3 days</td>
</tr>
<tr>
<td>Moderate Use</td>
<td>4 days</td>
</tr>
<tr>
<td>Heavy Use</td>
<td>10 days</td>
</tr>
<tr>
<td>Chronic Heavy Use</td>
<td>21-27 days</td>
</tr>
<tr>
<td>Methaqualone</td>
<td>7 days or more</td>
</tr>
<tr>
<td>Phencyclidine (PCP)</td>
<td>8 days (approximate)</td>
</tr>
</tbody>
</table>

Source: Adapted from the Journal of American Medical Association's Council on Scientific Affairs (1987), p.3112
APPENDIX II

DATA COLLECTION INSTRUMENT

Survey of Participants

You have been asked to complete this anonymous survey, in order to assess the effectiveness of the Probation Office drug testing policy. Your answers to these questions are completely confidential and your personal situation will not be effected in any way. The Probation Office has a duty to formulate treatment that is appropriate and facilitate the program effectively to render the best possible opportunity for rehabilitation for all participants. This survey will provide better information on the participants in this program as a group and will allow manpower and funding to be allocated properly. Please answer the questions truthfully, so the program can effectively be evaluated.

1. Do you have a documented history of Substance/alcohol abuse?
   A. Yes      B. No

2. What criminal offense were you convicted that resulted in your being placed on supervision?
   A. Violence (Robbery, Assault, Battery, Homicide, Threats etc.)
   B. Property (Theft, Wire Fraud, Credit Card Fraud, Money Laundering, etc.)
   C. Drug Offense (Felony Possession, Trafficking, Distribution, Conspiracy, etc.)
   D. Weapons (Felony)
   E. Misdemeanor (Federal Property, DUI, Simple Possession, Reckless Driving etc.)
3. Circle the number of your felony convictions including the one for which you are now under supervision.

1  2  3  4  5  6  more than 6

4. Circle the number of your misdemeanor convictions (No traffic offenses except for DUI), including any for which you are now under supervision.

1  2  3  4  5  6  more than 6

5. What is your sex?  Male ______  Female ______

6. Have you ever in your life illegally used the following drugs? (circle all that apply)

A. Marijuana
B. Cocaine
C. Methamphetamine
D. Heroin
E. Barbiturates (downers)
F. Other forms of amphetamines
G. Benzodiazapenes (xanax, valium)
H. Prescription pain killers (darvon, percodan, hydrocodone, vicodin)
I. PCP
J. LSD
K. Psychilicin (mushrooms)
L. Other

7. If yes, how many times per week did you use any illegal substance?

1. Time 2 times 3 times 4 times 5 times 6 times 7 times more than 7 times

8. While participating in the urine testing program, how many urine specimens have you submitted?

1 to 5 6 to 10 11 to 15 16 to 20 21 to 25 26 to 30 more than 30
9. How many of your specimens were found to contain an illegal drug?
   0 1 3 4 5 6 more than 6

10. If your specimen(s) tested positive, what drugs were detected? (circle all that apply)
   A. Marijuana
   B. Cocaine
   C. Methamphetamine
   D. Heroin
   E. Barbiturates (downers)
   F. other forms of amphetamines
   G. Benzodiazepines (xanax, valium)
   H. Prescription pain killers (darvon, percodan, hydrocodone, vicodin)
   I. PCP
   J. LSD
   K. Psylicibin (mushrooms)
   L. Other

11. Are you required to attend substance abuse counseling?
   No
   Yes — A. Do you feel the outpatient counseling is beneficial to aid you in refraining from drug or alcohol abuse? Yes No

12. Have you used illegal drugs since you received probation/supervised release?
   No
   Yes — How many times? 1 2 3 4 5 6 more than 6

13. Did the threat of revocation resulting in prison affect your decision to refrain from drug usage? Yes No
14 Did you stop using drugs for reasons unrelated to your supervision?
   Yes    No

15 You were placed into the drug testing program due to some aspect or period of your
   life involved drug usage or possession. Have you used drugs considered illegal since
   you have participated in the drug testing program?
   No
   Yes ---- How many times and what type of drug? (Circle all that apply)
   1  2  3  4  5  6  more than 6
   A. Marijuana
   B. Cocaine
   C. Methamphetamine
   D. Heroin
   E. Barbiturates (downers)
   F. other forms of amphetamines
   G. Benzodiazapenes (xanax, valium)
   H. Prescription pain killers (darvon, percodan, hydrocodone, vicodin)
   I. PCP
   J. LSD
   K. Psylicibin (mushrooms)
   L. Other

16 Have you refrained from usage out of fear that the drug testing program would
   detect your drug use?    Yes    No

17 Do you just not desire to use drugs?    Yes    No

18 The rules of the drug testing program mandate that alcohol use is prohibited during
   the testing period. Were you aware of this?    Yes    No

19 Have you used alcohol since you were placed in the urine testing program?
No

Yes — How many times per week? 1 2 3 4 5 6 more than 6

20 Have you ever failed to provide a urine specimen when you believed it would be positive?

No

Yes A. Did you fail to show up for the test? No Yes

B. Stall by stating “I cannot give a sample” No Yes

21 Have you ever tried to flush your bodily system by consuming large quantities of liquid prior to giving a urine sample?

No

Yes, How many times did you do this?

1 2 3 4 5 6 more than 6

22 Have you ever used over the counter products to mask drugs that you believed to be in your body out of fear of failing a urine test?

No

Yes, A. Did it Work? Yes No

B. How many times did it work? 1 2 3 4 5 6 more than 6

C. How many times did you try it? 1 2 3 4 5 6 more than 6

23 Have you ever used an apparatus (bottle, tubing etc.) attached to your body containing someone else’s urine, to avoid being detected for drug use?

No

Yes ---- How many times? 1 2 3 4 5 6 more than 6
24 Do you feel that the 1 day notice prior to a urine test is enough time to remove any illegal drugs from your system prior to submitting a urine specimen?
   Yes
   No

25 If you have used drugs while in the drug testing program, did you alter your pattern of usage (the days you used the drug) to avoid detection?
   Yes
   No

26 Did you alter your drug of choice to avoid being detected by the program?
   Yes
   No
   Not Applicable

27 Has the use of intermediate sanctions such as imposing community service deterred you from using illegal drugs or alcohol?
   Yes
   No
   Not Applicable

28 Has the intermediate sanction of home confinement deterred you from using illegal drug or alcohol?
   Yes
   No
   Not Applicable
29. Do you feel the drug testing program has helped you refrain from using illegal drugs or alcohol?
   Yes
   No

30. Please rate your confidence in the ability of the following drug testing procedures to detect illegal drug usage. 1 weak ability To 10 Strong ability

   Urine Testing 1 2 3 4 5 6 7 8 9 10
   Sweat Patch 1 2 3 4 5 6 7 8 9 10

31. Have you ever submitted a specimen that tested positive for illegal drug usage when in fact it was negative?
   No
   Yes, ---- How many times? 1 2 3 4 5 6 more than 6

32. Do you feel the drug testing program is an accurate program?
   Yes
   No

33. Have you ever offered to bribe a staff member to conceal a positive drug test?
   No
   Yes, — did the staff member accept the bribe?
      Yes
      No
34. What is your race?  
- White
- African American
- Hispanic
- Asian
- Native American

35. What is your level of Education?  
- Some High School
- G.E.D.
- High School Grad.
- Some College
- College Graduate
- Post Graduate
REFERENCES


Bureau of Justice Statistics (1983b) *Prisoners and drugs*. Washington D.C.


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