

Drug Testing In The Workplace: An Historical and Economic Examination

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Abstract

Considerable evidence exists to show that drug abuse contributes to the frequency and intensity of many types of crime, from white-collar offenses and political corruption to property offenses and violence. Similar evidence exists to show that safety in the workplace and the profitability of businesses are directly affected by substance abuse.

Improving our understanding of the factors that influence abuse both on and off the job is important in developing interventions and strategies to reduce drug-related problems. Although we have not found the right answer to eradicating drug abuse, some progress has been made in reducing it and in defining the many facets of the problem.

We know that young people are at increased risk where there is parent–adolescent conflict, favorable parental attitudes to drug use, parental alcohol and drug problems, and parental approval of drug (e.g. alcohol) use in childhood or early adolescence, making it imperative that we reach out to parents/adults and educate them about the harms of drugs. One of the very few places that we have parents/adults as a captive audience is the workplace, making it an ideal arena for providing drug education and influencing their attitudes about drug use.

The federal government and much of the private business sector have adopted policies of making illicit drug use unacceptable either socially or in the workplace and utilized drug testing to enforce those policies. This strategy is aimed at reversing the levels of drug abuse and the losses that flow from it. This concept has garnered much support in Congress, the state legislatures, the business community, and a broad cross-section of the public in the United States and, to some extent, in other countries. It is not a total answer but is definitely a step in the right direction.

This article will examine the history of the evolution of drug-free workplace programs with drug testing as a cornerstone of such programs and will explore the cost/benefit ratio to such programs.

Keywords

absenteeism, accidents, deterrent, detection, drug testing, employee assistance program, impairment, rehabilitation, workplace

Introduction

Drug abuse and the crime and social problems that flow from it constitute one of the most serious and frustrating challenges faced by Americans. This challenge is serious because of the social and economic costs imposed by drug abuse, and it is frustrating because we have not yet found a way to deal with it effectively enough to eliminate it.

Many people in our society, especially our youngsters, use illegal drugs and misuse alcohol and some legal drugs. Many drugs that did not even exist a few decades ago such as crack cocaine and drugs that are slightly different chemically from controlled drugs but have the same effects known as “designer drugs” have spread rapidly through all segments of society. Hospitals are reporting alarming increases in rates of drug-related emergency cases and the public continuously rank drugs and crime as major concerns.

Considerable evidence exists to show that drug abuse contributes to the frequency and intensity of many types of crime, from white-collar offenses and political corruption to property offenses and violence. Similar evidence exists to show that safety in the workplace and the profitability of businesses are directly affected by substance abuse.

Improving our understanding of the factors that influence abuse both on and off the job is important in developing interventions and strategies to reduce drug-related problems. Although we have not found the right answer to eradicating drug abuse, some progress has been made in reducing it and in defining the many facets of the problem.

We know that drugs interact with other complex social, psychological, and pharmacological factors to influence the behavior of abusing individuals. We also know that young people are at increased risk where there is parent–adolescent conflict, favorable parental attitudes to drug use, parental alcohol and drug

problems, and parental approval of drug (e.g. alcohol) use in childhood or early adolescence, making it imperative that we reach out to parents/adults and educate them about the harms of drugs. One of the very few places that we have parents/adults as a captive audience is the workplace, making it an ideal arena for providing drug education and influencing their attitudes about drug use.

The federal government and much of the private business sector have adopted policies of making illicit drug use unacceptable either socially or in the workplace. This strategy is aimed at reversing the levels of drug abuse and the losses that flow from it. This concept has garnered much support in Congress, the state legislatures, the business community, and a broad cross-section of the public in the United States and, to some extent, in other countries. It is not a total answer but is definitely a step in the right direction.

Drug abuse in the workplace is not a new phenomenon. Drug abuse, especially the abuse of alcohol, has always been present in the workplace. The problem has gone uncorrected in the past not so much because business failed to address it but because society in general has been unable to understand the dimensions of drug abuse, find a cure, and set up effective prevention measures.

Marijuana is the drug most commonly found through urinalysis in the workplace and causes one of the greatest concerns for employers. It probably is not necessary to state the obvious but – smoking is smoking. Whether it is marijuana or tobacco that is being inhaled, the harm is being done. Research has shown that smoking retards fetal growth and doubles the danger of delivering a low-birth-weight baby. With employers paying for much of the health insurance for many employees, this is, of course, a bottom-line issue for employers in the United States.

In recent years, research has repeatedly linked marijuana and/or other drug use with a myriad of health issues such as psychosis, reduced blood flow to the brain, impaired brain development in fetuses and adolescents, pulmonary complications, emphysema and other respiratory problems, bone disease, increased risk for stroke, infertility, an increase in premature newborn babies, a decrease in the function of the immune system, impairment of the learning process, short- and long-term memory loss, and an increased risk of various forms of cancer such as head, neck, throat, and bladder. Research has clearly established that marijuana is addictive both physically and emotionally and that it has a gateway effect into the use of other illegal drugs.

A strong correlation has also been scientifically established between marijuana and other drug use and an increased risk for accidents, including traffic and workplace mishaps which put us all at risk. This fact has led to the evolution of an extremely effective drug demand reduction policy being utilized by employers: drug-free workplace programs.

Some members of the business community developed and applied some of the earliest programs for ridding the workplace of drugs. Many of the testing programs that have been adopted by the criminal justice system to identify drug abusing criminals and prisoners are based upon programs conceived in the business sector.

While the examination of employees through the years to determine their fitness for work is not new, the techniques employed since the 1980s for examination are. For instance, the technology on which urinalysis is based has advanced almost to the point of 100 percent accuracy. In addition, drug testing serves a dual process - it both deters and detects drug use. Drug abusing employees who know they will be discharged or disciplined if identified through testing are motivated to stop drug use. The identification of employees with drug problems is the first step toward treatment and recovery. Within a comprehensive drug-free workplace program, however, testing is only one of several tools available to help management eliminate drug abuse in the workplace. Others include education, training, discipline, counseling, and rehabilitation.

Drug Testing in the Federal Workplace

The rationale for drug testing in the federal workplace arose from the experience of America's largest employer, the U.S. military. In 1980, roughly 27 percent of military personnel surveyed admitted that they had used an illicit drug within the month preceding the survey. In 1985, only 9 percent reported similar use. A drug testing program within the military was instituted during that five-year period, and 64 percent of the military personnel polled said that they believed drug testing was the main reason for this decrease in drug use. Three years later, drug use in the military dropped to 5.3 percent, a decline of more than 80 percent in eight years.

Responding to the military's drug crisis, President Ronald Reagan issued Executive Order 12564 on September 15, 1986, mandating a drug-free workplace with the intent that the federal workforce would serve as a model for all American businesses. The order required that all federal employees refrain from using illegal drugs on or off the job. It directed that federal agency heads do the following:

- Develop policies regarding the use of illicit drugs and the consequences of policy violations
- Implement Employee Assistance Programs (EAPs)
- Conduct training of supervisors in drug abuse recognition and intervention
- Provide for supervisory referrals and self-referrals of employees to treatment
- Instigate drug testing to identify employees who are in violation of policy

The order allows agency heads to require urine testing in the following cases:

- When candidates apply for federal employment
- After an accident or unsafe practice has occurred
- When there is a reasonable suspicion that an employee uses drugs or is unfit for duty
- As a follow up to drug counseling or rehabilitation
- On a random basis among employees who are employed in positions that are deemed as safety or security sensitive in nature

On July 11, 1987, the U.S. Congress passed legislation for implementation of Executive Order 12564 under Section 503 of Public Law 100-73 (the Supplemental Appropriations Act of 1987). Section 503 established uniformity among federal agency drug testing plans, ensured confidentiality of drug test results, and centralized oversight of the government's drug testing program, in addition to providing funds to carry out the executive order.

The Secretary of the Department of Health and Human Services (DHHS) was, under Section 503 and the executive order, tasked with promulgating technical and scientific guidelines. On April 11, 1988, the DHHS published the Mandatory Guidelines for Federal Workplace Drug Testing Programs, sometimes referred to as NIDA (National Institute on Drug Abuse) guidelines. These guidelines play an essential role in ensuring that the requirements of the executive order are met. All federal agencies must follow the procedures outlined in these guidelines and may not deviate from them without written approval of the DHHS.

The guidelines require that all federal agency programs must test for marijuana and cocaine at a minimum. Agencies also may elect to test for opiates, amphetamines, and PCP without additional authorization. No other substances may be tested for without written authorization from the DHHS.

The rationale for this testing plan was based upon recognition that marijuana and cocaine are by far the most frequently abused drugs, with opiates, amphetamines, and PCP the next most common drugs of abuse. Although alcohol abuse is very prevalent in society, testing for it was intentionally omitted for a variety of reasons.

The guidelines spelled out what components were required for a federal drug-free workplace program such as a written policy statement, employee assistance program, employee education, supervisor training, etc. They also established cutoff levels for drug testing, how to report test results, etc. The guidelines even spelled out the requirement and role of a licensed medical doctor known as a Medical Review Officer to review and sign off on all positive test results before they are reported to employers.

Since these guidelines were originally issued, they have undergone numerous minor revisions, but the original intent remains intact.

On November 21, 1988, the United States Department of Transportation (DOT) issued rules to require drug-free workplace programs through its six operating administrations: 1) Federal Highway Administration; 2) Federal Railroad Administration; 3) U.S. Coast Guard; 4) Federal Aviation Administration; 5) Urban Mass Transportation Administration; and 6) Research and Special Programs Administration.

The DOT program requires a DOT employee to be removed from federal service under several circumstances: 1) refusal to enter or successfully complete a drug rehabilitation or abatement program; 2) repeated use of drugs; 3) refusal to provide a urine specimen for drug testing; 4) adulteration or substitution of a urine specimen; 5) on-duty use of illegal drugs; or 6) a determination that the employee has engaged in illegal drug trafficking. If a covered employee tests positive on a drug test, they must be removed from the job until they successfully complete treatment, can pass a drug test and are recommended to be returned to duty by a Substance Abuse Professional.

Each of the six DOT agencies subsequently issued more specific rules for their specific employees.

In addition to the six sets of rules of the DOT agencies, the DOT published a modified version of the DHHS's Mandatory Guidelines for Federal Workplace Drug Testing Programs. The DOT version is called the Procedures for Transportation Workplace Drug Testing Programs and is codified in 49 CFR Part 40.

The DHHS procedures apply to the physical and organizational circumstances of federal agencies, whereas the DOT procedures apply specifically to drug testing programs in industries regulated by the DOT's operating administrations. These procedures were meant to clear up any confusion regarding the application of the DHHS procedures in the industrial context. The revisions removed much of the potentially confusing terminology and left intact the safeguards for accuracy and privacy in drug testing.

Drug Testing in the Private Sector

While the government was creating a "green light" for drug-free workplace programs to include drug testing, the private sector was busy establishing similar programs. Programs that included drug testing were, of course, the most controversial. While employee education, employee assistance programs, and treatment options had existed for a number of years, drug testing and even dog searches and personal searches only emerged in the 1980s. This expansion to drug-free workplace programs came about in response to recognition that a significant portion of the workforce was using illegal drugs.

Testing for drugs in the private sector by means of urinalysis started on the oil rigs. Employees who were performing extremely dangerous work on the rigs and could put other workers at risk were the first to undergo drug testing. Upon learning that the positive rate was higher than expected, oil and chemical companies then moved to test employees in their refineries and other locations where safety-sensitive work was being performed.

Recognizing that a significant portion of workers in the refineries were not employed by the owner/operators but rather were contract employees, the next logical step was to require that all contractors, subcontractors, and vendors implement testing of their employees.

As larger companies expanded their testing and discovered significant drug use among workers, mid-size and small business owners began to worry that drug users may end up working in their companies as a result of being screened out by the larger companies. Ultimately, even the smaller companies began to implement drug-free workplace programs that included drug testing.

Due to the explosion of drug testing in the late 1980s and early 1990s, it became necessary for state regulatory agencies to address the problem and to establish guidelines for this phenomenon. Agencies regulating workers' compensation and unemployment benefits stepped in to create rules and regulations on how to handle claims when employees failed drug tests. Some states even enacted workers' compensation laws that encouraged the establishment of drug-free workplace programs by providing discounts on annual insurance premiums.

Since many of the larger companies operate internationally, including all of the larger airlines that fly into or out of the United States and major oil companies (which are regulated by the DOT), drug testing has expanded beyond the borders of the United States into other countries.

Value of Drug-free Workplace Programs

A drug-free workplace program typically contains one or more of the following components:

- policy statement;
- employee orientation and drug-awareness education program;
- supervisor training;
- an employee assistance program (EAP), including intervention and treatment referral components; and
- testing for certain categories of drugs.

A study conducted by Forward Edge, Inc. in the mid 1980s found that 38 percent of all workers tested in the Freeport/Lake Jackson, Texas community could not pass a drug test. Following a year of aggressive random drug testing, the positive rate was reduced to less than 10 percent and continued to decline in following years. It was concluded that drug testing had both detected drug users and eliminated them from the workplace, either because of provisions of treatment or termination, and had also deterred use by those employees who were not necessarily addicted.

But was this community typical of the rest of America, and did the reduction of the level of drug abuse really have much of an impact?

A review of the scientific literature on the effects of illicit drug use on employees' health and performance reveals that there is a good deal of information about the health risks associated with illicit drug use, and a fair amount about some of the ways in which drug abuse affects human performance. Only limited information is available about the actual effects of illicit drug use in the workplace, but the information we do have clearly indicates the significance of this problem.

Major Findings

In the United States, where this issue has been studied to some extent, one out of every 12 employees and one out of five employees between 18 and 25 use some illicit drug at least once a month. The youngest age group - those just entering the workforce - has by far the greatest prevalence of use. This should be a great concern for employers as they bring on future workers. The drugs most commonly abused are cannabis, cocaine, barbiturates, amphetamines and opioids, with cannabis (marijuana), by far, being the most prevalent.

It is estimated by the National Institute on Drug Abuse that approximately 70 percent of the adult illicit drug users in the U.S. are employed. Cannabis is the drug most frequently abused in most workplaces, with 7 percent of all full-time employees and 17 percent of those aged 18 to 25 using in the course of a month. Cannabis significantly impairs the worker's ability to perform relatively complex tasks such as driving, posing what may be the greatest performance and safety risk for employers.

This connection of drug use and impairment is reinforced by a study conducted in the late 1980s by Forward Edge, Inc. wherein 68 percent of all employees tested following accidents during a 6-month period could not pass a drug test, with an overwhelming majority testing positive for marijuana.

Studies indicate the impairment caused by cannabis use can persist as long as 24 hours - even though the user may no longer be aware he is still impaired. Therefore, observation of employees may not detect potentially unsafe employees which could be detected through drug testing.

Effects in the Workplace

Current research documents the problems most frequently reported about drug-using employees as:

- increased use of health services and insurance benefits;
- greater absenteeism;
- more frequent job turnover;
- increased risk of accidents; and
- decreased productivity.

According to the United States Occupational Safety and Health Administration (OSHA), 47 percent of all industrial accidents in the United States are related to drugs and/or alcohol. Drug and alcohol abusers file about 5 times as many workers' compensation claims as non-abusers. National statistics also indicate that drug and alcohol abusers will utilize 300 percent greater medical benefits than non-abusers.

Analysis of corporate records from 10 worksites of five large firms in the United States has suggested that substance users have between 1.5 and 3 times the illness rates of those who do not use illicit drugs or alcohol. One national survey of executives of large U.S. firms showed that a majority believed that the absenteeism rate of substance abusers was two to three times that of other workers and that drug abuse caused increased absenteeism in their own firms.

But does the cost of eliminating drugs in the workplace outweigh the benefits?

Cost/Benefits of Interventions

The cost-effectiveness of EAPs for clients with drug or alcohol problems seems well established. A representative case is the United Airlines EAP that achieved a 7-to-1 benefit-to-cost ratio over five years, or nearly 17-to-1 over the clients' expected careers.

There have been relatively few systematic attempts to study the cost-effectiveness of interventions directed at illicit drug use alone, including drug testing programs. However, the findings of the largest and best-designed of these studies consistently demonstrate that such programs are extremely effective in reducing prevalence of drug abuse in the workforces studied and that the net savings achieved are significant.

A scientific study completed in December, 1995, conducted by Houston's Drug-Free Business Initiative (HDFBI), in collaboration with the University of Houston at Clear Lake, reinforced the belief by many employers that drug testing reduces injuries and workers' compensation claims in the workplace. The study, although scientifically inconclusive, found that companies engaged in random drug testing in combination with preemployment testing reduced their mean workers' compensation claims per 100 employees per year by 63.7 percent over a 4-year period while the "control group" of employers (employers not conducting drug testing), experienced a 19 percent increase during that same time period.

The HDFBI study also captured employers' attitudes about the cost effectiveness of drug intervention strategies in the workplace. It found that well over half of the responding employers believed that the benefits of drug testing outweighed the cost and just under half felt that the benefits of an EAP outweighed the cost. When asked to select one strategy over the other, 40.6 percent of the respondents stated that it was more important to conduct drug testing than have an EAP, while only 7.8 percent thought it was more important to have an EAP than to test. However, 51.6 percent thought drug testing and EAPs were of equal importance.

An examination of the outcomes of drug-free workplace efforts by the U.S. military, the U.S. Postal Service, and private employers indicates that drug-free workplace programs are an effective drug demand reduction policy. The following are just a few examples:

United States Military

Perhaps the most dramatic decrease in the prevalence of illicit drug use after the institution of a drug-testing program has been reported by the U.S. military forces. Although some drug testing began in the military in 1972, the program evolved slowly. The crash of a jet fighter on the deck of the aircraft carrier Nimitz in 1981 focused attention on the issue of impaired performance and widespread random testing began in earnest toward the end of that year. Self-reported drug use among military personnel began its dramatic decline in 1982, decreasing by almost 50 percent in each of three studies over a six-year period. In 1986 positive tests had already dropped to only about 4 percent.

In a 1980 survey of drug use among U.S. military forces around the world, 27 percent of the respondents reported having used an illicit drug during the previous 30 days. A random drug-testing program was introduced widely in 1982, and successive repetitions of the survey found a progressive drop in reports of recent use of illicit drugs: down to 19 percent of the respondents by 1982, 9 percent in 1985 and 4.8 percent in 1988. Analysis of the data has shown that this decline cannot be attributed primarily to either shifting demographics of new recruits or changes in drug consumption among the civilian population. In

the opinion of a Navy captain who has been associated with the program from inception: "The single most important factor in bringing down drug use in the Navy has been the urinalysis program and... the ability to take punitive action from a positive urinalysis."

In the 1980 study, the percentage of respondents reporting use during the past year was 35 percent for marijuana, 13 percent for amphetamines, and 11 percent for cocaine. Three percent of all Department of Defense personnel were judged to have been physically dependent on a drug at some point in the previous year. In 1988, only 6 percent reported marijuana use, 2.5 percent reported cocaine use, and 1.6 percent reported amphetamine use during the previous year. Virtually no evidence of dependence on illicit drugs was seen.

United States Postal Service

One of the best designed attempts to estimate the strength of the association between a positive drug test in a pre-employment screen and subsequent rates of absenteeism has been the study of 395 U.S. postal workers who were hired despite a positive test and entered into a two-year evaluation study between the fall of 1987 and spring of 1988.

Analysis revealed that the mean absence rate was 6.63 percent for the employees who tested positive, compared with 4.16 percent for those who tested negative. The absence rate of those who tested positive was 59.4 percent greater than that of the negatives, and the positives were 1.97 times more likely to be among the heaviest users of leave (i.e., those with average rates higher than 3.0 percent).

Employees who tested positive on their pre-employment drug tests were 1.7 times more likely than those testing negative to file an above-average medical claim. In addition, the average claim for those who tested positive was \$487 per year, compared to \$260 per year for those testing negative. Although the rate of substance-abuse related claims was relatively low for both groups of employees, positive testers filed 3.4 times as many drug- and alcohol-related claims.

According to study results, the postal service would have saved \$52 million by 1989 had it screened out all drug-positive postal service applicants in 1987. By June of 1991, this figure more than doubled - \$105 million - emphasizing that workplace-related alcohol and drug-abuse problems continue to develop and impact the workplace throughout the course of employment.

Southern Pacific Transportation Company

Declines in drug use have been reported by the Southern Pacific Transportation Company after initiating a drug-testing program in 1984. In addition to using the tests to screen prospective employees, current employees could be tested for reasonable suspicion, as well as after any accident. In the first year of testing, 22.9 percent of the tests were positive for drugs or alcohol, but in 1985, only 11.6 percent were positive and the downward trend continued, with 5 to 6 percent positive in 1986 through 1988.

By the beginning of 1988, personal injuries per 200,000 man hours worked had dropped from 15.5 to 5.8. During the same period, train accidents attributable to human failure dropped from 22.2 per million train miles to 2.2.

In most years, marijuana has been the drug most frequently detected, with cocaine detected about half as often, usually more frequently than alcohol. An evaluator of the program concluded that "Drug testing does act as a powerful deterrent to drug use on the job." He further concluded "Drug testing does make the workplace safer and increases overall public safety by substantially reducing accidents and injuries."

Utah Power and Light Company

Evaluation of a small number of employees of the Utah Power and Light Company who tested positive for illicit drugs (primarily marijuana) showed that they were five times more likely to be involved in an accident than a matched control group. Accident rates had been rising in the utility company in the two years previous to the introduction of drug testing (both pre-employment and "for cause") in 1985, after which rates fell significantly.

Employees who tested positive for illicit drugs were found to have averaged 63.8 hours of unexcused absences over the two years of the study, versus the 18.7 hours of a match control group - a ratio of 3.4 to 1. Those who were in rehabilitation for substance abuse averaged 32.2 unexcused absences, versus 10.1 for their control group.

Overall benefits of the drug testing program are estimated to have exceeded costs by 37 percent.

Georgia Power Company

In a study of the previous performance of 198 employees of the Georgia Power Company who were dismissed after testing positive for illicit drug use, it was found that the employees who had tested positive had averaged 165 hours of absenteeism, compared with 47 hours for their control group and 41 for the workforce as a whole - a ratio of four to one.

Georgia Power estimates that it saved as much as \$1.7 million by discharging and replacing 198 employees who failed drug tests between 1983 and 1987. This figure was arrived at by calculating savings from excess medical claims, absenteeism, and workers' compensation payments.

Georgia Power also estimated that the cost to the company for its drug-testing program - combined with the costs of legal challenges, lost productivity, recruiting, and training expenses - ranged between \$7,287 and \$8,063 per employee.

The investigators in the study concluded that the average benefits to be realized per employee dismissed were between \$9,548 and \$15,824. This meant that the net savings were somewhere between 18 percent and 195 percent of the total cost of detecting, dismissing and replacing the employees who had tested positive.

United Airlines

About 2,000 of the first 5,100 clients at an EAP of United Airlines had problems with alcohol or drugs, often both. Absenteeism of participants during the first year of participation dropped 74 percent below that of the previous year in Chicago and about 80 percent in San Francisco.

The benefit-to-cost ratio, based chiefly on reduction in sick leave, and taking into account all costs associated with the EAP itself, was seven to one projected over five years and nearly 17 to one over the client's expected career. Similar results are widely known such as the EAP program at Phillips Petroleum which produced reductions in accidents and sick leave that netted more than \$8,000,000.

Brown & Root (now known as the Halliburton Company)

Since the implementation of its drug abuse prevention program, Brown & Root (The Halliburton Company) has witnessed remarkable improvement in several areas. For example:

The recordable injury accident rate declined from 9.73 in 1986 to 4.11 in 1991, the most recent year for which data was tabulated (the industry average for the same periods was 14.5 and 14.2 respectively);

Pre-employment positive drug test results dropped from 8.8 percent in 1986 to 3.6 percent in 1991; and

Random employee positive results dropped from a high of 6 percent in 1987 to 2.6 percent in 1991.

Chamberlain Contractors

Chamberlain estimates that it saves in excess of \$70,000 a year, plus additional savings as the result of quality workmanship and fewer "go backs" on jobs already completed. Part of that savings does include approximately \$50,000 in reduced workers' compensation insurance premiums.

Emergency One

Emergency One's management attributes the continuing overall decrease in the number of positive tests for all types of testing to random testing. Since 1987, Emergency One's pre-employment positive rate decreased from 33 percent to two percent. Workplace accidents also decreased by 50 percent over the last four years, thereby producing significant savings on workers' compensation costs.

Emergency One "looks at the program as an investment rather than an expense." The company spends \$17,000 per year for testing, which is \$14.78 per employee.

Hoffman Construction Company

Hoffman experienced 45 lost-time accidents in 1984, before the drug and safety program was implemented. In 1985, the year in which the safety program began, the number dropped to 33 accidents. In 1986, with the drug-testing program in effect for six months, there were only six accidents. With both programs fully operational in 1987, Hoffman experienced only two lost-time accidents.

Workers' compensation losses in 1984 with no program in place were \$986,000. By 1987, with both programs in place, the company's losses had decreased to \$118,000.

The Upjohn Company

Upjohn carefully tracks and evaluates the costs and savings of its substance-abuse prevention program. In 1993, Upjohn's program cost the company approximately \$476,000. With gross savings of more than \$1 million, the company realized a net savings of approximately \$560,000 - in 1992 alone. Savings of \$799,000 were realized in two areas alone: reduced absenteeism (\$450,000) and reduced turnover (\$349,000).

Warner Plumbing

The owner of Warner Plumbing estimates his company saved \$385,000 in compensation and insurance premiums. By early 1993, the company saved an additional \$31,000. Also, because there has been less turnover since the implementation of drug testing, the company saves at least \$20,000 annually on personnel advertising and hiring costs.

Regarding the cost of training new employees, Warner says the number of apprentices who complete the two-year course has increased from 25 percent to 75 percent, resulting in a savings of about \$165,000 per year.

Additionally, workers' compensation claims decreased from 111 annually to just 35.

W. W. Gay Mechanical Contractors

W. W. Gay had spent a total of \$67,000 by the end of 1993 on drug testing since the program was started in 1990 but had gotten back \$19 for every dollar spent. This includes the decrease in workers' compensation bills and savings in medical costs on denied benefits for failures in post-accident testing.

When the company began testing, the failure rate was 17 percent. A more recent reported rate was only one percent. Furthermore, the company experienced only eight lost-time accidents in 1992, indicating that the loss ratio dropped by 15 percent since testing began.

The most convincing evidence of the program's success is, however, the savings in insurance premiums. Prior to the start of drug testing, W.W. Gay paid \$2 million a year in claims; however, the company paid only \$1.26 million in claims the year the program was established. At the close of 1993, the total for insurance claims was only \$264,000.

Conclusion

In the light of the evidence reviewed above, it seems clear that the benefits of reducing illicit drug use in most workplaces should outweigh the costs entailed. Considering the obvious importance of reducing such risks as that of occupational accidents, it seems unnecessary even to raise the question of economic savings in many contexts, such as among employees in any safety-sensitive positions.

We do not have a plethora of reliable data on the relative cost-effectiveness of various types of interventions within specific industries, much less across industries. Indeed, only a relatively few studies have attempted true cost/benefit evaluations of actual interventions, and these studies reflect that we are in only the very early stages of learning how to apply econometrics to these evaluations.

Nonetheless, the few studies of this kind that have been reported provide an intriguing look at the early exploration of a particularly complex field of research, as well as substantial encouragement for the proposition that it is not only possible, but cost-effective, to reduce drug abuse in the workplace.

We now have sufficient statistical data from which we can convincingly show in a courtroom that:

Drug use in the workplace is a reflection of drug use in our society.

It is simply not true that a drug user or alcohol abuser leaves his habit at the factory gate or the office door.

Drug testing does make the workplace safer and increases overall public safety by substantially reducing accidents and injuries.

Drug testing does act as a powerful deterrent to drug use on the job.

Drug abuse prevalence in a work force is related to many variables, including the nature of the work, the culture and traditions of the industry, the operating philosophies of management, the orientation of supervisors, and the social mores of the employee population. A direct variable is the influence of countermeasures effected by the employer. Counter measures are effective to the extent that they are weighed against actual (not imagined) prevalence. The use of drug testing as a countermeasure should be based on an objective analysis of need. For example, it would not be effective to only conduct random tests of plant workers when the drug problem exists within the office workers.

An employer that demonstrates zero tolerance for illegal drugs in the workplace can be a model for spreading the antidrug message to the community. After all, the majority of our community segments are workplaces, be it government, private companies, schools, churches, or non-profit organizations.

The success that an employer will have in ridding the workplace of drug abuse depends to a large extent on employee perceptions. Enforcing an antidrug policy, testing for drugs, educating employees, and training supervisors are activities that strongly shape employee perceptions. Another activity that influences these perceptions is respect for employees' privacy expectations.

Many companies that have initiated drug testing programs report dramatic reductions in medical costs, accident rates, absenteeism, as well as increased productivity and morale. Successful programs integrate employee education, supervisory training, and employee assistance. The companies that have achieved good results have managed to satisfy both the needs of employees to feel safe and secure at work and the needs of management to maintain a safe, secure, and productive environment.

It is important to remember that the majority of our employees, and indeed the majority of our citizens, are drug-free and deserve the benefits of drug-free workplaces that protect them from the harms of drugs.

It is also important to note that the government played an important role in encouraging the progression of drug testing in the United States and also was vital in establishing guidelines to create consistency in the programs.

Recommendations

Governments should initiate efforts to support and promote drug-free workplace programs that include drug testing, including government mandates and financial incentives.

More research needs to be conducted to measure the effectiveness of drug testing and other components of a drug-free workplace program, with a specific emphasis on individual industries.

The knowledge and experience that has been obtained from drug testing in the workplace should be applied to other arenas such as schools to develop similar programs that can be effective in pushing back against drug abuse.

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Calvina Fay is the executive director of Drug Free America Foundation, Inc. and Save Our Society From Drugs (S.O.S.). She has served as an advisor to the White House's Office of National Drug Control Policy as well as several political leaders, including former President Bush, on drug policy issues. In 2008, she received special recognition from then President George W. Bush for her exemplary efforts in drug prevention. She is also the recipient of the **2009 President's Award** from the National Narcotics Officers Associations Coalition. Professor Fay has over 25 years of experience in the drug prevention field and is considered a pioneering expert on workplace drug abuse prevention programs. She has authored several books, including *The Supervisor's Handbook For Preventing Drug Abuse in The Workplace* and *Starting a Drug-Free Business Initiative*, as well as numerous newsletters and publications in the field that have been published at regional and national levels. She was the managing editor and a co-author of *A Report on Employer Attitudes and the Impact of Drug Control Strategies on Workplace Productivity*. She also served as the managing editor of a monograph titled *Drug Abuse in the Decade of the Brain*. Professor Fay holds a masters degree in business administration and is an honorary professor at the Argentina Universidad del Salvador. She has founded, built and sold two successful businesses.

Conflict of Interest Statement

I declare that I have no proprietary, financial, professional or other personal interest of any nature or kind in any product, service and/or company that could be construed as influencing the position presented in this paper.

Where views are expressed they are my own. The findings are based strictly on research and my personal experience with drug-free workplace efforts throughout the years.

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