

**UNDER THE INFLUENCE?
ISSUES AND
PRACTICALITIES OF
ALCOHOL AND OTHER
DRUG TESTING IN THE
WORKPLACE**

UNDER THE INFLUENCE?
**ISSUES AND PRACTICALITIES OF ALCOHOL AND
OTHER DRUG TESTING IN THE
WORKPLACE**

**Proceedings of a Forum held in Perth, Western Australia
8 October 1996**

Edited by:

Richard Midford
Senior Research Fellow
National Centre for Research into the Prevention of Drug Abuse
Curtin University of Technology

Penny Heale
Research Officer
National Centre for Research into the Prevention of Drug Abuse
Curtin University of Technology

September 1997

ISBN 1-86342-705-8

TABLE OF CONTENTS	Page
FOREWORD	iii
ACKNOWLEDGEMENT	v
AN OVERVIEW OF DRUG TESTING IN THE WORKPLACE - KEY NOTE ADDRESS	1
Steve Allsop, Director National Centre for Education and Training on Addiction	
Mike Phillips, Senior Lecturer Dept of Biostatistics and Epidemiology Curtin University of Technology	
ALCOHOL AND OTHER DRUG USE IN WESTERN AUSTRALIA - IMPLICATIONS FOR THE WORKPLACE	19
Richard Midford, Senior Research Fellow National Centre for Research into the Prevention of Drug Abuse Curtin University of Technology	
ALCOHOL AND OTHER DRUGS IN THE WORKPLACE - WHY BE CONCERNED?	31
Martin Ralph, Principal Consultant Industrial Foundation for Accident Prevention	
Catherine Stedman Catherine Stedman and Partners	
DRUG TESTING AT WORK HOW DOES IT WORK? IS IT WORTHWHILE?	43
Mike Phillips, Senior Lecturer Dept of Biostatistics and Epidemiology Curtin University of Technology	
WORKPLACE DRUG TESTING - THE EMPLOYEE'S PERSPECTIVE	61
Tony Cooke, Secretary Trades and Labor Council of Western Australia	

WORKPLACE DRUG TESTING - THE EMPLOYER'S PERSPECTIVE..... 65

Anne Bellamy, Group Manager Training Services
Chamber of Commerce and Industry

THE PLUTONIC GOLD EXPERIENCE 69

Tony Baker, Occupational Health & Safety Co-ordinator
Plutonic Gold Mine

THE MURCHISON ZINC EXPERIENCE..... 77

Adele Bintley, Consultant
Downing Teal

**MANAGING ALCOHOL AND OTHER DRUG RELATED PROBLEMS
IN THE WORKPLACE 85**

Nicol W H Ormonde, Senior Occupational Physician
Alcoa Australia

**DRUG TESTING IN THE WORKPLACE -
ISSUES FOR OCCUPATIONAL HEALTH PRACTITIONERS 89**

Peter Connaughton
Occupational Physician

LEGAL PRACTICALITIES ASSOCIATED WITH DRUG TESTING..... 93

Leon Levine, Senior Associate
Parker & Parker Barristers, Solicitors and Notaries

FORUM SUMMARY 97

Steve Allsop, Director
National Centre for Education and Training on Addiction

FOREWORD

The forum 'Under the Influence? Issues and Practicalities of Alcohol and Other Drug Testing in the Workplace' was the result of a common interest in the area of workplace drug testing by a diverse range of organisations that worked with industry, or in the alcohol and other drug (AOD) field. Each organisation also had particular expertise and perspectives to contribute to an understanding of the issues and it became clear from a series of preliminary meetings that bringing these different approaches together could build a more integrated understanding of workplace drug testing.

The following people comprised the committee that organised the forum.

Gary Arcus, Industrial Foundation for Accident Prevention
Richard Midford, National Centre for Research into the Prevention of Drug Abuse
Alan Philp, Alcohol Advisory Council of Western Australia.
John Scotland, Indrad Services
Tony Wilson, Parker and Parker, Barristers Solicitors and Notaries

As I was a member of this committee it seems somewhat self congratulatory to say what a unique task was undertaken and what a useful outcome was achieved. However, the alternative is not to acknowledge the efforts of the other committee members. The committee worked for some six months organising the forum and apart from the housekeeping side of putting on a good event, their efforts in getting together a group of speakers with a broad range of complementary expertise, ensured that the forum contributed to a better understanding of the issues for those who attended. Indeed, this is why the National Centre decided to document the proceedings of the forum. It was a unique event in Australia and the evidence, opinions, debate, conclusions and recommendations about drug testing could also usefully inform others grappling with the complexities of this issue.

The other group of people crucial to the success of the forum were the speakers and in this regard we were fortunate to have such a range of knowledgeable people willing to participate. As you can see from the presentations preserved in this document the speakers included academics and researchers in the alcohol and other drug field, health and safety service providers, representatives of employer and employee groups, legal practitioners, occupational health medical practitioners and workplace managers.

Associate Professor Steve Allsop in his key note address, written with Mike Phillips, provides a provocative and broad ranging overview of the issues that bear on drug testing in the workplace. I talk about the prevalence of AOD use in Western Australia, the associated harm and cost to industry and the implications this has for response measures that are likely to produce the greatest benefit. The paper by Martin Ralph and Catherine Stedman succinctly examines why industry should be concerned about AODs in the workplace. Mike Phillips' paper addresses what is the key question for a lot of people: does drug testing work and is it worthwhile? Tony Cooke and Anne Bellamy respectively present employee and employer perspectives on the issue. Tony Baker talks about implementation of drug testing at a mining worksite, which is a unique contribution to the body of knowledge on this issue, because so little has been written in Australia about actual practice. Adele Bintley provides another interesting example of an approach taken by a mining company that involves performance testing as a prominent component in a multi faceted strategy. Dr Nic Ormonde provides an insightful historical tour of how workplace responses to AOD problems developed in

Australia and in the process raises the broader contexts in which drug testing should be considered. Dr Peter Connaughton provides a very practical insight into the drug testing issues that need to be considered by occupational health practitioners. Leon Levine provides another practical talk; in this case pertaining to the legal responsibilities associated with drug testing. The final paper in these forum proceedings is again by Associate Professor Steve Allsop and draws together the themes that emerged during the day.

This forum brought together presenters and audience with a common concern about the practical application of drug testing as a way of reducing AOD problems in the work place. The event provided an opportunity for considerable sharing of information and opinion as to the merits of various approaches. None of the following papers will provide simple answers, but they will provide a rich and diverse insight into the issues associated with drug testing and an appreciation of the current state of knowledge. The forum was designed to bring together up to date information on all aspects of drug testing in the workplace and make that directly available to people who are having to make decisions about how best to respond to AOD problems at work. These proceeding have collated the following papers so that this collective wisdom is preserved for others.

Richard Midford
Senior Research Fellow
National Centre for Research into the Prevention of Drug Abuse

ACKNOWLEDGEMENT

The editors would like to thank Tahnee Stratton and Jodie-Lee McLeod for their time, patience and skill in collating and formatting these conference proceedings. It was a disjointed task over a number of months, which required a degree of creativity and perseverance to get all the papers together in a common format.

AN OVERVIEW OF DRUG TESTING IN THE WORKPLACE - KEY NOTE ADDRESS

**Steve Allsop, Director
National Centre for Education and Training on Addiction**

**Mike Phillips, Senior Lecturer
Dept of Biostatistics and Epidemiology
Curtin University of Technology**

Summary of paper

A number of employers, labour organisations and individual work settings have become concerned about the potential of alcohol and other drug use to impair work performance, impacting on safety and productivity. In an attempt to prevent and minimise harm that could arise from drug related impairment, a number of strategies have been proposed. One of these strategies is the use of drug testing. The issue has raised a great deal of controversy in relation to cost-effectiveness, privacy and industrial relations.

An individual's exposure to drugs can be measured in a number of ways (e.g. blood, hair, urine and breath analysis). Breath testing is usually used to assess recent alcohol use. Urine testing is the more common test for other drugs.

While levels of intoxication can be presumed for a breath test for alcohol (e.g. there is evidence that after 0.05mg% there is an increase in accident risk for drivers), the same cannot be said of urine tests for other drugs. A urine test generally identifies drug exposure, not intoxication or impairment. Usually, urine tests measure the presence of drug metabolites, not the actual drugs themselves. Metabolites of some drugs can be detected several days after exposure. For example, amphetamines may be detected one or two days after exposure, while cannabis may be detected weeks after exposure.

The rationale for drug testing is that drug use impairs work performance (e.g. lowers productivity; increases accident risk) and the proper concern of employers, unions and employees is to reduce such risk. Drug testing is proposed as a way of preventing use and detecting impairment. However, the consistent consensus of scientific bodies is that urine testing merely detects whether a person has been exposed to a drug in the recent past. It does not detect impairment. Such tests do not detect when the drug was used, level or pattern of use, intoxication or impairment. Nevertheless, drug testing programs may still be beneficial because they might deter people from using drugs and consequently increase productivity and reduce accident risk.

Two broad types of drug testing can be used: pre-employment testing and screening current employees (e.g. at random or for probable cause, such as after an accident). Most studies on pre-employment screening have been poorly controlled. Those that have been carefully controlled have found that many of the claims used to justify pre-employment screening have been exaggerated. Users may avoid detection, while other people can take up use after employment. The available studies showed that pre-employment testing was of extremely limited use. Drug testing existing employees has not been shown in a single controlled study to have positive impact on productivity or safety. Nor have such programs been

demonstrated to reduce drug use.

To summarise, drug testing does not measure impairment and has not been demonstrated in any scientifically controlled study to reduce work related impairment or improve safety or productivity.

There are costs associated with a drug testing program. These can include the actual economic costs of the program itself, the industrial relations costs and the fact that errors in analysis and interpretation can and do occur. Also, having a drug testing program may result in tensions and conflict in the workplace and a loss of credibility of other strategies to prevent and reduce hazardous and harmful drug use.

There are no controlled studies on the cost effectiveness of drug testing programs. The programs can be quite expensive, especially if an employer were to test all of his/her staff. Costs can range from \$25.00 for an initial screening test to \$100.00 for a confirmatory test. This does not include indirect costs (e.g. legal advice) or those which might arise from a dispute concerning the interpretation of a test. Given the fact that no controlled studies have demonstrated a positive impact of drug testing, not surprisingly it is not possible to determine whether such a large investment in testing is worthwhile.

Studies in the US have demonstrated that laboratory errors can and do occur, and a high proportion of cases identified as positive may turn out to be false positive. This is particularly the case if strict guidelines on urine handling and analysis are not employed. Also, when low prevalence of drug use exists, anything less than 100% sensitivity and specificity of a test will result in a substantial proportion of false positives: lower prevalence of drug use will result in a higher proportion of false positives. False positives are undesirable in terms of the potential industrial and legal costs and disruption for the employer and employee.

Common products have been known to result in false positives. For example, poppy seeds may result in a positive result for opiates, cough medicines may result in a positive result for opiates or amphetamines one or two days after the medicine was taken. Drugs prescribed by a GP may be identified and unnecessarily invade the privacy of the individual. (Acknowledging that it is appropriate that an individual not engage in risky/complex work when prescribed certain medications). The more expensive drug tests, which are more specific to drug type, make fewer errors of this kind.

Substantial debate has occurred regarding the social justice issues surrounding drug testing in the workplace. Drug testing has been deemed to be intrusive by the legal system in the US and has been similarly scrutinised and criticised by the Privacy Committee in NSW.

Employer and labour organisation views and comment on drug testing in the workplace have been mixed. For example, at a recent conference in Sydney, a senior employer representative stated - "Testing in the workplace for drug or alcohol abuse is not a practice that we are promoting for adoption in workplaces generally". At the same conference, an individual who had been responsible for safety training in one of Australia's major airlines referred to drug testing as an "expensive fraud".

Drug testing does not address the structural issues which might underlie hazardous and harmful drug use. For example, the potential impact of amphetamine use on long distance drivers has been well publicised. Successfully reducing such use by employing a drug testing program may actually increase accidents if more drivers were to fall asleep at the wheel. Effective prevention will likely involve strategies which will reduce the probability of drivers staying at the wheel for such long periods.

Summary Conclusion

Drug testing can be costly in industrial relations and financial terms. It has not been demonstrated to be effective in reducing drug use or work impairment, nor has it been associated with improvements in safety or productivity. It does not measure impairment. Preventing and detecting impairment in staff is the proper concern of employers. Drug testing (except perhaps with the exception of breath testing for alcohol use) does not do this.

Introduction

In the debate about alcohol and other drug problems in the work setting, drug testing has received a significant amount of attention, from coroners, employers, politicians, unions and the media. Hailed by some as the objective and scientific means of identifying and responding to a pervasive and insidious problem, others have attacked the notion as a clear example of Orwellian nightmare come true. The addiction behaviours, which frequently foster discord, appear to have incubated a controversy with major political and industrial ramifications. The desirability of reducing drug-related problems is self evident. Whether drug testing is an appropriate, effective and acceptable means to this goal is another matter.

What is the Rationale for Drug Testing?

Drug testing has been proposed as a means to detect drug users in the work setting, to prevent or reduce impairment, and thereby increase safety and productivity. Sometimes secondary benefits are suggested, such as a reduction in theft, avoidance of blackmail, fostering public trust or identifying and referring impaired employees into treatment. Drug testing has been used to investigate accidents, fitness or other suitability for work, and as an adjunct to treatment (Miller, Giannini, Gold & Philomena, 1990; Schottenfeld, 1989).

The specific assumptions on which drug testing has been based are that drug use impairs performance and increases accident risk in the work setting. In fact, while these assumptions appear to have good face validity, there are few empirical data specific to the work setting to justify them. For example, McCunney stated that:

“...although it is virtually impossible to define the nature of the effects of drug abuse on work performance because of logistic difficulties in obtaining an accurate assessment of drug use, it has been claimed that work site drug abuse has led to accidents, absenteeism, reduced productivity, theft and vandalism.” (McCunney 1989, p. 590).

The belief that certain types of drug use are detrimental to work performance is one which has limited and sometimes contradictory evidence. We know little about the effects of drugs, other than alcohol, on performance and much of the evidence is conflicting. For example, Kagel and colleagues reported on the effects of marijuana on the job performance in a micro-economy created in a hospital facility. The drug had no impact on work output or hours worked (Kagel, Battalio & Miles, 1980). Mello and Mendelson (1985) conducted a similar study, where subjects were able to buy tobacco or marijuana cigarettes. Even those smoking up to twelve marijuana cigarettes a day did not, in the three weeks of the study, demonstrate a difference in work output. While citing these studies is not intended to communicate that drug use is a low risk activity in the workplace, the paucity of controlled studies, and the contradictory conclusions of some of those that do exist, limits the ability to assess the impact of intervention strategies: baseline data are lacking. A recent review of the Australian literature (Bush et al, 1994) indicated that there are few methodologically robust studies on the impact of drug use in the workplace. A major priority must therefore be to develop reliable indicators of drug related consequences which are valid in the work setting.

Finally, whatever the outcome of the debate on drug testing, it is important to note that there may be differences in the rationale for safety critical (e.g. pilots, long distance drivers, members of emergency teams) and non safety critical (e.g. performance of routine office work) job roles. It is generally accepted that safety critical tasks should be open to greater scrutiny, and this may include drug testing. Of course, the first priority is that the method can

be demonstrated to deliver the expected improvements in safety.

What is Drug Testing?

An individual's exposure to drugs can be measured in a variety of ways, including through the analysis of samples of hair, blood, saliva, exhaled breath and urine. In the work context, breath and urine testing are the most common methods. It has been argued that this is because urine testing is relatively easy, cheap, non-intrusive (e.g. compared to taking a blood sample) and urine can be collected in large volumes and analysed easily (Finkle, Blanke & Walsh, 1990; Potter & Orfali, 1990). Also, due to the concentrating function of the kidneys, drugs and their metabolites are more concentrated in urine than in other body fluids or tissues. Breath testing is considered an even more straightforward and less intrusive method.

In view of the fact that the method of screening employees is usually by urine testing for metabolites of drug use (other than alcohol and tobacco), about which there is most controversy, the current paper will focus on this type of testing. It is relevant to note that much of the debate and activity has not included testing for alcohol and tobacco use. This in itself has been criticised, given that these are among the most commonly used drugs and they have the highest costs for individuals, the broad community and the workplace (e.g., see Collins and Lapsley 1996). The comparatively limited attention to alcohol is interesting, in that more is known about the impact of alcohol on work related behaviour than any other drugs.

Different types of testing can be conducted, including pre-employment screening (screening job applicants), screening with probable cause (e.g. after an accident or aggressive behaviour), mass screening and random screening. Detection of substances, other than alcohol, is usually via urine testing and, generally, two techniques are employed: immunoassay and gas liquid chromatography. Details of these methods can be found elsewhere (e.g. Finkle et al, 1990; Morgan 1984; Potter & Orfali, 1990). In brief, the immunoassay technique is generally sensitive to most of the drugs which are likely to be tested. However, it cannot identify specific drugs (i.e. it can identify a metabolite as being related to amphetamines but not identify which specific drug). Immunoassay tests are not 100% reliable and interpretation of results may confuse licit substances with illicit ones.

It is usually advised that a 'positive' result should not be considered positive unless confirmed by another method, such as gas liquid chromatography. This is far more accurate and can distinguish different types of drugs. However, it is more expensive than immunoassay, and its sensitivity means that some metabolites may show positive days after the individual was exposed to the drugs.

Drug testing in the work setting has been available for a number of years. For example, in 1971, concerned about the drug use of Vietnam veterans who were applying for jobs, the Bell Telephone Company in the US initiated pre-employment screening (Hilker et al, 1975, cf. Lewey, 1983). In 1981, a major accident on the US aircraft carrier, Nimitz, gave some impetus to drug testing. Fourteen sailors were killed and 42 injured. Of the dead, six had traces of marijuana in their bodies. This accident, and evidence from survey data which indicated significant illicit drug use by navy personnel, added momentum to a major investment in drug testing in US armed forces (Cangianelli, 1989). Coincidentally there was a rapid increase in the number of Fortune 500 companies which tested job applicants or employees. Between 1982 and 1985, the proportion of US companies engaged in some form of testing rose from 3% to 30% (Schottenfeld, 1989).

More recent emphasis came from President Reagan's Commission on Organised Crime. The

Commission's report 'America's Habit-- Drug Abuse, Drug Trafficking and Organised Crime' (1986) stated:

“Government and private sector employers who do not already require drug testing of job applicants and current employees should consider the appropriateness of such a testing program” (cf. McCunney 1989).

The 'war on drugs' was being taken into the workplace. By 1988, 50% of firms surveyed by the American Management Association were drug testing (Greenberg, 1989) and in 1989 it was estimated that 20% of Americans worked in a business with a drug testing policy (Bureau of Labor Statistics, 1989). The use of drug and alcohol screening has continued into the 1990's (Institute of Medicine, 1994; Lawental et al, 1996).

What does Drug Testing Measure?

As indicated, the most common methods are breath and urine testing. Random breath testing drivers for alcohol has had a substantial impact on the reduction of road deaths associated with drunk driving. For a number of reasons, breath testing employees for alcohol is far more straight forward than other forms of drug screening. First, it is far less personally intrusive for an employee to provide a sample of exhaled breath for analysis than it is to give a sample of urine. Second, it is far easier to nominate a blood alcohol concentration which is likely to be consistent with impairment (commonly 0.05mg% for non safety critical positions and 0.00mg% for safety critical positions.) This is not possible with screening for other drugs. Third, breath analysis is logistically easier and cheaper than urine drug testing, with the sample of breath being analysed immediately and on site (one generally has to wait for the results of other tests).

If it is determined that drug screening is to be adopted, random breath testing should be a higher priority than screening for other drugs. Alcohol is a far more widely used drug than illicit drugs, and there is much more evidence about potential and actual effects on general and work performance.

There are three cautions which should be expressed about breath testing in the work setting. The first relates to the reliability of breath analysis machines (and in particular the lower cost varieties). Many of these machines require regular calibration and, if not conducted, will almost inevitably lead to inaccurate results. Second, some of the harms that can arise in relation to alcohol use will not be prevented by the use of breath tests. As noted below, performance may be impaired as a result of a hangover, even with a zero blood alcohol level. Third, breath testing has not been shown in any controlled investigation to reduce drug related harm in the workplace. Although it may appear to be an attractive option, its effectiveness is far from clear.

Urine testing measures exposure to drugs. The tests usually engaged measure the presence of metabolites, not the drug itself. Some of these metabolites can be identified days after the individual was exposed to the drug. There is no evidence which links the presence of drug metabolites with performance. For example, in two editorials in the Journal of the American Medical Association it was stated that:

"Specifically, under no circumstances can impairment be diagnosed or even presumed from a urine test result" (Lundberg 1986, p. 3004).

and

"Drug testing does not provide any information about patterns of drug use, about abuse of or dependence on drugs, or about mental or physical impairments that may result from drug use." (Council of Scientific Affairs 1987, p. 3114).

The major rationale of drug testing, to identify impairment, is compromised. The technique

cannot do this. Morgan (1984) consequently criticised the very basis of testing as placing

“..the drug positive individual in the grim situation of proving his/her innocence not of intoxicated dysfunction or malfeasance, but of immoral and undesirable behaviour. The usual justifications offered for mass screening do not withstand examination ...urine screening is a probe to identify deviance not dysfunction ...a technique to investigate humans, not accidents.” (Morgan, 1984, pp. 305-306).

It is possible that many employers are not interested in identifying immoral, undesirable and deviant employees, but believe that the tests do that which they cannot: detect impairment. Even with this shortcoming, it is still possible that a urine testing program will have impact on safety and productivity.

What is the Impact of Drug Testing on the Work setting?

Two broad categories of testing occur in the work setting; pre-employment screening of job applicants and screening of current employees. Pre-employment screening has been proposed as a useful technique to predict future job performance. A cursory review of the evidence appears to support this contention.

However, criticisms can be levelled at some of the methodology and indeed incautious conclusions of many of the studies. For example, Blank and Fenton (1989) reported that a positive pre-employment test was associated with performance decrements and an increased risk of discharge from the armed forces. Unfortunately, they did not control for age in their study, an oversight in many similar investigations. Given that age (youth) is a major predictor of drug use, risk of accidents and other work performance decrements, interpretation of the results is rendered difficult. Consequently, the evidence does not allow an unequivocal endorsement of pre-employment screening.

McDaniel (1989) reported similar results in his study of pre-employment screening in the armed forces. However, while he noted that pre-employment screening for marijuana use did have predictive value for later job performance, he concluded that it had lower utility than other measures. For example, in terms of predicting "unsuitability discharge" from the military, whether or not the subject completed high school was a better indicator of later performance (again with a possibility of confounding with age). Further, McDaniel noted that a predictor such as drug testing with a low operational validity:

"....may screen in many applicants who prove unsuitable after time while screening out many applicants who would perform well once hired" (McDaniel, 1989, p. 726).

That is, some individuals will cease hazardous drug use once they are employed, while others will commence use after they have commenced work. A similar conclusion has been reached by other researchers. Parish (1988) reported that of all new staff screened prior to employment in one company, 12% were drug positive. After one year there was no difference between those positive and those negative on job performance. Indeed although 11 'drug negatives' were dismissed no 'drug positives' were. Sheridan and Winkler (1989) reported that those Georgia Power Company staff testing positive for marijuana did not evidence a significant difference in absenteeism. Interestingly, they also noted that a higher number of positive post employment tests occurred in those who were hired after a pre-employment screening program was introduced. Although one might expect that a pre-employment testing program would dissuade high risk applicants, at least in this study this did not appear to be the case. This may be because, being forewarned of testing, users may well cover up their use or abstain prior to the critical test. Clinical anecdote supports such a possibility. Other employees may, of course, have taken up use after employment, particularly if work related factors were conducive to drug use.

Zwerling, Ryan and Orav (1990) recently conducted a methodologically sound investigation of the predictive value of pre-employment screening on over two and a half thousand postal employees. The analysis controlled for potential confounding variables, including age. The

authors reported that a positive result for marijuana or cocaine was associated with ‘adverse employment outcomes’, defined as accident risk and staff turnover. The research did not control for heavy alcohol use and thus could not:

“...exclude the possibility that the associations found between substance abuse and employment outcome were confounded by alcohol abuse”. (Zwerling et al, p. 2643).

It is critical to note that the risk levels were small. For example, for people who were positive for marijuana, the relative risk for accidents was 1.15 and staff turnover 1.56. Given the large sample size, this is of statistical significance, but questionable clinical or practical significance. To give some context, the research also found that relative risk for voluntary and involuntary turnover was 1.43 for women and 2.43 for African Americans. The authors concluded:

“...many of the claims cited to justify pre-employment drug screening have been exaggerated” (Zwerling et al, 1990, p. 2643)

The major arguments in favour of testing existing employees is that the process will detect impairment, reduce accident rates and improve productivity. Given the apparent inability of the method to predict impairment, and the problems associated with pre-employment testing, as described above, the last two claims appear to be, at the same time, doubtful and essential to the arguments for testing.

As with pre-employment testing, an uncritical review of the literature appears to indicate that drug testing programs have positive impact. For example, the South Pacific Railroad reported a reduction in accident rates from 10% to 5% in the five years after testing was introduced. Also, between 1985 and 1987 the proportion of employees testing positive dropped from 11.6% to 5.8% (Taggart, 1989). The US Army also claimed success for their testing program on the basis that the proportion of staff showing positive decreased. The assumption of success ignored a contraindicator. Over a similar time period, world-wide surveys of self reported alcohol use in the military indicated that alcohol use and related problems did not decline (Bray et al, 1983; 1985; cf. Blum, 1989). Similarly impressive claims have been made in other reports (e.g. De Cresce et al, 1989). Unfortunately none of these studies have employed a control group and therefore, it is not possible to determine whether any changes were attributable to testing or other factors. For example, testing often forms a part of other workplace strategies such as counselling and health promotion. Changes in the workplace may also simply reflect changes in the broad community.

It is useful to return to the US Navy and, one of the major contributors to the establishment of testing in this setting, the accident on the Nimitz. As with other programs the outcome is, at first glance, compelling. The number of personnel testing positive dropped from 48% in 1980 to 3% in 1987. Again, interpretation of these data is difficult as there was no control group and different testing measures were introduced over the period under study (Needleman and Romberg, 1989). Indeed, as will be discussed later, the Navy had serious problems with its testing procedures. There is also the question of whether a reduction in positive results, an oft quoted indicator of good outcome, is indicative of a real change in drug use or of the ability of users to avoid detection. (This will also be discussed below). It is interesting to note that although the positive rate in navy samples had declined to 3% in 1989, the occurrence of 65 deaths in 6 accidents on US naval ships in the same year appears a little inconsistent with the notion of testing having major impact on safety. Such a statement is, of course, spurious, but perhaps no more so than using the data from the South Pacific Railroad to imply drug testing is successful. In fact, the implication sometimes given, that the accident on the Nimitz was drug caused, may be unfounded if such a conclusion was only based on the fact that six of the fourteen dead (i.e. 43%) were positive for marijuana. This proportion was representative of general rates of use in the Navy at that time, not of higher rates of use of those involved in accidents. Causal interpretations of such data are inappropriate.

More recently, Lawental et al (1996) reported on the use of urine testing as a means to coerce employees into treatment. A total of 103 employees, referred for positive urine tests in a random testing program, were compared to 265 employees who self-referred for drug treatment. Interestingly, the coerced staff were significantly different to the self-referred employees. They were more likely to be older, African American, male and report no previous treatment for alcohol problems. They also had lower levels of problem severity, fewer medical and other problems and evidenced a better employment record. (Although they reported use of cocaine three times a week for over two years and five years marijuana use). Their apparent need for treatment was slight compared to the self-referred group. Thus, random testing seemed less likely to identify those with more severe problems.

One finding did not lend confidence to the effectiveness of the drug testing procedure to identify drug use. At follow up, drug testing was used to confirm recent drug use, yet 12% of the employees who acknowledged recent drug use were negative on testing.

It was reported that coerced employees had better outcome. That is, they complied with treatment and were less likely to have early termination of treatment. However, neither the self-referred nor coerced group demonstrated any improvement in measures of employment problems, surely the main purpose of the strategy.

Despite the lack of improvement in work functioning and major threats to the study design (e.g. no random assignment to treatment group, differences in the groups prior to treatment, different treatment exposure for each group) the authors of the report made claims that urine testing may be a useful tool. We find it more appropriate to emphasise the conclusions of the study, that, at best:

“it is hard to determine the relative influence of either the coercion or the treatment on posttreatment outcome” (Lawental et al, 1996, p. 126.)

Unfortunately, the arguments for drug testing sometimes become totally drug focused, promoting a tendency to ignore or diminish the relevance of other risk factors, such as hazardous work environments or practices. Schottenfeld (1989) suggested such a possibility, arguing that if a test conducted after an accident showed positive, there may be an assumption that the drug caused the incident, diminishing attention on other contributory factors which may be more amenable to preventive action in the future.

One final speculation, relating to recent debate on long distance driving, is illustrative. If a drug testing program was successful in stopping all long distance drivers from using stimulants, it is possible that accident rates would not decrease, may even increase, as drivers fall asleep at the wheel. The major focus of attention might more appropriately be directed at the conditions which encourage drivers to spend such long hours at the wheel.

The current authors were unable to locate any controlled studies which demonstrated that a urine testing program had a positive impact on safety or productivity. Similar conclusions have been drawn by other researchers (e.g. Blaze-Temple, 1992). In the absence of such data, it is unclear how a case can be made for these programs.

Reliability of Testing Methodology

Criticism of drug testing is fuelled by the observation that the history of drug testing has been one in which the reliability of the method itself has been brought into question. It has been reported that the accuracy of some US laboratories ranged from 30% to 95% (Lundberg, 1986). These results hardly inspire confidence in the methods or in the data. Admittedly, the standards of testing, particularly in the US, have been subject to scrutiny and certification/performance testing of laboratories has encouraged increased efficiency (e.g. see Finkle et al, 1990). However, errors do still occur. Miller and colleagues (1990) reported on a study conducted by Centres for Disease Control, where 75% of participating laboratories reported false negatives on urine samples containing fairly high levels of cocaine. As noted by Morgan, human error is still likely to occur with the best possible technology:

“... one can imagine the astonishingly boring work of handling thousands of specimens with only an occasional positive test to excite, which may be potentially false.”

(Morgan 1984, p. 313-314).

Indeed, false positives do occur under the most stringent of conditions, inaccurately labelling someone as a user (with all the negative consequences that may entail) and as indicated, even correct detection does not denote impairment (Schottenfeld, 1989).

Even with very good quality control and good test procedures, the low rate of drug use in the working population poses a major problem, as identified by a number of researchers. The issue is summarised by Schottenfeld:

“... no workplace testing program can ensure completely accurate or 100% specific results ... Assume that (under ideal conditions)... testing identifies all positive samples as positive and correctly identifies as negative 999 out of 1000 truly negative samples (i.e. it misidentifies only one out of 1000 truly negative samples as positive). Assume that only one out of 1,000 individuals is a user ... We would then expect there to be one true positive result and one false positive result out of every 1,000 individuals tested. Consequently, half of all workers identified as being positive for the substance will be false positives ... anything less than 100% specificity is bound to result in a high percentage of positive tests being false positives (at least where there is a low prevalence of drug use)” (Schottenfeld, 1989, p. 418 emphasis added.)

The Council of Scientific Affairs (1987) also noted the problem, hypothesising the impact of a test with a 90% specificity and 99% sensitivity on a population of 10,000 which had 100 users (i.e. 1% of the workforce). Ninety nine of these would test positive, while 990 of the 9900 non users would also test positive.

Obviously, this is less of a problem with higher prevalence of users in a population. For example, a test with 95% specificity and sensitivity would have the following predictive value:

prevalence of drug use	predictive value of positive result
1%	16%
2%	28%
5%	50%
10%	68%

(Lundberg, 1986)

The prevalence of drug use in many workplaces is relatively low compared to clinical samples. While robust data are not available for Australia (Bush et al, 1994), in the US, Whitney (1989) reported positive rates found by laboratories testing employees of large transport companies as being between three and sixteen per cent. A survey of seven major testing laboratories, who tested over two million samples from 1990 to 1992, found that 4% were positive for one or more drugs and marijuana accounted for approximately 50% of these results (Research and Evaluation Associates, 1992). Results differed from method to method: 8% to 13% of pre-employment tests, 2% of random tests and 7% to 8% for cause tests were positive. Anglin and Westland (1989) concluded that, as the usual prevalence of detected use in work settings in the US is as low as one to two percent, testing is almost irrelevant. If the prevalence of drug use in Australian work settings is comparably low, then there is major potential for false positives. Even if prevalence of illicit drug use were as high as 10%, the predictive value of a positive result will be 68%. That is, 32% of the results may be inaccurate.

False positives may also arise as a result of exposure to drugs or products which are of little or no relevance to employers. For example, many over-the-counter medicines (e.g. cough

medicines) and common food products (e.g. poppy seeds and tonic water) can result in positive results (the more costly tests, which are more specific, are less likely to make this error). Acknowledging that it is appropriate that an individual not engage in risky/complex work when prescribed certain medications, testing may detect medication prescribed by an employee's doctor, with obvious implications for infringing on patient-doctor confidentiality. Finally, a positive test for marijuana may be indicative of passive inhalation of marijuana smoke, not of the individual being a drug user (again an error that can be reduced by the use of appropriate cut off points for sensitivity). Nevertheless, the literature does indicate the need for caution in interpreting positive results for marijuana (e.g. Cone & Johnson, 1986; Mule, Lomas & Gross, 1988).

False positives can be reduced by employing more accurate confirmatory tests, but these are not always used, especially in pre-employment screening and, as suggested earlier, errors in handling can still, and indeed do occur. Examples can be found by referring to the US armed forces. In 1984, a senior officer announced that the army and airforce were reviewing the results of 100,000 tests. One estimate was that as many as 30,000 military staff may have been eligible to have prior disciplinary action dismissed (Morgan, 1984). Similarly, the navy investigated 6000 positive urines taken in 1982. It was found that 2,000 could not be substantiated as true positives and another 2,000 were missing some form of documentation (Morgan, 1984). Finally, Dangelo (1990) cited the army as having to recall 52,000 urine samples because of faulty handling. Coincident with compromising confidence in the methods, one might also be interested in the cost of all the aborted tests and potential legal costs. As already discussed, there have been attempts to improve the methods, and a number of reports have described methods to ensure quality in testing (e.g. Nicholas and Allsop, 1996). Nevertheless, improvements in technology and application should not be considered as substitutes for the scientific method needed to assess the impact of drug testing.

Clinical and other anecdotes imply that some of the observed reduction in positive rates favourably reported in some studies, may reflect user ability to give a false sample, or to tamper with their urine in some way. For example, at least one laboratory in the US has sold '100% drug free urine' (Anonymous, 1987) and laboratory texts on processes which confound drug tests are available in drug using sub-cultures (Seymour & Smith, 1990).

The consensus of opinion is that in order to ensure that a true sample is given, the person tested should be observed closely. A number of US states have legislated to ensure that in the work setting, urine samples can be given in privacy. Also, as part of program policy, some companies have announced the commencement of a testing program several days before its implementation (Angarola and Rodriguez, 1989). In the light of these weaknesses in the method, and in the absence of controlled investigations, the reports of a reduction in the number of employees testing positive should be treated with some caution.

Finally, the results of urine testing often take hours, even days, to ascertain. If one is concerned about the potential impairment of an individual employee, a urine test will not give timely information.

Cost Effectiveness

Drug testing has spawned a multi-million dollar industry in America, and this industry seems to be catching on in Australia, with new drug testing laboratories appearing all over the country. Employers and companies are encouraged to purchase equipment which has the capacity to test much larger populations than in their employ. Crouch et al (1988) estimated that in the US, \$US 250 million were spent on drug testing in the absence of any cost benefit analyses (cf. Crouch, Webb, Buller & Rollins, 1989). In a later paper, Crouch and colleagues identified a number of cost benefit analyses which were favourable to drug testing. However, as appears to be a common feature in this area, these were all based on uncontrolled analyses and therefore must be considered inconclusive (Crouch et al, 1989). Hoyt and colleagues (1987) argued that it is important that any cost analyses include the cost of legal advice and provision for costly defamation and other suits by employees.

Two case studies are illustrative of poor cost-effectiveness. As already mentioned, the Bell Telephone Company in the US was concerned about the recruitment of Vietnam veterans. The company screened 488 applicants and found 33 positive samples. Of these, 31 returned

for further assessment and only three of these were found to be true positives and only one unequivocally confirmed as indicative of recent drug exposure. That is, the program had a positive predictive value of 10%. Not surprisingly, it was concluded that the program was ineffective (Hilker et al, 1975). Later, Lewy came to a similar conclusion (Lewy, 1983). He reported on 500 tests on prospective hospital employees, of which only 13 (2.6%) were confirmed positives. Seven were positive for tranquillisers (six had doctors' prescriptions and one had taken a Valium for "exam nerves"), three applicants who were positive for barbiturates

also had prescriptions, four positive for amphetamines were traced to over-the-counter medications containing phenylephrine, one positive for opiates had been prescribed an opiate based cough syrup and one positive for PCP had no legitimate reason for use. To detect this one illicit drug user, \$US 16,500 was expended.

Drug Testing and Civil Liberties

Improved techniques and cost effectiveness still leaves an essential issue open to debate, as succinctly summarised by Giles and Wilkinson:

“improved techniques would merely allow a more efficient violation of the individual's rights” (Giles and Wilkinson, 1991, p. 7).

We are returned to the initial concern that drug use and/or a positive result on a urine test does not necessarily imply impairment. The assumptions on which drug testing are based are not empirically supported, and thus:

“The question of whether any individual who is apparently functioning normally with no demonstrated impairment can be subjected to a form of intimate body search remains a serious problem..” (Lundberg, 1986, p. 3015).

and

“There is now little doubt that a urine analysis test infringes upon an employee's reasonable expectation of privacy and therefore constitutes a search and seizure within the meaning of the fourth amendment”. (Crystal and Samson, 1988, p. 704).

While US law clearly does not apply in Australia, the principles for civil liberties are similar. Rights appear to be being given to employers that we would be very cautious in extending to the police. Detection by the police is followed by the opportunity to refute evidence in court. Employers do not always have the same constraints. The risk is that without constraints that are placed on the state, some employers in the US appear to have been injudicious in the application of drug testing and consequent action, as evidenced by the following example:

“The plaintiff challenged the results of a positive test. The defendant gave the plaintiff a second drug test but required the plaintiff to spend four days in the hospital. The second test indicated that no drugs were present in the plaintiff's system. Even though the second test was negative, the defendant committed the plaintiff to twenty eight days of inpatient rehabilitation in a drug clinic, forced the plaintiff to attend addiction meetings, and administered ten more drug tests which were all negative” (Dangelo, 1990, p. 554-555).

There have also been claims that drug testing has been used to control or intimidate staff in less extreme ways. Apparently, employees have been ordered to submit to testing as a consequence of their involvement in union activity. In addition, some employers have been more lenient in their response to a positive test at times of staff shortages, and conservative, or more prone to discipline when staff are in plentiful supply (Blum, 1989; Schottenfeld, 1989).

Some reports about drug testing imply that taking a urine sample is not intrusive. Common opinion, and that of the courts in the US, are not in agreement with this belief:

“Because of the exposure of private body parts occasioned by such observation, the degree of intrusiveness for urine testing is high, and as a result likely embarrassing and humiliating, no matter how courteously and clinically conducted.” (Heshizer & Muczyk, 1986, p. 333).

This intrusion and embarrassment has resulted in a number of employers facing expensive law suits (Aron, 1987). As part of the process of chain of custody (i.e. to ensure the given sample can be attributed to a specific person with no likelihood of tampering or other handling error) it is strongly recommended that urine is collected under direct observation, labelled carefully and signed for each time it exchanges hands and is kept in a sealed container (Council on Scientific Affairs, 1987; Seymour & Smith 1990). It is suggested that:

“..Without large numbers of diligent and devoted micturition observers, the entire mandatory urine drug screening system becomes a travesty and is certain to fail” (Lundberg, 1986, p. 304).

The first condition of chain of custody is considered essential, while being the most intrusive. This intrusion is signalled in the following advice:

“The collector must watch the client urinate. To obtain the best view of the female's urethra (sic) meatus the collector can ask her to bend over and view the process from behind her. It is important to view the urine actually coming from the meatus and into the empty collection container, for both men and women”. (Anderson et al, cf. Clark, 1990).

Paraphrasing civil libertarian arguments, Kendall (1986) noted that as employers can already discipline employees for poor performance, why do they need to search body functions to ascertain the cause. The emphasis should appropriately be on detecting poor work performance, hazardous working conditions and practices. Drug testing does not do this.

Ensuring Quality in Drug Testing

If an organisation decides that drug testing is still an option, there are a number of strategies which can at least ensure compliance with quality. Any company undertaking drug screening should accept that at some point in time test results, and in particular positive results, may come under close scrutiny by the courts, by statutory bodies such as the Arbitration Commission or by employee representative groups. It is vital that sample collection, chain-of-custody and analytical procedures are carefully developed and well documented.

The existence of easy to use immunoassay methods for screening drugs in urine samples provides organisations the option to carry out initial testing on-site. On-site testing has certain advantages, which include:

- Confidentiality can be maintained because the specimen and test results remain under the organisation's control at all times;
- Chain-of-custody can be simplified because the number of persons required to handle a specimen can be minimised; and
- Results are available more quickly, in some cases immediately.

Advantages to sending all specimens to an outside laboratory for testing include the following:

- Trained technical staff perform the testing;
- Initial positive results can be confirmed on the spot by an alternative method, avoiding delays;
- Laboratory staff can answer technical questions; and

- **The laboratory's expertise is available to help the organisation set up sound specimen collection and storage procedures.**

However, if an organisation does elect to carry out immunoassay testing on-site, it is still necessary to confirm all positive results by an alternative method. Unless there are adequate facilities on-site, it will be necessary to send all positive results obtained by immunoassay to an outside laboratory for GLC confirmatory analysis.

Not all laboratories have the capability to perform urine screening in a manner which will withstand legal challenge. Therefore, it is important to have a set of criteria by which to judge laboratories. The criteria include laboratory certification, chain-of-custody procedures, staff qualifications, quality control procedures, and result reporting procedures. Differentiation in quality will most likely be found in the degree of accountability or chain-of-custody that is afforded each specimen.

Most large clinical or hospital laboratories process thousands of specimens every day, often with a number of staff having access to specimens. This can compromise documentation of chain-of-custody. Therefore, clinical or hospital laboratories performing urine screening should have fully developed chain-of-custody procedures.

To confirm a positive test result from an alcohol or other drug screen, a completely new portion of the specimen must be obtained from the original container, and all of the number-matching checks should be repeated. This is essential to reduce the risk of compromised chain-of-custody.

A laboratory should have the capacity to provide expert testimony, including description of the methods used the scientific validity of results. Thus, the laboratory must employ, or otherwise have access to someone who can qualify as an expert witness.

It is important to include specific reference to the guaranteed turnaround time in the laboratory contract. Telephoned reports should be avoided as this is the least secure and most error prone method. If there is no urgency for the results, they can be sent by mail, clearly stamped confidential, and addressed to the person authorised to receive the results.

It is advisable to visit the laboratory with an inspection checklist. The inspection could include the following:

- The physical facilities, the laboratory's organisation and procedures for processing specimens.
- Examination of equipment to evaluate operating condition. Up-to-date maintenance records should be available for each piece of equipment.
- Review of the "Standard Operating Procedures" manual. All procedures used within the laboratory should be written in detail, including handling and analytical procedures.
- Review of the quality assurance program and examination of records on quality control sample results.

Good practice would include periodic testing of a laboratory by sending specimens known to be positive or negative for specific drugs disguised as regular employee specimens. Unexpected results will denote errors in laboratory procedures.

Prior to commencement of a drug testing program, the organisation should publish and widely disseminate its policy. Any screening undertaken without such strategy is likely to create uncertainty and anxiety in members of the workforce. The policy should clearly explain the organisation's aims in undertaking screening, provide a definition of a positive result and outline the consequences likely to flow from such a result. It should also detail who within the organisation will have access to the results. Confidentiality of results is important, not only from the viewpoint of employee confidence but also in legal terms. If an organisation has a medical department, then it seems logical for that department to oversee screening programs and to be custodians of the results. In that way screening results would

become part of an employee's medical record and release of results would be governed by the same rules which cover other medical records.

Performance Testing

Some of the criticisms of drug testing have encouraged the consideration of other methods, such as performance testing. Drug testing is an indirect measure of performance. Direct measurement of performance is likely to be a more effective measure of capability and impairment. However, performance testing, currently in its infancy, raises a number of social and industrial relations issues, as the method will identify all impaired staff, irrespective of cause.

The way in which drugs, such as alcohol, impair performance, is complex. For example, if an individual performs uncomplicated, routine psychomotor tasks which are familiar, they can do so without gross levels of impairment, even at blood alcohol concentrations of approximately 0.1mg%. However, for tasks which require higher level thinking, or coping with the unexpected, there is a dramatic decrease in performance in the intoxicated individual. This affects both the individual's ability to respond to complex situations quickly and in the ability to think laterally and solve problems (Glencross, 1990).

For example, for an individual required to operate a machine which always performs exactly the same function under exactly the same conditions, with no decision making required, the level of impairment associated with even relatively high blood concentrations of alcohol may not be substantial. However, if decision making is introduced into the process, or the employee is required to respond to an emergency, or new information, a substantial degree of impairment will be evident.

One advantage of performance testing over drug testing is that individuals may experience drug related impairment, even though drugs will not be detected. Hangover from alcohol intoxication can substantially impair performance. In one study, driving ability was decreased by approximately 20% on the day following acute alcohol intoxication (the subjects' blood alcohol concentration was an average of 0.147 mg% the night before). This was evident long after blood alcohol concentrations had returned to zero (Laurell and Tornros, 1983).

Conclusion

Drug testing, particularly urine testing, appears to be an increasingly acceptable option for many employers and some unions. This movement is occurring in the absence of any convincing evidence about the ability of such a process to detect impairment, let alone have impact on safety and productivity. This in itself should be enough to halt any investment in the process. However, the techniques employed are also flawed and, in situations of low rates of drug use, likely to result in false positives, with the potential to result in the loss of valuable staff resources and expensive legal cases.

Misplaced faith in the method is likely to result in neglect of other ways to respond to work setting hazards in general, and alcohol and other drug problems in particular. The method is costly with no controlled evidence for cost effectiveness. The potential toll in legal suits is self-evident, as is the infringement on the personal lives of employees. Giving a urine sample under the conditions required for chain of custody is humiliating and intrusive.

To conclude, it is perhaps useful to refer to an old saying, that actions speak louder than words. It was mentioned earlier that the President's Commission on Organised Crime in the US recommended that employers should drug test prospective and current employees. In

response, a House Subcommittee on Human Resources convened a special hearing. Noting the recommendations, the Chairperson of the subcommittee asked the Commission Deputy Executive Director to give a urine sample before testifying. This particular proponent of testing refused (Kendall, 1986).

Acknowledgements

Thanks to Loretta Miranda and Mark Kelly for word-processing and computer technical support.

References

Angarola, R.T. & Rodriguez, S.N. (1989) State legislation: Effects on drug programs in industry, in S.W. Gust & J.M. Walsh. *Drugs in the Workplace: Research and Evaluation Data*, NIDA Research Monograph 91.

Anglin, M.D & Westland, C.A. (1989) Drug monitoring in the workplace: Results from the California commercial laboratory drug testing project, in S.W. Gust & J.M. Walsh. *Drugs in the Workplace: Research and Evaluation Data*, NIDA Research Monograph 91.

Anonymous. (1987) Monday Morning Report, *Alcohol Research Information Service*, 11:4.

Aron, M.W. (1987) Drug testing: The employer's dilemma, *Labor Law Journal*, 19, 157-165, March.

Blank, D.L. & Fenton, J.W. (1989) Early employment testing for marijuana: Demographic and employee retention patterns, in S.W. Gust & J.M. Walsh. *Drugs in the Workplace: Research and Evaluation Data*, NIDA Research Monograph 91.

Blaze-Temple, D. (1992) Drug testing in the workplace: Overview of the issues, *Drug & Alcohol Review*, 11:1, 59-73.

Blum, T.C. (1989) The presence and integration of drug abuse intervention in human resource management, in S.W. Gust & J.M. Walsh. *Drugs in the Workplace: Research and Evaluation Data*, NIDA Research Monograph 91.

Bureau of Labor Statistics. (1989) Survey of employer antidrug programs. U.S. Department of Labor, Bureau of Labor Statistics, Report 760, 1989. Cangianelli, L.A. The effects of a drug testing program in the navy. In L.S. Harris (ed). *Problems of drug dependence 1989*. NIDA Research Monograph 95. Rockville, Maryland: National Inst on Drug Abuse, 90.

Bush, R.A., Allsop, S.; Vincent, N. & Bailey, M. (1994). *Bibliographic Details of Literature on Alcohol and Drugs in the Workplace (1980-1993)* Technical Report (Second report) Critical analysis Research Project on Drugs in the Workplace. A report for the Commonwealth Department of Human Services and Health. National Centre for Education and Training on Addiction, The Flinders University of South Australia.

Clark, H.W. (1990) The role of physicians as medical review officers in workplace drug testing programs. In pursuit of the last nanogram, *Addiction Medicine*, 152:514-524.

Collins, D.J. & Lapsley, H.M. (1996) *The social costs of drug abuse in Australia in 1988 and 1992*, National Drug Strategy, Monograph No. 30, Commonwealth Department of Human Services and Health, Canberra.

Cone, E.J. (1986) Contact highs and urinary cannabinoid excretion after passive exposure to

marijuana smoke, *Clinical Pharmacology and Therapeutics* 40:247-256.

Council on Scientific Affairs. (1987) Scientific issues in drug testing. *Journal of American Medical Assoc*, 257:22, 3110-3114.

Crouch, D.J., Webb, D.O., Peterson, L.V., Buller, P.F. & Rollins, D.E. A critical evaluation of the Utah Power and Light company's substance abuse management program: Absenteeism, accidents and costs, in S.W. Gust & J.M. Walsh. *Drugs in the Workplace: Research and Evaluation Data*, NIDA Research Monograph 91.

Crystal, J.L. & Samson, R.L. (1988) Drug testing of public employees: A management perspective, *Journal of Law & Education* 17:4, 703-716.

Dangelo, C.J. (1990) The individual worker and drug testing: tort actions for defamation, emotional distress and invasion of privacy, *Duquesne Law Review*, 28-545, 545-559.

DeCresce, R.P., Lifshitz, M.S., Ambre, J.A., Mazura, A.C., Tilson, J.E. & Cochran, K.M. (1989) Drug testing in the workplace, Washington D.C.: *The Bureau of National Affairs, Inc.*

Finkle, B.S., Blanke, R.V. & Walsh, J.M. (1990) Technical, scientific and procedural issues of employee drug testing, U.S. Department of health and Human Services, *NIDA Consensus Report*.

Giles, G. & Wilkinson, A. (1991) Dug-Testing and individual rights, *The Journal*, 20, 7-8.

Glencross, D.J. (1990) Alcohol and human performance. *Drug and Alcohol Review*, 9, 111-118.

Greenberg, E.R. (1989) Workplace testing: Who's testing whom?, *Personnel*, 66:5, 39-45.

Heshizer, B. & Muczyk, J.P. (1988) Drug testing at the workplace: Balancing individual, organisational, and societal rights, *Labor Law Journal*, 39, 340-345.

Hoyt, D.W., Finnigan, R.E.T. Shults, T. F. & Butler, T.J. (1987) Drug testing in the workplace - are methods legally defensible? A survey of experts arbitrators and testing laboratories, *Journal of American Medical Association* 58:4, 504-509.

Institute of Medicine. (1994) *Under the influence: Drugs and the American workforce*. Washington, DC: National Academy Press.

Kegal, J.H., Battalio, R.C. & Miles, C.G. (1980) Marijuana and work performance: Results from an experiment, *Journal of Human Resources*, 15, 373-305.

Kendall, R.M. (1986) Drug testing: Societal safeguard or invasion of privacy? *Occupational Hazards*, 43-45.

Laurell, H. & Tornros, J. (1983) Report no.222a, *Journal of the American Medical Association*, 250, 1657-1658.

Lawental, E., McLellan, A.T. Grissom, G.R., Brill, P. & O'Brien, C. (1996) Coerced treatment for substance abuse problems detected through workplace urine surveillance: Is it effective? *Journal of Substance Abuse*, 8:1, 115-128.

Lewy, R. (1983) Pre-employment qualitative urine toxicology screening, *Journal of Occupational Medicine*, 25:8, 579-580.

Lundberg, G.D. (1986) Mandatory unindicated urine drug screening: Still chemical McCarthyism, *Journal of the American Medical Association*, 256:21, 3003-3005.

McCunney, R.J. (1989) Drug testing: Technical complications of a complex social issue, *American Journal of Industrial Medicine*, 15, 589-600.

McDaniel, M.A. (1987) Does pre-employment drug use predict on-the-job suitability?, in S.W. Gust & J.M. Walsh. *Drugs in the Workplace: Research and Evaluation Data*, NIDA Research Monograph 91.

Mello, N.K. & Mendelson, J.H. (1985) Operant acquisition of marijuana by women, *Journal of Pharmacology & Experimental Therapeutics*, 235, 12-171.

Miller, N.S., Giannini, A.J. Gold, M.S. & Philomena, J.A. (1990) Drug testing: Medical, legal, and ethical issues, *Journal of Substance Abuse Treatment*, 7, 239-244.

Morgan, J.P. (1984) Problems of mass urine screening for misused drugs, *Journal of Psycho-active Drugs*, 16:4, 305-317.

Mule, S.J., Lomas, P. & Gross, S.J. (1988) Active and realistic passive marijuana exposure tested by three immunoassays and GC/MS in urine, *Journal of Analytical Toxicology*, 12:113-116.

Needleman, S.B. & Romberg, R.W. (1989) Comparison of drug abuse in different military populations, *Journal of Forensic Science*, 34, 848-857.

Nicholas, R. & Allsop, S. (1996) *Alcohol and other Drug in the Workplace: Issues, Trends and Practices*. The Chamber of Mines and Energy of Western Australia Inc, Perth.

Parish, D.C. (1988) Relation of the pre-employment drug testing results to employment status: a one year follow-up, *Journal of General Internal Medicine*, 44, 44-47.

Pettitt, B.C. Jr., Oysz, S.M. & Hood, L.V.S. (1987) Opiates in poppy seed: Effect on urinalysis results after consumption of poppy seed cake-filling. *Clinical Chemistry*, 33:7, 1251-1252.

Potter, B.A. & Orfali, J.S. (eds) (1990) *Drug testing at work - A guide for employers and employees*. Ronin Publishing.

Research and Evaluation Associates. (1992) *Drug testing Laboratories Data Analysis (NIDA Contract No. 271-89-8525)* Rockville, Md.

Schottenfeld, R.S. (1989) Drug and alcohol testing in the workplace-objectives, pitfalls, and guidelines, *American Journal of Drug and Alcohol Abuse*, 15:4, 413-427.

Seymour, R.B. & Smith, D.E. (1990) Identifying and responding to drug abuse in the workplace: an overview, *Journal of Psycho-active Drugs*, 22:4, 383-404.

Sheridan, J.R. & Winkler, H (1989) An evaluation of drug testing in the workplace, in S.W. Gust & J.M. Walsh. *Drugs in the Workplace: Research and Evaluation Data*. NIDA Research monograph 91.

Taggart, R.W. (1989) Results of the drug testing program at Southern Pacific Railroad, In S.W. Gust & J.M. Walsh. *Drugs in the Workplace: Research and Evaluation Data*, NIDA Research Monograph 91.

Whitney, J. (1989) Drug use patterns found in criminal justice and workplace drug testing programs, *California Association of Toxicology Newsletter*, Fall: 21-28.

Zwerling, C., Ryan, J., Orav, E.J. (1990) The efficacy of pre-employment drug screening for marijuana and cocaine in predicting employment outcome, *Journal of the American Medical*

Association, 264:20, 2639-2643.

ALCOHOL AND OTHER DRUG USE IN WESTERN AUSTRALIA: IMPLICATIONS FOR THE WORKPLACE

**Richard Midford, Senior Research Fellow
National Centre for Research into the Prevention of Drug Abuse
Curtin University of Technology**

Introduction

The basis for seeking to prevent alcohol and other drug (AOD) related problems in the workplace is well established and has arisen from a number of concerns. These have been grouped into the following four broad categories by Nicholas et al (1996):

- Safety;
- Productivity and efficiency;
- Employee and community health;
- Morality and legality.

Traditionally, responses to AOD problems in the workplace have focused on identifying individual employees with drinking or other drug problems followed by referral to employee assistance programs (EAPs) for treatment. Holder (1990) considers that the challenge is to build on this positive base in a way that goes beyond defining workplace AOD problems only in terms of individual impairment. He argues that if the goal is to prevent AOD harm in the workplace then the response should focus on the problem and the context, not just the individual.

Since the workplace is part of a larger community system, any understanding of AOD problems in the workplace needs to include an understanding of the broader community in which the AOD use takes place. Part of this understanding is an appreciation of community patterns of use and harm. It is almost axiomatic that a workplace located in a community with high consumption of AODs, will experience more AOD related problems than a similar workplace located in community with low consumption. The type of drug most commonly used and the method of use are also important factors in understanding the sort of harm that is likely to occur in a workplace.

Western Australia has considerable diversity in climate, lifestyle and population, which in itself suggests that AOD patterns would vary considerably across the state. Fortunately this is backed by some excellent data gathering systems and a number of particularly salient research reports, which when put together provide a sound, empirically based state profile of AOD use likely to cause the most problems to within the workplace.

AOD Use in Western Australia

As part of the 1995 National Drug Household Survey (National Drug Strategy Household Survey, 1996) a stratified sample of 500 Western Australians were interviewed on the patterns of AOD use. The percentage who have ever tried and the percentage who have used

in the last 12 months are presented in Figure 1.

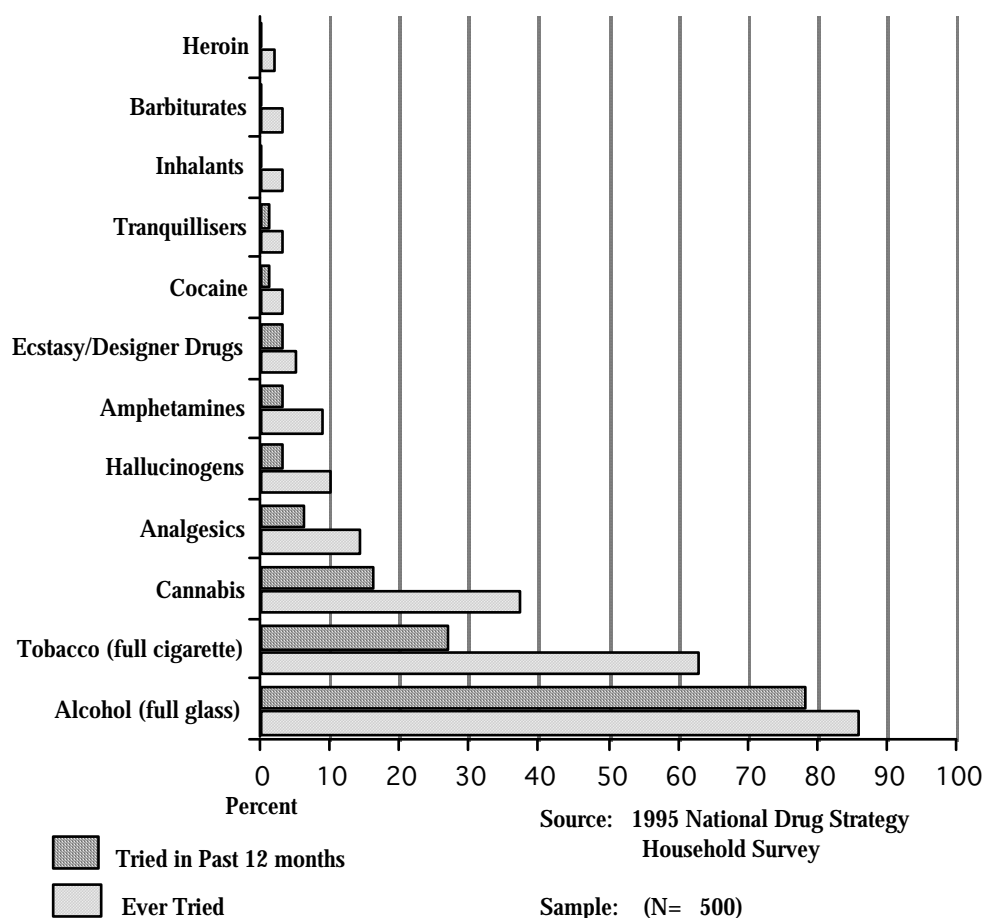


Figure 1: Drug Use in Western Australia 1995

The great majority (86%) have tried at least one full glass of alcohol and 78% are current users by the criterion of having had a least one drink in the last 12 months. Ever use and particularly current use of all other drugs is much lower. Most Western Australians surveyed had smoked at least one cigarette (63%), but only 27% were current smokers. In the case of illicit drugs, the figures were even lower. Cannabis was the most popular illicit drug, with 37% of the sample having ever tried it. However, only 16% reported current use. The percentage of the survey sample who reported current use of any other illicit drug was very small and in fact it is probably not that useful to quote actual percentages because such small numbers do not give an accurate picture of true population use.

AOD Related Harm in Western Australia

The National Drug and Household Survey is one indicator of AOD use in Western Australia, but it does not provide any information on associated harm. This is very difficult to do empirically in the case of illicit drugs, because of the nature of their use. However in the case of alcohol use there is an extensive research tradition of attempting to quantify the relationship between consumption and harm (Cherpitel, 1993; Holder, 1993; Rabow and Watts, 1983). An innovative project has examined the relationship between consumption and several commonly accepted indicators of related harm across all regions of the state. This project, the Measurement of Alcohol Problems for Policy (MAPP), uses a computer based spatial technique (Geographic Information Systems or GIS) to construct a comprehensive

database containing state-wide data sets of alcohol consumption and indicators of related harm (The Measurement of Alcohol Problems for Policy Project, 1995). Data for the 1991/1992 financial year was the first to be brought together in this way because contemporaneous socio demographic information was available from the 1991 census.

The GIS technique allows systematic exploration of the relationship between alcohol sales and alcohol-related problems across different areas of Western Australia and because this information can be spatially aggregated at a number of different levels, ranging from the whole state to particular local regions, there can be better understanding of regional variation. Additionally, relevant information can be made available to affected communities, including workplaces, to stimulate and support informed participation in local planning and decision making processes. Figure 2 shows the level of per capita alcohol consumption in 130 regions of Western Australia. This varies from 1.49 litres to 29.1 litres. This variation across regions

Figure 2: Per Capita (15 years and over) Consumption of Alcohol in 130 Regions of Western Australia for 1991/92

is considerable and is associated most strongly with the following available indicators of alcohol harm:

- night time assaults;
- night time positive driver breath tests;
- night time minor traffic crashes;
- acute hospital morbidity weighted by alcohol aetiological fractions (English et al, 1995).

The MAPP study not only indicates that alcohol consumption is a strong predictor of harm in Western Australia, but it also identifies those regions with particularly high rates of alcohol related harm. The implication for business is that a workplace located in a region with high rates of consumption and harm is likely to be reflect the harm experienced in surrounding communities.

The Cost of AOD Use to Western Australian Business

An economic perspective on AOD harm in Australia has been provided by Collins and Lapsley (1991, 1996). These researchers developed a methodology for estimating the cost of AOD abuse and used this to calculate the social cost of abuse in dollar terms. They had three categories of drugs; alcohol, tobacco and illicit drugs and apportioned costs to three sectors of the community; individuals, governments and business. A summary of their findings for 1992 is presented in Table 1.

In Western Australia tobacco is the most costly drug, with community wide social costs of \$857.9 million. Total alcohol costs are less (\$363.8 million), but they fall disproportionately on business (\$324.7 million), because the great majority of people who receive medical treatment as a result of alcohol problems are in employment. In comparison, illicit drug use in Western Australia costs business considerably less at \$63.7 million.

AOD Use by Australian and Western Australian Workforces

Webb et al (1990) in a survey of workers at a heavy manufacturing plant in the Hunter region of New South Wales found that 8.8% of workers were drinking at harmful levels. Hagen, Egan and Eltringham (1992) surveyed a broad range of industries in Victoria and found that 6.9% of workers were drinking at harmful levels. A consumption survey of workers at several Hunter Valley coal mines found that between 8.7% and 17.8% were drinking in a hazardous or harmful manner (Hunter Centre for Health Advancement, 1996). Hazardous drinking has been defined by the National Health and Medical Research Council (NHMRC) as more than four drinks per day for men and more than two drinks per day for women. Harmful drinking has been defined as daily consumption in excess of six drinks for men and four drinks for women (Pols and Hawks, 1992).

In Western Australia there are only two recent documented studies of workforce AOD use (Scotland, Hyde and Midford, 1996; Midford, Marsden, Phillips and Lake, 1997). These two studies collected data on AOD use by three mining related workforces. Two of the workforces (A and B) live and work in the Northwest of the state. The third (workforce C) essentially comprises two groups, Perth based head office staff and fly in/fly out remote

location staff. Both groups do however maintain their households in Perth.

Table 1: Social Costs Associated with Use of Alcohol and Other Drugs: Australia and Western Australia 1992

		Type of Drug	Borne by individuals	Borne by business	Borne by governments
			\$m	\$m	\$m
Australia	Total Quantified tangible costs	Alcohol	264.6	3418.0	147.0
		Tobacco	5630.2	2286.0	646.7
		Illicits	313.8	670.3	483.6
WA	Total Quantified tangible costs	Alcohol	25.1	324.7	14.0
		Tobacco	534.9	321.7	1.3
		Illicits	29.8	63.7	45.9
			%	%	%
		Percentage of total tangible costs borne by each sector			
		Alcohol	6.9	89.3	3.8
		Tobacco	58.3	35.0	6.7
		Illicits	21.4	45.7	33.0

Australian figures taken from Collins and Lapsley, 1996.

Western Australian figures calculated as a proportion of the national figures, based on state population.

The findings of these Western Australian studies were broadly comparable to the Victorian and New South Wales studies, although differences in methodology do not allow direct comparison. However, because the Western Australian studies used the same quantity/frequency questions as the 1995 National Drug Household Survey (National Drug Strategy Household Survey, 1996), their results can be directly compared with national consumption patterns. Male workers living in the Northwest (workforces A and B) reported higher usual consumption, with substantially more usual hazardous

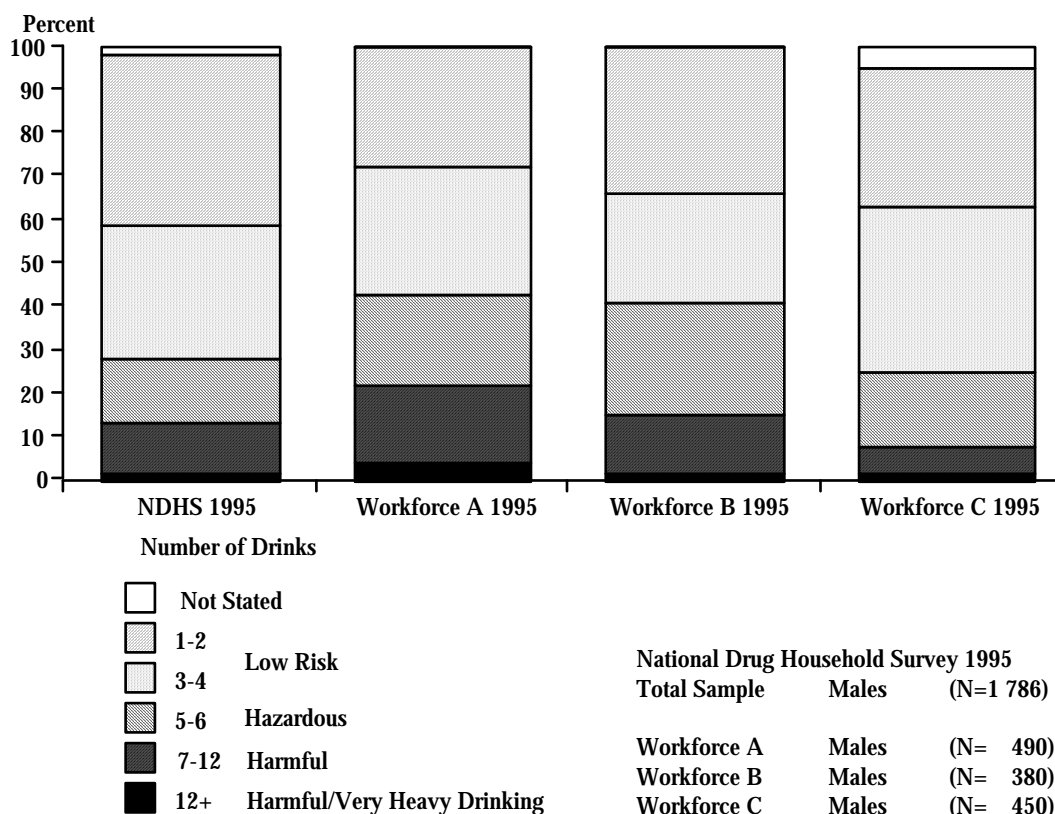


Figure 3: How Many Drinks do Males in Three Mining Related Workforces Usually Have

(5-6 drinks in a session) and harmful (7-12 drinks in a session) consumption in both groups (Pols and Hawks, 1992) (see Figure 3). However male workers in all three Western Australian workforces reported drinking more often and more frequently in excess of recommended limits than their national sample counterparts.

Females in all four samples reported usually drinking comparable quantities of alcohol (see Figure 4). However, females in the three workforces reported usually drinking more frequently and more often exceeding the recommended daily limit than their national sample counterparts. The proportions of males and females in the three workforces drinking in the top risk categories for quantity, frequency and exceeding recommended limits were broadly similar to the respective national samples.

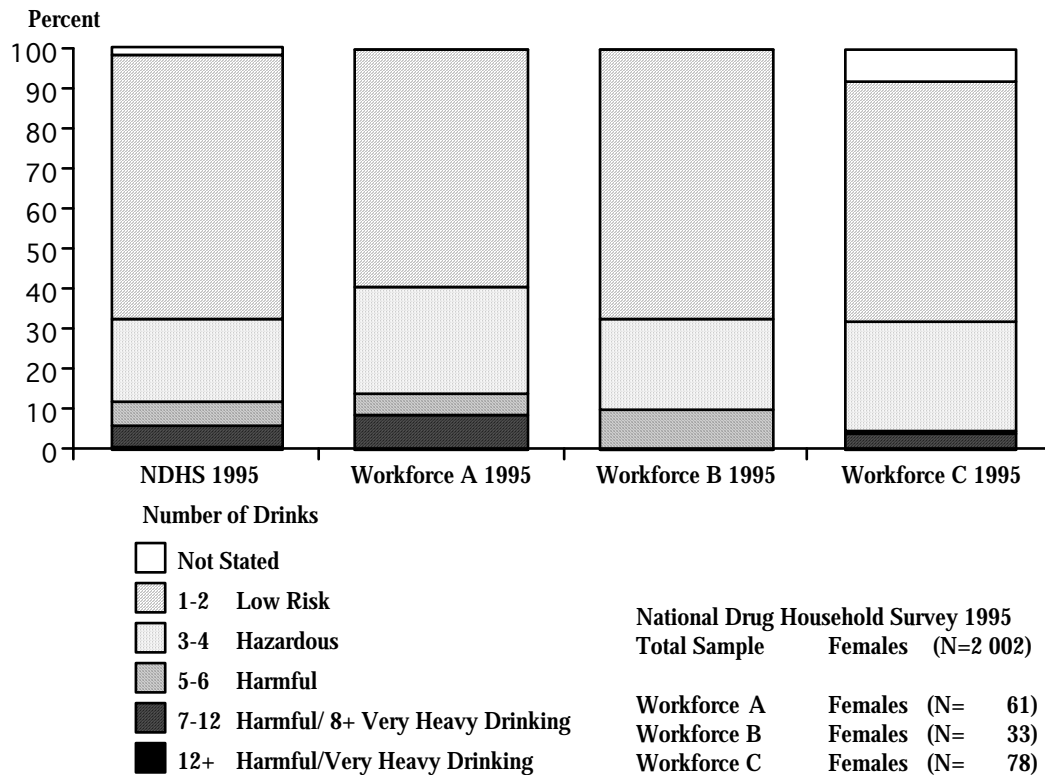


Figure 4: How Many Drinks do Females in Three Mining Related Workforces Usually Have

The Perth based workforce C was also asked about cannabis use. Their self reported use is presented in Figure 5, alongside use reported by the national sample, surveyed as part of the National Drug Household Survey (National Drug Strategy Household Survey, 1996). Ever use by both male and female workers is higher than for their national counterparts. Use in the last 12 months by males is comparable for both samples. Use in the last 12 months by female workers is greater than for national sample females.

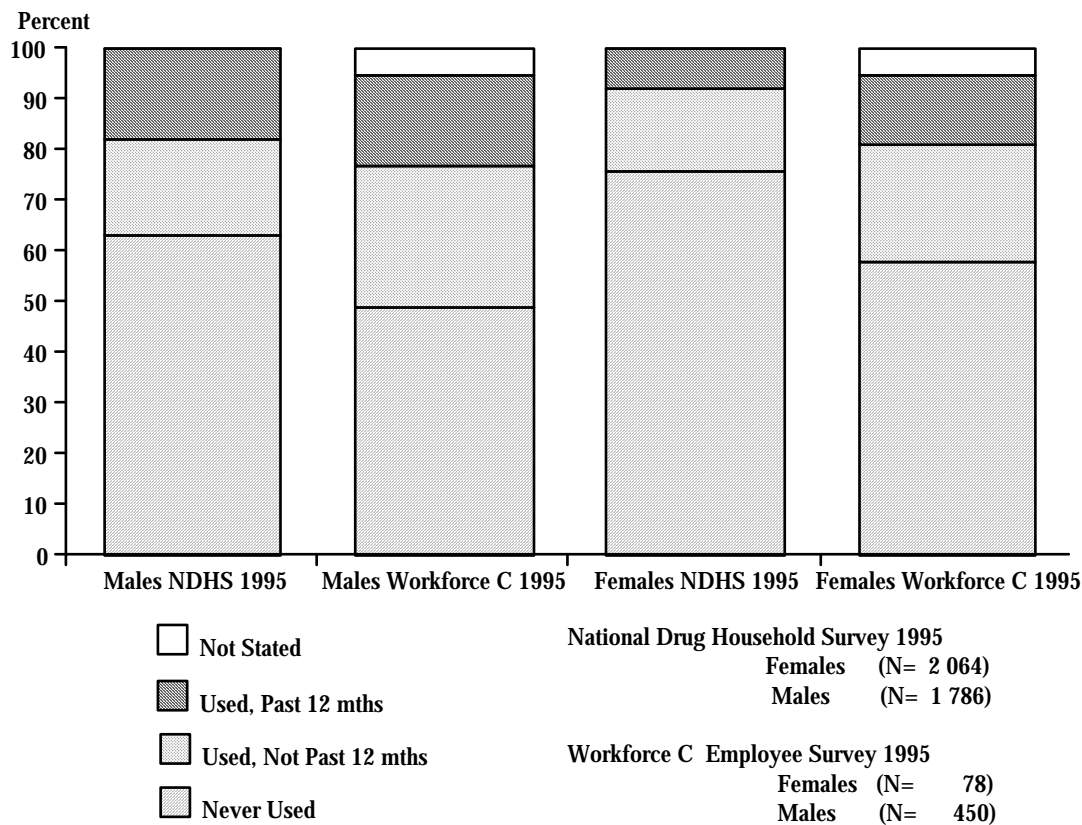


Figure 5: Self reported Cannabis Use by a Perth based Mining Related Workforce

Conclusions

Illicit drug use is often seen by business as the 'the drug problem', but empirical evidence would suggest otherwise. The National Survey data for Western Australia indicates that the prevalence of illicit drug use is relatively small in this state in comparison to alcohol use. The dollar costs borne by business for illicit drug use is estimated at about 20 percent of the costs borne for alcohol or tobacco use. Added to this, the relationship between illicit drug use, impairment and harm is less clear than is case with tobacco and alcohol. Taken in concert, these indicators give a sense of proportion as to what drugs are likely to be causing the greatest problems in Western Australian business. Such an appraisal of state drug use patterns, harms and costs is also a starting point for identifying response measures likely to produce the most benefit.

While tobacco use costs business almost as much as alcohol, the evidence suggests that drug programs aiming to reduce workplace harm would do well to focus primarily on alcohol. The harms associated with tobacco use tend to be chronic in nature and prevention program dividends are likely to be long term and difficult to evaluate in terms of business benefit. Alcohol, on the other hand, has a far greater component of acute harm, which if reduced, produces immediate benefit for business. Mining operations in Western Australia provide a good case in point. Mines tend to be concentrated in the high consumption areas of the state illustrated in Figure 2, so it is almost inevitable that their workforces will reflect the high consumption of the region in which they live. They are also likely to reflect the high levels of alcohol related injury morbidity, which accompanies high consumption. This in turn will

reflect on workplace safety, productivity, rates of sick leave etc. A program that decreases consumption in these regions is likely to produce immediate and measurable benefits for local mining operations.

This supposition of higher consumption by mining workers is supported by the surveys of employees in several mining related workforces reported in this paper. These data indicate that a large proportion of the surveyed workforces were drinking heavily, but that out of control drinking, as indicated by the proportion drinking in the top risk consumption categories, was no greater than in the general population. Such a finding is useful in terms of program planning because it suggests that drinking is being controlled, albeit at a high level. Accordingly, if drinking can be controlled at one level, an intervention program can reasonably assume that it will be possible to achieve similar control at a lower level.

There are a number of other factors which work in favour of an alcohol intervention being effective .

- The problems can also be dealt with more openly because alcohol is a legal drug.
- Most heavy drinkers appear to drink up to a level they identify as a health risk and consequently may be receptive to messages about the health benefits of reducing their consumption (Jones, 1993).
- Most employees who have problems with alcohol do not want to risk losing their job.

Data from three mining related workforces have been used to illustrate the nature of the AOD problem in Western Australian business, partly because the issue is more topical in this industry, but also because there is little other objective information available. However, the problems are not confined to the mining industry. The national data gives an indication of the sheer numbers of people who at some time drink in a high risk manner. Most of these would be in employment, which suggests that the workplace is going to bear the consequences. Putting effort into increasing responsible drinking behaviour is likely to be a cost effective way of reducing workplace problems associated with drug use. By way of comparison, workplace programs that emphasise problems of illicit drug use seem difficult to justify in light of the available objective evidence.

References

- Cherpitel, C. (1993) Alcohol and injuries: a review of international emergency room studies. *Addiction*, 88, 7 923-937.
- Collins, D.J. & Lapsley, H.M. (1996) *The social costs of drug abuse in Australia in 1988 and 1992*, No. 30, Canberra: Australian Government Publishing Service.
- Collins, D.J. & Lapsley, H.M. (1991) *Estimating the economic costs of drug abuse in Australia*, Monograph Series No. 15, Canberra: Commonwealth Department of Human Services and Health.
- English, D.R., Holman, C.D.J., Milne, E. et al. (1995) *The quantification of drug caused morbidity and mortality in Australia*, 1995 edition. Canberra: Commonwealth Department of Human Services and Health.
- Hagen, R., Egan D. & Eltringham, A. (1992) *Work, Drugs and Alcohol Occupational Health and Safety Commission Inquiry into Alcohol, Drugs and the Workplace*, Melbourne: Victorian Occupational Health and Safety Commission.

Holder, H. (1990) Prevention of alcohol problems in the workplace: A public policy perspective. In: Roman P.M.(Ed). *Alcohol Problem Intervention in the Workplace Employee Assistance Programs and Strategic Alternatives*, New York: Quorum Books.

Holder, H. (1993) Changes in access to and availability of alcohol in the United States: research and policy implications. *Addiction*, 88, Supplement, 67-74.

Hunter Centre for Health Advancement. (1996) *The Coal Project Report*, Newcastle: Author.

Jones, R. (1993) *Drug use and exposure in the Australian community*, Canberra: Australian Government Publishing Service.

Midford, R., Marsden, A., Phillips, M. & Lake, J. (1997) Workforce alcohol consumption patterns at two Pilbara mining related worksites. *The Journal of Occupational Health and Safety - Australia and New Zealand*, 13(3), 267-274.

National Drug Strategy Household Survey. (1996) *Survey Report 1995*, Canberra: Commonwealth Department of Health and Family Service.

Nicholas, R., Allsop, S., Calogero, C., Phillips, M. & Ormonde, N. (1996) *Alcohol and Drugs in the Workplace - Issues, Trends and Practices*, Western Australia: The Chamber of Mines and Energy.

Pols, R.G. & Hawks, D. V. (1992) *Is there a safe level of daily consumption of alcohol for men or women?* Canberra: Australian Government Publishing Service.

Rabow, J.R. & Watts, R.K. (1982) Alcohol availability, alcohol beverage sales and alcohol related problems *Journal of Studies on Alcohol*, 43, 767-801.

Scotland, J., Hyde, N. & Midford, R. (1996) *Alcohol and other drug use in the workplace: the attitudes and behaviours of employees of a major Australian mining exploration company*, Presented at 3rd National Conference on Alcohol and Other Drugs in the Workplace. Sydney, 27-29 March, 1996.

The Measurement of Alcohol Problems for Policy Project. (1995) *A first report of work in progress*, Perth: National Centre for Research into the Prevention of Drug Abuse, Curtin University.

Webb, G.R., Redman, S., Hennrikus, D., Rostas, J.A.P. & Sanson-Fisher, R.W. (1990) The prevalence and sociodemographic correlates of high-risk and problem drinking at an industrial worksite. *British Journal of Addictions*, 85, 495-507.

ALCOHOL AND OTHER DRUGS IN THE WORKPLACE - WHY BE CONCERNED?

**Martin Ralph, Principal Consultant
IFAP**

**Catherine Stedman
Catherine Stedman and Partners**

The Legal Issues

The Duty of Care is a legal concept enshrined in the Common Law, and now adopted by the occupational safety and health statutes. As such, it is legally enforceable.

The Duty of Care places responsibilities upon all those at the workforce, but has a primary focus upon the employer to provide a safe place of work, and to ensure that safe systems of work are invoked.

The duties of all parties are limited by the concept of reasonableness - which takes into account the level of knowledge of a hazard, the availability of control mechanisms and the cost involved in applying the controls.

It is argued that AOD issues should be treated in a similar fashion to any other hazard at the workplace. Just as "classical" hazards, such as chemicals or noise need to be controlled at source, so too can "modern" hazards such as AOD, indoor air quality, occupational overuse syndrome and AIDS/HIV.

Organisational Response to AOD Problems in the Workplace

Why be Concerned?

- The Duty of Care requires the employer to provide and maintain a working environment in which employees are not exposed to hazards.
- Explicitly, the employer must provide safe 'systems of work' - in which potential hazards are dealt with in a systematic fashion.
- Alcohol and other drugs must be viewed collectively as just one of the extensive suite of occupational hazards that may exist at the workplace.

A safe system of work implies one in which hazards are identified, assessed and adequately controlled according to the risk that they pose.

Implicit in the statutes is that a 'systems approach to managing hazards', that follows the identify-assess-control route, should be applied to all hazards in the workplace.

In a similar fashion to other occupational hazards, e.g. noise or chemicals, a standard is required upon which to base the risk assessment process.

Because, in the case of AOD, the hazard is primarily human, any standards established need to be performance based.

If an employer is faced with a noisy piece of machinery, their first reaction is to arrange suitable maintenance to repair it - not to discard it. The second reaction would be to investigate why the machinery became noisy in the first instance. So too, employers should assist individuals within their organisation to overcome any AOD issues, but furthermore assess their own systems of work to evaluate the input (if any) that the workplace may have had to the development of the issue.

Organisational Response to AOD Problems in the Workplace

- As such, the basic principles of hazard management apply, in that:
 - *the hazard needs to be identified;*
 - *the risks associated with the hazard need to be assessed; and*
 - *employee exposure to the hazard needs to be effectively controlled*
- The outcomes will be the establishment of:
 - *acceptable standards of behaviour and performance; and*
 - *support mechanisms necessary for the employer to discharge their ongoing obligations*

The Systems Approach - Step 1 Identification

What is a drug?

The majority of AOD related harm is associated with licit drugs, in particular alcohol and tobacco.

There is often a tendency for employers to focus upon minimising the potential harm associated with the use of illegal drugs, and largely ignoring the risks posed by legal drug use.

Illicit substances include cocaine, heroin, amphetamines and marijuana.

There is also widespread concern regarding the range of issues associated with prescription and over the counter medicines. For instance, Australians are large consumers of benzodiazepines drugs such as Valium, Serepax and Mogadon, all of which are known to impair psychomotor performance for a considerable time after consumption.

Similarly, the active ingredients of many medicinal compounds, such as cough mixtures or allergy relievers may induce drowsiness, particularly if taken in combination with alcohol.

Organisational Response to AOD Problems in the Workplace

IDENTIFICATION - What is a drug?

- Any substance, with the exception of food and water, which when taken into the body, alters the physical and/or psychological functions of the exposed individual

- May include:
 - *illicit substances*
 - *socially acceptable substances*
 - *over-the-counter medications*
 - *prescription medicines*

Some sources (for instance Buon and Compton, 1990) suggests that of individuals treated for drug dependency, between 60 and 70 percent were in full time employment, and that up to 10 percent of the workforce may suffer from AOD problems.

Stages of harm from AOD use need to be recognised:

Intoxication usually results from acute effects of drug consumption, and is usually the most obvious effects of drug use.

Regular excessive use does not necessarily involve intoxication, but may result in problems such as poor health due to the chemical insult to the body. Such exposures are usually referred to as sub-acute, and may be experienced for instance by the 'light smoker', and indeed by 'passive smokers'.

Dependence can be expressed as the degree of difficulty that the individual has refraining

from use, but may vary from mild to severe.

Stereotyping the user as a hopeless misfit is a mistake. For instance, data from a 1990 National Health Survey suggested that the heaviest drinking occupations were managers, sales representatives, business professionals, labourers and mobile plant operators.

The data was remarkably similar for both genders!

**Organisational Response to AOD
Problems in the Workplace**

IDENTIFICATION - What is a drug user?

- The majority of people who use AOD in a hazardous or harmful fashion *are employed!*
- There is a need to distinguish between the categories of AOD use:
 - *intoxication*
 - *regular excessive use*
 - *dependence*
- Common stereotypes can be misleading
- Paradoxically - most risk occurs from the infrequent intoxicant - not the frequent dependant

At the workplace a number of factors, in isolation or combination may provide the employer with an indication that AOD use is a potential hazard at the workplace.

All of the global indicators are potentially within the control of the employer.

However, if the employer has not been vigilant in collecting the data, many of the indicators will be meaningless, and may be dismissed as part of the workplace culture.

For instance one small workplace (employing approximately 40 persons) were using in the order of 100 Panadol per week. When quizzed on the subject, the managers reaction was one of surprise, and the first aider accused the employees of stealing.

The use patterns and needs were never raised. Instead of recognising the opportunity, the manager cancelled all future purchases.

Organisational Response to AOD Problems in the Workplace

IDENTIFICATION - Global Indicators?

- absenteeism (on and off the job)
- erratic change or gradual decline in
 - *pace of work*
 - *quality of work*
 - *productivity*
 - *reliability*
- incidents or near misses
- physical complaints or medical ailments
- complaints from employees
- poor morale
- unreasonable use of analgesics

Individual factors, that are not routine behaviours may also indicate that an employee has been exposed to AOD.

It must be recognised however that many external factors may contribute to an individual displaying one of the listed factors.

In depth knowledge of an individuals work patterns and routines are required before largely subjective indicators are acted upon.

It needs to be recognised that even heavily intoxicated individuals may be able to perform uncomplicated psychomotor tasks without gross levels of impairment.

However, if decision making is required, or the employee needs to respond quickly to a situation, then a substantial degree of impairment will be evident.

**Organisational Response to AOD
Problems in the Workplace**

IDENTIFICATION - Individual Indicators?

- emotional changes that produce tension or conflict
- promise to improve behaviour
- tardiness
- lack of attention to detail
- inability to concentrate
- abnormal speech patterns

Organisational Response to AOD Problems in the Workplace

IDENTIFICATION - All Indicators?

- All of these indicators are symptoms of workplace stressors - not necessarily confined to AOD problems.
- However some indicators such as discarded syringes, roaches or packaging are definite symptoms of AOD use.
- Care must be taken when assessing the impact of AOD in the workplace.

The Systems Approach - Step 2 Assessment

Organisational Response to AOD Problems in the Workplace

ASSESSMENT OF RISKS

- Formal Processes:

- Pre-employment screening
- On-the-job quantitative assessments
- Medical reports
- Outcomes of disciplinary outcomes
- Official consumption reports
- Staff turnover
- Intervention by supervision
- Employee input

**Organisational Response to AOD
Problems in the Workplace**

ASSESSMENT OF RISKS

- Informal Processes:

- Employee perceptions
- The “grapevine”
- Code of silence
- Intervention by supervision
- Value judgements
- Stereotyping
- Staff turnover

Organisational Response to AOD Problems in the Workplace

ASSESSMENT OF RISKS

Formal Processes

- are they doing the job for which they were intended?
 - *AOD 'problem' v poor management systems*
- Pre-employment screening
 - *deterrent or intelligence test?*
- quantitative assessments
 - *what standards are in place?*
 - *is performance impaired?*
 - *legal, social and moral dilemmas!?*

**Organisational Response to AOD
Problems in the Workplace**

**ASSESSMENT OF RISKS
Informal Processes**

- What cannot be measured cannot be managed
- Act upon the information provided to formalise the processes
- Ownership by employees
- Intervention by supervision:
 - *empowerment of supervisors*
 - *support from management*
 - *training in recognition of symptoms and reaction to information*

The Systems Approach - Step 3 Control

Organisational Response to AOD Problems in the Workplace

CONTROL OF RISKS

- Is Elimination Possible?
 - *organisational culture an impediment?*
 - *does the employer have a moral obligation?*
- Substitution
 - *Choice alternatives*
 - *Paradigm shift - where alcohol becomes secondary to activity*
 - *Job redesign*
- Engineering Controls
 - *Provision of alternative/improved facilities*
 - *Random testing?*

Organisational Response to AOD Problems in the Workplace

CONTROL OF RISKS

- **Administrative Controls**
 - *Policy Development*
 - consultative approach
 - clear statement of principles
 - define acceptable adult behaviour
 - *Shift Rostering/Hours of work*
 - *Identification of safety critical tasks*
 - *Performance standards:*
 - Development
 - Workforce communication
 - Enforcement

Organisational Response to AOD Problems in the Workplace

CONTROL OF RISKS

- **Administrative Controls**
 - *Removal of unrestricted access*
 - *Reinforcement of Duty of Care provisions*
 - *Employee Assistance Programmes*
 - *Regular Drug Screening*
 - *Educational:*
 - employers policy and procedures
 - targeted information campaigns
 - common standards for *all* employees
 - effective intervention (all employees)
 - medical and bar staff

**Organisational Response to AOD
Problems in the Workplace**

INTERVENTION BY SUPERVISION

- Is the preferred process for managing AOD in the workplace.
- The employer needs to:
 - *establish the specific performance criteria needed for each task conducted at the workplace*
 - *train and empower supervisors to enforce performance criteria*
 - *ensure that all employees know and understands*
 - the standard of performance required
 - the outcomes of non-compliance with the standards

Organisational Response to AOD Problems in the Workplace

EAPs AND DRUG SCREENING

- Substance abuse or misuse at work is always a problem for management...it is not always an individuals problem - often it is deemed to be a lifestyle choice.

- Why an employee may resist a management AOD policy ...
 - *What they say is*
 - This is an invasion of my privacy!
 - *What they mean is*
 - I might lose my job

- **Workforce consultation is essential!!!**

**Organisational Response to AOD
Problems in the Workplace**

SOME GENERAL COMMENTS

- Having a policy or conducting testing does not satisfy the requirements of Duty of Care - must be a part of an ongoing information programme
- Drug testing reflects past behaviours - shows no intent of how the issue will be managed in the future
- Employers need to understand the *AOD users culture*
- Focus is generally upon those suffering acute exposures - chronic users are generally not considered

Like so many other occupational safety and health issues, visible commitment by senior management is needed to ensure the success of an AOD programme.

Visible commitment may include such actions as removing alcohol from the boardroom, and introducing a consultative-based non-smoking policy which applies to all employees, including executive management.

Furthermore, through its culture, an organisation may send a clear message to employees about approval or disapproval of high risk AOD (particularly alcohol) consumption.

Finally, it needs to be recognised that industrial tribunals and the legal fraternity are increasingly demanding constructive responses from employers to workplace issues.

If the work environment is contributing to the development of risks, then dismissal of individual employees does not resolve the problem. Rather, the punitive approach may be perceived as inappropriate, and encourage concealment of future issues.

**Organisational Response to AOD
Problems in the Workplace**

MAKING IT WORK

- Leadership by example
- Alter theme or format of corporate functions
- Eliminate punitive approach
- Recognition that AOD represents a workplace hazard - like any other, and needs to be managed accordingly

References

Buon, T. & Compton, B. (1990) Alcohol and Other Drug Programs in the Australian Workplace. *Business Insights*, 6, 24-29.

DRUG TESTING AT WORK: HOW DOES IT WORK? IS IT WORTHWHILE?

**Mike Phillips, Senior Lecturer
Dept of Biostatistics and Epidemiology
Curtin University of Technology**

The place of drug testing in the workplace, particularly for illicit drugs, remains controversial¹. Whereas there can be little doubt that any workplace should have a part of their occupational health and safety policy which addresses alcohol and other drug issues, the part which drug testing should play in that policy is unclear. This paper will attempt to outline some of the practical issues which would need to be addressed in reaching a decision about the utility of incorporating drug testing in an occupational health and safety policy.

Drug Testing Procedures

There are a variety of procedures which can be used to implement a drug testing program². These include testing of breath, urine, blood and hair. The two most common are testing of exhaled breath for alcohol and the testing of urine for other drugs, particularly the illicit drugs cannabis, amphetamines, opiates and cocaine. The utility of these two approaches to drug testing may differ. This paper will address the more contentious area of urine testing for illicit drugs. An outline of the procedures which are typically conducted in an illicit drug testing program is shown in Exhibit 1.

EXHIBIT 1

DRUG TESTING PROCEDURES

An employee drug testing program typically has the following elements:

- Selection of sample donors;
- Specimen collection;
- On-site screen testing using immunoassay;
- Counselling of positive workers;
- Confirmatory laboratory testing of positive screen tests;
- Interpretation of test results;
- Counselling of false-positive screen tests;
- Action for confirmed positive screen results.

Some of the issues which need to be considered in the planning of such a program for the testing of current staff are listed in Exhibit 2 and are discussed below.

EXHIBIT 2

ISSUES TO CONSIDER IN PLANNING A DRUG TESTING PROGRAM

Who selects the workers who are sampled at any one time? Is it fair?

If specimen collection is not private who should do it?

Qualifications;

Age;

Gender.

If specimen collection is private have resources been committed to prevent cheating?

Test urine temperature;

Test urine specific gravity;

Test urine pH.

Is documentation of all stages sufficient to ensure the 'Chain of custody' of the evidence?

What cut-points of concentration will be applied to prevent claims of passive exposure or malicious "Mickey Finns"?

Although the biochemical testing of the sample is a core part of the program, there are a number of administrative and other procedures which must form a necessary part of the program.

The first stage is the selection of sample donors. For pre-employment screening and testing-for-cause (e.g. after an accident or other incident) this is relatively straightforward since the individuals to be sampled are selected by the circumstances. For a random drug testing program, however, this selection is more difficult. By definition, in random selection each member of the workforce should have an equal probability of being selected. There are a number of practical issues which would need to be addressed if this aim is to be achieved. It is, of course, implied that all shifts, geographical areas and categories of staff must be included in the population to be sampled. One approach is to use a computer program to randomly select the required number of workers on any one day from a list of employees identified by their payroll number. Once selected each worker must then be identified, located, requested to attend the testing facility, briefed about the procedures, provide the sample and then return to work. Such a system, although fair and statistically sound, would be likely to be unmanageable for many companies. Thus much simpler approaches such as selecting every, say, tenth worker who attends for work at the beginning of a shift may be adopted. Such an alternative is, however, subject to some problems since it is open to manipulation by those who are making the choice and by those who may be reluctant to be chosen. Effort would need to be given to ensuring that the system was not only fair but seen to be fair by the workforce.

The next stage following the selection of workers is the collection of the urine specimen. This is an area which has raised considerable controversy because of the potential invasion of privacy. A choice must be made whether to opt for supervised specimen collection or to allow donors to provide a specimen in private. Supervised collection of urine is recommended as the 'ideal' by such protocols as the Australian Standard 4308³ because it ensures the chain of custody is intact and adulteration is very much more difficult. If this procedure is adopted consideration needs to be given to such issues as the qualifications of staff, as well as their gender and perhaps their age. Normally such a procedure would only be acceptable if clinically qualified nursing staff were responsible, perhaps with both genders available. Even so it is likely that many workers will still find such a procedure embarrassing or humiliating and thus unsupervised, private collection of the urine sample is common. This does, of course, allow more opportunity for cheating and four methods are quite well known. These are: to provide a substitute "clean" sample which has been provided by a non-drug user; to drink a large amount of water in order to hyperhydrate and thus dilute the concentration of the urine; to use an available water source to dilute the sample; and, to add chemicals such as strong alkalis to the specimen in order to degrade the sample. These methods can be overcome by testing the temperature, specific gravity and pH of the specimen immediately after collection⁴ but this additional testing does increase the cost of sample collection. It also raises questions about what would be an appropriate response by the employer in the event that such cheating was suspected, bearing in mind the difficulty in proving that it had occurred.

A further issue to be considered is to ensure the chain of custody of the sample. This legal term expresses the requirement for any material which may be used as evidence for legal or quasi-legal purposes to have a document trail which establishes the identity of the specimen from the point of collection to the point of final analysis. This is usually accomplished by a chain of custody form which accompanies the specimen. The detailed procedures to ensure such documentation are important but may be time consuming.

After the specimen is collected it is possible to apply an immediate on-site immunoassay screening test which has a broad spectrum for the detection of a range of illicit drugs. Generally the tests are designed to detect metabolites of drug consumption rather than the drug itself. This can generate a few problems since some legal and illicit drugs will produce similar results, e.g. heroin and codeine⁵. Another problem with these tests is, of course, that metabolites can be detected for a long time after consumption, when the intoxicating effects of the drug have disappeared. Thus amphetamines can be detected for 2 days after consumption. For cannabis the situation is more complex since detection times will vary with frequency and length of use. A daily cannabis smoker who has smoked for three months may have a detection time of 30 days or more following abstinence, whereas an experimental one-off user will have a detection time of about 3-5 days⁶. These prolonged detection times raise the question of the relevance of testing to the detection of incompetence or intoxication at work.

Of critical importance for examining the effectiveness and cost-effectiveness of a drug testing programme is the accuracy of the on-site immunoassay testing. Ideally we would like to have tests which are 100% accurate, but this is not possible. The accuracy of such tests is described using two parameters, sensitivity and specificity, which are defined in Exhibit 3. It will be seen from the definitions that the accuracy of a drug testing procedure depends upon both its ability to detect users (sensitivity) and its ability to detect non-users (specificity). Very often in clinical medicine, diagnostic tests have a higher sensitivity than specificity, since the purpose of diagnostic tests is to allow the correct treatment to be provided as

quickly as possible. For on-site drug testing procedures there is a wide variation in sensitivity and specificity. Sensitivity is generally about 90 - 95% and specificity between 80 and 90%^{7,8}.

EXHIBIT 3

DEFINITION OF SENSITIVITY AND SPECIFICITY

SENSITIVITY:	the proportion of true drug users (true positives) in the tested population who are identified as such by the testing program.
SPECIFICITY:	the proportion of non-drug users (true negatives) who are identified as such by the testing program.

The next step in the procedure is to counsel those workers who test positive for the on-site test. This requires a policy decision to be made about immediate action, which should be tempered with a recognition of the inaccuracies of the tests. One would suppose that a sensible policy might be to suspend workers who test positive, since they have provided presumptive evidence of incapacity, but to take no disciplinary action (including not paying wages) since the test result might be incorrect. Whatever the policy, there is an obvious need for workers who test positive to be counselled as to the test accuracy and the potential consequences of a positive test.

All positive on-site tests must be sent for a confirmatory test using more accurate laboratory procedures⁹. Although a variety of methods can be used, the method of choice is gas chromatography/mass spectrometry (GC/MS). This method can be assumed to have a sensitivity and specificity of 100%. However it does not provide a yes/no answer. Rather it gives a concentration of the metabolite of a given drug in the urine. These results must be interpreted by a person who is specialised in this area (in America these individuals are termed the 'Medical Record Officer' and must hold specialist medical qualifications). In effect, arbitrary cut-points must be defined for concentrations which are above an 'allowable' limit. The need for such cut-points is to avoid the possibility of claims that exposure was passive, due to passive inhalation of smoke from other people smoking cannabis, or claims that the result is a consequence of contamination from a legitimate pharmaceutical product, or that the exposure was malicious, due to "Mickey Finns", or people ingesting food 'laced' with the illicit drug. In the latter instance, a number of American companies have adopted the practice of only recognising this defence if the individual concerned files a legal action for assault¹⁰. Such a policy might not be acceptable in Australia.

Following the results of the confirmatory test it is necessary for the alcohol and drug policy to specify the action which should be taken for the two possible outcomes. For those whose drug use is confirmed a decision must be made about the appropriate disciplinary action. For those whose drug use is not confirmed some form of counselling must occur to explain the false positive result (an apology perhaps?).

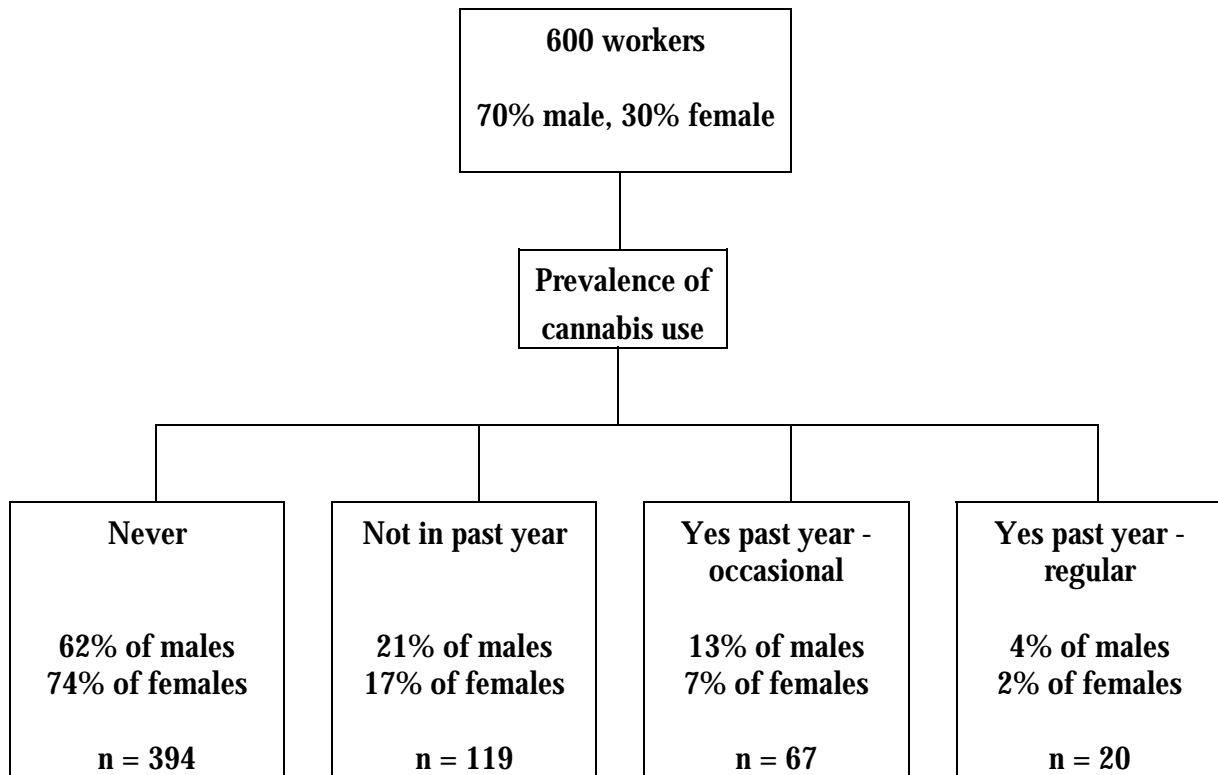
The above is a brief account of the procedures involved in an illicit drug testing program. It

is quite clear that such a program requires more resources than would appear at first sight. The next section attempts to cost such a program.

Planning a Random Drug Testing Program for Illicit Drug Use

EXHIBIT 4

PLANNING A CANNABIS TESTING PROGRAM - 'NIRVANA MINING'



Derived from:^{11,12}

This simulation exercise will be conducted for a fictitious WA mining company 'Nirvana Mining'. This company employs 600 workers of whom 70% are male. The first part of the simulation is to estimate the number of various categories of drug users who might be employed. This exercise is illustrated in Exhibit 4. Drug use has been categorised into those who have never used cannabis, those who have used it but not in the past year, those who have used it occasionally during the past year, and those who have used it regularly during the past year. Regular use has been defined as an average use of at least once per week. It is assumed that the drug testing program is designed to detect both regular and occasional users but not the first two categories¹³. These estimates are based upon two sources of data. The National Campaign Against Drug Abuse (NCADA) survey¹¹ of 1991 provides general population prevalence rates for cannabis use. The survey within Western Australia¹² was conducted in 1988 and this provides estimates of the different categories of use. Since these were surveys of the general community they may have over-estimated prevalence for the purpose of this exercise since the simulation is attempting to estimate prevalence in an employed group. Since illicit drug use is likely to be associated with unemployment¹⁴ an over-estimate will result. This error is likely to result in a more optimistic assessment of the likely effectiveness of the drug testing program.

As can be seen from Exhibit 4, about 17% of the male employees and 9% of the female employees can be expected to fall into the categories which the program aims to detect, a

total of 87 workers.

The next stage of this simulation is to estimate the number of these workers who would be detected by the program. In order to do this we need to estimate the detection probabilities for the different categories of drug use based upon a likely pattern of drug testing. The results of this estimation assuming each worker is randomly tested once, are shown in Exhibit 5. In order to make this estimation, a number of assumptions are necessary. The first is that for those who have used cannabis during the past year, the average frequency of use of regular users is once per week and for occasional users it is once per month. The second assumption concerns the length of time that metabolites remain at detectable levels in the urine. This exercise assumes an average of 7 days. This seems reasonable given the quoted values of 30 days for daily users and 3-5 days for monthly users .

Given these assumptions and the pattern of the drug testing program, the conditional probability of detecting a regular user (once per day), given that they have been selected for testing, is 0.95 (i.e. almost all of them will test positive). For the occasional users, the detection probability is 0.24. These estimates are based upon the frequency of testing for individual workers. A change in the program will change the detection probabilities, with more frequent testing increasing the detection probability but with an increase in the cost of the program which is discussed below. The detection probability is also sensitive to the prevalence of drug use. These detection probabilities assume that all workers are randomly tested each year, and that 14.5% of workers are using cannabis once per year, of whom 3% are regular users (once per week) (Exhibit 4).

The characteristics of the drug testing program planned for 'Nirvana Mining' is shown in Exhibit 6. As can be seen, this is a random testing program with an initial on-site screening test based upon immunoassay, followed by confirmatory testing using gas-liquid chromatography/mass spectrometry conducted according to Australian Standard 4308. This hypothetical program requires ten tests per day which averages four tests per worker per year. The total number of tests conducted over one year is 2,400. It is assumed (rather generously) that the sensitivity and specificity of the screening test is 95% and that they are both 100% for the GLC/MS confirmatory testing. The performance of this drug testing program if the test frequency was one test per person per year is shown in Exhibit 7.

EXHIBIT 5

DETECTION PROBABILITY FOR CURRENT CANNABIS USERS

Assuming the following frequency of use for current users:

Regular users - at least once per week;

Occasional users - at least once per month;

Assume cannabis metabolites remain at detectable levels in urine for 7 days.

The following detection probabilities apply to each test in the random drug testing program:

Regular users: probability of detection = 0.95

Occasional users: probability of detection = 0.24

Estimated from the number of days of the year when cannabis metabolites are detectable.

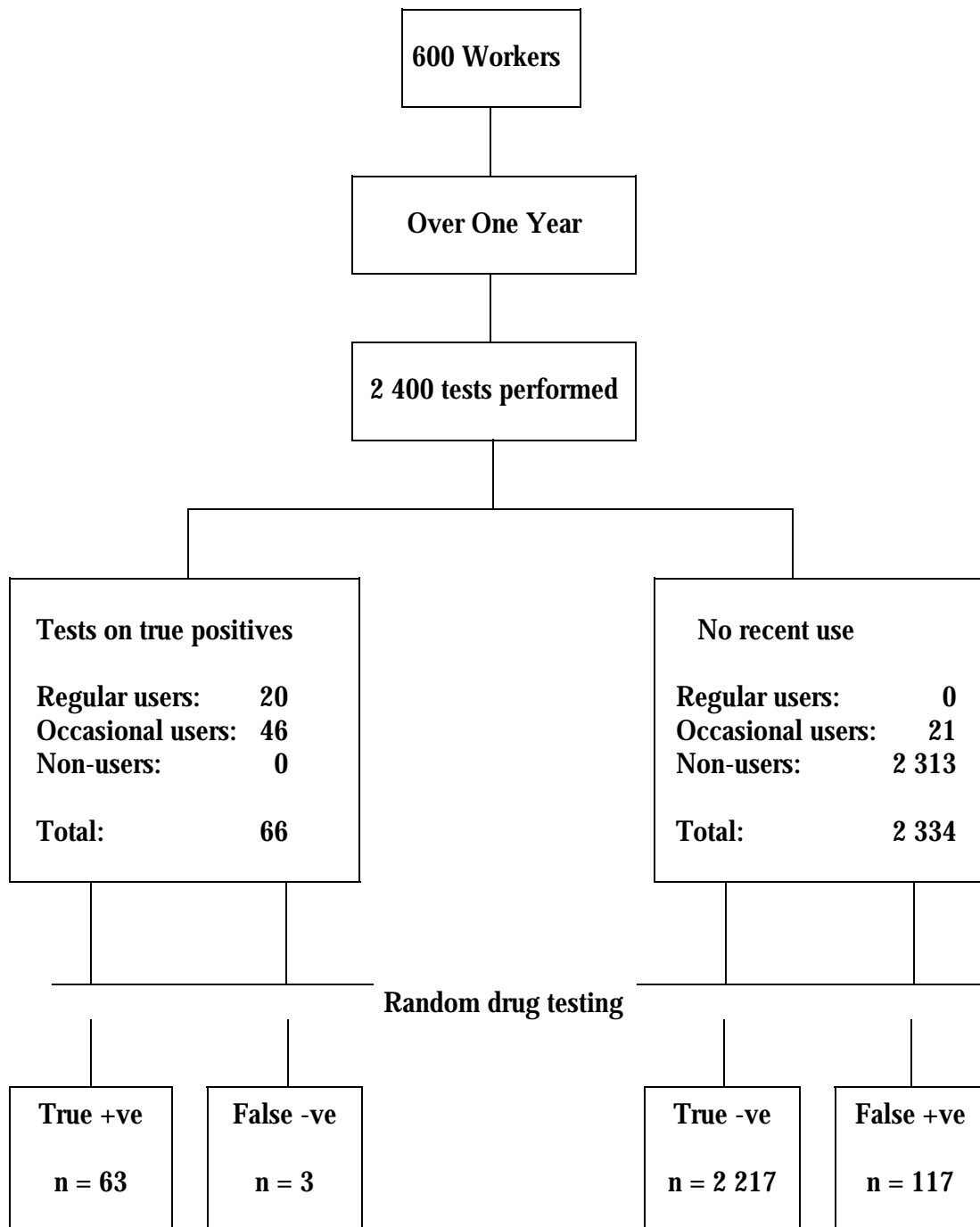
EXHIBIT 6**CHARACTERISTICS OF THE CANNABIS TESTING PROGRAM**

- Random testing;
- Initial on-site screening test based upon immunoassay;
- Confirmatory follow-up test of all positive screening tests using gas-liquid chromatography/ mass spectrometry (GLC/MS);
- Ten tests per day;
- Equivalent to four tests per person per year;
- Total number of tests = 2,400;
- Sensitivity of screening test = 95%;
- Specificity of screening test = 95%.

As can be seen, given the detection probabilities, the prevalence of drug use and the accuracy of the screening test, the outcome of the program can be modelled.

EXHIBIT 7**PERFORMANCE OF A CANNABIS TESTING PROGRAM - 1st TEST**

Of the 600 workers, with a pattern of drug use typical of Western Australia (shown in Exhibit 4), 37 can be expected to have used cannabis recently enough to be detectable in the urine on any given day. Of these, 20 will be regular (weekly) users and about 17 will be occasional users. Of the majority of 562 workers with no recent use, about 50 will be occasional users who have not used recently. Given this hypothetical drug testing program, 35 of the 37 recent users will be detected by the on-site screening test if tested once (true positives) and two will not be detected (false negatives). Of the 562 workers with no recent use, 534 will be correctly classified as such by the screening test (true negatives) and 28 will be incorrectly classified as users (false positives). Thus 63 confirmatory tests will be required (all those who test positive in the screening test). Since the confirmatory GC/MS testing is assumed to have 100% sensitivity and specificity, the 28 false positives will be 'cleared' after a few days.

EXHIBIT 8**PERFORMANCE OF A CANNABIS TESTING PROGRAM
OVER ONE YEAR**

For the 'Nirvana' program, in which each worker is tested on average four times per year, over one year these detection probabilities will change. It is assumed that all confirmed tests result in dismissal or cessation of drug use and that pre-employment testing ensures that no new workers are current drug users. Exhibit 8 shows the performance of the testing program over one year. Given the average testing of four tests per person per year, we can expect every regular user and most occasional users to be detected. During one year there will have been 117 false positives 'detected'. These results over one year are summarised in Exhibit 9.

EXHIBIT 9**SUMMARY OF TESTING RESULTS OVER ONE YEAR**

- 63 of the 81 workers who have used cannabis during the year have been detected (78%);
- 18 of the 81 workers who have used cannabis during the year have not been detected (22%);
- 117 workers who have not used cannabis have been incorrectly 'detected' as users (23%);
- 180 confirmatory tests are required (all positive tests).

A number of issues are raised by this simulation. One is what action should be taken concerning the 117 innocent non-users who have been incorrectly classified? These individuals (23% of non-users) will spend at least a few anxious days waiting for the confirmatory test result to exonerate them. During this period, and perhaps afterwards, they may be the subject of gossip if, as is likely, they are suspended from work during this period, at least for the shift when they were tested. Any gossip and innuendo may extend into the community and involve family members. If such persons are in a supervisory role, their ability to work effectively may be undermined by such a false positive result.

Another issue to be considered concerns the 22% of occasional users who have tested negative over the year and those few regular users whose test results in a false negative result. It is likely that such events will be reported by word of mouth within the drug using sub-culture and become well known. The effect may well be to undermine any deterrent effect which the drug testing may have since deterrence theory suggests that such programs as random breath testing for drivers and drug testing of workers act as a deterrent only to the degree that potential culprits perceive that they will be caught¹⁶.

Estimation of the Costs of the Random Drug Testing Program

Having examined the likely performance of the program it is necessary to consider the cost. These costs involve both the direct cost of the drug testing as well as any ancillary costs associated with administration, etc.

The direct costs of testing are shown in Exhibit 10. These costs are based upon current charges in WA for an immunoassay such as the popular EMIT test of Behring Diagnostics, and a GC/MS confirmatory test¹⁷.

EXHIBIT 10**ESTIMATES OF DIRECT COSTS OF CANNABIS TESTING PROGRAM****TESTING COSTS****Random screening tests -****2,400 tests per year @ \$20 per test****Total cost = \$ 48,000 per year****Confirmatory tests -****180 tests per year @ \$ 100 per test****Total cost = \$ 18,000 per year****TOTAL TESTING COSTS = \$ 66,000 per year**

Additional costs of the program are associated with specimen collection, time off work for donors during specimen collection, and costs associated with counselling of workers who test positive in the screening test. The specimen collection costs are shown in Exhibit 11 and the counselling costs in Exhibit 12. The estimates of staff time which is the basis for the costing in Exhibit 11 is based upon the 'Urine drug screening collection protocol' which is part of Appendix A of Australian Standard 4308. Both the staff time of staff employed to conduct the drug testing program and the staff time of donors has been costed. On-costs such as workers' compensation costs and payroll tax have been ignored. The cost of specimen collection from this estimation is equivalent to \$ 8.50 per test. This may be an underestimate since an estimate of US\$ 20 has been quoted for the USA¹⁸.

The testing staff costs assume that the drug testing program is staffed by a clinically qualified nurse being paid at the appropriate rate. Although in the USA it is necessary for drug testing programs to be supervised by a registered medical practitioner this is not a requirement in Australia. Thus no supervision costs have been included. Tasks which must be carried out by the testing staff include: random selection of staff to sample, supervision of sample provision, documentation for each sample including chain-of-custody forms, conduct of on-site screening tests, packaging of positive samples for laboratory based confirmatory testing. No costs have been included for the provision of facilities although AS 4308 indicates that some costs must be incurred for the provision of dedicated premises with suitable facilities.

EXHIBIT 11**SPECIMEN COLLECTION COSTS**

Staff time of testing staff -

TASKS - Supervision of sample provision, selection of staff to sample, conduct of on-site screening test, documentation of tests (including chain-of- custody form), packaging of samples for confirmatory testing.

Testing staff time per test = 15 mins

Testing staff time per day = 2.5 hours

Sample collection costs @ \$20 per hour labour* = \$52 per day

TOTAL testing staff cost = \$ 12,500 per year

Staff time of sample donors -

**Ten workers per day for 10 minutes per worker,
@ \$ 20 per hour = \$ 33 per day**

TOTAL donor-time cost = \$ 8,000 per year

TOTAL specimen collection costs = \$ 20,500

* Based upon a salary of \$40,000 per annum for a clinically qualified nurse, on-costs excluded.

EXHIBIT 12**COUNSELLING OF POSITIVE WORKERS**

180 positive screening tests in 48 weeks = 3.75 per week

Time for counselling of each worker = 30 mins.

Total time per week for workers = 112.5 mins. @ \$20 per hour

Total time per week for counsellor = 112.5 mins. @ \$20 per hour

Cost = \$ 75 per week

TOTAL counselling cost = \$ 3,600 per year

Exhibit 12 shows the costs associated with counselling of those workers who test positive with the on-site screening test using immunoassay. Since 65% of these can be expected to be

false positives (Exhibit 7), such workers must be counselled so that the nature of confirmatory testing can be explained and any interim measures such as suspension from work or from normal duties can also be explained. The costs associated with this counselling are shown in Exhibit 12, but as for other costs, infrastructure costs and on-costs have been excluded.

Exhibit 13 summarises the costs of the drug testing program planned for 'Nirvana Mining'. These costs include only the costs of running the program on a day-to-day basis. Costs of infrastructure and on-costs having been excluded.

EXHIBIT 13**COST SUMMARY OF DRUG TESTING PROGRAM**

Total testing costs	= \$ 66,000 per annum
Total specimen collection costs	= \$ 20,500 per annum
Total counselling costs	= \$ 3,600 per annum
TOTAL PROGRAM COST	= \$ 90,100 per annum

Thus about \$90,000 will need to be expended each year to run a drug testing program designed to detect most current drug users¹⁹. This cost will be offset by the benefits of the program and these are estimated next.

Estimation of the Benefits of the Random Drug Testing Program

The aims of the drug testing program have not been outlined. If we examine the claims that have been made for such programs it is clear that they may have a number of benefits which include: accident prevention, improved productivity, benefits for employees because of reduced drug consumption, intangible public relations benefits associated with a commitment of resources to combat drug use among employees of the company.

None of these benefits have been verified by empirical studies, but an attempt will be made to quantify the benefits from accident prevention. This exercise is illustrated in Exhibit 14. The lost time accident incidence (LTI) rate for the mining industry in Western Australia is about 70 per 1,000 per year for men and 36 per 1,000 per year for women²⁰. Thus a company of this size and gender composition can expect 36.5 lost time accidents per year on average. The next question which must be addressed is the proportion of these accidents which can be attributed to the use of illicit drugs (the aetiologic fraction). In the most recent estimates of the amount of harm caused by drugs in Australia, English *et al*²¹ give an aetiologic fraction based upon published research of zero for illicit drugs and occupational injury and 0.07 for alcohol and occupational injury (i.e. 7% of all occupational accidents can be attributed to alcohol consumption and none to illicit drug consumption). It is quite clear that the role of illicit drugs as a cause of occupational accidents is much lower than that of alcohol²². For the purposes of this exercise, an aetiologic fraction of 50% of that of alcohol has been assumed (there is little doubt that this is an over-estimate). Thus 3.5% of the LTIs at 'Nirvana Mining' can be assumed to have been caused by illicit drug consumption. Thus prevention of this consumption will result in the prevention of 1.3 LTIs per year if programs which are 100% effective are put in place. Since no accident prevention programs are this effective it seems reasonable (perhaps rather generous) that a goal of 45% effectiveness can be assumed. Thus of the 87 current drug users in the company, 39 (45%) will stop taking drugs or no longer be at risk because they have been dismissed by the company. This may include 100% of the regular users who are very likely to be detected and 25% of the occasional users, values which reflect the detection probabilities shown in Exhibit 5. Thus the net result for the program is to prevent 0.6 LTIs per year or about one every two years.

EXHIBIT 14**PROGRAM BENEFITS - ACCIDENT PREVENTION**

LTI incidence rate (average for WA mining):

Men = 70 per 1,000

Women = 36 per 1,000

For 600 employees (70% men : 30% women),

Expected annual number of LTIs = 36.5

Assume an aetiologic fraction of 0.035

(50% of the aetiologic fraction for alcohol)

\ Drug related LTIs = 1.3 per year

Assume potential preventive effect of drug testing = 45%

Thus LTIs prevented by program = 0.6 per year

The other benefits which some have attributed to drug testing have not been estimated since there is insufficient empirical evidence of effectiveness for such an exercise to be conducted.

The Cost-effectiveness of the Random Drug Testing Program

The balance of costs and benefits of the program are summarised in Exhibit 15. The question which should be asked by any company, such as 'Nirvana', which is planning a drug testing program is whether the resources spent on drug testing could generate a better return in benefits if they were spent on other methods to achieve the same goals, without producing the undesirable side-effects, such as false accusation, of drug testing. It seems from this analysis that for 'Nirvana Mining', \$90,000 dollars per year spent on alternative programs to drug testing would buy more productive accident prevention, health promotion and productivity improvements which would be of more benefit both to the company and its employees.

The above example has examined only one alternative in the spectrum of possible drug testing programs in order to illustrate the issues which should be considered, and the assumptions which need to be made, when considering the introduction of a drug testing program. For other types of programs such as alcohol breath testing, or pre-employment drug testing, there will be different issues which will need to be considered. Even for random drug testing of current employees, the cost-effectiveness will differ with a different pattern of testing and for a different size of company. Nevertheless, it seems likely from this analysis that careful scrutiny should be given to such programs before they are implemented.

EXHIBIT 15**SUMMARY OF RANDOM DRUG TESTING PROGRAM**

**Cost-benefit balance sheet
for the year for
'Nirvana Mining'**

COSTS

Drug testing costs = \$ 66,000

Additional costs = \$ 24,100

Total monetary costs = \$ 90,100

**Non-monetary costs:
117 workers (23%) falsely
accused of drug taking;
time in committees to
develop policy;
administrative costs;
possible industrial
relations damage.**

BENEFITS

**One lost-time accident will be
prevented every two years (@ a
unit cost of about \$150,000).**

**78% of current cannabis users
have been identified and can be
referred for rehabilitation or for
disciplinary action.**

**Nirvana has made a strong,
public statement of its
opposition to cannabis use.**

Possible productivity gains.

The Cost-effectiveness of Pre-employment Drug Testing

The benefits of the random drug testing program for 'Nirvana Mining' assume that no new employees are drug users. This presupposes that there is an effective pre-employment drug testing program in place. Such programs are more common in the USA than random drug testing programs of current employees²³. Exhibit 16 illustrates the effectiveness of such a program for 'Nirvana Mining', assuming that the aim is to prevent any current drug user (i.e. someone who has used illicit drugs in the past year) being employed. Exhibit 17 shows the additional costs of recruitment of new employees imposed by the pre-employment drug testing.

EXHIBIT 16**EFFECTIVENESS OF PRE-EMPLOYMENT DRUG TESTING****Prevalence of current drug use:**

Regular users	=	3.3%
Occasional users	=	11.2%

Thus 14.5% of job applicants are current users of illicit drugs.

Probability of detection at pre-employment examination:

Regular users	=	0.95
Occasional users	=	0.24

Based upon prevalence and detection probability, 6% of applicants will be detected as current users.

Pre-employment testing will result in:

- 6% of applicants will be detected as true +ve;
- 5% of applicants will be detected as false +ve;
- 8.5% of applicants will be detected as false -ve;
- 80.5% of applicants will be detected as true -ve.

EXHIBIT 17**COST OF PRE-EMPLOYMENT DRUG TESTING****Cost per applicant:**

Screening test:	\$ 25.00
Confirmatory test:	\$ 11.00
Staff time:	\$5.00
TOTAL:	\$ 41.00

Exhibit 16 shows that only 41% of current drug users who apply for a job with 'Nirvana Mining' will be detected by the program. If we assume that job turnover is stable at 15% per annum, there will be 90 vacancies per year. Assuming five applicants for each vacancy and that each applicant is screened, the total cost of the program is \$18,450 per annum for a success rate of 41%. This cost assumes that all positive screening tests have been followed with confirmatory GC/MS testing. Many companies in the USA do not apply confirmatory

testing to positive pre-employment tests²⁴, which would reduce the cost to \$13,500 but this would produce an additional hidden cost since 5% of applicants who are not current drug users will have been deprived of the opportunity for employment because of false positive screening tests and 'Nirvana' will have been denied the opportunity to evaluate these people for employment.

Conclusion

In a recent survey of companies in the USA, 82.3% of companies which conducted some form of drug testing claimed that it was an effective way to deal with drug abuse. Only 7.5% of these firms had conducted any cost-justification study²⁵. Anglin and Westland²⁶ suggest that drug testing is unlikely to be cost-effective when the yield from a drug testing program is less than 2%. Zwerling and Ryan²⁷ show that the cost-effectiveness of drug testing is sensitive to both the prevalence of drug use and to the cost of the drug screening tests. These comments support the findings of this simulation exercise, which are that drug testing is not a simple issue and that companies which plan such programs should consider the cost-effectiveness of such programs carefully before their adoption.

References

- 1 Allsop, S. & Phillips, M. (1991) Drug testing in the work setting: legitimate intervention or toxic infringement? In *Drug Problems in our Society: dimensions and perspectives*, White, J., Ali, R., Christie, P., Cormack, S., Caughwin, M., Mendoza, J. & Sweeney, R. (Eds.), Drug and Alcohol Services Council: Sydney.
- 2 For more details see Morland, J. (1993) Types of drug-testing programmes in the workplace. *Bull. Narc.*, XLV(2): 83-113.
- 3 Standards Australia. (1995) Recommended practice for the collection, detection and quantification of drugs of abuse in urine. *Australian Standard* 4308.
- 4 Kapur, B.M. (1993) Drug testing methods and clinical interpretations of test results. *Bull. Narc.*, XLV(2): 115-154.
- 5 Kapur, B.M. (1993) *op cit*.
- 6 Dackis, C.A. et al. (1982) Persistence of urinary marijuana levels after supervised abstinence. *Am. J. Psychiatry*, 39: 1196-1198.
- 7 Kapur, B.M. (1993) *op cit*.
- 8 McBay, A.J. (1989) Drug analysis technology - pitfalls and problems of drug testing. In *Analytical Aspects of Drug Testing*, Chap. 11, Deutch, D. G. (Ed.), Wiley: New York.
- 9 Hanson M. (1993) Overview on drug and alcohol testing in the workplace. *Bull. Narc.*, XLV(2): 3-44.
- 10 Pohlman, B. (1995) Drug testing and occupational injuries. In *Occupational Injuries: evaluation, management and prevention*. Herington, T. H. & Morse, L. H. (Eds.), Mosby: St. Louis.

- 11 Department of Health, Housing and Community Services (1992) *Statistics on Drug Abuse in Australia, 1992*. Australian Government Publishing Service: Canberra.
- 12 Blaze-Temple, D., Binns, C., Radalj, T. & Phillips, M. (1988) *Adult Drug Consumption in Western Australia 1986*. National Centre for Research into the Prevention of Drug Abuse: Curtin University of Technology.
- 13 See Hanson (1993) *Op cit*, page 18 for more information on the objectives and rationale given for drug testing programs.
- 14 Zimmer, L. (1996) Drug testing in the USA: a policy for maximising harm. *Int. J. Drug Policy*, 7(1):37-41.
- 15 Dackis, C.A. et al. (1982) *op cit*.
- 16 Homel, R. (1988) *Policing and punishing the drinking driver: a study of general and specific deterrence*. Springer-Verlag: New York.

- 17 PathCentre. (undated) *Drug testing in the workplace*, Perth, WA.
- 18 Morland, J. (1993) *op cit*, page 105.
- 19 This is almost certainly an underestimate since costing studies in the USA have estimated the cost of detecting one true positive at US\$ 77,000 and US\$ 20,000, with the observation that these costs increase with decreasing prevalence of drug use. The estimate from this study is equivalent to AU\$ 1,430 per true positive detected. One explanation for the much lower costs is the exclusion of capital and infrastructure costs, plus the requirement for tests to be conducted by specialist medical practitioners in the USA. See Morland, J. (1993) *op cit* for further details.
- 20 White, C.B. (Ed.) (1994) *State of the Work Environment: Occupational Injuries and Diseases, Western Australia 1992/93*. Department of Occupational Health, Safety and Welfare: Perth, Western Australia.
- 21 English, D.R. et al. (1995) *The quantification of drug caused morbidity and mortality in Australia*, 1995 edition. Commonwealth Department of Human Services and Health, Canberra.
- 22 Macdonald S. (1995) The role of drugs in workplace injuries: is drug testing appropriate? *J. Drug Issues*: 703-722.
- 23 Hanson, M. (1993) *op cit*. and Morland J, 1993, *op cit*, page 87-90.
- 24 Hanson. (1993) *Op cit*.
- 25 American Management Association. (1992) 1992 AMA survey on workplace drug testing and drug abuse policies. New York (cited in Hanson, 1993).
- 26 Anglin, M.D. & Westland, C.A. (1989) Drug monitoring in the workplace: results from the California Commercial Laboratory Drug Testing Project. In *Drugs in the workplace: research and evaluation data*. National Institute on Drug Abuse Research Monograph Series, No. 91: 81-96. Rockville, Maryland.
- 27 Zwerling, C. & Ryan, J. (1992) Pre-employment drug screening: the epidemiologic issues. *J. Occup. Med.*, 34(6): 595-599.

WORKPLACE DRUG TESTING: THE EMPLOYEE'S PERSPECTIVE

**Tony Cooke, Secretary
Trades and Labor Council of Western Australia**

Thank you very much for the opportunity of being with you. I must start by congratulating a number of contributors to the development of policy on this issue. The Chamber of Mines and Energy in this state has provided an excellent document on ways of responding to workplace harms associated with alcohol and drugs. One person I recognise for his personal contribution to informed debate on the issue of workplace drug testing is Steve Allsop. I thank him for that contribution.

I am going to start at a different point on this issue than I had planned, given the content of Steve Allsop's presentation and also what was said by Mike Phillips regarding detection rates and the cost/benefit trade off. I had intended to go through a range of issues, but considering what has already been presented this morning, I would just rather touch on some of the comments made earlier, particularly the value of appropriate processes for the implementation of any new management system in the workplace. I agree with Martin Ralph from IFAP that drug and alcohol issues should be handled as any other hazard in the workplace. Similarly, I endorse what Mike Phillips said: every workplace should consider the place of drug and alcohol issues in that particular environment according to the appropriate management processes for any occupational health and safety issue. IFAP's policy of handling alcohol and drug problems in the same manner as any other hazard is closely associated with a good management system. Sound Health and Safety management is clearly an integral element of a high quality management system in the modern workplace.

I would like to make a couple of other comments. Again, taking a point made in the IFAP presentation, common stereotypes can be misleading. Today I wish to talk further on that topic, and also about another issue that was raised: whose problem is it? I think it is a very valid point to question; who consumes alcohol and what are useful problem indicators? I think a relevant point was covered in the IFAP presentation; personal indicators for drug and alcohol consumption correlate with the level of workplace stress. Therefore, to draw on a stereotype of alcohol and drug use as necessarily indicating some personal inadequacy may lead to an incorrect assessment of causation. In turn this could result in entirely inappropriate management of the issue. As an example, let me raise the link between demanding shift work patterns and consumption of alcohol and drugs, including caffeine, which I admit to consuming heavily myself.

All of this leads to a couple of additional observations. Here I wish to draw a distinction between what I have to say and the position adopted by IFAP. In the IFAP presentation, employee input was ranked last in a list factors contributing to good Health and Safety management. I of course would differ, because I believe good Health and Safety management in the workplace is about a joint approach to issues. If you rate employee input as low on the list of techniques used to identify and deal with hazards, then you miss out on the benefits of a framework which encourages full participation and consultation. I would also disagree with the heavy emphasis on the need for an interventionist approach by supervisors. Such intervention by supervisors is not a desirable alternative to participative approaches to Health and Safety management. These strategies are about joint identification, assessment and control of Health and Safety issues in any workplace. A constructive approach involves including representatives of work forces and setting up appropriate

committee structures to allow issues to be addressed.

A valid point was raised in the IFAP presentation. An appropriate process in the workplace reinforces the importance of drug and alcohol issues to employers, and also their duties and obligations within a management system. I agree with that entirely, but I would go further. The approach that I favour actually reinforces to employees their obligations and duties, and the hierarchy of appropriate processes for dealing with issues of Health and Safety. I advocate a shared responsibility. I believe a good management system reinforces to employees their place within it. There are lots of good models out there in the community that demonstrate this. One is the construction industry in New South Wales. This is an example of a joint approach which has resulted in quite major changes in the way alcohol and drug issues are managed. Instead of a management prerogative, it becomes an issue of joint responsibility, joint process, joint outcome and joint ownership.

Why are alcohol and drugs a modern problem? Firstly a suggestion which relates to my earlier comments about the strong emphasis on intervention by supervisors. Such an emphasis infers the input of employees is of lesser importance. We are confronting major change in our economy. We are confronting major changes in the organisation of workplaces. We are confronting all that is associated with the proposals about a productivity culture in Australian workplaces. Other than trade union officials, I believe one group in particular face great challenges as a result of the participative approach: supervisors and managers. This is because the approach emphasises involvement and teamwork, based on common ownership and shared benefit. Not inconsistent with the positive approach required of the safety conscious worker.

If you put in place mechanisms that allow those who see their role being challenged and undermined to retreat to the old ways of doing business, then you have a problem. My suggestion is that there may be a correlation between a desire of supervisors and managers to reassert their traditional role and the demands placed on this group to better manage workplace alcohol and drug problems. I think the point made about the importance of the managerial role is valid, I just do not agree with how some people view their contribution. I believe this is part of the reason alcohol and drugs suddenly became a modern problem, and a problem that I would almost say was taken to hysterical levels in some workplaces and across the community. It allows supervisors and managers to revert to an old role and that may be one of the factors at play in this debate.

My next point is not a suggestion, but an assertion as to why alcohol and drugs have become a modern problem. I am aware of a case involving a well intentioned health promotion organisation. The organisation tried to use an inappropriate intervention approach to implement a worthy health strategy. What did they do? They relied on the capacity of management to impose a solution through the conventional hierarchy. It was really a community problem, but the organisation wanted 'runs on the board'. One way to achieve this was to approach a workplace, tell the employer a problem existed, provide a solution and say "Boss, impose it for us please".

What offends me about such a strategy is that it undermines the positive reinforcement that comes from a constructive approach to Health and Safety in the workplace. It fails to recognise that one of the major gains in Health and Safety, associated with the new legislative frameworks of this State, was the shift in responsibility purely from employers, to a greater role for employees in their own safety. It is a contentious issue and I will highlight an example of why it remains a contentious issue in my concluding remarks. I agree that smoking, alcohol and drug consumption are issues of broad community concern and should be addressed by a range of health promotion organisations, but to be successful, the

techniques may need to differ according to the context. The problem with imposing interventions through employers is that it contributes to a negative approach to Health and Safety by workers. It certainly does not reinforce a positive approach.

The other people that I would like to refer to are service organisations; the ones who stand to make a profit. In contrast to such groups, health promotion organisations do not make a profit. Recently, the TLC was approached by two individuals who said “We have got a wonderful drug testing regime which we would like to discuss with TLC, and to receive your

endorsement". They arrived with a Beagle, wanting TLC endorsement for going into mining camps to sniff out drugs! My response to the guy who saw them was "Either these two are classic indicators of failure in our mental health system, or they are undercover drug squad operators. Either way get them out of the building."

There are more sophisticated examples of such an approach present at this forum. Outside in the display area there is a brochure which asserts that drug users have been shown to have accident rates up to four times higher than non-users; 40% more industrial deaths and 50% more workplace accidents. Where? What evidence? There is also a dissertation on retention times of drugs, which I would assume to be fully accurate. It talks about cannabis and says a heavy user can have retention rates of up to 30 days. This in itself raises a whole range of issues.

Given what has been presented today, I question the assertion about increased risk levels. When it comes to the issue of consumption, I also question the validity of that approach. Does it address the community objective of reducing alcohol and drug consumption? I think you have heard otherwise. Does any of this reduce Health and Safety problems in the workplace? I think there is only evidence to the contrary. So what is it about? I worry that drug testing is being driven by the hysteria promoted by those who stand to make profit from it. In making money, please do not undermine the approaches which workers and employers rely upon to ensure good Health and Safety.

We have an example of a worker in a fly-in, fly-out operation who admitted to recreational cannabis use in his time off. He tested positive at the start of a two week work cycle and was sacked. He will no longer work in the mining industry. He admits to smoking cannabis but he says he has never used it at camp. Was there any evidence of impairment in his function? Of course not! Would any of the testing arranged by a service provider address issues of impairment? I have not heard any comment on this. Do the cut off points for detection relate in any constructive fashion to issues of impairment? What does it mean if 80% of those detected as having used are office workers? Where does the impairment factor come in?

Now, I just raise this issue and I get quite heated about it. I really do wonder where we are going, because I really want to keep a positive pathway through all of this. I do not like the distractions, because of the costs involved, for the imprecision involved, for the damage that may be done to more positive approaches that are sorely needed in our community. Is it worthwhile? That is the question you have to ask yourselves. You have to ask yourselves what your role is in the debate and where you stand as an individual.

I will just cite a couple of incidents to illustrate my point. A Health and Safety representative on the Pilbara / Goldfields gas pipeline made a complaint about working conditions, resulting in an investigation. A mechanical digger had made a pipe trench 200 mm too shallow. The pipe was laid and joined before the problem was discovered. Damn the trench is too shallow! How do we fix the problem? Use the side boom to lift the pipe out of the trench, get 10 workers to go in there with shovels and dig out another 200 mm. Side booms are not designed for lifting a joined length of pipe. Furthermore, on the same job there had previously been clutch failures which allowed sections of pipe to drop. What do those workers look forward to? The wet mess! Given the nature of the job these workers were doing, would it have made any difference if they were pissed or whacked off their brains? And I will take it further, I personally would have to be pissed or whacked off my brain to get into that bloody trench. The workers did, and they did as a result of the very poor Health and Safety practice reinforced in this brochure.

What did the investigation conclude? This returns us to my earlier question about who pays the penalty. While the investigation refers to workers not having adequate information about safety issues and management systems, it concludes that the personnel who entered the trench under the raised pipe breached Regulation 15 of the Pipeline Regulations Act 1970. It is a classic case of double jeopardy. Refuse to do the work - subject yourself to pressure. Go into the trench - risk your life. If you complain - risk prosecution under the existing regulations, as did the employees involved. This is the context in which I raise the issue of proper management of

Health and Safety issues. Wet messes, drug and alcohol consumption - few other forms of recreation are available to the workers in certain industries. I am concerned when I see that sort of evidence. Drug and alcohol issues are not given a high priority in the safety hierarchy. This is the case not only in the mining industry, but industry generally.

I would like to conclude with a personally relevant example. I am very proud of this one. My brother is a panel beater. Two years ago he started saying to his boss; "No boss, I can buy my beer and consume it where I want to. Stop turning on the slabs of beer on a Friday night and give me extra pay." It is still a practice in some segments of industry to lay on happy hours sponsored by the employer. An example I recently came across, again unfortunately in the mining industry, involved a worker who had consumed alcohol in a work related context and was killed on Wanneroo Road. I conclude by noting that there were a range of issues about drugs and alcohol raised here today, but most importantly, how can we address those issues? How can we deal with the link between a permissive workplace culture, consumption and harm if the circumstances of drug and alcohol consumption in the sort of death I referred to above are not reported to the coroner?

There are a whole range of issues associated with the impact of alcohol and drugs in the workplace that we seek to raise in as positive fashion as possible and that is why I get quite heated in these sort of presentations. I worry about what can be achieved and how the problems can be tackled so that there is a positive contribution to Health and Safety management.

WORKPLACE DRUG TESTING: THE EMPLOYER'S PERSPECTIVE

**Anne Bellamy, Group Manager Training Services
Chamber of Commerce and Industry**

Overview

The issue of drug or alcohol related work impairment is raising some very complex legal, moral and practical questions for employers. As the state and federal governments move to introduce greater social legislation, employers are faced with considerably more conflict in juggling the private actions of an employee and the requirements of safe and competent job performance.

Whilst employers have an over-riding responsibility to provide a safe working environment for all employees, the greatest difficulty is in developing and implementing the appropriate controls to ensure a balance between safety, civil liberties and industrial acceptance.

There are a number of different scenarios that employers face. Some will stand alone, but in most circumstances there will be a combination of factors which will tend always to complicate and at times cloud the issue.

The following situations are the most frequent to arise:

- An employee reports for work seemingly affected by alcohol or drugs
- An employee's work is impaired as a result of consuming alcohol or by drug use
- An employee is known or suspected to be in possession of drugs on site
- An employee is known to be selling drugs on site or adjacent to the workplace
- An employee is using drugs at formal or informal work breaks
- Employees are influencing other employees to use drugs particularly at night or in isolated situations
- Employees are consuming alcohol either on or off site at lunch time
- Employer sponsored functions involving alcohol

There are three essential steps in addressing the issues. The first is identification of the problem. If a problem exists involving alcohol/drugs it may manifest itself in a number of ways, including a change in work performance, absenteeism, lowered productivity, poor employee relationships and communication breakdowns. Equally, it is unlikely that alcohol and drugs will be the sole cause of any of these problems. Contributing factors may include ill health, distractions such as personal problems, job dissatisfaction and unclear expectations relating to job performance.

The second is assessment. The extent of any problem should be known. This will help ensure that any action taken by the employer will be appropriate in resolving workplace problems.

The third step is control of the problem. Generally this is the most difficult for employers, particularly in situations where there are no workplace guidelines relating to either alcohol/drugs or disciplinary procedures.

Duties of Employers, Occupiers and Employees

There are now a number of different Acts as well as the general law of negligence which provide a stimulus for employers to take action to reduce negligence associated with allowing persons under the influence of alcohol/drugs to enter or remain on a work site.

Whilst the Workers' Compensation and Rehabilitation Act contains a serious and wilful misconduct clause (Section 22) and the Mines Safety and Inspection Act provides for the removal of a person under the influence of alcohol/drugs, it is the Occupational Safety and Health Act (OHS) 1984 which places the most stringent responsibilities on both employers and employees.

The OHS Act places a clear responsibility on employers to provide and maintain, so far as is practical, a work environment in which employees are not exposed to hazards. As defined under the Act, 'hazard' in relation to a person, means anything that may result in injury to the person or harm to the health of a person.

It could be argued that the influence of alcohol or drugs on a person can cause considerable impairment of normal physical and mental function. Such impairment may render the affected person incapable of performing his/her duties safely, thereby jeopardising their own safety and possibly the safety of others. There is no reason why a person cannot be considered a 'hazard' under the Occupations Safety and Health Act.

If a person is considered to be a hazard due to the influence of alcohol or drugs then the employer has a responsibility to reduce associated risks to both the affected person and any other person to whom there is the potential for injury.

Employees also have a number of responsibilities under the Act. The following three are particularly salient when dealing with issues relating to alcohol and drugs:

- Employees have a duty 'to comply, so far as reasonably able, with instructions given by the employer for his/her own safety or health, or that of others'. If any employer believes that an employee is jeopardising the health or safety of himself/herself or another person, the employer has the right to instruct the employee not to carry out the work.
- Employees have a duty to take reasonable care of their own health and safety as well as to not adversely affect the health and safety of others through any act or omission on their part. Whilst it is likely that an employee affected by alcohol or drugs could be in breach of the Act, particularly if an injury occurs, this does not detract from the employer's duty to take action to reduce the risk.
- Employees also have a responsibility to report to the employer 'any situation at the workplace that he/she has reason to believe could constitute a hazard to any person that he/she cannot himself/herself correct'. This clearly places a responsibility on employees to report another employee who is considered to be a hazard because of his/her behaviour.

Occupiers have a duty under the Act to ensure safe entry to and exit from the workplace for all persons. This extends the responsibility for employers who are also the occupiers of the workplace to also ensure the safety of person who are not employees. This would have particular relevance for workplaces where employees are responsible for the safety of the public i.e. transport, retail shops, public facilities.

Interaction Between Occupational Safety and Health and Industrial Relations

The two areas, whilst interrelated, are in fact quite distinct. Alcohol and drugs become an occupational health and safety issue, only if an employee has consumed one or both and their work performance is either impaired or there is the potential for it to be impaired, creating a safety hazard for either the employee, other employees or persons at or near the workplace.

The issue remains a safety issue up until the affected employee is either removed from the work task and/or the work environment or the effects of the alcohol/drugs no longer impinge upon the capacity of the employee to work safely. Once an employee is removed from work then routine industrial procedures should apply.

Alternatively, if an employee is failing to achieve or maintain an acceptable work performance level, because of alcohol or drugs but there are no immediate safety implications, the problem should be approached as one would tackle other performance issues - by clarifying performance requirements, counselling and monitoring the employee. That is, normal performance management and, if necessary, disciplinary procedures should be used when addressing an alcohol/drugs related issue.

If the situation arises where an employee affected by alcohol/drugs continues to work and other employees refuse to work on the grounds that it is unsafe to do so, because of the actions of the affected employee then the consultative provisions of the Occupational Safety and Health Act would apply.

In particular, Sections 25 - 28 provide for an employee to refuse to work if that employee believes that there is a serious and immediate threat to his/her safety. If there is no formal strategy at the workplace to be used in such circumstances then the default procedure in the Act for consultation between the employee, a safety representative if any and the employer or a supervisor should be used.

If the issue is not resolved according to the relevant or default procedure then a WorkSafe WA Inspector may be called to the workplace. The Inspector has the authority to declare that the circumstances do not give rise to a hazardous situation or alternately issue either the employee or employer with an improvement or prohibition notice.

Short and Long Term Management Strategies

The International Labour Office and World Health Organisation report that 60% to 70% of people with alcohol or drug-related problems are in full-time employment. Of all work-related fatalities 15% to 30% are related to alcohol and other drugs, and of all work accidents 20% to 25% involve intoxicated persons. Employees with alcohol and other drug problems have 200% to 300% more absenteeism than other employees.

It has been estimated that approximately 15% of the adult Australian population have a problem with either alcohol or drugs and 5% will be addicted. In most cases the effects of the problem will impact upon both work and family.

Whilst the employer should not be expected to take responsibility for an employee's behaviour when not at work or indeed become involved in an employee's lifestyle, these matters can have substantial impact on an employee's ability to perform competently and

safely. This in turn can affect productivity, workplace morale, absenteeism, worker conflicts and personal and team performance. The cost to Australian industry from excessive drinking alone is estimated to be \$400 million.

What Action can be Taken by Employers?

In support of an Alcohol and Drug Policy Statement, employers should consider documented workplace procedures. In addition to policy aims and objectives mentioned above, particular attention should be paid to issues relating to employee support and assistance, privacy, including confidentiality, civil liberties and testing. If a comprehensive strategy addressing all of these matters is developed and implemented then it is likely that alcohol/drug use affecting work can be controlled in most instances.

An integral part of policy formulation should involve policy on support services for the affected employee. These generally take the form of an employee assistance programme or specific counselling, both at and/or away from the workplace.

Civil Liberties is frequently an issue when introducing a policy and procedure. The employer must show that it is the public interest to take serious action such as alcohol/drug testing. Such action must be weighted against the interests of the affected party and it is always preferable to have informed consent either by the individual or through a workplace agreement between employer and employees to carry out testing.

It has been argued that testing is invasion of privacy however the Privacy Committee of NSW has concluded that:

"workplace safety is a concern of such importance that, in limited circumstances, drug testing for safety reasons may be justified."

There are a number of situations in which alcohol/drug testing may be appropriate. These are generally pre-employment, random testing, occupational group testing, mass testing and specific purpose individual testing. Whilst the reliability of testing has been questioned, a number of procedures can be put in place to ensure very strict control, both on the way testing is conducted and in the collection and evaluation of samples. This would reduce concerns about the accuracy of the results obtained.

Conclusion

Alcohol and drugs have become a significant concern for employers. There is no doubt that where there is the potential for personal behaviours to have a detrimental influence on work then the employer will need to address the issue.

Only a comprehensive approach to policy making noting the organisation's own specific circumstances can hope to balance the competing industrial, safety and civil liberties concerns.

THE PLUTONIC GOLD EXPERIENCE

Tony Baker, Occupational Health & Safety Co-ordinator
Plutonic Gold Mine

Background

The Company

The Plutonic group of mines is a national company with headquarters in Sydney, New South Wales. Throughout Western Australia it operates 5 mines. It also has a very active exploration division which operates throughout the nation.

The mines operating in Western Australia are: Darlot, Lawlers, Bellevue and Mt Morgans located north and north east of Kalgoorlie, and the company's flagship, Plutonic Gold located north of Meekatharra.

Plutonic Gold is one of Australia's most successful gold mining companies. Plutonic, Darlot, Mt Morgans, Peak Hill and Bellevue have underground operations, whilst Lawlers is an open cut facility. Together the 5 mines produce 450,000 ounces of gold per annum.

I am currently the Occupational Health and Safety Co-Ordinator at Plutonic Gold Mine. I have been at Plutonic for 4 weeks, having worked at Lawlers Gold Mine for the previous 18 months.

Mining Operations and the People

Each mine operates on a fly-in, fly-out basis, generally on a two week turnaround out of Perth. There are 500 employees and contractors at Plutonic, and between 120 and 150 at each of other 4 mines. These include the usual mix of occupations - engineers and chemists, excavators, caterers, office workers and other professional support staff.

For the purpose of this paper and because my experience of the Plutonic Group is largely centred there, I will mainly discuss the experience of the Lawlers Mine.

Lawlers Mine

Lawlers is a recent mine development (est. 1985) located on 19th century diggings near Leinster, Western Australia. There are three main sites at the mine. The camp buildings are 5 minutes drive away from the mill and treatment plant. The mining operational area is located 17 kilometres from the plant.

The camp is made up of transportable buildings and consists of single and family accommodation, ablutions, dining facilities and a wet mess. There is also a separate recreation room, in which no alcohol or smoking is allowed, a gymnasium, swimming pool, tennis court and cricket pitch.

Objectives of this Paper

In this paper I will attempt to achieve the following:

- Firstly, I will describe the main parts of the AOD policy;
- Secondly, I will describe how the policy was implemented and some comments on the effectiveness of the implementation;
- Thirdly, I will describe how the policy currently works and provide examples and statistics of the impact of the policy;
- Fourth, I will attempt to evaluate the effectiveness of the policy in reducing the risks associated with AOD harm in the Lawlers workplace.

Alcohol And Other Drugs Policy

Reason for the Policy

Lawlers introduced an AOD policy 3 years ago in 1994. It was modelled on the policy introduced at the Plutonic site in 1993.

The AOD policy was introduced for Safety reasons - to reduce accidents and performance problems in the workplace.

The AOD Policy: An Outline

The Plutonic AOD policy is in reality 2 policies - a policy for Drugs and a policy for Alcohol. We treat alcohol affected persons differently. Both policies contain 5 main parts:

1. Legislation affecting a workplace AOD policy
 - Mine Safety & Inspection Act
 - Workers' Compensation and Rehabilitation Act
 - Other Drugs, Poisons and Road Traffic Acts
2. An education component about the nature and effects of drugs on the body and performance
3. Drug Testing Procedures
4. Employee Information, Support and Counselling Procedures
5. Disciplinary Action

How the policy was developed

In 1992, the then Mine Manager made the decision to implement an AOD policy at Lawlers Mine. The Plutonic model was used as a basis for the policy. It was developed by the Mine Manager and the Mine Superintendents. It was then discussed at Department Head level and the OH&S Committee (comprising all Departmental Heads, Resident Manager, OH&S Manager, Safety Representatives from each department and the Contract managers). The policy was then 'filtered down' to the rest of the employees in the following way: a draft was distributed to all employees and placed on notice boards. It was also discussed at Safety

meetings. All were invited to make comments about the policy. In reality no employees made comments and the management position was adopted.

Implementation of the policy

Once the policy was finalised and accepted by the Resident Manager, all employees were educated about the policy. This occurred in short 'tool box' meetings throughout the site. At the same time information documents and awareness posters were made available to employees. These included Drinksafe posters, and 'Quit' pamphlets.

The mine's induction program now includes information about the AOD policy and the support services available through the Employee Assistance Program (EAP) (provided by Indrad Services).

Even though the policy allowed for testing, this was not implemented until 12 months after the policy was finalised. The reason for this was to allow people to adjust to the AOD policy and to let it settle into the life of the mine. There was also instability in the OH&S Co-ordinator's position which prevented a real focus on progressing the policy implementation.

Implementation of the Employee Assistance Program

During that 12 months the Employee Assistance Program was implemented. Lawlers contracted Inrad Services to provide counselling support to the mine for all employees, contractors and their family members to help deal with any personal or work related problem. This allowed time for the generic counselling support service to settle into the life of the company. It also countered the perception that counselling was for AOD issues only, encouraging the view that counselling is for any personal or work related problem.

An Inrad consultant travelled to site a number of times to meet with the work force, including contractors, and to provide awareness raising sessions about the counselling service. The consultant also provided short training sessions for the managers and supervisors in effectively dealing with employees experiencing difficulties.

During that 12 month period, a number of employees voluntarily used the counselling service to help them deal with AOD problems. However, as a company there was very little focus on the AOD problem as an issue. The only education that occurred outside of the implementation of the AOD policy was the inclusion of the policy details in the induction.

In October 1994, it was decided by the Resident Manager and the senior managers to implement the AOD testing part of the policy and to commence AOD testing procedures.

Changes in the role of the wet mess and recreation

In the past the wet mess has been the focus of most social activities at the mine. The mess sells all beers, wine, cider, UDL drinks, soft drinks, tea and coffee.

To help people change their drinking habits and in response to requests for a non-smoking facility, a new recreation room was established.

This facility has a large TV, a place for cards, chess and other table games. No alcohol or smoking is allowed in this room. The only beverages available are tea and coffee supplied by the mine. This has helped the growth of the perception that alcohol and drinking don't need to be mixed.

I do not have any figures, but each time I go to Lawlers, the room is being used by people. It has been well accepted.

Drug Testing

Types of Testing

At Lawlers there are 3 types of drug testing: for cause, random/on request and pre-employment.

For Cause

Urinalysis and Breathalyser are used for serious incidents, those involving substantial injuries - amputations, fractures, etc. and vehicle accidents. Near misses are reported and sometimes tested.

Random/On request Breathalyser

Any superintendent, supervisor, the OH&S co-ordinator or safety representative can request that a person be breathalysed at any time.

An individual employee can also request to be breathalysed. If the result is between 0.02% and 0.049%, the employee will be placed on alternative light duties and tested again in 4 hours. If the result is 0.05% or over, the employee will be sent home for the day on sick leave with no penalty. An employee can use all accrued sick leave in this way.

If the employee is over the limit and this is discovered by the company, leave without pay must be taken and a verbal warning is given.

Pre-employment Testing

All applicants for jobs with Lawlers, including contractors, are tested as a part of the medical test. A significant number do not continue with their application for employment once they learn that drug testing is part of the company policy.

Drug Testing - Implementation of the Policy

The OH&S Co-ordinator is responsible for co-ordinating the testing on-site. Each person is tested 3-4 times per year by the contract testing company - Perth Pathology.

The OH&S Co-ordinator contacts Perth Pathology and nominates a date for the testing. The only people who know about it are the Resident Manager, the receptionist (who makes all the flight and accommodation bookings) and the OH&S manager.

The policy allows for 20% of the work force to be randomly tested and for the OH&S Co-ordinator to select the people. In practice, the whole site is tested each time. The random part of the testing is the date selected - the timing of the tests.

All employees were advised that drug testing would be implemented through the Safety Committee, 'toolbox meetings' and notices placed on the notice boards. The first test was conducted in June 1995.

Current Practice

For drug testing to work there must be firm and consistent leadership and management. At Lawlers, the OH&S Co-ordinator is responsible for all drug testing procedures, including the date of testing and co-ordinating the testing process. This can cause a conflict of roles, as the OH&S manager is part of a supportive and representative process, whilst drug testing can be seen as a policing process.

Testing is conducted 3-4 times per year (decided by the Resident Manager). All those on-site on the testing day are tested, which means all contractors, employees and visitors. The testing process requires a lot of organisation, but Perth Pathology are good and know 'all the quirks'.

On the day of testing I contact all the Managers, ensure that all people are at work and advise that testing is to commence. The managers provide a list of employees on-site at the time to me. I then make arrangements for each department to present for testing at a particular time.

Each name is given an identification number and this number is attached to each sample.

Male and females toilets are used in the main administration building as well as a spare room

for administration purposes. Most samples are collected in the first 2 hours of the day. However, because of shifts, illness or absence from site, the full number are often not collected until the next morning. Visitors are fitted in at convenient times during the day.

All taps are taped, the toilet water is dyed blue. The employee signs an agreement to be tested. One sample is taken. The temperature of each sample is recorded to ensure it is at body temperature. The sample is sealed in the employee's presence, the tape on the container is coded with the employee's id number and initialed by the employee. He/she then places it into a bag which is sealed and taped. The identification number is placed on that and initialed.

The employee can also hold her/his own sample for any possible confirmatory test purposes.

Some of the problems of the process relate to employees who will try to avoid being tested. We always have some who say they can't 'go to the toilet'. So I delay the test for them, but ensure they wait around until they can give a sample. It has been known for some individuals who have smoked pot to return to their quarters, consume 2 litres of water and 6 Urals. It is reported that this reduces the pH level and gives a negative result.

Another problem is that if an employee genuinely can't pass a sample, then we need to take the container from the employee, get him to drink water and go through the whole process again.

Testing Confirmations

The samples stay with the Pathology Nurse overnight in an iced esky in her room. The nurse returns to Perth the next day and testing begins using immuno-assay processes.

All positive results from the first test are checked by the Resident Manager and me. We check for those who have registered as having taken drugs such as Codral for health reasons. We know who most of them are any way, because they have registered with the First Aid centre.

All positive tests of Cannabis, Opiates and Amphetamines are automatically confirmatory tested using Gas Chromatography/Mass Spectrometry (GC/MS). Tests with a positive alcohol result are not confirmed. Lawler's Gold Mine must authorise the confirmatory tests. No action is taken at Lawlers until the confirmation tests have been completed.

There can be a problem with false positives, particularly in detecting opiates. An employee may have taken Codral, etc. for colds. However, all employees are required to declare this prior to being tested.

Miscalculations are very rare. Lawlers have set the tolerance above the Australian standard, so miscalculation is not a real issue.

What happens after positive tests?

The main principle is that the company is not trying to sack people. Long term valuable employees may be favoured, afforded greater tolerance and given a chance to improve.

Cannabis (THC)

First offence - Discussion between the Manager, Superintendent and employee involved. A written warning may be served. All are reminded of the counselling service available through Indrad Services.

If it is clear that the employee is an habitual user, he/she will be recommended to counselling. Sometimes we will require proof that the employee has attended the service.

Second offence - employee can be dismissed. It often depends on the interview with the mine manager and the superintendent.

Some people have been given up to 3 warnings. They have then given up smoking via counselling and other means.

Opiates and Amphetamines

First Offence - termination. It is our assessment that if people use these 'hard drugs' they are unstable. Hard drugs present a greater safety hazard to the workplace. At the same time, other employees won't tolerate it.

Alcohol

There are two ways a person can be breathalysed:

1. *Voluntary*: An employee can ask to be tested (if they've recently drunk, or had a binge the night before). If over the limit, they are sent home sick. They may use up their sick days.
2. *Manager or Supervisor Initiated*: First offence - if .05% or above, counselling by manager, verbal warning, loss of day's pay and sent home. Noted on personnel file. If 0.02% - 0.049%, given light duties and tested after 4 hours. Suggested use of Intrad counselling.

Second Offence - Counselling by manager and referral to Intrad Services for professional counselling. Proof of attendance may be required. Written warning and loss of day's pay.

Third offence - Each case is evaluated on its merits, but can lead to termination.

Drug Screening Statistics (June 1995 - September 1996)

Number of people tested: 519.

Number of true positives: 34 or 6.6%.

Types and number of drugs: 33 THC, 1 amphetamine.

False positives: 12% or 2 times the number of true positives.

Resultant action: All were spoken to, offered counselling and given the opportunity to change. We bend over backwards to assist people.

Drug Testing - An Evaluation

Negatives

- It is a messy process - handling urine samples, nurse holds in esky in own room (chain of custody). Getting people to pass urine, place smells, must flush the toilet each time, samples can leak. Have to carry up to 140 samples in the fridge at any one time.
- It is a very intrusive process - watching and policing people urinating
- Guilty until proven innocent.
- Contributes to antagonism towards myself, the Nurse and Management (Us against them)
- It is a policing role for me which carries over to the perception of my other OH&S duties and roles. It also means I have to be thinking about 'catching' people.
- Has a negative effect on the whole company
- Many people are petrified to have a test. Some try to predict the date, particularly if there hasn't been a test for a while (2-3 months).
- Parties for people who have resigned from the company. Those people generally become 'blind drunk'.
- After the tests have been taken, the employees have big 'blow out' smoking dope on the

weekend. I question 'what has the test prevented?' I'll probably need to time a test the following week

- It only tests for alcohol and other drugs, not a person's capacity to work.
- You only test 4 or 5 times a year.

Positives

- Employees see that it is a positive step by the company towards accident prevention
- Attitudinal change: Employees don't want to work with drug affected people, including alcohol
- The fact that drug tests are conducted means that people's drug taking behaviour is changed - people think twice about bringing drugs into the workplace
- A useful pre-employment tool. Some applicants drop out as soon as they learn a drug test is included
- At close of the bar or party times, less people are drinking at harmful levels. More drink light beer or soft drinks.
- The 10 PM rule is creeping in - many stay at the bar but will only drink soft drinks or not drink after 10 PM.
- People are taking greater responsibility for their drinking - spread it out (don't binge) and have low alcohol drinks.
- No pure spirits (except in the form of mixed drinks - UDL cans) are available on site

Overall Assessment

I do not like the process of drug testing. It has had a positive effect on the amount of problem drug consumption, it has modified people's behaviour - less people are drinking high levels of alcohol. However, it compromises my job as it does not test for capacity to work. It creates a focus on alcohol and drugs rather than fitness for work.

There must be a better way. Currently, the only alternative technology are capacity testing programs.

Capacity Testing Programs

Capacity testing takes the form of a hand-eye co-ordination exercise using a computer program. Murchison Zinc is currently using the OSPAT program and Adele Bintley will talk about this following my presentation.

Reasons for considering capacity testing

We are considering this process because:

Positives

- It is non-intrusive and non-invasive
- Testing occurs daily - greater chance of detection
- It specifically tests fitness for work, not drugs.
- The decision for fitness remains with the supervisor - who has a line function for safety
- Removes the policing role from the Safety Co-ordinator
- Scientific validation
- A standard is set for each employee - it is non arbitrary
- Computerised records management
- Favoured by employee bodies
- Non-judgmental

Negatives

- **Can be costly**
- **Can be time consuming**
- **Manager has to interpret the results**
- **It is new technology - has not been fully tested on sites in Australia**
- **Can have complex management requirements**
- **Equipment maintenance**

Conclusion

In my personal opinion, the disadvantages of drug testing outweigh its advantages. Until recent times, those organisations who have wanted a more objective measure of potential harm from drug use have had little alternative. However, with advancing technology, I believe we can improve our approaches to assessment of capacity to work, remove our policing function and help people to do what they should be doing - taking full responsibility for their own fitness for work. Whilst there may still be technical flaws, I believe capacity testing can be of great assistance here and will be the way of the future.

THE MURCHISON ZINC EXPERIENCE

Adele Bintley, Consultant
Downing Teal

Background

I am currently employed as a consultant for Downing Teal in West Perth. Prior to this I was employed by Normandy Mining on the Golden Grove Joint Venture, Scuddles Mine Site, approximately 500 km north of Perth and 300 km east of Geraldton, as a Personal Assistant/Office Administrator to the Resident Manager. This position entailed various responsibilities, with a primary focus on the redesign, recruitment and establishment of a modern Occupational Health, Safety and Training Unit for the mine site. As the then Resident Manager, Mr Bruce Anderson and I were the primary instigators for implementing the OSPAT system, I will present the following paper on behalf of Golden Grove. The paper outlines the establishment of this particular type of tool as support to the Drug and Alcohol Policy and Guidelines.

I would like to take this opportunity to briefly outline the history of Golden Grove in terms of health and safety as a precursor to why the management of Golden Grove Joint Venture selected the OSPAT system.

In 1991 Normandy Mining had taken over ACM and subsequently the Golden Grove Joint Venture, which consisted of Normandy Mining, Exxon Coal and Minerals Australia and Aztec Mining. As part of the take-over and restructure, Mr Bruce Anderson was placed as Resident Manager in June 1992, and I was recruited in August 1992.

At that time the raw Lost Time Injury (LTI) rate was 36 for the period June 91 to June 92 (see Table 1), with two fatalities related to alcohol - a drowning and a road accident.

Table 1: Scuddles Mine: Lost Time Injury Rate, June 1991 to June 1992

The next 12 months saw a total site reorganisation, which involved the restructure of several key positions, duties and reporting responsibilities. Site wide policies, procedures and guidelines were also investigated.

The July 92 to June 93 raw LTI rate was 24 (see table 2), with the ongoing impact of carrying several long term workers compensation statistics which had not been resolved. This period saw aggressively pro-active assessment of all workers compensation cases, recurring injuries, safety training and reporting of accidents and near misses.

Table 2: Scuddles Mine: Lost Time Injury Rate, July 1992 to June 1993

Normandy, Exxon, Aztec and other non joint venture mine sites and companies were contacted to discuss their Occupational Health Unit practices. Safety, training, medical attention, policies and procedures relevant to the Occupational Health Unit/Safety Department were covered (including Personal Protective Equipment, Training, Mines Rescue Training, Inductions, Medical Attention and Reporting, Pre-Employment Medicals and Administration and Drug and Alcohol Policies).

The collation of this data resulted in the formulation of guidelines which were compatible with Normandy Mining policies as well as joint venture commitments and obligations regarding Health and Safety.

The June 93 to June 94 period saw the effects of the first stage restructure. A 'flatter' management team, with direct lines of instruction to the work force, significantly affected the raw LTI rate, which was reduced to 8 (see table 3). This also included the resolution of

several long term workers compensation cases.

During this period the Heads of Department, such as the Underground Mining Superintendent, and Concentrator (Process) Superintendent, by direction of the Resident Manager, were reviewing options of dealing with the hazards of alcohol and drugs in the workplace.

These discussions were held in conjunction with the Normandy Mining Group Safety Department in order to determine the available choices, such as urine sampling, blood sampling, breathalysing and any other industry recommendation. The frequency, time, location and suitability of the above mentioned options were also examined.

Table 3: Scuddles Mine: Lost Time Injury Rate, June 1993 to June 1994

Table 3 here

Discussions were undertaken with a company called OSPAT Pty Ltd who managed the OSPAT system. At that time the system was being tested at Mt Leyshon in Queensland by the contracting firm ELTIN's.

The Murchison Zinc Company P/L Drug and Alcohol policy and guidelines were passed to all Department Heads and supervisors for review and comments. The information was then assessed, and if appropriate, adopted. Some aspects of the policy and guidelines were accepted in a modified form.

At the conclusion of all discussions and proposed concepts, the Resident Manager decided the most appropriate support mechanism for the Drug and Alcohol policy and guidelines was to introduce an Employee Assisted Programme (EAP) for employees. "Random" breathalysing prior to commencement of work was also pro-actively introduced. In addition, the OSPAT system, which operated as a hand-eye co-ordination test, was to be completed prior to commencement of shift. All persons from the Resident Manager to the gardeners were to perform OSPAT at the commencement of their shift.

A trial period commenced in Sept/Oct 94, for three months. A solid education programme was undertaken for the whole work site, including contractors that came onto site. In addition, the Induction Programme had a significant section on the Drug and Alcohol policy, with clear and specific instructions on the OSPAT system.

The OSPAT system was supported during the initial period by the Resident Manager and

myself. At the end of the trial period and after confirmation of the start date, this task was passed to the newly established Occupational Health, Safety and Training Unit.

Brief Outline of OSPAT

OSPAT is the abbreviation for Occupational Safety Performance Assessment Technology.

OSPAT comprises computer technology to assess an individual's hand-eye co-ordination level. OSPAT P/L stated in their scientific support literature that this was an accepted and proven method of assessing fitness for work.

The individual being assessed uses a trackball to try and keep a moving cursor over the centre of a target. This is illustrated in Figure 1. An assessment takes less than one minute to complete. Each individual has their own performance record stored in an OSPAT database. When an assessment is completed, the result is compared to the average of their previous assessments. No knowledge of computers is required to perform an assessment successfully.

Figure 1: The OSPAT Performance Task

If the difference between the latest assessment and the average of their previous assessments is too great, OSPAT will warn the individual and alert the shift supervisor that the individual has performed significantly below their own established standard. Each person has just one opportunity prior to starting a shift to pass an assessment.

A poor assessment result is generally caused by the effects of illicit drugs, medication, alcohol, fatigue, stress, anxiety or illness. OSPAT does not detect the cause of a poor performance, but brings it to the attention of the individual and the supervisor.

The supervisor has a legal duty of care for workplace safety and must decide at that point whether or not the employee will work that shift. The law requires employers to maintain a healthy and safe work environment. Employees are required to take reasonable care to ensure their own safety and health at work and to avoid adversely affecting the safety or health of any other person.

Objective of OSPAT

OSPAT was used in conjunction with the breathalysing unit and continued site education on safety and training. There was a very strong commitment from senior management to support the tools and guidelines of the Drug and Alcohol policy.

It is important to emphasise the fact that OSPAT was used only as an additional tool in decision making regarding employee fitness to working in an environment that could result in injury to the employee or their co-workers.

At no time was the OSPAT system ever used as a “policing” mechanism for drunk or drugged “award workers”. The Drug and Alcohol policy and guidelines were designed for the whole work force, therefore the mechanisms employed were to contribute to safety by identifying those employees who could be a safety risk on any particular shift.

It is important to re-emphasise that any policy is only as good as the management team that support it, and any tool or mechanism is only as good as the support it receives from the management team.

Identifiable Concern Areas

1. Initially the adverse effect was from individuals OSPAT identified as continual problems. These people were resigning and leaving work before any form of EAP or counselling support could be offered. Those that remained and continued to have problems with OSPAT (based on a fear of failing - a high percentage of personally high achievers were prone to failing for a very short period during the initial establishment of individual norms). People that were unable to work under a targeted LTI rate of 0 also left.
2. Certain professional staff expressed concerns at having to perform OSPAT as they felt it was either demeaning to their image as professionals or that it perhaps showed a lack of confidence from management towards their work commitment or ethic.
3. Finally the interpretation of how the data collected could be used, and what form any disciplinary action would take under the Drug and Alcohol policy and guidelines were identified as areas of concern. There is in fact no disciplinary action for receiving a

caution - only further evaluation.

All these issues were dealt with by open discussions, one-on-one talks, further education on how the system worked, asking for support from personnel during the 12 month trial period to see if LTI's were affected, and by bringing the EAP contracted company to the mine site for employee support talks.

Again, it is worth highlighting that the acceptance of the OSPAT system was strongly dependent on the support of the senior management team participating every day prior to commencement of work in OSPAT, and following procedures, if a poor result was recorded by the system.

Clearly set out procedures were followed in the event of a poor performance. These involved completing an interview form and talking with the immediate supervisor. If the supervisor felt the employee was under the influence of alcohol they were sent to the OHU for breathalysing. If the employee was potentially under the influence of an illegal narcotic, further testing would be undertaken. An employee exhibiting signs of stress, fatigue or illness was required to report to the OHU for advice and attention.

Summary

For the period July 94 to June 95 the LTI rate was 10 (see Table 4). During the period January 95 to December 95 (which was the official OSPAT operational review period) the LTI rate was 3.

Table 4: Scuddles Mine: Lost Time Injury Rate, July 1994 to June 1995

During the OSPAT operational review period of 95, ongoing pro-active education and evaluation of safety, training and site wide discussions was conducted. This included breathalysing, OHU staff spending time in the workplaces and in some cases, working

alongside personnel to get a feel for potential hazard.

Conclusion

In conclusion, the selection of OSPAT as a safety tool was made on the basis of:

- **the site philosophy which was created by the Resident Manager at that time. Another mine site may not find OSPAT the safety tool suitable for them, due to cultural or philosophical circumstances. Such sites use ongoing breathalysing and random urine sampling as their preferred safety measure;**
- **the pursuit of 0 LTI;**
- **the goal of the senior management team of Murchison Zinc Company P/L and joint ventures, to identify those employees who could be a safety risk to themselves and possibly their co-workers on any particular shift.**

It was viewed that OSPAT would therefore help employers and employees whilst sending a clear message that safety is the responsibility of everyone.

MANAGING ALCOHOL AND OTHER DRUG RELATED PROBLEMS IN THE WORKPLACE

Nicol W H Ormonde, Senior Occupational Physician
Alcoa Australia

This paper is a guided historical tour, both idiosyncratic and holistic through some twenty years of concern for the effects of drugs, alcohol and tobacco on the lives of people at work. In so doing, the paper identifies the policies, processes, protocols and programs which may have lessened the impact of alcohol and other drugs on those with whom I have worked. These are my personal thoughts and feelings, though I would hope that not too many of my fellow employees will take exception to what I say. This, therefore, is one occupational physician's approach.

Moral, legal and scientific issues regarding drug testing are widely examined in the proceedings of this forum. I will briefly summarise my position on each, before describing the processes involved in the provision of a service that deals with the prevention, early identification and resolution of personal and work related problems. Such problems may impact adversely on employee well-being, job performance and productivity - particularly those problems associated with drugs, including alcohol and tobacco.

There are those who would use a moral stance to determine management response to drugs in the workplace. I believe there is no place for such morality, otherwise we would be debating right or wrong, not the provision of a safe work place which is mandated by law. Whether the legal obligation of management regarding safety includes drug and alcohol testing is arguable and will be debated elsewhere today. Recent statements by the Coroner, prominent lawyers and the providers of the required laboratory services would suggest that organisations which do not test may be unwise, if not delinquent. After today, this question may be more clear, allowing us to make a rational decision about the issue. While we can determine exposure to drugs by testing, the incidence of false positives and negatives for any one test requires a range of tests to be in place in order to be reasonably sure of exposure. Whether the substantial expense of testing, random or otherwise, can be justified when the consequences of the diagnosis are not certain must be considered.

However, the question is not whether or not to test expired air, urine, blood or whatever to determine exposure to an undesired chemical. Rather, the question is whether or not we can determine impairment of function which could put the individual, other workers or the work process at risk of harm. The risk could be due to a range of hazards, including drugs.

The onus of that decision rests with those who work with the affected person, both peer and supervisor. The decision is reached by observation and assessment, but only if those involved, commit themselves to the process. Having observed, peers or supervisors need to assess the situation and then act to prevent the affected person offering a hazard to himself, others and the operation.

The required observations are those of altered or changed behaviours and the assessments are those of psycho-motor function; that is, how the mind is functioning and how that function is being translated into motor skill, both gross and fine. The ability to observe and assess must be taught to all members of the workforce, but especially supervisors, by competent health professionals. This process requires a high degree of trust within the workforce generally and

close-knit crews in particular. Such trust can only be built on a foundation of knowledge and understanding of the problem - in fact common ownership.

I digress at this point to unreservedly recommend the recent publication from the WA Chamber of Minerals and Energy, "Alcohol and Drugs in the Workplace" written by Professor Steve Allsop, our keynote speaker today, and Roger Nicholas. It is excellent and discusses current issues, trends and practices and should be read by those contemplating the establishment of a Drug and Alcohol Program and by those about to review existing programs. The bases for decision making are there. It is a first stage towards acquiring the knowledge and understanding necessary to create a united workforce dedicated to the minimisation, if not the total elimination, of the effects of drugs and alcohol on the workforce and workplace.

I will retrace my own steps to the development of an Occupational Drug and Alcohol Program.

There is nothing new in societal concerns regarding psychoactive drugs and alcohol which have been part of man's experience since the earliest recorded history. The need to stimulate or depress one's mind would seem to be an essential accompaniment to hope and despair, success and disaster.

Nineteenth century Australian history, as in Britain, records many attempts by fiscal and non-criminal law to control opium, marijuana, cocaine and other drugs. The impact this had on work and family life was attested to by the various and usually religious societies that flourished at the time, dedicated to temperance and the betterment of society.

The real beginning of an organised approach to Occupational Drug and Alcohol Programs (ODAPs) came with the establishment of Australian Foundation on Alcoholism and Drug Dependence (AFADD) in 1967, closely followed by State organisations affiliated to the National body. The aim of AFADD was to foster education, training and early intervention.

The year 1976 saw the formation of the National Alcohol and Drug Dependence Industry Committee (NADDIC). It too had State branches committed to the occupational aspects of drugs and alcohol.

NADDIC sponsored two conferences on Occupational Drug and Alcohol Programs in 1978 and 1981. The creation of Industry Program Co-ordinators (IPCs) to market, implement and service such ODAP's was a considerable advance. Following the second conference a Blueprint for a National Strategy was developed from the collective experiences of the IPCs. The Blueprint reflected the concerns expressed by employers and employees in the areas of productivity, safety, absenteeism, job loss, family breakdown and personal health related to alcohol and other drug use.

The rationale of the National Strategy was that people dependent on drugs or alcohol could be treated through bipartisan, union/management supported programs of intervention. Such programs sought to overcome early denial and refusal to act by education. The programs challenged the passive role of employees who turned a blind eye to the problem and also management who responded to drug and alcohol related problems with dismissal.

I feel there is now a tendency to forget much of the learned process and also a wish to use drug testing without an ODAP to eliminate problems from the workplace. Without a broad

approach, I believe drug and alcohol testing would fail.

Effective supervision by management and peers is the key to success. Unless education in the recognition of unacceptable behaviours is a pre-requisite to referral to treatment facilities, failure is probable. Such referrals require no diagnosis, no labelling of behaviour as drug induced, only the recognition that such behaviours need management.

Implementation begins with the management/union commitment to the clearly defined policy and program. This involves the provision, either internal or external, of referral, assessment and treatment facilities. It includes training of all personnel, including unions, managers, program co-ordinators and medical and other professionals. Personnel must be conversant with the statement of policy, the operating procedures of the program and the nature and function of the prescribed referral process. They also need to know the roles of those associated with the program

The education program would include data concerning the epidemiology of alcohol and other drug use and abuse, the provision of relevant pamphlets and teaching material on the specific drugs of concern, newsletter articles and crew briefing sessions - all on a recurring basis.

Overall evaluation of any program is only as good as the periodic evaluations which allow the program to develop and mature. Such evaluations should report the nature of the problem and the distribution of the cases between alcohol and the various drugs. Where the program is a component of a broader Employee Assistance Program (EAP), as I believe it should be, the distribution of other causes of family and work breakdown (for example, financial, legal, marital, psychological, etc.) should also be assessed. An analysis of referral source (self, supervisor, Human Resources or Occupational Health professional) would be an important indicator of the success of the program.

Following ODAP II in 1981, John Bowyer and myself embarked on a program of education, training and familiarisation with the blueprint principles of ODAP and by 1983 we had achieved an Assistance Program for Drug and Alcohol related problems within the wider Employee Assistance Program.

The technological advances which today make drug testing a reality prompted a review of the program which has constantly evolved over the last decade. By the early 1990's our overseas associates had accepted Australian initiatives and this resulted in world wide standards for EAPs within Alcoa. From these Alcoa of Australia developed a new standards and guidelines for implementation within Australia.

We are encouraging the debate on drug testing among all sectors of the workforce. A particularly committed and involved group from all sections of the workforce at our Willowdale mine site is acting as a pilot study. They are gathering and disseminating information to allow rational debate. Their most recent initiative was to consider the possibility of undertaking a workplace survey by an independent and confidential organisation to obtain a measure of the problem, both real and perceived. From this we hope to establish the place for drug testing in our program. Specifically, it will evaluate the deterrent value of pre-employment testing, the way in which testing should be used in rehabilitation and debate as to whether random drug testing the workforce at large is of any value.

I would paraphrase the wisdom of a former Kwinana manager who said:

"To solve the problem requires application from us all, but bear in mind that before solving the problem we must establish whether a problem exists and then define all the possible alternatives for solution. By so doing we will determine whether we have a real problem or just a perceived problem. The latter is susceptible to solution by education alone. The other, if real, is susceptible to identified intervention strategies."

It is a never static, always changing situation which could involve drug testing of sections of the workforce. The reasons for the use of drug testing in the management of individual problems may be clearer than the arguments for random testing. Whilst arguments for random testing are not fully understood by all sections of the workforce and random testing is not accepted by that workforce, such an approach may not achieve any improvement in workplace safety, only satisfy legal and moral obligations.

DRUG TESTING IN THE WORKPLACE - ISSUES FOR OCCUPATIONAL HEALTH PRACTITIONERS

Peter Connaughton
Occupational Physician

Introduction

Many working environments which I visit as part of my role as an Occupational Physician require a combination of team work, concentration and quick reflexes - and they are certainly not places to work, if adversely affected by alcohol or drugs.

One of the earliest recorded cases of drug dependence in the work place relates to the famous surgeon, William Halstead, who helped to establish the Johns Hopkins Medical School in the United States. The anaesthetic properties of cocaine were discovered in 1884, and Halstead and two assistants subsequently experimented on themselves. His two assistants died as a result of cocaine dependence, and it took many years for Halstead to overcome his addiction.

In my role as an Occupational Physician I regularly see the affects of accidents and injuries in the work place which result from impairment due to various causes, including alcohol and drugs.

Prevalence

It is acknowledged that alcohol and drug abuse is an issue in society in general, and at work. We are all familiar with people who have alcohol problems and it is important that an "us and them" attitude is not fostered - because the people affected may be work mates, employees, bosses or family members.

- 7% of the working population are problem drinkers
- 25-40% of heroin addicts are employed
- Studies show that cannabis has been used by 8% of 25-39 year olds in the preceding month and at some time by 51% of 17-34 year olds.

The patients with whom I have come in contact, who are either registered or non-registered drug addicts, have all been employed.

Alcohol and Drug Policy

It is essential that employers develop appropriate policies for alcohol and drug use. It is the responsibility of Occupational Physicians to promote health and safety at work, and medical input to development of policies is essential, because this is partly a medical issue. Advice is necessary on procedures for managing employees with alcohol and drug dependence. The important concepts of ethics and confidentiality need to be discussed with employers - and I have significant concerns about organisations which are running alcohol and drug testing programs without medical assistance or advice.

The company policy reflects the general philosophy of the organisation, the values of the

company and the value of the employee. The policy determines the manner in which employees are treated, in relation to a complex problem. Both employers and employees have a duty of care to take appropriate steps to address the issue. If nothing is done, then preventable accidents will continue to occur. An example I am aware of involved an employee with a major crush injuries to both legs, who had been known to have a long-standing alcohol problem. Arranging for medical assessment of blood alcohol level after the accident was too late, as intervention should have occurred far earlier.

Practical Issues

The need for an alcohol and drug policy is therefore clear. However, there are a number of practical problems which need to be overcome if an employer is considering drug testing. Whilst this may seem to be an easy task it is often fraught with problems.

I am not aware of the view of the Equal Opportunities Commission in regard to pre-employment drug testing. For on-site screening, decisions need to be made as to who collects the samples, who receives the results, and who assesses them. The potential difficulties of drug testing may be illustrated by the following example. A man required to complete a pre-employment assessment, initially tested positive for amphetamines. The following day he was positive for cannabis, but negative for amphetamines. It subsequently transpired that the applicant had initially concealed a sample of his son's urine for the first test, but had forgotten that his son was on medication for ADD! The second sample was more closely witnessed, and correctly indicated that the applicant had been using cannabis.

Interpretation of results, particularly in relation to prescription medications and unexpected results can be especially difficult and require medical input. For example, truck drivers and plant operators may be taking amphetamines, but report they are taking medication for their sinuses. Similarly if an employee is addicted to benzodiazepines, he may simply report that he has taken a sleeping tablet. If a urine test is positive for opiates, and the employee reports having taken Panadeine Forte, then the question needs to be asked whether he is safe for work if his pain levels require such medications. I do not feel that these sorts of issues can be adequately dealt with by non-medical staff. It is vital to consider issues such as informed consent, ethics and confidentiality prior to a drug screening program.

The important effects of non-prescription drugs are often overlooked, and we should not lose sight of the major adverse health effects of cigarettes and alcohol.

The Validity of Drug Testing

The criteria for any test is that it should be objective, repeatable, accurate and valid. The important issue of false positive and false negative results has been discussed in detail in other papers today, and I shall therefore not repeat that information.

Validity of testing is one of the most important aspects of my presentation today. I propose that urinary drug testing in work places is not a valid form of assessment because it measures exposure to drugs, and not impairment of function. The employer has every justification to assess whether an employee is impaired either in terms of safety or ability to perform his job. The employer does not have a policing role and, regardless of that, the presence of drugs in the urine is not an offence under the law.

The important principles of evidence-based medicine must be applied. There should be scientific evidence confirming that the presence of drugs in urine can be related to safety impairment and accidents. This topic has been discussed in detail by Professor Steve Allsop, and we have heard already about the lack of scientific evidence and studies in that area.

Delayed excretion, particularly of THC metabolite, means that there is a variable period of time during which the urine sample will be positive, but when the employees safety will not be impaired. I therefore propose that there is a major fault, both in terms of logic and scientific evidence, to use the presence of THC metabolite in urine as any measure of safety

impairment. It would appear that, either consciously or subconsciously, this form of testing is accepted as a measure of impairment because use or possession is illegal. However, as previously indicated, the employer's role does not extend to law enforcement. The responsibility is to assess safety impairment, and urinary THC metabolite readings clearly cannot reliably or validly perform that function.

By way of example, if an employee drove a vehicle over the speed limit - then it would be correct to say that was an unsafe and illegal activity. If, however, it did not occur during working hours, and it was not a work vehicle - then it would seem illogical that the employer would have any obligation or right to take action against the employee.

Another major shortcoming of urinary drug testing is that it cannot begin to address other possible causes of safety impairment at work, which are probably more common. Employees may be impaired as a result of having a migraine, the after effects of a hangover, other medical conditions such as depression or early schizophrenia, or social issues such as a recent marital break-up. If impairment as a result of these sorts of common problems is not addressed, then that whole area which would benefit from assessment is being ignored or overlooked.

Computer based methods for monitoring hand/eye co-ordination which have been discussed at today's seminar appear to show promise. However, the same scientific standards must be applied to any testing method - in that it must be objective, repeatable, accurate and valid. I therefore feel that such technologies need to be validated by appropriate scientific research.

In Summary

- Alcohol and drug abuse is a social issue which must be addressed both by the community and in the work place.
- There are significant practical issues and obstacles to drug testing in the work place.
- I propose that urinary drug testing is not a valid method of assessing safety impairment in the work place.

The challenge for the future is to develop, research and validate a method of assessing safety impairment, regardless of the cause of that impairment.

LEGAL PRACTICALITIES ASSOCIATED WITH DRUG TESTING

**Leon Levine, Senior Associate
Parker & Parker, Barristers, Solicitors and Notaries**

General Liability of Employers

Under the general law an employer has a duty to take reasonable care to avoid exposing its employees to foreseeable injury. There is also a statutory duty upon employers to provide and maintain workplaces which are free from hazards. The use of drugs and alcohol constitute a significant risk factor for injury in the workplace, and an employer ought, for this reason, to consider having an alcohol and drug policy in place, and testing its employees for drug and alcohol use.

The Right to Assess Whether an Employee is in a Fit Condition to Work

An employer is entitled to make an assessment as to whether an employee is fit to work, either because of drug usage, alcohol consumption, or for any other reason. If the employer makes the assessment that the employee is not fit it can, and should, prevent the employee from working and in certain cases, may dismiss the employee.

The assessment of an employees' condition need not necessarily be done by way of breath, blood or urine testing. It can also be done by way of observation of the employee. Obviously it is preferable for the assessment to be done by more scientific means, but that does not mean to say that an employer cannot, in circumstances where testing equipment is not immediately available, make an assessment by observing the employee and taking whatever steps are appropriate to prevent the employee from working.

The Introduction of Alcohol and Drug Testing/Searches

Generally, an employer does not have an express contractual right to subject employees (or contractors) to alcohol and drug tests, or to search their property for these substances. However, there is no bar to incorporating these rights as an express term of the contract of employment. An employee who has expressly consented, but subsequently refuses, to comply with a test or search procedure will be in breach of his or her employment contract. The employer may then be entitled to treat such breach as repudiation of the contract and to terminate the employee's services. Whether the termination of an employee's services for that reason would be unfair is a matter for assessment, taking into consideration all the circumstances of the case. However, if both the reasons for the employer having such a policy and the consequences of breach of that policy have been brought to the employee's attention, it is unlikely that the dismissal will be found to be unfair on that ground alone.

The situation will be different for employees who do not have such a term in their contracts, and who do not consent to being tested/searched. An employer, if it wishes to conduct testing/searches, must then either say that it is an implied term of the contract that entitles it to do so, or rely on statutory provision which impose on employees the duty to co-operate with an employer which is carrying out its obligations to ensure a safe workplace (Mines, Safety and Inspection Act 1994 (WA)).

The implication of such terms in a contract is not without difficulty, although the courts do

recognise that an employee has an implied duty to carry out all lawful and reasonable commands of the employer. A court may very well find that it is reasonable and lawful instruction to require of an employee, as an implied term of contract, that he/she submit to testing and searches in appropriate circumstances.

Obviously, however, the better option is to obtain the employees' consent to being tested and searched and, thereby, eliminate the need to have recourse to an implied term of the contract.

A term in a contract should, in any event, state specifically why the testing/searches are required, and should set out exactly what the employer is entitled to do, and what the employee may be obliged to submit to.

The Requirement of Informed Consent

Whether or not an express contractual term exists, or whether such a term is implied in the contract, an employee's informed consent is required before testing proceeds. An informed consent is one given without artifice or deception as to the purpose for which the sample is required. An employee has personal rights and liberties, and a contravention of these rights may result in actions for the criminal offences of assault, battery or false imprisonment or the civil tort of trespass to the person. The only exceptions are those expressly bestowed on certain authorities by legislation. Obviously, then, testing/searches should not be used for any purpose other than to ensure that employees are, and will not be, affected by alcohol and drugs whilst performing their duties.

Objections to Alcohol and Drug Testing

Employees' objections to such testing principally centre on:

- The accuracy of testing;
- The competence of laboratory staff;
- Security of handling and transport (chain of custody) procedures;
- Access to independent evaluation if results are disputed;
- Privacy issues;
- Confidentiality issues;
- Timing and frequency of testing.

All but the last three of these issues can be dealt with in a well-constructed and well-administered alcohol and drug policy, which takes a problem-solving rather than punitive approach. Such policies should make provision for testing by trained personnel, confirmatory testing for any sample testing positive, use of a laboratory that meets the requirements of the National Association of Testing Agencies (Australia) (or certified for employee drug testing where such certification exists), sensitivity to privacy issues in the testing process, and a maintenance of complete confidentiality as to results.

In general, for a number of reasons, testing for alcohol abuse is more acceptable to employees than testing for drug abuse. The main reason for this is that testing for alcohol can be undertaken by a breath test which is a non-invasive method, with minimal disturbance to an individual's privacy and dignity.

By contrast, testing for drugs by urine analysis or blood testing is less acceptable. Urine testing, although not physically invasive, involves a certain loss of privacy and dignity. Blood testing is physically invasive, requires skilled personnel and is expensive.

In addition, drug testing may pick up the use of illegal and prescription drugs. If the results of such a test are taken into account in any way by an employer, it may give an employee grounds for alleging discrimination against him or her on the basis of disability or impairment.

Testing for illegal drugs is also unavoidably connected with criminal law issues. Employers may be less likely to employ or retain drug users, on the basis that if these employees choose to break the law, then they are less likely to be honest and reliable than persons who obey the law

in this respect. The issue may also arise as to whether or not the employer should report the use of illegal drugs to the authorities.

In its broader social context, drug testing in the workplace raises a plethora of questions in relation to civil liberties and privacy. This testing involves a balancing act between the public interest involved in providing a safe workplace, and the individual interest in privacy. Privacy may well be breached by workplace drug testing, but it is notable that the Privacy Committee of New South Wales has concluded that “workplace safety is a concern of such importance that, in limited circumstances, drug testing for safety reasons may be justified.”

Positive Alcohol and Drug Tests

What can an employer do if a Drug or Alcohol Test is carried out and the result is positive, or if a search reveals that an employee has drugs in his or her possession?

Realistically, most employers who have a drug and alcohol policy would want the option of terminating employees found to be in breach of the policy. An employer will not, however, even if it has such a policy, be able to terminate an employee's services under all circumstances. In practice, the answer will vary from case to case. An example is the case of *Estee Lauder Pty Ltd v George*. In this case, a forklift driver was dismissed for breach of his employer's drug and alcohol policy. This policy stated that breach of its provision could lead to termination of employment, but also offered employees confidential counselling and rehabilitation. In this case, the Industrial Relations Commission, although it commended the employer for the stand it has taken against substance abuse, took the view that because the employee had 8 years' service and a good work record, that only a small quantity of marijuana had been found and the search procedures had been irregular, that dismissal was not an appropriate response. It said that the dismissal of the employee was contrary to the spirit of the rehabilitation program set out in the employer's policy.

Contrast this, however, with the case of *Kay v Cargill Foods*. Here the employer was an abattoir, and had a drug and alcohol policy. Although the employee knew of the policy, he breached it by reporting for work after having smoked marijuana. He tested positive, and was dismissed. The Court upheld the decision to terminate, stressing the importance of the employer being able to insist on the maintenance of a safe working environment.

Conclusion

There is no doubt that alcohol and drug testing of individuals raises questions concerning their civil liberties. However, where safety is an issue then it falls to balance the interests of the community against those of the individual. The public has generally accepted a restriction on civil liberty by the introduction of random breath testing in the interests of maintaining a safe network of roads. A study of alcohol and drug testing in the workplace by Workwell and Curtin University of Technology cited a report showing that 85% of the Australian community strongly approves of employees in jobs with public safety and health responsibilities, such as drivers, pilots and doctors, being tested.

Courts and tribunals have recognised that employers have obligations not only to individual employees but to the whole of their workforce. Where individuals are not prepared to take responsibility for substance abuse problems then the employer must do so if it is to avoid liability for those hazards. Alcohol and drug testing is one way in which employers are entitled to minimise those risks.

Under both the general and statutory law, employers are required to take steps to remove employees from the workplace who would otherwise constitute an unnecessary risk of injury or a hazard to themselves or to others. Employers are obliged to take action if made aware of a possible risk of injury. The result is that even without an alcohol and drug policy causal testing may be necessary to establish whether a hazard exists. There is nothing new about substance abuse, but there is increasing evidence that employers have a part to play in the minimisation of the risks and the education of the workforce. The lack of an operational alcohol and drug

policy may be evidence of negligence on the part of an employer. This will become increasingly likely as more companies move to implement such policies.

Because of the relative novelty of these policies in Australia there is as yet little case law to guide their operation. What there is, suggests that employees must be familiar with the policy in order to give their informed consent to its full implementation. Generally the courts view preventative measures for safety purposes sympathetically. In *Albany International Pty Ltd v. Amalgamated Footwear and Textile Workers Union*, in relation to the imposition of a non-smoking policy, the Australian Industrial Relation Commission went so far as to comment that those workers who were smokers “may well have to consider as to whether they continue to pursue their livelihood with the company in view of its policy related to smoking”.

It is likely, given the fact that safety in the workplace has become an extremely important issue, that the individual interests of the employees to maintain their privacy will increasingly become subordinate to the public interest of ensuring safe workplaces.

FORUM SUMMARY

**Steve Allsop, Director
National Centre for Education and Training on Addiction**

It has been a pleasure to be a part of this forum. That some 200 people have participated in a full day's workshop is a measure of the concern about potential and actual drug problems in the workplace. The success of the forum is testament to the efforts of the organisers, and I think they should be acknowledged for this effort. The National Centre for Prevention of Drug Abuse, the Alcohol Advisory Council, INDRAD Services, IFAP and Parker and Parker have managed an excellent program.

I believe that the Chamber of Mines and Energy of Western Australia should also be congratulated for their involvement in this issue. They have endeavoured to ensure that any responses to alcohol and other drug problems in the workplace are developed in a context of informed decision making - and in this regard they have embarked on a number of effective strategies.

I also acknowledge the comments made by one of the participants from the Pilbara. I agree that drug use and related harm is not just an issue for employers and employees, it is an issue that demands responses from health and community services and, importantly, leadership from government. Alcohol and other drug problems are a major concern to the Australian community, and, quite clearly this translates to concern within Australian workplaces.

I believe that Griffith Edwards, a clinician and researcher, provides an important guide to our efforts to respond to alcohol and other drug problems in any setting, including the workplace. It is not uncommon in preventive effort to ignore the environmental context. Prevention attempted in this manner ignores the forces that might facilitate effective action and those which may act as barriers. The likely outcome of such action is likely to be frustration and wasted effort. While we may have concerns about alcohol and other drug problems, many of our colleagues, many workplaces and many in government and the broad community do not share our concern. Edwards has advised that we cannot impose preventive action. We must be prepared to consult, to listen and to explain. Prevention must be an invitation to change, rather than an edict, and the invitation to change will be accepted only if it is sensible.

To summarise the presentations and debate: What have we heard?

We have observed a very limited knowledge of the impact of alcohol and other drug use in the workplace. Both Richard Midford and Martin Ralph noted that while there is some information on the impact of alcohol on work practices, there is a dearth of information on other drugs. If we are to develop effective strategies, we must improve our knowledge base. Martin observed that there are a broad range of drug using patterns that may well require a broad range of responses.

Tony Cooke and Anne Bellamy noted the critical importance of responding to alcohol and other drug problems in the same manner that we respond to any workplace hazard, with a system consistent with good management principles, consistent with good occupational health and safety procedures, and a system that involves joint and consultative approaches.

A number of speakers and participants indicated the right to be safe, and indeed the law

demands this. We do need methodologies to assess and respond to hazard, including drug related hazards in the workplace. However, a number of speakers indicated that drug testing, particularly urine testing, is not such a method. Several speakers noted that there is a need to assess capacity to conduct work safely (one hopes that this will include assessment of the environment) - drug testing falls short of this simple demand. It is appropriate, indeed it is essential, that we are able to identify and assess hazard. Drug testing has not demonstrated an ability to do this.

Whatever action participants embrace, it should be informed and considered. In the afternoon, we heard from Tony Baker, who described the experiences in one company. He described the advantages and disadvantages of drug testing and provided some examples of practical difficulties not alluded to in most text books. He concluded that the advantages were outweighed by the disadvantages and observed that the future lay not with drug testing, but testing capacity. Tony Baker and Peter Conaughton endorsed the view that such methodologies were likely to be the preferred option in the future. Adele Bintly described one such strategy and provided examples of the kinds of results one could expect from the methodology. Nic Ormonde described the Accord developed and implemented in his company. Again he noted that the focus of any action should be on whether or not we can determine level and capacity of function.

Leon Levine, unfortunately, experienced the fallibilities of technology as the computer broke down and limited our access to his images, but once the technical fault was overcome, he identified procedures that we must comply with to remain within the spirit and letter of the law. We must ensure that we clarify and communicate the purpose of any procedures, including drug testing, and the parameters within which our procedures and strategies will operate. If one does not take these simple but critical steps, severe consequences can be anticipated. Whatever methodology or strategy is employed, there must be consistent and universal application.

Mike Phillips pointed out the high costs and loss of benefits of what he so eloquently described as “taking the piss”. The example he provided did not suggest any substantial economic gain from a testing program, and indeed he noted a number of quite significant costs. The costs of drug testing should be considered in light of the fact that there are a wide range of alternatives to drug testing. John Scotland introduced participants to the wide range of options, including those offered by his agency.

All the speakers gave an indication of concern about potential and actual alcohol and other drug related problems in the workplace. However, the nature of the problem has generally been poorly described. We need answers to the following questions.

- What is the level and nature of drug related harm in the workplace?
- What are the full range of potential responses? (We should avoid the search for a single magic bullet, no matter how well marketed).
- Are we looking in the right places for solutions?

At the end of the day, we are left with a number of the needs we must satisfy if we are to usefully deal with workplace safety.

- We need objective measures of workplace hazard.
- We need reliable measures.
- We need valid measures.
- We need measures that stand up to legal and scientific scrutiny and are consistent with Natural Justice.

I have argued that drug testing does not stand up to such demands. Advances in technology and good preventive sense tell us that we should focus on impairment and hazard, not simply try and guess why someone became impaired.

Thank you for the opportunity to speak today. I hope that whatever decision you make, to embrace drug testing or not, to alter or discontinue your existing program, you make a more informed decision - I believe that today will help achieve that end.