# THE NATIONAL DRUG STRATEGY: THE FIRST 10 YEARS AND BEYOND

## Proceedings from the Eighth National Drug and Alcohol Research Centre Annual Symposium, November 1995

**Paul Dillon [Ed]**

**NDARC Monograph No. 27**

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# THE NATIONAL DRUG STRATEGY: THE FIRST TEN YEARS AND BEYOND

**Proceedings from the Eighth National Drug and Alcohol Research Centre Annual Symposium**

held at the Landmark Hotel, Potts Point
November 1995

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# PREFACE

**Paul Dillon**

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In April 1985, following a special Premier's Conference on drugs, the National Campaign Against Drug Abuse (NCADA) was established. NCADA aimed to provide a national framework for minimising the harmful consequences of drug use, actively encouraging liaison across all jurisdictions. A major strength of the campaign was that it provided a basis for consultation and cooperation among health, education and law enforcement agencies. Following two reviews in 1988 and 1991 the Campaign evolved into the National Drug Strategy (NDS).

The strategy document described aims, principles and strategies for work in each of four main areas:

Education and training
Treatment and rehabilitation
Research and information
Controls and enforcement

It is now ten years since the launch of NCADA. To commemorate this anniversary, the National Drug and Alcohol Research Centre (NDARC) in conjunction with the Commonwealth Department of Human Services and Health decided that the 1995 NDARC Annual Symposium should focus on the achievements of NCADA and reflect on the impact this revolutionary campaign has had. The symposium was therefore called ***National Drug Strategy: The First Ten Years and Beyond***.

The two day symposium was held at the Landmark Hotel at Potts Point and invited a variety of speakers from around Australia to reflect on what we have learnt over the past ten years.

The symposium was opened by keynote speakers Professor Jim Rankin, Acting Director of the Drug and Alcohol Directorate and Professor Ian Webster Director of the Division of Public Health, South Western Area Health Service, who gave an overview of the last ten years under the National Campaign and briefly looked towards the future. Following on from this introduction, the two day program was broken up into 10 sessions, each one examining a particular area of the National Drug Strategy. These sessions included the following areas: patterns of drug use, drug-related problems, intensive treatment and intervention and contribution of research to policy.

This monograph contains twenty seven of the papers presented at the Eighth NDARC Annual Symposium, held on November 23-24, 1995.

The papers are presented as provided by the authors. Details of the affiliation of each author are provided and we suggest they be contacted for further information.

# NCADA & NDS -
# LOOKING FORWARD WHILE LOOKING BACK

**Ian Webster**

Professor of Public Health
Director of the Division of Public Health
South Western Area Health Service

I have been privileged to be involved from the start of the National Campaign Against Drug Abuse and the National Drug Strategy (NCADA/NDS).

Watching these developments and the interaction with government, the health system and the community, forms the perspective of my address today.

## The need to do something!

In Kings Cross and the universities young people let their hair down, as Jesus Christ Superstar played in the Capitol Theatre. There was flower power and pot smoking and the Vietnam War. There were R and R men in the Cross. New and disturbing experiences for our community at the time.

These events and the young people involved were threatening to the older generation, yet these young people were acting out the fantasies of freedom and non-conformity which their parents held.

Ted Noffs started the Wayside Chapel and the drug referral centres and proclaimed his idea that the "polluters should pay".

It was fertile ground for aspiring politicians and police inspectors as they convinced the media there was a crisis in our midst, and that society faced its Armageddon.

I wrote in that time:

"....there is a feeling abroad that the drug problem is undermining our society: threatening the future of young people, escalating drug and organised crime and corrupting our social institutions of law and order and politics. How sensible that perception is, and whether and how we should respond are crucial questions which need to be answered[1]."

Between 1970 and 1980 there were a myriad of government inquiries, mainly judicial, mainly concerned with law and enforcement. They got nowhere, except they had to admit that demand reduction was the way drug problems had to be tackled[2-6].

## Calls for a National Institute

In the same period, there were calls for a national institute. As I recall, the existence of the Addiction Research Centre in Canada, a similar institute in London and the National Institute of Alcohol and Addictions in the US stimulated these ideas.

The Alcohol and Drug Foundation of Australia made several submissions for such an institute to Ministers for Health.

## Drug Summit

As drug abuse reached politicians through their families, the new Hawke Government held a Drug Summit on April 2nd 1985[1]. This Summit followed a successful Economic Summit. On this occasion the Prime Minister and Premiers met to deal with a national social crisis.

## Drugs in Australia: National Action

Prior to the Summit a workshop was called by Dr Neal Blewett, Minister for Health and organised through the Alcohol and Drug Foundation of Australia. The Drugs in Australia: National Action Workshop provided recommendations, guidelines and documentation for the Premiers and Prime Minister.

The dye was cast.

The workshop recommended:

*The objective of a national drug policy on drug use should be to minimise the harmful consequences of the use of drugs to individuals, their families, and the community as a whole including the needs of special groups. Therefore a national, comprehensive approach will be required*[1].

Herein lay the principles upon which the whole alcohol and other drug field and governments have worked ever since!

The Ministerial Council on Drug Strategy was established; and the National Campaign Against Drug Abuse was born - known today as the National Drug Strategy.

I can recall the media clips of Mr Hawke announcing increased funding for customs and police intelligence, and Mr Wran, describing how phone tapping would catch the drug traffickers.

It is credit to all concerned, and especially to the officials of state and territory governments, that Australia's drug reform did not go that way.

One submission came from the Australian Medical and Professional Society on Alcohol and other Drugs (AMPSAD) for the establishment of a national institute. This was another step which led to the national centres in Sydney and in Perth.

## The "Campaign"

In the flurry of the media campaign - the Drug Offensive, the fact that there were four principal initiative areas in NCADA, was easily missed. These were:

- ··education,
- treatment and rehabilitation,
- research and information and
- controls and law enforcement.

I imagine today's symposium will reflect especially on the contribution made by research and information.

## Significance of the government and community response

Out of this process an important consensus emerged and has been confirmed since:

- Governments have a responsibility to address alcohol and other drug issues,
- An integrated and comprehensive approach is best,
- The major focus on causes,
- Equitable access to be ensured,
- Concentration on 'at risk' groups,
- Concentration of resources on effective interventions, and
- Policy informed by research.

## Achievements

The national campaign has been closely scrutinised. It has been subject to formal external evaluation. The evaluations by the First and Second Task Forces were positive. The first led to a refocus on the needs of special population groups, and the second, to the National Drug Strategy.

In the second evaluation the achievements were noted to be:

- National commitment
- High profile
- Inclusion of all drugs
- The objective of harm reduction
- International recognition, and,
- Outcomes - measured in reduced consumption and harm.

## Public health

NCADA has been, and still is, a most effective public health program. It is equivalent to the tuberculosis campaign of 50s and 60s in which the Commonwealth took the leadership role and funded case finding and treatment programs in all the states; it is equivalent to other public health initiatives such as the immunisation programs.
When you consider the complexity of the issues and tasks, the competing attitudes, it is

remarkable that so much has been achieved. Much of the credit must go to politicians such as Neal Blewett and Health Ministers in some states. In NSW the AIDS epidemic made a special call on political leadership and their response has been much to their credit.

## "Real politics"

Drug policy is decided in the cauldron of law and order and in the context of public ambivalence about drug users.

Cast such elements into the less humanitarian political environment of the past decade, and it is a wonder that any progress has been made at all.

Social policy has taken a 'U turn' from universalism and inequality, towards the 19th century values of the deserving poor and charity. In the drug and alcohol field this means a shift from needs based services to the tick box mentality of eligibility criteria and proof of eligibility. The disadvantaged are targeted for the scarce dollar and are trapped there with the clients of drug and alcohol programs.

Governments want the best value for money. In the drug and alcohol field this means that funds will be allocated preferentially to cost effective programmes[7]. Those activities which deal with complex, multiple and less tangible problems will be discarded to other systems - welfare and charity. The resources will go to the providers and recipients of effective, efficient and tangible treatments.

That too, is what happened to public health at the turn of this century - prevention and the needs of the poor became marginal services.

Despite these arcane forces NCADA/NDS has been a progressive social innovation; but the NDS will have a hard time from now on.

## Research

There have been a number of recent reviews of science and development, for example, of the NH and MRC, the Prime Minister's Science and Engineering Council, the Industry Commission and the Australian Science and Technology Council.

The NSW Department of Health in reviewing science and technology has posed the questions:

- What needs to be done?
- What can be done?
- How do these questions align with the skills and interests of researchers?

In the drug strategy of the last decade, these are precisely the questions which we have been asking. The two national centres and other centres have confronted these questions from their inception and on a daily basis.

The NSW Department's document recommended:

*Research organisations funded by the NSW Health Department should be encouraged to develop, and apply and evaluate innovative methods of communicating research findings to promote implementation of research results*[8].

The second evaluation of NCADA (1992) consulted widely on research with people outside the research community, and with people involved in research.

The Task Force was impressed with the research effort in the first six years of NCADA. It said there was "a greater range of researchers working on alcohol and other drug issues in specialist as well as mainstream government and academic settings[9]."

It noted "....research has contributed to a more rational approach to harm measurement, a challenge to established beliefs about alcohol and other drug use, and to increased credibility of NCADA's policies and programs[9]."

It was clear then, that the dedicated research funding through RIDDAC and the work of the two national centres had made an enormous difference.

Just as in health now, there were continuing questions about the incorporation of research into policy and practice.

It is not for me to comment on this further, as it is likely to be discussed throughout today's conference.

## Leadership

The drug and alcohol field has led public health in Australia. It has addressed outcomes well before this became fashionable in health. It asked questions about evidence based practice from the inception of these initiatives again ahead of the rest of the field. The national centres have specifically addressed this issue.

The National Drug Strategy is truly a public health program.

Of all public programs, NDS is truly multisectoral. It involves health, education, the media, law, law enforcement, housing, consumer agencies, welfare, work practices, representatives of ethnic and Aboriginal communities and many other community groups and interests. It is, and has been, an outstanding public health program.

The more progressive aspects have been driven by the encounter with HIV infection; by social research which shows that the effects of all drugs in health and crime are ubiquitous; and, by demonstrating that front-line doctors and nurses can intervene effectively.

Which leaves a conundrum. Why do none of the national goals and targets or priority health directions address substance use and abuse to any extent? These behaviours are principal causes and complicating factors in the cancers, heart disease, injury and mental disturbances and in the needs of the Aboriginal peoples which form the priorities for goals and targets.

Is it because the drug and alcohol field has been so successful that drug and alcohol issues are not included?

Or, is it more sinister, that these problems are too existential, too confronting, or the people affected are and more culpable than the people whose behaviours contribute to other disease states?

## The Challenge

In sum, a great deal has been achieved through NCADA/NDS. But there are now risks; risks that the field will again be marginalised. This can be seen as the community reacts - with the help of the media - to needle and syringe exchange programs, methadone programs and other alternatives. There are risks from law and order - with its regression towards retribution. There are risks from economic fundamentalism.

There is a risk which we can influence, and that is the public health agenda. Will this agenda continue to centre on alcohol and other drug problems, or will it continue to be diverted to clean politically correct health issues?

Will there ever be the day, that the TV screen will show the benefits of needle syringe exchange programs, or of positive outcomes for drug treatment?

I think that this central position can be occupied by the people here.

It will be through stressing the underlying social causes, the social justice issues and the powerful effects of social and economic policy - for example, unemployment and taxation - on harmful and addictive substance use. It is with this type of advocacy that alcohol and other drug problems will be honestly engaged by political and social processes.

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# DRUGS, DEATH AND HUMAN MISERY: WHAT HAVE WE LEARNED DURING THE NATIONAL CAMPAIGN ABOUT DRUG-RELATED MORBIDITY AND MORTALITY?

**Wayne Hall**

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In the course of the ten years of the National Campaign Against Drug Abuse (NCADA) we have learned a great deal about the contributions that alcohol, cigarette smoking and illicit drug use make to premature mortality and treated morbidity in Australia. This has been largely due to two consultancies commissioned by the Drugs of Dependence Branch of the Commonwealth Department of Health[1,2]. This paper outlines what these studies have shown, concentrating on the more recent of the two because it substantially improves upon the methods of the earlier one.

The most recent analysis[2] provides an important approximate accounting of the harm to health caused by alcohol, tobacco and illicit drug use as assessed by premature mortality, life years lost, and treated morbidity (as reflected in hospital episodes and hospital bed days). It is very carefully done, adopts a critical approach to the interpretation of epidemiological data, and shows that its authors have been responsive to criticisms of the earlier analysis[1].

## Logic of the Approach

The logic of English, Holman et al's approach is conceptually straightforward. Drug use is assumed to be usually a component or contributory cause of injury, illness and death. That is, drug use is neither necessary nor sufficient to explain illness, injury or death; rather it contributes as a component of a large set of conditions which bring about the adverse health effect. This means that drug use is probabilistically related to injury, illness and death, and hence that we cannot be sure in any individual case whether a condition was caused by drug use or not. We can nonetheless still assign causal responsibility to drug use for a certain proportion of deaths within each category.

The exception to this general principle is the minority of diseases and conditions which are aetiologically defined in terms of drug use, such as, alcoholic liver cirrhosis, drug-induced psychosis, and opiate dependence. In these cases, drug use is a necessary part of the complex of factors that cause the condition, and so the proportion attributable to drug use is 100% by definition. The only probabilistic element in the causal attribution of these cases to drug use

is the error (usually unknown) in making the diagnostic judgement about the aetiology of the condition.

Given this approach, the aim of English et al's analysis was to estimate from epidemiological studies the proportion of each specific condition that was attributable to drug use. These estimates were then multiplied by the number of deaths, hospital episodes and bed days for each specific condition, and these products were summed across conditions and then added to the number of conditions that were directly attributable to drug use. This produced an overall estimate of the number of deaths and the amount of hospital morbidity that was attributable to each form of drug use. In the case of life years lost, more complex calculations were done. These took account of the number of life years lost that were attributable to each type of drug use, assuming that in the absence of drug use the affected individual would have lived the average life span (conservatively estimated at 69 years for most analyses).

## Methods

The production of the estimates required a considerable amount of work. The first step was to systematically and comprehensively review the research literature to identify studies that were potentially relevant in evaluating the causal contribution of drug use to conditions which drug use has been hypothesised to caused. These studies were critically reviewed, and those that passed standard tests (e.g. adequate research design) were formally analysed. The first step was to decide whether there was reasonable evidence that the specific type of drug use made a causal contribution to the condition. This required a judgment of the evidence using standard criteria for inferring causal relationships, such as those used by the International Agency for Research into Cancer (IARC) to assess the carcinogenicity of substances. The level of confidence in the relationship was signified (following the IARC) as: "sufficient evidence, limited evidence, inadequate evidence, evidence suggesting lack of causality".

For those relationships that provided limited or sufficient evidence for causation the relative risks of developing a condition for each level of drug use were estimated. This was done by the statistical method of meta-analysis. The resulting relative risks were used (in combination with data on the prevalence of each level of drug use in Australia by age and gender) to estimate the aetiologic fraction (AF) for each condition. The AF can be thought of as the proportion (or percentage) of cases of the disease, injury or condition that is attributable to drug use in our community at this time. The AF for each condition is not fixed for all time; it will vary depending upon the prevalence of drug use in the community, and the prevalence of other factors, both causal and protective, that act in concert with drug use to produce the disease or injury. For example, the AF of alcohol use towards motor vehicle estimates has declined as community per capita alcohol consumption has declined and as random breath testing has deterred drinkers from driving.

This approach was originally used by Holman, Armstrong et al[1]. English, Holman et al[2] added some refinements to address criticisms that have been made of the original estimates. Among these the most important were the following. First, all judgements about the evidence for causal relationship were peer reviewed by international and national experts in epidemiology. This minimised the contribution of individual bias in making such judgements.

Second, to address the criticisms that summing condition-specific estimates over-estimates the contribution that drug use makes to disease and injury they also estimated deaths attributable to drug use by the "all-cause mortality method". In this method, the results of the overall relative risk of premature death from all causes in users of specific drugs was used. This relative risk was obtained from cohort studies in which drug users were followed over time to compare their mortality with that of nondrug users. It has been claimed that this is a more accurate method of estimating deaths attributable to drug use[3].

Third, English et al estimated the possible effect of double-counting on the total estimate of drug-related mortality. This was to take account of the claim that they had double-counted the contributions of different types of drug use to specific deaths where two or more drug types were both contributory causes, e.g. alcohol and tobacco in the cases of oropharangeal cancer and fire injuries.

English et al also made a major change in the way that the mortality and morbidity attributable to alcohol were calculated. Instead of referring the relative risk of any disease attributable to any level of alcohol use to abstainers, they estimated the relative risk of hazardous and harmful alcohol use by comparison with that of low risk drinkers (as defined by the NH and MRC). Their reason for adopting this approach was that it is not our social goal to encourage abstinence but rather to advocate low risk drinking, as reflected in media campaigns to drink within NH and MRC limits.

# RESULTS

## Overall Comparison of Drug-related Mortality and Morbidity

The overall analysis comparing mortality and morbidity attributable to the three drug classes substantially replicated the results of the earlier analysis by Holman and Armstrong. The rank ordering on all three measures was: tobacco, alcohol, and illicit drugs (Tables 1, 2 & 3). The magnitude of the differences between drug types in each outcome (mortality, life years lost, and hospital morbidity) were very similar as well, with the exception that there were more deaths attributable to all types of drug use in the English et al analysis, and there were more deaths attributable to alcohol using the newer method of estimating relative risk.

Tobacco was well out in front in terms of the aggregate number of deaths caused. Alcohol, and to a lesser extent, illicit drugs, narrowed the gap in terms of life years lost because both types of drug use adversely affect the health adults at an earlier age than tobacco. In terms of morbidity, the difference between alcohol and tobacco narrowed further because the morbidity burden of chronic alcohol-related conditions begins to affect adults in middle life.

**Table 1**
**Drug-related deaths in Australia 1992**

| | Alcohol | Tobacco | Illicits |
|---|---|---|---|
| Males | 2,581 | 13,857 | 384 |
| Females | 1,139 | 5,063 | 104 |
| Persons | 3,660 | 18,920 | 488 |

**Table 2**
**Drug-related life years lost (PYLL) in Australia 1992**

| | Alcohol | Tobacco | Illicits |
|---|---|---|---|
| Males | 43,183 | 63,646 | 13,892 |
| Females | 12,267 | 24,620 | 4,007 |
| Persons | 55,450 | 88,266 | 17,899 |
| Mean PYLL | 15.2 | 4.7 | 36.7 |

**Table 3**
**Drug-related bed days in Australia 1992**

| | Alcohol | Tobacco | Illicits |
|---|---|---|---|
| Males | 443,834 | 551,347 | 21,812 |
| Females | 287,335 | 261,519 | 18,710 |
| Persons | 731,169 | 812,866 | 40,522 |

## Alcohol-related mortality and morbidity

An interesting picture emerges from analyses of alcohol-related mortality and morbidity by age and gender. As expected, mortality, life years lost, and hospital morbidity were all much higher for males than females in all age groups, reflecting higher male exposure to hazardous and harmful alcohol use. Alcohol-related mortality for both men and women become apparent in middle life, i.e. in the 40s, increased throughout the 50s, and peaked in the 60s. Life years lost showed a similar pattern, but with higher contribution to life years lost in the 70s because of the number of persons affected by alcohol-related diseases in this age group. Bed days showed a more varied picture across the age groups. The higher contribution in younger age groups reflected accidental injury, that in the later age groups reflected the high burden of hospital treatment required for chronic alcohol-related conditions.

Analysis of the contribution to overall alcohol-related mortality by specific conditions also revealed some interesting patterns (Table 4). There were interesting differences between men and women in the contribution of specific conditions which reflect the acute effects of intoxication and those that reflect the effects of sustained heavy alcohol use. In males, the largest contributions to alcohol-related mortality were made by deaths attributable to injury (particularly motor vehicle accidents, falls and drowning), gastrointestinal diseases (particularly, liver cirrhosis), cardiovascular disease (particularly stroke), and violence (suicide and assaults). In women, by contrast, the largest contribution was made by stroke and injury.

In terms of life years lost, the picture for males was dominated by injury, violence and

cirrhosis which accounted for 46%, 20% and 16% respectively of all life years lost because of alcohol. This reflected the young average age of males dying from alcohol-related accidents, suicide and assault. For women, differences in the contribution of these specific causes was less marked, although, as for men, injury and violence predominated.

Hospital morbidity varied across the age groups. The higher contribution in younger age groups reflected accidental injury, while that in the later age groups reflected the high burden of hospital treatment required for chronic alcohol-related conditions. Among men, hospital treatment for alcohol dependence and alcoholic psychoses ("alcoholism" for short) dominated all other specific causes, followed by injury. For women, injury was still the major cause of hospital morbidity, followed by alcoholism. This reflected the much higher prevalence of alcohol dependence among men than women in most cultures[4], including Australia[5].

A comparison of the condition-specific and all-cause mortality analyses for adults over the age of 25 years showed very little difference in overall numbers of deaths but there were differences in the distribution of deaths across age groups: the condition-specific estimates showed higher numbers of deaths among younger age groups while the all-cause estimates produced higher numbers of deaths among the older age groups.

**Table 4**
**Causes of alcohol-related deaths in Australian men and women in 1992 (%)**

| | Males | Females |
|---|---|---|
| Cancer | 7 | 8 |
| Alcoholism | 9 | 4 |
| Cardiovascular | 19 | 38 |
| Gastrointestinal | 24 | 15 |
| Injury | 29 | 28 |
| Violence | 12 | 8 |

N male deaths 2530; N female deaths 1132

## Tobacco-related mortality and morbidity

The analyses of tobacco-related mortality and morbidity by age and gender showed higher mortality, greater life years lost and more hospital morbidity for males than females at all ages, reflecting the higher prevalence of cigarette smoking among males until recently. Mortality attributable to cigarette smoking in men and women began much later than that attributable to alcohol, first becoming apparent in the 50s, and increasing through the 60s and 70s. As Sir Humphrey Appleby cynically observed in "Yes Prime Minister": tobacco is the type of drug use governments would most like to encourage. It produces a steady government income (via taxation and excise) from dependent smokers throughout their working life and its effects begin to kill them at about the time they qualify for the old age pension and superannuation. Nonetheless, the life years lost because of tobacco smoking were still substantial. Even though the average age at death for tobacco-related causes was high, the

number of persons affected by tobacco-related diseases was large so that in aggregate tobacco smoking accounted for a large number of lost life years.

The impact of tobacco smoking on hospital morbidity as assessed by bed days begins to be felt sooner than deaths. This reflects the deterioration in health status of smokers who begins to experience the chronic health effects of smoking (such as respiratory and heart disease) that will subsequently kill many of them.

Analysis of the contribution to overall tobacco-related mortality by specific conditions reveals some interesting similarities between men and women (Table 5). In males the largest contributions to tobacco-related mortality were made by deaths attributable to cardiovascular disease (particularly ischaemic heart disease), cancers (particularly lung cancer), and respiratory diseases (particularly chronic obstructive lung disease). Among women, the picture was very similar.

In terms of life years lost, the picture for males was similar, except that cardiovascular disease and cancer make a larger contribution than respiratory disease which strikes later in life and produces more chronic illness. The same was true for life years lost among women. Hospital morbidity data showed a slight change in the contribution of specific causes. Cardiovascular disease dominated tobacco-related morbidity in males and females, followed by respiratory disease, and then cancers. Effects of maternal smoking during pregnancy on the health of mothers and infants had an impact on hospital morbidity that was not reflected in mortality or life years lost.

A comparison of the condition-specific and all-cause mortality analyses revealed a larger difference for tobacco than for alcohol. There were substantially more deaths attributed to tobacco in the condition-specific analysis than there were in the all-cause analysis, namely, 13,795 and 9,043 respectively for males, and 4,980 and 3,503 respectively for females. There were also differences in the distribution of deaths across age groups: the condition-specific estimates showed higher numbers of deaths across all age groups than the all-cause estimates.

**Table 5**
**Causes of tobacco-related deaths in Australian men and women in 1992 (%)**

| | Males | Females |
|---|---|---|
| Cancer | 37 | 30 |
| Cardiovascular | 38 | 41 |
| Respiratory | 24 | 26 |
| Other causes | 1 | 3 |

Total N of deaths 13,859 for men and 5,063 for women

## Illicit drug-related mortality and morbidity

The quantity and quality of evidence available on causal relationships between illicit drug use and health status was not as good as that for tobacco and alcohol. Most of the evidence

related to relatively direct, acute drug effects, and even their contribution was probably under-estimated because of the low index of suspicion among many physicians and the stigma attached to illicit drug use that makes it more likely to be under-reported. It was also likely that the available data underestimated the contribution to disease and injury of chronic illicit drug use because of the absence of any data on the long-term effects of most forms of illciit drug use, including the most common form, cannabis use[6].

The poverty of data on the causes of mortality among illicit drug users is revealed in Table 6 which uses a crude classification of cause by drug type and route of administration. There was a predictable male excess in all age groups which reflects the higher prevalence rates of illicit drug use and dependence among males than females[5]. Deaths were also concentrated among the younger age groups, especially in the twenties and thirties.

**Table 6**
**Causes of illicit-drug-related deaths in Australian men and women in 1992 (%)**

| | Males | Females |
|---|---|---|
| Opiates | 92 | 89 |
| Injecting drug use | 6 | 8 |
| Other | 2 | 3 |

Total N of deaths 384 for men and 104 for women

In terms of life years lost, illicit drug use accounted for a relatively small number in aggregate but a larger number of life years per death than tobacco or alcohol. This reflected the young age at which illicit drug users die (median 30 years). Hospital morbidity attributable to illicit drug use was similarly concentrated in the same young age groups, with the addition of morbidity attributable to the effects on babies and infants of maternal illicit drug use.

The major causes of death attributable to illicit drug use were those due to opiate "overdoses", whether deliberate or not. Although injecting drug use is a major vector for the transmission of infectious diseases, such as, HIV and hepatitis B and C, this was not reflected in Australian mortality data to date, a situation that may well change in the future. Other forms of illicit drug use accounted for a minority of all deaths attributable to illicit drug use.

Condition specific life years lost showed a major contribution by illicit opiate. Stimulant use begins to have an effect equivalent to that of injecting drug use because of the younger average age of stimulant than opioid users[7]. Illicit opiate use continued to dominate in terms of morbidity but the contribution of other causes increased. Drug psychosis, which is probably largely due to stimulant use, makes a larger contribution to hospital morbidity. It is followed by stimulant-related admissions, which is consistent with the high rates of psychological and other morbidity reported among illicit amphetamine users[7,8]. Cannabis use also makes a detectable contribution to hospital morbidity whereas it makes no known contribution to mortality or life years lost.

A comparison of the condition-specific and all-cause mortality analyses for illicit drug use revealed a larger number of estimated deaths from the all-cause method (532 compared with

470). There was a substantially larger difference among women than men (152 and 90 for females compared with 337 and 380 for men). There were also differences in the distribution of deaths across age groups which varied between men and women in complex ways that are not easily described or explained. These differences undoubtedly reflect our greater ignorance of the relationships between illicit drug use and mortality, and especially in later life.

## Summary

The results of the most recent analysis of mortality and morbidity attributable to alcohol, tobacco smoking and illicit drug use are largely consistent with those of the previous analysis[1]. They show the same rank ordering of adverse impact on health (namely, tobacco, alcohol and illicit drugs), although there was some variation in contribution across deaths, life years lost and hospital morbidity. All three drug types show much larger impact of drug use on women than men because men are more likely to use all types of drugs, and to use them to excess, than are women.

Tobacco was the major cause of premature death in total, although alcohol rivaled it in terms of life years lost because it affected a younger group of adults on average. Illicit drugs were responsible for a much smaller number of deaths than either alcohol or tobacco, reflecting the enormous difference in the population prevalence of the use of alcohol, tobacco and illicit drugs. The differences between alcohol and tobacco in total hospital morbidity were also smaller, reflecting the large burden of acute and chronic illness produced by alcohol.

The age profile and type of health effects differed between drug types. Alcohol exerted its adverse effects on health as a result of the effects of intoxication in early adult life and as a result of the accumulated health effects of chronic alcohol use in middle and later life. Tobacco largely affected users later in life as the result of the cumulative effect of long-term heavy use. Illicit drug use exerted its known effects in the early adult years, largely via the risks of overdose while intoxicated.

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# THE 1985-1993 NDS SURVEYS: MEASURING PATTERNS OF ALCOHOL AND TOBACCO USE

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Effective public policy requires accurate and timely information, efficiently collected. But an equally important requirement is the need to collect such information regularly. Only when comparable information is accumulated over time can trends be monitored and effective policy formulated to anticipate future needs and demands. Perhaps nowhere are these requirements more pressing than in the drug area, where the economic costs to the community are enormous and relatively small changes in drug use across a population can have significant public policy implications[i]. As a result, most governments have committed significant resources to monitoring trends in patterns of drug use in order to anticipate future demands on their resources[1].

A wide range of data are collected in Australia relating to drug use. These include data concerning drug movements (such as production and consumption), prescriptions, mortality and morbidity, the economic costs of drug abuse, the legal and social problems that arise from it, customs and excise collections, and data on individual drug use[2]. All of these collections have a role to play in identifying trends in drug use by providing different perspectives on the problem. However, the most effective method of acquiring data on patterns of drug use - which is at the core of the problem - is through sample surveys, conducted on a regular basis and among a sufficiently large sample of the population that the estimates are reliable[3].

Population surveys do, of course, have major limitations in the reliability of the estimates that they can provide. Surveys are effective in measuring regular, widespread and licit patterns of behaviour, such as alcohol or tobacco use; they are less accurate in measuring behaviour that may be illicit, socially unacceptable, irregular, or which is carried on by only a comparatively small proportion of the population. In these cases, other methodologies are required for reliable data collection[4,5]. There are also major considerations in how potentially sensitive questions about drug use are actually asked[6], in addition to the usual problems of respondent recall. Despite these difficulties, mass population surveys represent the most effective means of identifying patterns of use for alcohol and tobacco and, to a lesser extent, cannabis.

Since drug use surveys started to be used on a regular basis in Australia in the 1970s, a large number have been conducted. However, most have focussed on specific populations (such as adolescents or secondary school students) or geographical areas (such as a state, territory or city) and only a small number have been repeated. Three sets of surveys have been conducted nationally and on a regular basis, thereby permitting the monitoring of overtime

trends. The largest and most costly are the health surveys conducted by the Australian Bureau of Statistics, which started in 1977 and are conducted quinquennially. The surveys have the advantage of large sample sizes, but the disadvantages that they do not ask about illicit drugs; do not include any attitudinal items; are unavailable for secondary analysis, except at considerable cost; and the five year interval between surveys is too long for effective monitoring. The second set of surveys have been conducted by the Anti-Cancer Council of Victoria since 1974. They are mainly restricted to tobacco use and later surveys have not been made available for secondary analysis.

The third series of surveys are the National Drug Strategy (NDS)[ii] surveys conducted by the Commonwealth Department of Human Resources and Health. These surveys - conducted in 1985, 1988, 1991, 1993 and 1995 - represent the most far-reaching attempt in Australia to date to monitor patterns of drug use in and across the society. Their value lies primarily in the fact that they are regular national surveys, conducted triennially, using broadly comparable items and containing sufficiently large sample sizes to permit reliable analysis of subgroups. They also ask about a wide range of drugs, as well as attitudes towards drugs and about public policy issues. Finally, the data are made available to researchers for secondary analysis after the completion of data collection.

This paper examines what we know - in very broad terms - about alcohol and tobacco use using the NDS surveys, and what we need to know. These drugs are chosen because they are the easiest to monitor in mass population surveys. The discussion is limited to examining patterns of use; any discussions of changes in attitudes would require more space than is available here. The analyses use the 1985 to 1993 surveys; although the 1995 NDS survey has been completed, it has not yet been released for secondary analysis. The remainder of the paper examines ways in which the NDS surveys could be used as a nucleus for a much larger longitudinal data collection exercise.

## Alcohol

### *Patterns of Use*

Population surveys are of most value in tracing the changing patterns of alcohol and tobacco use. Both are licit drugs that are widely used within the population, so respondent self-reports of use and consumption are likely to be reasonably accurate[7,8]. Tobacco use is easier to measure than alcohol, for two reasons. First, nicotine addition means that most smokers consume approximately the same number of cigarettes per day. By contrast, apart from a small number of drinkers, alcohol consumption is more varied, since it often takes place in social situations and at different times. Cross-sectional population surveys are not well suited to measuring this type of irregular behaviour. Second, although cigarette brands differ in the amount of tar and nicotine that they deliver to the smoker[iii], alcoholic content differs even more by beverage type. Most large-scale population surveys can only imperfectly record the beverages that individuals consume, so that arriving at a reliable estimate of actual alcohol intake is difficult.

Fortunately, the licensing requirements for alcohol mean that reliable data exist about alcohol consumption per head of population going back more than 150 years (Figure 1). Alcohol consumption in the two colonies which kept continuous records of production, New South Wales and Victoria, show that alcohol consumption stood at about 12 litres per head in the early to mid-nineteenth century. The formation of various temperance groups to lobby for restricted access to alcohol resulted in progressive declines in consumption until the early part of the twentieth century[9]. After the Second World War alcohol consumption again

increased; it appears to have peaked at just over 9 litres per head in 1980; subsequent data show a consistent decline[iv].

**Figure 1**
**Alcohol consumption per head of population, 1938-1993**

More recent data from the 1950s, again using aggregate government statistics, enable us to trace the consumption patterns of the main beverage types (Figure 2). Beer consumption peaked in the late 1970s, and thereafter has fallen consistently; it now stands at less than 100 litres per head, the lowest level at any time since 1956. Wine consumption peaked in the early 1980s, after a progressive increase which started in the early 1970s. Consumption has remained fairly consistent since then, despite the introduction of various government taxes. Consumption of fortified wines, never a large proportion of the market, had declined by about half since 1980.

**Figure 2**
**Consumption of alcoholic beverages per head of population, 1956-93**

The 1985-93 NDS surveys enable us to place some of these patterns in a longitudinal perspective for different age and gender groups (Figure 3). Weekly alcohol use among adolescents would appear to have declined, although there is some suggestion in the most recent survey that it may be on the increase once again among males. The figures for adolescent females have fluctuated over the period, although the estimates from 1988 to 1993 tend to suggest that about three in every 10 use alcohol on a weekly basis. There is least change in use among those aged 20 to 39; indeed, among males, the variation is only 3 percent, well within the boundaries of sampling error. Among women in this age group, the estimates suggest that they has been a decline in weekly alcohol use. The estimates for the over 40s suggest a sharp increase in use among men; verification of this change will have to await the release of the 1995 survey data.

**Figure 3**
**Weekly alcohol use by age and gender, 1985-93**[a]

In addition to asking the respondents how often they had an alcoholic drink of any kind, all four of the NDS surveys asked the frequency and volume of the alcohol the respondents consumed. There appears to have been little change in the proportions responding to the question concerning when they last had an alcoholic drink; in 1988, 44 percent said that this had occurred one or two days previously, while in 1993 the same figure was 42 percent. There does appear to have been some decline in the frequency of drinking - in 1985 19 percent reported daily alcohol consumption, compared to 12 percent in the most recent survey - while the proportion in the less frequent categories has declined. In terms of consumption, there is some evidence of a decline in drinking, but once again the changes in the estimates

are well within the range of sampling error.

**Table 1**
**Measures of alcohol consumption, 1985-93**

Finally, three of the surveys asked respondents about their consumption of particular beverages[v]. Beer is the beverage of preference for males, although its popularity among the over 40s has been declining consistently; 32 percent of this group now favour low alcohol beer, compared to only 8 percent in 1985. there have been fewer changes in preferences among women over the period. Wine remains the beverage of choice among older women, while spirits are preferred by the two younger age groups.

**Table 2**
**Types of alcohol beverages, 1985-93[a]**

### *Improving Estimates of Alcohol Use*

What we know about trends in alcohol use can be summed up as follows. The trends in use at the aggregate level, using government licensing figures, suggest that alcohol consumption peaked about a decade ago, but beyond speculation, we do not know why consumption is declining. The mass population surveys provide us with reasonably reliable estimates of use among different sociodemographic groups, but we still lack reliable estimates of alcohol intake. In addition, we do not know how beverage preferences vary over time, or to what extent such changes are the result of lifestyle changes or more general social trends. And we also know comparatively little about changes in uptake rates among the young.

How do we remedy these gaps in our knowledge? One elementary step is to make the demographic variables consistent between the NDS surveys. For example, future NDS surveys need to collect age information in single years as a matter of priority[vi]. More generally, the 1993 NDS survey asked no less than 17 separate questions about alcohol use and that probably represents the most detail that can be included within a mass population survey. One possibility is to undertake more sophisticated data collection exercises, such as panel surveys of small subgroups (for example, among adolescent males). Another possibility is to use the data that are available and apply multilevel analysis, for example using aggregate data on consumption, state or regional consumption data, and individual level survey estimates.

## Tobacco

### *Patterns of Use*

Population surveys are of most use in tracing the changing patterns of tobacco use. Prior to 1974, three commercial surveys are available which provide estimates of current use[10], and since 1974 the Victorian Anti-Cancer Council have commissioned national surveys to gain

estimates of use[11-13]. Patterns of smoking in Australia since 1945 are shown in Figure 4, for men and women separately, using these surveys in addition to the 1985-93 NDS surveys. The figures show the proportion of smokers in the adult population, aged 16 years and over. The results confirm the consistent decline in prevalence that has taken place among men, from 72 percent in 1945 to half that figure in 1986. Since 1986, the proportion of smokers has remained either stable or declined slightly, to between 30 and 33 percent of the adult male population[vii].

**Figure 4**
**Current smokers by gender, 1945-93**

There is either a steady or rising trend among women, depending on the time-frame under examination. In 1945, 26 percent of females smoked, compared to between 30 and 31 percent in the late 1970s and 1980s. Since this peak in use, the proportion of women smokers appears to have declined gradually, by an average of about 1 percent per year. The most recent data that are available, the 1993 NDS survey, show that 25 percent of adult women smoke, which is the lowest proportion since 1945. Nevertheless, these figures indicate that, judged over almost half a century, the proportion of women smokers has changed little, certainly in comparison with their male counterparts.

The net result of these trends is a declining gender gap in smoking. In 1945, 46 percent more men than women smoked; by 1986 this gap had diminished, to 4 percent, and then it increased slightly, to 6 percent, in 1993. The declining incidence of smoking is therefore having the effect of reducing the historically large gender gap in smoking, since there has been little or no overall decline among women in the postwar years. These patterns have been shown to be broadly similar across the smaller states, such as Western Australia[14].

Among men, the trend is clear: there is an almost linear decline in the proportion of male smokers. With one exception, the most recent 1993 survey, the proportion of male smokers has either declined or remained the same in each successive survey. Fitting an ordinary least squares line to the plots in Figure 4 suggests that smoking has declined by 0.9 percent per

year[viii]. Based on that trend, we would expect smoking prevalence among men to be just over 21 percent by the turn of the century. Of course, it may well be that the levelling out of the trend since 1989 may represent the end of this linear decline.

The trend among women is more difficult to identify. While the changes in female smoking prevalence has not been substantial - particularly given the timespan under consideration and the social, economic and health changes that have taken place since the end of the Second World War - the figures suggest that female smoking may have peaked in the late 1970s and early 1980s and is now declining, in line with the trends among men. If we estimate an ordinary least squares line just for the post-1980 results, the equation suggests that smoking among women has been declining by just over half of one percent per year[ix]. If this trend was to continue, female smoking prevalence would stand at just over 21 percent by the turn of the century. In other words, if trends in patterns of smoking among men and women continue for the remainder of the decade, we would expect male and female prevalence rates to converge; thereafter, there would be a higher prevalence rate among women.

A wide range of studies have highlighted the strong age effects that exist in patterns of smoking[15]. Once again, the 1985-93 NDS surveys enable us to examine these trends in a longitudinal perspective. Table 3 shows the proportions of current smokers by age group and gender from 1985 to 1993, with the caveat that there are difficulties in matching the age categories in the 1993 survey to the previous three surveys. In 1993, smoking prevalence was highest among men aged between 20 and 39 (at 43 percent for those aged 20 to 29 and 42 percent among those aged 30 to 39), although it stood at 41 percent among women aged 20 to 29. Every age group registers a decline in smoking over the period of the surveys, with the exception of males aged in their 40s (where there is a small increase, from 30 percent to 32 percent) and among women aged in their 30s, where smoking rates have remained constant.

**Table 3**
**Current smokers by age and gender, 1985-93**

The magnitude of the decline varies considerably. The decline is greatest among men aged in their 50s. In 1985, 43 percent of this age group smoked; in 1991 prevalence declined to 23 percent, a drop of almost one half. There is also a significant decline in smoking prevalence among those aged 60 years or over for the three surveys for which we have comparable data, dropping by 9 percent among men and 8 percent among women. Overall, the trends suggest that the groups which are most resistant to cessation are men aged in their 30s and 40s, and women aged in their 30s.

As the NDS surveys have shown, smoking reaches its peak among those aged in their 20s and 30s[11,12]. Among women, prevalence drops away significantly after the mid to late 30s, although the decline is less substantial among those aged in their 40s and 50s. Among men, the decline is less significant, and with the exception of the 6 percentage point drop among men aged in their early 40s, it declines by no more than 3 percentage points until the 60s. Comparing the figures for men and women, there is only one age group in which female smoking exceeds that of males: adolescence. However, it is notable that the gender gap in prevalence is narrowest among those aged in their early 20s (2 percentage points) and among those aged in their 70s (also 2 percentage points).

Other studies have examined prevalence rates over-time using a variety of methods. Pierce et al[16] analysed five cross-sectional surveys of the population conducted between 1974 and 1984. They concluded that the uptake rate for males aged 16 to 19 years reached a peak in 1980. For females aged 16 to 19 years, the uptake rate reached a peak in 1983: in 1984 there was a significant drop in the percentage of female ever-smokers. The net result is that there is a growing proportion of past smokers within the population, which will increase in line with the cessation rate[12].

The NDS surveys permit us to identify the proportion of previous smokers among those who do not currently smoke, again with the exception of 1988. The results suggest comparatively little change in the relative proportions of light and heavy smokers within the smoking population (Table 4). In 1985, 16 percent were heavy smokers, compared to 14 percent in 1991 and 1993. However, the proportion of light smokers declined over the period by about the same amount. The main increase is in the proportion who have never smoked, which has increased by 4 percentage points. The fact that previous smokers have only increased by 1 percentage point suggests that this increase is composed largely of an increase in the proportion entering the population who have not taken up the habit.

**Table 4**
**Patterns of tobacco use, 1985-93[a]**

## *Improving Estimates of Use*

The current state of our knowledge in terms of tobacco prevalence and consumption among adults is generally adequate. The 1985-93 NDS surveys provide an important data source to monitor longitudinal trends. However, the surveys suffer from the fact that the measures of use and consumption vary between the four surveys making comparisons over-time difficult,

in addition to the problem of the inconsistent demographic variables mentioned under alcohol. The ABS Health Survey overcomes some of these problems by using a large sample size (in the region of 40,000 to 50,000), accurate and consistent prevalence and consumption measures, and reliable demographic information. However, the surveys do not contain attitudinal information and are effectively unavailable for secondary analysis. The surveys conducted by the Anti-Cancer Council, in Victoria as well as nationally, are another important source of data. Once again, however, they are not publicly available nor are the later surveys conducted by the National Heart Foundation publicly available, making secondary analysis by researchers and policy makers difficult if not impossible.

Information on adolescents is better served in terms of data availability, mainly through the Anti-Cancer Council surveys which are conducted nationally (or, in the most states and territories) on a regular basis. Once again, however, much of the data are not available for secondary analysis. Data are available from the National Health Survey, but although the survey includes adolescents aged 14 years or over, the tobacco questions are not asked of 14 or 15 years old since it is illegal for them to purchase cigarettes. Once again, these restrictions on availability and measures means that researchers must fall back on one or the major sources for drug use research, the NDS surveys, with the various difficulties that emerge in making comparisons over-time.

## Developing the NDS Surveys

There are three ways in which the NDS surveys could be developed, beyond their current status as a regular cross-sectional survey of drug use and attitudes towards drugs conducted by the federal government. The first consideration relates to sampling error and sample size, a problem which in turn is associated with what the survey is designed to measure.

The second problem is the survey methodology that is used, and several low-cost innovations are suggested which would substantially improve the quality of the data that the surveys collect. Finally, it is argued that there is too much data collection in the area of drug use in Australia and that resources are spread too thinly; one way of remedying this problem is to concentrate our resources and make the NDS surveys the nucleus for a regular omnibus survey of drug use.

### *Sampling Error and Sample Size*

A major consideration in any survey of drug use is sampling error. In every sample survey there is some error involved in data collection and these sampling errors are reported by confident intervals. For example, in Table 5 the width of the confidence band is comparatively narrow for marijuana but very high for heroin. The survey estimates give approximately 50 people who admit to having tried heroin, but this varies by 14 people or approximately 28 percent of the number of users.

**Table 5**
**Confidence intervals on lifetime prevalence of marijuana and heroin, 1991[a]**

If the purpose of the survey is to provide information on the correlates of illicit drug use then the sample size will need to be increased. Table 6 presents a very simple estimate of the sample size required to interview a certain number of people who have ever tried heroin. This is based on the proportion (1.85 percent) who admitted to use in the 1991 survey. This figure is subject to error in that some people who admitted use will not have tried heroin while others will do the reverse. It is simply assumed that the estimate is the best we have at this time for a national population survey. If, for example, it was decided that 400 heroin users were required, then the survey would need a sample of around 20,000. These considerations have led to very large sample sizes in other surveys, particularly in the United States: the US Household Survey on Drug Abuse, for example, had a sample size of 32,594.

**Table 6**
**Estimated sample sizes required for heroin users[a]**

Attempts to obtain reliable estimates of use for certain illicit drugs therefore suggest that there are two alternative strategies. The first is simply to exclude questions regarding the lifetime prevalence of drugs such as heroin and cocaine from the surveys, since the normal sample size within a national population survey is insufficient to produce reliable estimates. An alternative approach is to introduce other sampling strategies to produce more reliable estimates. One sampling strategy might be to oversample the 14 to 39 year olds, the group with the highest prevalence rate for illicit drugs.

## *Survey Methodology*

All of the NDS surveys have used a personal interview schedule. The two main alternative (and substantially cheaper) methods are a mail instrument and a telephone survey. These alternatives are not feasible given the sensitive nature of the survey topics. The sealed envelope method of collecting the lifetime prevalence and use measures used in the 1988-93 surveys appears to produce more reliable estimates of prevalence. Analyses have shown that: (1) the proportion who admit to use increases when the sealed enveloped is used: (2) the number of people who refuse to answer or say that they don't know is also reduced; and (3) those who are more likely to admit to use with the sealed methodology are significantly more

likely to come from 'at risk categories' - at least circumstantial evidence that the method is more accurate[17-19].

Nevertheless, other methodologies which complement the personal interview could be used, since they have the potential to enhance the data that are collected, for little additional cost. Two that could be considered are the drop-off mail questionnaire and a panel component. The drop-off questionnaire is used in situations where a personal interview has already been completed and other, less direct and less potentially difficult information has to be collected. In the context of a personal interview, most of the drug use questions could be asked by the interviewer using the sealed envelope, plus other relevant factual questions. At the completion of the interview, the interviewer would hand the respondent a booklet to complete in their own time, together with a reply-paid return envelope. This would be mailed back and matched to the data collected in the personal interview schedule. The advantages of this method are: a shorter personal interview; the ability to ask a much wider range of questions than in an exclusively personal interview approach; a reduced cost overall for the data collected; and the capacity to give questionnaires not only to the respondent, but to other members of the household[xi].

The traditional argument against mail surveys is their allegedly low response rate. Properly conducted, however, mail surveys have been shown to elicit the same or higher response rates when compared to personal interview surveys. For example, the 1987, 1990 and 1993 Australian Election Study surveys, which were all conducted by mail, produced response rates in excess of 60 percent[20]. In addition, once a respondent has agreed to a personal interview, the 'hard core' refusals have already been excluded. In the 1992 Australian Rights Survey, a drop-off questionnaire following a telephone survey produced a 70 percent response rate[21]. This is the response that we would expect to achieve for a properly organised drop-off questionnaire. The drop-off questionnaire would be used to collect a wide range of attitudinal data; it could also be used to collect health and other basic non-threatening factual information.

A panel component in the survey would enable important questions about changing patterns of drug use, attitudes towards drugs or other aspects of behaviour to be measured. The present cross-sectional patterns mirror real changes. The panel component of the survey would involve a proportion of the original survey would involve a proportion of the original survey respondents being re-interviewed, mainly about their attitudes and drug use behaviour (since we would already have demographic and other information, these do not need to be asked again). The size of the panel would depend on what the panel component was designed to test; the optimum size might be 1,000 to 1,500 and, assuming a panel mortality rate of around 10 percent per year, this would produce 700-1,000 responses.

## *The Future of Surveys*

Mass population surveys are indispensable tools for tracing overtime trends in the use of alcohol and tobacco, and to a lesser extent marijuana. In addition, surveys can monitor the attitudes that people have towards drugs and their opinions about a wide variety of related public policy issues. In the past twenty years there has been a proliferation of surveys in Australia about drugs and drug use. There have been national as well as state and local surveys; surveys of the general population as well as surveys of particular subgroups, such as women or adolescents; surveys which have examined a particular topic as well as surveys that have covered a range of topics. The reasons for this proliferation are obvious. Governments appear active and gain visibility by conducting surveys, while researchers gain academic prestige and research grants. It can be argued (often justifiably) that a particular

topic requires a purpose-designed survey instrument.

But the net effect of this proliferation is that the resources that are allocated to data collection are rarely used efficiently. There are two major problems. First, much data collection is conducted without regard to comparability, either to other surveys conducted in Australia or to overseas surveys. In some cases items or codes are changed from survey to survey making the monitoring of overtime trends difficult or impossible and thus reducing the utility of the data. Second, many of the surveys are either not adequately analysed by the original investigators or are not made available for secondary analysis by academic or other researchers. This is particularly the case with the ABS health surveys, where the cost of collection is considerable but the research output minimal. Put simply: we are spreading our data collection resources too thinly.

In many cases, the types of questions that need to be answered could be covered by an omnibus survey. Such an omnibus survey, conducted annually or biennially, could be used to monitor trends in drug use across the national population. Interested groups and organisations could submit items for inclusion in the interview schedule and oversamples of particular states or subgroups within the population could be built into the sample design at a much lower cost than mounting an independent survey. Moreover, the organisation sponsoring a set of questions would not only receive the data relating to their own items, but the data from other items as well, in addition to the demographic and socioeconomic information. Apart from efficiency, such an omnibus survey would reduce the problem of oversurveying certain populations[xii].

How would such a regular, omnibus survey be organised, funded and administered? A steering committee could oversee the design and conduct of the survey, including representatives of the various states and organisations who might make use of it. The NDS surveys could provide a nucleus for such a survey, with Commonwealth funding for a core set of questions, and additional questions could be added as resources or outside funding permitted. The steering committee would decide on the items for inclusion, the methodology, and the conduct of the survey in general. Such a survey would be offering the states and other organisations the opportunity to collect the data they require at a considerable saving, while at the same time providing them with a wider range of data that they would otherwise acquire, as well as the ability to monitor overtime trends.

Crucial to this proposal is that such data be deposited in a recognised archive and made available for public use by researchers. At present, comparatively few surveys find their way into the ANU Social Science Data Archive, despite the fact that many are funded at public expense. The NDS surveys are routinely released for public use after collection, at nominal cost to the researcher[xiii]. Although the ABS health surveys are also available, the cost is prohibitive because of the ABS's policy of cost recovery. The earlier surveys conducted by the Anti-Cancer Council in Victoria were released but the most recent surveys have not been deposited, nor have any of the surveys conducted by the National Heart Foundation.

## Appendix: The NDA Surveys

The four surveys that have been conducted between 1985 and 1993 were all national samples, conducted by personal interview. They do, however, differ in their sample coverage and general methodology. The 1985 survey used a quota sampling technique, while the other three surveys used random samples. The first three surveys were samples of urban centres with populations of 5,000 or more, while the 1993 survey was stratified by Census Collectors'

Districts. The 1985 survey relied solely on a personal interview technique, while the other three surveys all used a sealed self-completion booklet to collect the more sensitive drug use questions. The 1988 survey collected these data both by personal interview and using the booklet, enabling an experiment to be conducted comparing the two sets of estimates[18,19]. All except the 1993 survey had an oversample of the 14 to 19 year olds; an oversample was not required in the 1993 survey because of the already large sample size (n=3,500).

## Notes

i. The titles of some of the collections reflect this monitoring function. In the United States, for example, three prominent collections are known as project ALERT, DAWN (Drug Early Warning Network) and Monitoring the Future.

ii. Formally known as the National Campaign for Drug Abuse (NCADA).

iii. There is some research on tar intake according to branch preference[13].

iv. For a discussion of the factors influencing the general decline in alcohol consumption[22].

v. The question was not asked in the 1988 survey.

vi. Commercial survey companies collect age information by showing respondents a show card and asking them to nominate the age group they belong to, usually categorised into five or ten-year group. This is used on the entirely erroneous assumption that respondents will not volunteer an exact age. This problem, which is in any event fictitious, is avoided by asking respondents their year of birth.

vii. Similar rates of prevalence between men and women have been reported in small scale studies[23].

viii. The exact equation is y=110.9 - 0.90x. R-squared = .96.

ix. The exact equation is y=76.3 - 0.6x, R-squared = .97.

x. 'Light' and 'heavy' smokers are measured in different ways, often using 20 cigarettes per day as the cut-off point since that represents one pack. Fifteen cigarettes per day is used here mainly for practical reasons, since it divides the smokers in half and helps to preserve sample sizes.

xi. On this latter point, a drop-off questionnaire could be given, for example, to a son or daughter in the household, if a parent has been interviewed (as well as giving the parent a questionnaire); or to a parent if a son or daughter has been selected for the personal interview. Matching the data between parents and children is crucial. The 1988 and 1991 surveys were designed so that parents and children in the same household could be matched in the datafile, but in practice, the market research company failed to collect the appropriate data and the link could not be made.

xii. The problem of oversurveying is particularly acute in schools-based surveys, with school often being faced with the prospect of 'yet another' survey. As more schools decline to participate, the possibility of unreliable and invalid samples increases.

xiii. The researcher pays the costs of the documentation for the survey, and the costs of copying the data to tape, or transferring it via Internet.

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# THE DISMAL SCIENCE AND THE NATIONAL DRUGS STRATEGY: THE CONTRIBUTION OF ECONOMICS TO DRUGS POLICY DEVELOPMENT

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## Introduction

The costs of alcohol and drug abuse is of interest to government policy makers, policy analysts, to all involved in the provision of programs, and to the media. Cost estimates and improved knowledge of the economic implications of alcohol and drug abuse assist in determining priorities for strategies and programs, provide cost information from which the effectiveness of policy interventions can be evaluated, and identify areas where information is inadequate or simply unavailable.

For those whose careers and lives are heavily involved in delivery and evaluation of programs to reduce alcohol and drug abuse, and its associated harm, it no doubt appears self-evident that governments and particularly health departments and health agencies should recognise the enormity of the problem, and consequently allocate appropriate resources. Unfortunately, the mere identification of need is usually not sufficient to convince governments, relative to the many other competing and also legitimate claims, and it is therefore in terms of economic implications that drug and alcohol resources are and will continue to be considered. This is true for Australia and also for other developed countries where the dimensions of problems relating to drug and alcohol abuse have been recognised and are now being estimated and more rigorously and extensively quantified.

Firstly, in this paper some major international initiatives relating to the measurement and cost of drug abuse will be identified, followed by a brief discussion of the economic contribution to the Australian drug strategy. Next, some of the knowledge which has been developed through Australian research will be considered, together with comments on how non-economic research results are used in economic research. The final section of the paper comments on future research priorities, and how our present knowledge can contribute to policy and practice.

## International initiatives

The World Bank, in its 1993 World Development Report, *Investing in Health*[1], noted the role of government policy in discouraging consumption of tobacco, alcohol and other drugs. Policies which were specifically identified by the World Bank as being effective included education to reach school-age children and to assist adults to escape from addiction, tax policies to reduce consumption, and banning advertising and promotion of tobacco goods and trademarks. The World Bank has articulated its own formal policy on tobacco, in recognition of the adverse health effects of tobacco consumption and to support countries' efforts to discourage consumption.

The main points are:

- The World Bank's activities in the health sector - including sector work, policy dialogue, and lending - discourage the use of tobacco products.
- The World Bank does not lend directly for, invest in, or guarantee investments or loans for tobacco production, processing, or marketing. However, in the few countries that are heavily dependent on tobacco as a source of income and of foreign exchange earnings (for example, those where tobacco accounts for more than 10 percent of exports) and especially as a source of income for poor farmers and farmworkers, the World Bank treats the subject within the context of responding most effectively to these countries' development requirements. The World Bank seeks to help these countries diversify away from tobacco.
- To the extent practicable, the World Bank does not lend indirectly for tobacco production activities, although some indirect support of the tobacco economy may occur as an inseparable part of a project that has a broader set of objectives and outcomes (for example, rural roads).
- Unmanufactured and manufactured tobacco, tobacco-processing machinery and equipment, and related services are included on the negative list of imports in loan agreements and so cannot be included among imports financed under loans.
- Tobacco and tobacco-related producer or consumer imports may be exempt from borrowers' agreements with the World Bank to liberalize trade and reduce tariff levels.

The World Bank notes that the scale of economic costs of alcohol abuse is particularly difficult to quantify, and identifies violence, assault and injuries in this category. It refers to some of the research studies which have demonstrated effectiveness, and acknowledges the importance of the contribution of non-government sector agencies in program and service provision. The Report confirms that while reliable data on trends, patterns and costs of illegal drug use are scarce, many of the health and other costs have been identified although not quantified.

The United Nations Economic and Social Council Commission on Narcotic Drugs made estimates of the economic costs of drug abuse and trafficking in its 1995 Interim Report; *Economic and Social Consequences of Drug Abuse and Illegal Trafficking*. In this report, the health costs and productivity losses associated with illicit drugs are recognised, and the range of costs of drug-related crime and law enforcement costs are noted. Like the World Bank Report, the United Nations Report notes that data are insufficient, and that some of the social costs of drug abuse are not always quantified. Some of the chilling observations in this report include the nexus between drug abuse and crime, the nexus between drug abuse, AIDS and prostitution, and the role of illicit drug money in insurgency and international terrorism.

Initiatives of the Canadian Centre for Substance Abuse (CCSA) have identified the need for the development of estimates of the economic costs of drug and alcohol abuse, and they have organised two international symposia on the economics of drug and alcohol abuse, with the Australian National Campaign Against Drug Abuse as one of the sponsors. The first publication, International Guidelines for Estimating the Costs of Substance Abuse[2], published in 1995, is a recognition of the importance of cost estimates, and provides a discussion of the types of costs and theoretical issues associated with the development of cost estimates of substance abuse.

The foregoing are international examples of the acknowledged role of economics and cost studies in identification of the extent and implications of the effects of drug abuse, from which policy initiatives can be developed.

## Australian initiatives

The economist is interested primarily in ways in which scarce resources can be used most efficiently to reduce the social costs of drug abuse. Before this type of analysis can be undertaken it is necessary to identify two types of information, relating to:

- causality; and
- costs

Information on causality is in large part epidemiological- identifying and quantifying the causal relationships between drug consumption, on the one hand, and mortality and morbidity, on the other. This causal information is, however, not confined to epidemiology. For example, the relationship between drug consumption and crime is a matter primarily for criminologists, and between drug consumption and workplace productivity for several related disciplines, including industrial relations.

The quantification of abuse costs relies upon the prior quantification of the causal relationships discussed above. If causal relationships can be identified and quantified, the costs of drug abuse can almost always be estimated (although with varying degrees of accuracy).

In the past ten years Australia has become a world leader in the provision of information on both causality and costs. In both areas the provision of information has been primarily due to research initiatives sponsored by the National Campaign Against Drug Abuse (now the National Drug Strategy).

## (a) Epidemiological research

Holman, Armstrong *et al*[3,4] produced the first comprehensive review in Australia (and probably in the world) of the causal links between consumption of most types of drugs (alcohol, tobacco and illicits) and various sources of mortality and morbidity. The quantification of these relationships is expressed in terms of attributable fractions (also called aetiological fractions). Without explicit or implicit attributable fractions cost quantification is not possible.

The 1990 study, an extensive meta-analysis of the available research information, has now been superseded by English, Holman *et al*[5], an up-to-date and even more extensive meta-analysis of the relevant literature. The causal relationships quantified in this research are summarised in Table 1. In very few cases the relationships are negative, that is drug consumption is associated with a reduction in the incidence of the relevant condition.

**Table 1 - Causes of mortality and morbidity associated with the consumption of:**

| Alcohol | Tobacco | Illicit Drugs |
|---|---|---|
| Orophangeal cancer | Orophangeal cancer | Cannabis dependency |
| Oesophageal cancer | Oesophageal cancer | Cannabis abuse |
| Liver cancer | Stomach cancer | Opiate dependency |
| Laryngeal cancer | Anal cancer | Opiate abuse |
| Female breast cancer | Pancreatic cancer | Opiate poisoning |
| Alcoholic psychosis | Laryngeal cancer | Accidental opiate poisoning |
| Alcohol dependence | Lung cancer | Suicide |
| Alcohol abuse | Endometrial cancer | Amphetamine dependency |
| Epilepsy | Cervical cancer | Amphetamine abuse |
| Alcoholic poly neuropathy | Vulvar cancer | Cocaine dependency |
| Hypertension* | Penile cancer | Cocaine abuse |
| Ischaemic heart disease* | Bladder cancer | Antepartum haem. (cocaine) |
| Alcoholic cardiomyopathy | Renal parenchymal cancer | Low birthweight (cocaine) |
| SV cardiac dysrhythmias | Renal pelvic cancer | Psychostimulant poisoning |
| Stroke* | Respiratory carcinoma in situ | Accidental pois. (psychostim.) |
| Oesophageal varices | Tobacco abuse | Hallucinogen dependence |
| Gastro-oesoph. haemorr. | Parkinson's disease* | Hallucinogen abuse |
| Alcoholic gastritis | Ischaemic heart disease | Hallucinogen poisoning |
| Alcoholic liver cirrhosis | Pulmonary circulatory dis. | Accid. hallucinogen pois. |
| Choleolithiasis* | Cardiac dysrhythmias | Other psychotropic pois. |
| Acute pancreatitis | Heart failure | Anabolic steroid poisoning |
| Chronic pancreatitis | Stroke | Hepatitis B |
| Spontaneous abortion | Atherosclerosis | Hepatitis non-A non-B |
| Low birthweight | Pneumonia | AIDS |
| Psoriasis | Chron. obstr. pulmon. dis. | Infective endocarditis |
| Ethanol toxicity | Peptic ulcer | Drug psychoses |
| Methanol toxicity | Crohn's disease | Maternal dependence |
| Road injuries | Ulcerative colitis* | Newborn drug toxicity |
| Alcoholic beverage poisoning | Ectopic pregnancy | |
| Other eth. and meth. pois. | Spontaneous abortion | |
| Fall injuries | Antepartum haemorrhage | |
| Fire injuries | Hypertension in pregn.* | |
| Drowning | Low birthweight | |
| Aspiration | Prem. rupt. of membranes | |
| Occup. and machine injuries | SIDS | |
| Suicide | Fire injuries | |
| Assault | | |
| Child abuse | | |

* indicates negative association

Source: English, Holman *et al* (1995)[5]

The negative relationships starred in the table are particularly important in relation to the links between alcohol consumption, on the one hand, and ischaemic heart disease and strokes, on the other.

English and Holman et al[5] conclude that the attributable fractions in relation to tobacco consumption are almost all positive. There are only very minor protective effects of tobacco consumption. The consumption of tobacco, even at low levels, appears to be damaging to health. They indicate that there are no negative attributable fractions in relation to the consumption of illicit drugs.

## (b) Economic research

The development of information on the costs of drug abuse in Australia has closely mirrored that of epidemiological information on the health effects of drug abuse. This is not totally coincidental, since without epidemiological information it is difficult to estimate costs. Too often, both in Australia and overseas, economists have themselves had to undertake what were effectively brief meta-analyses of available epidemiological information, as the basis for their cost estimation work. The inefficiencies of this approach are obvious - it is not an efficient use of economists' time and epidemiological meta-analyses will be much more efficiently undertaken by epidemiologists.

Prior to the Holman, Armstrong *et al* (1990)[3,4] work there was no comprehensive information on drug abuse impacts. Similarly, there were no comprehensive estimates on the costs of drug abuse. Holman, Armstrong et al[3,4] provided the basis for comprehensive cost estimation of abuse of alcohol, tobacco and illicit drugs and thus made possible the Collins and Lapsley [6] cost estimates. The later English, Holman et al [5] work provided the basis for a new Collins and Lapsley cost study published early in 1996. Both Collins and Lapsley papers were initiatives of the National Campaign Against Drug Abuse.

The Collins and Lapsley (1996)[7] paper is an improvement on the earlier work in various respects:

- It has benefited from review and comment by academic colleagues. For example, based on estimates by English, Holman et al[5], it now deals satisfactorily with potential double-counting problems associated with the aggregation of cost estimates for individual drugs;
- Its data coverage is wider and more accurate. It uses diagnosis related group (DRG) costs, instead of average bed day costs, to estimate abuse-related hospital costs. It uses a recent Australian Bureau of Statistics study[8] on the value of unpaid work in the Australian economy in 1992 to estimate the social costs of abuse-related mortality and morbidity of people not in paid employment (for example, housewives, the unemployed and the retired);
- It examines the *incidence* of the social costs of abuse, that is, how these costs are shared among three broad community groupings (individuals, business and government). This analysis is particularly important when governments are trying to shift a greater proportion of health costs to the private sector. Estimates of total social costs will not, on their own, indicate any change in the distribution of the burden of these costs;
- It estimates the proportions of drug abuse costs which are avoidable, that is, which are

potentially able to be eliminated if appropriate public policies are implemented. A major problem with aggregate social cost estimates is that they often tend to be incorrectly interpreted as being costs which could be eliminated. It will never be possible (nor would economists argue that it would be efficient) to eliminate all drug abuse, and so to eliminate all abuse costs. The concept of avoidable costs is much more useful in policy terms since these costs indicate potential returns to public policies;

- It estimates costs for two separate years, 1988 and 1992. Thus it becomes possible for the first time to identify changes in drug abuse costs over time, both in current price terms and adjusting for the effects of inflation;
- It separately identifies public expenditures on research and anti-abuse programs. It has been argued (see, for example, Maynard, 1993[9]) that such expenditures represent discretionary public policy reactions to the costs of drug abuse, rather than direct costs of abuse;
- The issue of whether drug consumption yields private benefits is dealt with more effectively. Only the external (social) costs of abuse are estimated, using the reasonable assumption that addictive consumption imposes external costs, but does not yield private benefits. Thus the results are based upon estimates of the addictive proportions of drug consumption; and
- The new epidemiological information has facilitated the development of improved demographic estimates of the age and sex structure of the Australian population as it would have been in the absence of past or present drug abuse.

Thus, there are now available the following social cost estimates for Australia:

- Total costs, in both current and 1988 prices, for the calendar years 1988 and 1992;
- The tangible and intangible proportions of total costs;
- The breakdown of total costs between alcohol, tobacco and illicits;
- Rates of growth of costs, in both nominal and real terms;
- The incidence of social costs between individuals, business and government;
- The proportions of social costs which are potentially avoidable, given appropriate public policies; and
- The impact of drug abuse upon government budgets at Federal and State levels.

It is not possible to present a summary of these results at this time since the Collins and Lapsley (1996)[7] paper is currently being prepared for official release. However, a number of observations are useful.

Total costs indicate the *dimension* of the economic impact of drug abuse, as previously stated. The rates of growth are important, as the extent to which harm reduction policies are effective or even keeping pace with the economic impact of the abuse of various drugs must be of importance for future policy considerations.

The proportion of social costs which are potentially avoidable, given appropriate and effective policies, is of considerable significance. While researchers such as ourselves carefully estimate *all* drug costs using all available data, some of those costs (e.g. already existing illnesses which are now being treated) are not susceptible to policy changes. They are the inevitable result of previous abuse and will continue to be borne. It is for this reason that economists emphasise that, in the unlikely event that all abuse were to cease, some costs would continue to be borne for many years.

The patterns of incidence of the three drugs are quite different. The costs of alcohol bear heavily on business because much of the mortality/morbidity associated with alcohol consumption occurs among the working-age population. Tobacco costs are borne more heavily by individuals because of the higher proportion of mortality/morbidity occurring past retirement age. The comparatively high proportion of illicits costs borne by government results from the law enforcement costs associated with these drugs.
By their nature all *intangible* costs (for example, pain, suffering and bereavement) are borne by individuals.

An excess of revenue over government expenditures can in no way be interpreted to mean that social costs are being covered by tax revenue. Many social costs, particularly intangibles, do not appear as public expenditures. The result is that social costs undoubtedly far exceed public expenditures, even when drug-related revenues exceed the relevant public expenditures.

## Future research priorities

## (a) Epidemiological

As indicated above, Australia is now particularly well-supplied with information on, and quantification of, the causal links between drug consumption and mortality/morbidity. This Australian evidence is now being reviewed, and in some cases modified, for use in other developed countries, particularly the U.S., Canada and New Zealand. There will inevitably be problems of transferability of such data between one country and another, particularly where social customs, product quality and range, consumption levels or public policies towards drug consumption differ. Nevertheless, the English, Holman et al[5] research is already proving its great use in abuse cost estimation in other western countries.

The transferability issue becomes a real problem when studying developing countries. The WHO has sponsored a comparative study of mortality from smoking in developed countries[10] but informational problems remain concerning smoking in developing countries. The situation is much worse in relation to information on the impact of alcohol consumption in developing countries and almost hopeless in relation to illicit drugs. In many cases, developing countries are at a much earlier stage of the drugs epidemic than are developed countries, with the result that mortality/morbidity problems have not yet fully emerged. For many developing countries, the extent of the economic impact of drug abuse is yet to be realised.

Even in the Australian context there remain major gaps in the epidemiological information. In relation to tobacco, it still does not appear to be possible to quantify the impact of environmental tobacco smoke (passive smoking). According to the epidemiologists, the qualitative evidence as to the harmful effects of passive smoking is accumulating rapidly but it has not yet reached the stage where reliable quantification is possible. It would appear, however, that this stage will be reached in the relatively near future.

The situation concerning attributable fractions for illicit drugs remains unsatisfactory. This is not surprising given the range of drugs in this category, and so the amount of research needing to be undertaken. Much less is known about the health impacts of illicit drugs than those of alcohol or tobacco.

Virtually no literature exists upon the impact of abuse of pharmaceuticals[11] . Even the concept of drug abuse of pharmaceuticals is not totally straightforward, particularly in relation to prescribed pharmaceuticals, although it could probably be approached from the point of view of a comparison of *per capita* consumption of prescribed pharmaceuticals in countries with similar health outcomes. It is fair to say that we have available virtually no quantifiable information on the abuse of pharmaceutical products.

## (b) Other causal relationships

Major gaps still exist in relation to the causal links between drug consumption and other non-health problems. The major areas of ignorance are the relationships between:

- All drugs and absenteeism;
- All drugs and on-the-job productivity;
- Alcohol, illicit drugs and crime;
- All drugs and welfare expenditures;
- All drugs and ambulance usage; and
- Tobacco and fires.

Anecdotal evidence would indicate that the effects of drug consumption on absenteeism and workplace productivity are substantial[12,13] but quantification of these costs does not currently appear possible. A similar conclusion must be drawn about the relationships between alcohol, illicit drugs and crime[14-16].

Certain significant government expenditures proved impossible to estimate, probably the most important being welfare expenditure (almost entirely a Federal responsibility). Social welfare data in Australia are not collected in sufficient detail to indicate the proportion of payments attributable, directly or indirectly, to drug consumption. In any case, care must be taken to distinguish between real welfare costs, which make a clear call on national productive resources, and pecuniary costs, which merely represent transfers of expenditure power between different community groups. Only the former should be included in social cost calculations. The latter are relevant for budgetary impact calculations.

In the present state of information in Australia the proportion of ambulance services attributable to drug use appears impossible to estimate, let alone the types and intensity of utilisation (and so the costs).

The English, Holman *et al* attributable fractions incorporate estimates of *mortality and morbidity* associated with tobacco consumption but it is not currently possible to estimate the proportions of *property and environmental damage* attributable to smoking. According to the NSW Fire Brigades Annual Statistical Report, 1992, over half of the fires reported in NSW in that year were directly caused by cigarettes and discarded matches. However it is not possible to convert this type of information to a form useful for the purposes of quantification.

## (c) Costs and other economic information

The major categories of costs which appear to be significant, but for which comprehensive data are not available, relate to those referred to above:

- Environmental tobacco smoke;
- Pharmaceutical abuse;
- Absenteeism (related to all three drugs);
- On-the-job productivity losses (all three drugs);
- Welfare expenditures (all three drugs);
- Ambulance usage (all three drugs);
- Crime (alcohol and illicits); and
- Fires (tobacco).

It is also noteworthy that two recent attempts to value loss of life, in New Zealand and Switzerland, suggest that the intangible costs presented in Collins and Lapsley (1996)[7] may be severely underestimated[17,18]. We can, thus, be extremely confident that the Australian results do not overestimate the "true" figures. They are almost certainly substantial underestimates.

## Conclusion

Drug cost studies promote public and political awareness as a part of budget proceedings: they are a tool for policy formulation and policy justification. They support other relevant data in policy analysis.

The ultimate objective of economic information on drug abuse is to assist in the achievement of the most efficient allocation of available productive resources, that is to employ resources in those uses where the social rate of return to the expenditures is the highest. This implies the need for program and policy evaluation in order to produce rate-of-return information. Very little of this type of information has yet been produced in the Australian context. For many drug abuse programs we have little or no information upon rates of return. This would be no problem if there were no limit on available resources. In the real world of limited resources, efficient allocation designed to maximise the social benefits of public expenditures can only be achieved on the basis of the use of rate-of-return information, yielded by benefit-cost analysis. The drug abuse cost estimates referred to above are an extremely important input into benefit-cost analysis of drug programs but they are not a substitute for it.

Future program evaluation should incorporate economic analysis, with an increased recognition of the opportunity costs of alternative policies. The developing emphasis on evidence-based practice and outcome measurement should also incorporate cost-effectiveness as an integral part of the evaluation process. In support of claims for additional resources for drug and alcohol programs, as with other public health programs, economic evaluation can make a major contribution.

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# THE CONTRIBUTION OF THE NATIONAL DRUG STRATEGY TO THE PREVENTION OF ALCOHOL RELATED HARM

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## Introduction

While the reduction in alcohol related harm in Australia cannot be wholly attributed to the National Drug Strategy or its predecessor, the National Campaign Against Drug Abuse, it would be an ungracious commentator who did not conclude that it had had a significant impact. While the Standing Committee of Officers reporting to Health Ministers had started to draft a national health policy in relation to alcohol before the Ministerial Council on Drug Strategy was formed; nonetheless, it was the declaration of the National Campaign Against Drug Abuse and the early formation of an Alcohol Sub-Committee which gave particular impetus to this policy. Regrettably, while a number of 'before' and 'after' measures of alcohol related harm have been compiled, some of them fortuitously, the absence and impracticability of any 'case control' means that such improvement as has been observed cannot be wholly or confidently attributed to the National Drug Strategy - while the overall evaluations carried out as part of the campaign itself have tended to concentrate on process measures[1,2].

## The recognition of alcohol as a drug

Perhaps the most significant achievement of the National Campaign Against Drug Abuse in relation to the prevention of alcohol related problems was to bring alcohol use itself into the orbit of a campaign dedicated to minimise the harm associated with all drug use. While that alcohol should be included in the ambit of such a campaign given the widespread harm associated with its use will strike us now as obvious, it is instructive to note that considerable debate surrounded its inclusion at the time[3]. Clearly, for alcohol related problems to be prevented requires that alcohol use itself be considered problematic. While the launch of the National Campaign Against Drug Abuse was not the first occasion on which there had been inter-governmental acknowledgement of the widespread harm associated with our use of alcohol[4], the acknowledgement of alcohol together with tobacco in a campaign concerned to minimise the harm associated with Australian's use of drugs was of particular consequence when it is recalled that surveys had previously revealed that many people did not consider alcohol to be a drug at all. The fact that the Alcohol Sub-Committee was one of the first Sub-Committees to be formed by the Ministerial Council on Drug Strategy and that the national health policy on alcohol was the first national policy promulgated by the Campaign only serves to confirm that alcohol related problems were on the map, if not contestably the most widespread of problems associated with drug use in Australia[5].

## The costing of alcohol related harm

Next to the inclusion of alcohol in the remit of the campaign one of the most significant contributions of the National Drug Strategy to the prevention of alcohol related harm has paradoxically been to undertake an economic costing of that harm[6] . Given Australia's long history of alcohol use, which until recently placed it in per capita terms at the forefront of the English-speaking world, it is perhaps ironical that it was only in 1991 that any serious attempt was made to estimate the economic cost of that use. While all such economic analyses are only as valid as the assumptions which they make in relation to them, those made by Collins and Lapsley[6] are generally considered to have been under-estimates[7]. Nonetheless, these costs were estimated to be of the order of $6.03 billion in 1988 terms.

These costs, which have not been authoritatively disputed, and which are currently under further review provide an impetus to the prevention of alcohol related harm, if only because they suggest that such costs and, therefore, the subsidy offered to the alcohol industry, cannot be sustained in a country committed to greater economic efficiency. Reducing these costs in any significant way means in essence preventing alcohol related harm since the treatment of such harm would itself represent considerable additional cost (though also returning economic benefits). In particular, this economic analysis has given rise to additional initiatives in the prevention of alcohol related road traffic accidents, industrial accidents and absenteeism, all of which represent significant contributors to these costs.

## Alcohol's aetiological significance

Of similar significance is the determination of the aetiological contribution made by alcohol to a wide variety of medical conditions, itself an ingredient of any economic costing, and a significant one, of the role of alcohol[8] . This determination, recently repeated in order to take account of the so-called protective effect of alcohol in relation to certain cardiovascular functions, suggests that in 1992 hazardous and harmful consumption of alcohol was responsible for the loss of 3,660 lives and 55,450 person years of life before 70 years, at an average of 15.2 years of life lost per death[9]. There was also a net occurrence of 71,593 hospital episodes and use of 731,169 hospital bed days caused by such consumption, figures in excess of those provided by an earlier estimation[8].

## Early diagnosis and intervention in the prevention of severe alcohol related problems

The cost of such admissions and years of life lost has lent additional impetus to the need and economy of early diagnosis and intervention, ideally at a primary care level or failing that at admission to hospital. The treatment of long-standing alcohol related problems is not so straightforward or assured of success that their early manifestations can be neglected, except at considerable expense to the health care system.

There have been numerous demonstrations here and abroad of the efficacy of early diagnosis and minimal intervention in the treatment of alcohol related problems presenting in both general practice and hospital settings[10-15]. While clearly these interventions do not serve a primary preventive purpose, their extrapolation to all relevant clinical and work settings would ensure that such problems are recognised early when their cost, in both personal and economic terms, is minimised and the possibility of their treatment maximised.

While the benefits of such practices have been demonstrated in a number of experimental settings, regrettably, as yet their implementation is not so widespread as to have realised their full potential. For them to do so will require that doctors be persuaded of the significant role

alcohol plays in many medical conditions and the availability of effective techniques for addressing excessive consumption.

## A better informed public

A number of the initiatives taken under the auspices of the National Drug Strategy have had as their aim a better informed public. Among these are the various campaigns, both federally and state based, designed to raise the public's awareness of the risks associated with the consumption of alcohol, whether on a regular or episodic basis[16-19]. Whereas initially these campaigns tended to concentrate on the medical effects of long-term heavy consumption, increasingly they have come to emphasise episodic hazardous consumption (e.g. bingeing) and at least in the most recent of these campaigns, 'Alcohol Go Easy', consumption which may have been considered 'normal' in the context of Australia's generally high level of tolerance for intoxication[19].

Surveys have shown that the public's awareness of the advice given has increased over time and is related to the energy with which particular campaigns have been pursued, with the populations of certain states showing more awareness than others[20,21]. As is true of most health promotion messages, recognition of the message is most often reported by those least at risk, suggesting that more segmented messages are required[20] While there has been increased recall over time of the messages promoted by the Drug Offensive, few studies have attempted to relate stated compliance to recognition of the messages, and fewer still have related recorded compliance to recognition.

*Recognition of unsafe levels of consumption*

An essential component in achieving a better informed public has been the determination of safe and unsafe levels of consumption. While some uncertainly exists as to whether a uniformly safe level of consumption can be identified, and whether in the process of defining it populations might be provided with an incentive to drink up to it, the National Drug Strategy occasioned an NH&MRC commissioned review of the risk literature which resulted in safe and unsafe levels being defined, albeit with a number of caveats[16]. Further consideration of these levels (precipitated by the evidence of a protective effect)[22] and the independent review undertaken by English and Holman et al.[9] have confirmed their veracity, as a result of which their recommendations are now contained within the individual campaigns run by the states and are recognised by the alcohol industry itself.

While familiarity with these levels does not necessarily imply compliance with them, surveys suggest a high recognition level for the recommendations in those states which have especially promoted them, though their relevance to episodic drinking (binges) is disputed by younger, heavier drinkers[20].

*The introduction of standard drink labelling*

Implicit in any attempt to educate the public as to what are safe and unsafe levels of consumption is the need to standardise the unit of consumption and to have all beverage containers depict the number of such units contained. A 'standard drink' equalling 10 grams of absolute alcohol and equating to approximately one nip of spirit, one small glass of wine and one schooner of regular beer has been the unit adopted in Australia, the depiction of which on all containers is to be mandatory from 22 December 1995. That this information was an essential ingredient in achieving a more discerning drinking population is suggested by that research which indicates that drinkers are unable to convert the information previously given (expressed in terms of alcohol as a percentage of volume) into the units

expressed in the NH&MRC guidelines and were, in any case, inclined to under-estimate the number of standard drinks in commonly poured drinks[23,24,25,26].

Whether providing this information which will enable drinkers to monitor their consumption in relation to NH&MRC guidelines and the advice given regarding drinking and driving will occasion them to do so, and whether as a consequence certain indices of harm will decline, remains to be seen. While some producers have already displayed such information on their products, they have done so in a voluntary and non-standard way the effect of which has not yet been evaluated.

Research undertaken in the United States on the effect of placing warning labels on containers, while not strictly analogous, has indicated an increasing awareness of the advice given even among those most at risk[27].

## The application of fiscal measures

The use of fiscal measures, whether federally or state administered, while holding out perhaps the greatest potential for preventing alcohol related harm, have been only partially applied.

While a tax differential has been introduced by the federal government favouring the least alcoholic beers, and this has been further widened by the practice in some states of not levying licence fees on the sale of low alcohol beers, Australia still does not apply a tax regime to alcoholic beverages in keeping with its avowed aim of minimising the harm associated with the use of alcohol. As previously observed, even the conservative estimates provided by Collins and Lapsley[6] suggest that the alcohol industry in Australia is subsidised to a significant degree, a fact which in itself would recommend increasing the tax impost on alcohol; while the present tax arrangements do not reflect the alcoholic content of the several beverages, particularly favouring bulk wines[28].

While some initiatives in this area can be taken by states or territories, as evidenced by the Northern Territory where the waiving of all licence fees on beverages having an alcoholic content of less than 3% by volume has contributed significantly to the popularity of low alcohol beers in that jurisdiction and the consequent lowering of its exceedingly high per capita consumption[29,30], the principal initiative must come from the Commonwealth. While the draft report of the Winegrape and Wine Industry Inquiry suggested that some small steps in this direction may have been taken[31], the government has since declared that it will not be varying the tax arrangements as they apply to wine thus passing up an opportunity to use fiscal measures in the interests of healthy public policy[32].

## The introduction of a uniform blood alcohol level, and random breath testing

Among the most significant of the initiatives taken under the auspices of the National Drug Strategy (though in part also preceding it) has been the introduction of a uniformly low blood alcohol level for driving, and the imposition of truly random breath testing[33]. Road traffic accidents and fatalities are among the most costly elements of Collins and Lapsley's[6] equation and feature prominently in English and Holman's[9] aetiological analysis. Any measure which significantly reduces alcohol's contribution to these events as random breath testing has been demonstrated to have done, therefore, represents a significant contribution to the prevention

of alcohol related harm.

## The introduction of a zero blood alcohol level for probationer drivers

While Australia has not seriously considered the possibility of raising the drinking age, the fact that probationary drivers are required to have zero alcohol in their blood while driving, combining with a high level of stopping of drivers in this age group, has resulted in a similar effect[34].

## The activation of the community

While the account given to date would suggest that the principal initiatives in the prevention of alcohol related harm have come from state or federal governments, there are also in the literature numerous examples of local communities taking the initiative in responding to alcohol related harm, in part by invoking regulations made centrally, but in other cases by taking truly individual initiatives such as suggesting that no alcohol be served in glass containers during certain events, imposing a ban on carry-on alcohol, the negotiation of an accord between alcohol industry and community representatives, or restricting the sale of alcohol altogether in certain areas.

While it is often difficult to attribute changes in consumption patterns or problems to these local interventions, the lack of control communities being an obviously deficiency, the changes effected in some cases are so large as to exclude other explanation. Notable examples of such initiatives, where there has been a strenuous attempt made to evaluate the effect of any intervention, have been the activities of the Alcohol Action Advisory Committee in Halls Creek[35], the 'Freo Respects You' initiative undertaken by the National Centre for Research into the Prevention of Drug Abuse[36], and the Surfers Paradise Safety Action Project co-ordinated by Ross Homel and his group[37]. All have demonstrated the potential of local community action for the amelioration of alcohol related problems.

The problem with many such local interventions, unless they are in some way institutionalised, is their transitory nature depending as they do on the concurrence of certain people who may themselves only be temporarily resident in those communities.

## The introduction of Employee Assistance Programs

A measure holding out particular promise for the prevention of alcohol related problems, but as yet lacking clear substantiation, is the introduction of Employee Assistance Programs into industry or, if not formal Employee Assistance Programs, a greater recognition on the part of employers and employees of the role of alcohol in industrial productivity[38,39]. The cost to industry of absenteeism, injury and loss of productivity are among the largest included in any estimation of the economic costs of our use of alcohol. Interventions aimed at identifying these alcohol related consequences and treating them in the employment setting, therefore, have a great potential for economic savings, particularly if they are combined with industry-wide policies aimed at minimising the on-site consumption of alcohol or its prior recreational use in security or safety sensitive occupations (e.g. train drivers)[40].

The contentiousness of these policies, however, and their obvious potential for managerial exploitation has made their adoption laborious and there are, as a consequence, few examples of their attested effectiveness. Notwithstanding this, the fact that the Campaign has

sponsored three national conferences on drug use in the workplace has undoubtedly contributed to a heightened awareness of the relationship between drug use and productivity.

## Conclusion

While a number of the initiatives which have been taken to prevent alcohol related problems - including some of the most significant - pre-dated, at least in part, the National Campaign Against Drug Abuse, there can be no question but that the Campaign has made a substantial contribution to the reduction of such harm. The multi-faceted nature of the Campaign, however, and the fact that of necessity no control comparison could be made, except in relation to some of its manifestations, has meant that it is difficult to attribute particular gains to particular initiatives. Local initiatives have occurred in the context of national initiatives and the two are inevitably intertwined in their effect.

Nor are pervasive socio-economic conditions irrelevant. Australia suffered its second worst economic downturn during the course of the Campaign which itself followed a period of buoyant, if not extravagant, economic activity. Both are likely to have contributed significantly to the prevalence of alcohol related problems. Whatever the other detrimental consequences of widespread unemployment and depressed economic activity, such conditions contribute to a reduction in alcohol related problems and in this regard an economic recession can be considered a preventive measure.

Whatever the current debate on republicanism - whether to favour a minimal or maximal model - it has always seemed to me that Australia enjoys a particular advantage in its current federal structure. The fact that the states are largely autonomous in their clinical and policing policies and practices means that initiatives taken in one state can be evaluated by comparison with others and only extrapolated to others if found to be efficacious.

If there is an abiding research imperative, it is to make greater use of this facility than is currently evidenced.

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# PRESCRIBED DRUGS AND PROSCRIBED DRUGS: TWO DIFFERENT WORLDS?

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**In this paper we examine the position of pharmaceuticals in the drug and alcohol field in general, with emphasis on the implications of this for the National Drug Strategy (NDS). The focus here is on the use of psychotropic drugs, particularly the benzodiazepines. We then provide some examples of research done by NDARC into pharmaceutical utilisation in collaboration with other groups.**

## Why pharmaceuticals ?

**A trite answer to the question of why should pharmaceuticals be of relevance to the National Drug Strategy?, is simply, "because they are drugs!!", and ipso facto as drugs they should be included in such a strategy. Pharmaceuticals are not however simply defined in terms of their chemical and psychoactive properties. Importantly, they are defined under legislation, as drugs having therapeutic potential which are to be prescribed by medical practitioners, and dispensed by licensed pharmacists for medical purposes. This on the face of it puts them in a different category to drugs such as alcohol, tobacco and cannabis, whose use is primarily for the purposes of recreation and social enjoyment. Also, in theory the use of pharmaceuticals should be initiated by the medical practitioner who acts as an agent for the patient, given their specialised knowledge of health problems and associated treatments.**

**This clear-cut distinction between "pharmaceutical" and "non-pharmaceutical" drugs breaks down very easily when submitted to closer scrutiny. One problem with this distinction relates to the political process underpinning the definition of a "pharmaceutical". Presumably a pharmaceutical drug should be defined on the basis of its therapeutic utility. However, there are several drugs (heroin for example) which have therapeutic potential, but which have been defined as illegal drugs via means of a political process.**

**Perhaps the major reason for pharmaceuticals being of relevance to the NDS relates to the potential that psychotropic drugs such as the benzodiazepines have for producing dependence. There is abundant evidence for the existence of a benzodiazepine dependence syndrome[1,2]. Longer-term users of these drugs may develop tolerance, thus**

**requiring higher doses over time, and experience withdrawal symptoms upon cessation of usage. Thus as drugs of dependence, psychotropic pharmaceuticals clearly fall under the umbrella of the NDS. There are also iatrogenic effects associated with the use of benzodiazepines, such as falls in elderly persons which can result in severe fractures. Other types of pharmaceuticals are probably of less relevance to the NDS. For example, while there is clearly a problem with the over-prescribing of antibiotics, this would be of much greater importance to the general practice and pharmaceutical benefits sectors, than to the NDS.**

**Another reason why psychotropic pharmaceuticals are of relevance to the NDS relates to the fact that these drugs can be used for "non-medical" purposes. That is, people use these drugs to experience some type of effect. One manifestation of this problem is seen in poly-drug use where benzodiazepines are used in conjunction with alcohol for example[3]. There is also clear evidence showing that some injecting drug users (IDUs) are combining benzodiazepines with their other drugs of choice such as heroin or amphetamines. This research has also found that IDUs who also use benzodiazepines have greater HIV risk behaviour than do those who are not benzodiazepine dependent[4].**

**Another important issue relating to the medical versus non-medical dichotomy, is the thorny question of self-medication. There is evidence to suggest that some illicit drug users may be using pharmaceuticals as a means of dealing with anxiety, depression and other psychological problems[5-7]. While the remedies that these people seek fall outside the official medical system as such, it could be argued that this use constitutes a form of therapeutic use.**

**For all the above reasons, distinguishing pharmaceutical from other drugs on the basis of medical versus non-medical usage is a tenuous distinction. What this discussion demonstrates is that proscribed and prescribed drugs belong to overlapping rather than separate worlds, with many common problems requiring common solutions.**

## The intersectoral nature of pharmaceuticals

**While the distinction between pharmaceutical and other drugs is far from being clearcut, the organisational structuring of research and policy bodies tends to be divided on a pharmaceutical versus non-pharmaceutical basis. When the NDS commenced in 1985 as the National Campaign Against Drug Abuse, its focus was mainly on alcohol abuse, tobacco and illicit drug use. To its credit much focus was given to alcohol and tobacco, both licit drugs, but also responsible for most of the drug related harm in our society. Given the initial political imperative that the NDS be set up to deal with the "hard" (illicit) drug problem, this was indeed a great achievement. However it would be a fair assessment that problems related to the use of psychotropic pharmaceuticals have received less emphasis. This however is not meant as a serious criticism of the NDS, as given limited resources, allocation of scarce resources should be focused on those drug responsible for the greatest harm.**

**Research and policy related to the use of pharmaceuticals in a general sense, has tended to be more the prevail of the Pharmaceutical Benefits Branch of the Commonwealth Department of Human Services and Health, rather than the Drugs of Dependence Branch. Other relevant sectors are the General Practice Branch and the Royal Australian College of General Practitioners (RACGP). Here the focus is very much on**

**aspects of general practitioner behaviour, such as rational prescribing and evidence based medicine. However as the Commonwealth Health Department's most recent policy on the quality use of medicine notes, it is not just doctor behaviour which influences utilisation, but also patient behaviour. Thus the experience of the NDS in terms of demand reduction initiatives with other drugs, has a complementary role to play in the field of optimal pharmaceutical utilisation.**

**A striking aspect of the most recent conference of the International Society for Pharmacoepidemiology, was the relative dearth of papers/posters dealing with the utilisation of psychotropics and total lack of papers dealing with the therapeutic use of methadone. Methadone researchers could consider submitting the results of their endeavours to clinical epidemiology journals. However this needs to work both ways, with the editors of such journals being receptive to such submissions, rather than rejecting them on the basis of it being of D&A concern only. Again this emphasises the need for intersectoral cooperation.**

## Data sources of pharmaceutical utilisation

**Sources of data on pharmaceutical utilisation can be roughly divided along the lines of aggregated utilisation data versus various types of survey data. We will describe each type in turn.**

***Aggregated Utilisation Data***

**The Drug Utilisation Subcommittee of the Commonwealth Department of Human Services and Health was established in the mid 1980s to set up a database of aggregated levels of pharmaceutical utilisation in Australia. This database comprises two major sources: (i) claims made under the Pharmaceutical Benefits Scheme (PBS) and the Repatriation Pharmaceutical Benefits Scheme (RPBS) ; and (ii) results from a regularly conducted Pharmacy Guild Survey to gauge utilisation levels of drugs not covered under either the PBS or the RPBS, such as private and "under copayment" medications. These data are excellent for examining trends in aggregate utilisation over time, and permit analyses of individual drugs or drug sub-classes. This database is particularly useful for assessing the effects of policy changes on pharmaceutical utilisation at the macro level.**

**A limitation of this type of data however, is that it lacks information about patient level variables such as age, sex and condition. Thus other types of designs are needed where the focus is more on the patient, to complement information provided at the aggregate level. The other problem with this data, is that organisational changes to the Pharmaceutical Benefits Scheme itself, can change the comparability of that part of the data over time.**

***Survey Data***

**Survey data into pharmaceutical usage in Australia can be defined in terms of the following categories:**

- **General Practice Based: The two major sources here are the Australian Morbidity and Treatment Survey (AMTS) conducted by the Department of General Practice, University of Sydney[8], and the New South Wales General Practice Survey conducted by the RACGP under the direction of A/Professor Andrea Mant. In these studies,**

**doctors are selected at random, and fill out a pad detailing consecutive consultations with patients over a given period of time (usually a number of days). Information is therefore obtained on doctor characteristics, practice characteristics and patient characteristics.**

- **Household Based: The largest household based survey which collects information on the use of medicines in Australia is the National Health Survey (NHS) conducted by the Australian Bureau of Statistics. The advantage of this survey is that comorbidity and the use of alcohol and tobacco can be correlated with pharmaceutical use. The disadvantages are the total reliance on self-reported medicine use, and the fact that the survey is only conducted at five year intervals. Nevertheless, the NHS provides a rich source of information on pharmaceutical use, and should be analysed in a lot more detail than it has been to date. The National Drug Strategy (formerly NCADA) household surveys also provide some information on pharmaceutical use, though this is less comprehensive than the NHS, and the sample size is smaller by a factor greater than ten. However NDS surveys are conducted on a more regular basis than are NHS surveys (every 2-3 years versus 5 years).**

- **Special Populations: A problem with household surveys is that they tend not to access sub-populations of illicit drug users such as injecting drug users. Purposive non-random designs are required to tap into these populations. As mentioned previously, the work of Darke and associates recruited amphetamine users and examined their benzodiazepine use as well as their illicit drug use[9].**

## Bridging the gap in research

**In this section we describe two pieces of research in which NDARC has been involved within the area of pharmacoepidemiology. One study involved using aggregated prescription data to evaluate a policy change, while the second was the evaluation of a general practitioner based intervention. In each case the research involved an intersectoral corroborative effort.**

***Evaluation of copayment changes to the PBS***

**NDARC has been involved with the Drug Utilisation Sub-Committee, Canberra, in evaluating the impact of copayment changes to the Pharmaceutical Benefits Scheme on drug utilisation levels[10]. In November 1990 pensioners were for the first time required to make a $2.50 copayment for prescription drugs covered under the PBS, and there were also other increases for other PBS recipients.**

**Time series analyses were performed to quantify the effects on prescription drug utilisation levels, of copayment increases which were made to the Pharmaceutical Benefits Scheme in late 1990. An important comparison made, was whether the copayment changes had a differential effect on "essential" versus "discretionary" prescription levels. For both drug categories, the introduction of the copayment produced a marked disturbance to utilisation levels. The month prior to the introduction of the copayment changes saw a huge anticipatory increase in utilisation levels. This was followed by a large reduction in utilisation levels. Interestingly, the analyses showed that the essential drugs tended to be returning to their pre-intervention levels, while the discretionary drugs seemed to have stabilised at a reduced level of**

**utilisation. These analyses have been written up in the form of a technical paper which is currently undergoing peer review[10].**

***The Hypnosedative Project***

**This study involved NDARC, in conjunction with the Royal Australian College of General Practitioners, in the planning, conduct and analysis of a randomised controlled trial of a brief intervention targeting the prescribing of benzodiazepines for anxiety and insomnia by general practitioners[11].**

**A random sample of GPs was selected from within two health jurisdictions in Sydney. Also included was a sample of all active GPs from ten purposively selected rural towns. Baseline information was collected from 286 GPs (51% response rate). Participating GPs filled out a pad documenting the main characteristics of 110 consecutive patient encounters. Information about GP and practice characteristics were obtained using a separate questionnaire. Thus at baseline there were 286 doctors who provided information on 31,256 patient encounters.**

**Two months after the baseline survey, doctors in the intervention condition received an educational visit which targeted benzodiazepine prescribing practice for the conditions anxiety and insomnia. This visit (academic detailing) provided the GP with materials encouraging them to "think twice" about the use of benzodiazepines in the treatment of anxiety and insomnia[12]. Approximately seven months after the baseline survey, 275 of the 286 doctors agreed to participate in a second survey, recording the details of (potentially) another 110 consecutive patient encounters. This second survey collected data on 30,200 patient encounters.**

**The *overall* benzodiazepine prescribing rate fell 24% from first to second survey across both intervention and control doctors. This may have either reflected an underlying secular trend for decreasing benzodiazepine prescriptions, or an audit effect for having surveyed the doctors. However, when the analyses were conducted within the diagnoses of interest (i.e. anxiety and insomnia respectively), there was clear evidence of a greater reduction in benzodiazepine prescribing for insomnia (though not for anxiety) among intervention doctors. This was particularly the case for initial benzodiazepine prescriptions for newly diagnosed cases of insomnia. While rate only declined from 69% to 64% among controls, it declined form 85% to 48% among patients from the intervention doctors, a statistically significant result[11].**

**As well as the work directly arising from the trial itself, the data have been used to explore the determinants of the rational prescribing of benzodiazepine and other psychotropics for diagnoses such as insomnia and anxiety[13], depression and other psychological disorders (work in progress).**

## Conclusion

**The distinction between the medical and non-medical use of drugs is not clear. Psychotropic pharmaceuticals are of relevance to the NDS, given their dependence liability and usage in poly-drug use. However given that the area of pharmaceutical utilisation overlaps a number of different disciplines, such as general practice, pharmacoepidemiology and the drug and alcohol field, it is important that clear and cooperative intersectoral links be developed.**

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# A PRACTICAL SOLUTION TO AN INTRACTABLE PROBLEM: HEROIN ADDICTION, METHADONE MAINTENANCE TREATMENT AND THE NATIONAL DRUG STRATEGY

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## Introduction

The National Campaign Against Drug Abuse (NCADA), which was later replaced by the National Drug Strategy (NDS), commenced in 1985 with harm reduction as its chief regulatory idea for guiding policy. Despite being out of favour in the years previous to 1985, methadone maintenance was endorsed as part of the Campaign as an appropriate treatment for heroin addiction[1]. This was consistent with a campaign focussing on harm reduction in that methadone maintenance involves substituting a long acting, orally ingested opioid for a short acting, injectable substance (heroin) which has a number of properties that make it suitable for the development of a compulsive pattern of use.

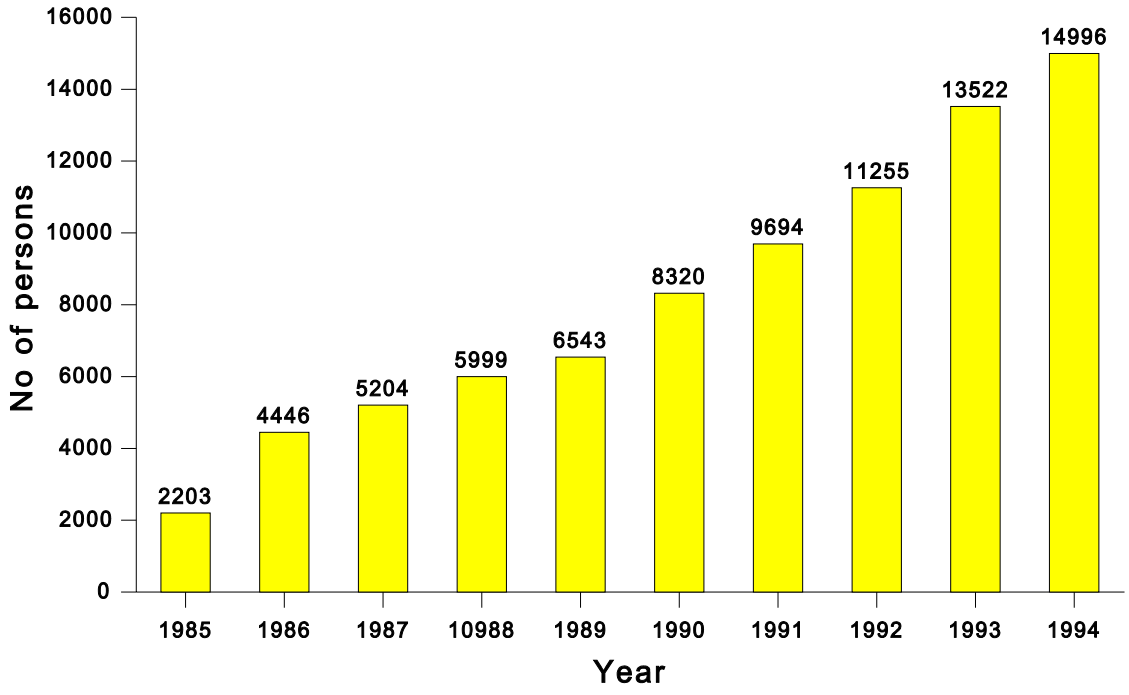
In the ten years since the commencement of NCADA, methadone maintenance programs in Australia have expanded dramatically, as they have in many other countries around the world. What I would like to do today is to examine whether this expansion was appropriate, and to look at what has been learned about the delivery of methadone treatment over the past decade. The key themes of the past ten years have been: the influence of the HIV pandemic on thinking about what appropriate goals for drug treatment programs might be; how to bring methadone treatment services into line with these new treatment goals; and, the extent to which treatment protocols can be varied before the expected results of opiate substitution cease to be observed. On the whole, the research evidence that has accumulated endorses the decision made ten years ago to support the expansion of methadone services.

## The expansion of methadone services in Australia

The endorsement of methadone maintenance, as part of a National approach to the management of heroin dependence in Australia, has had the effect of producing a dramatic growth in the methadone program and, notwithstanding the recent proposal from the Northern Territory to bus out heroin dependent people rather than provide them with treatment, all of the States and the ACT now have methadone programs. This reflects overseas trends; for example, many countries now have methadone programs, even though there was sufficient opposition to them in the past to prevent them being set up.

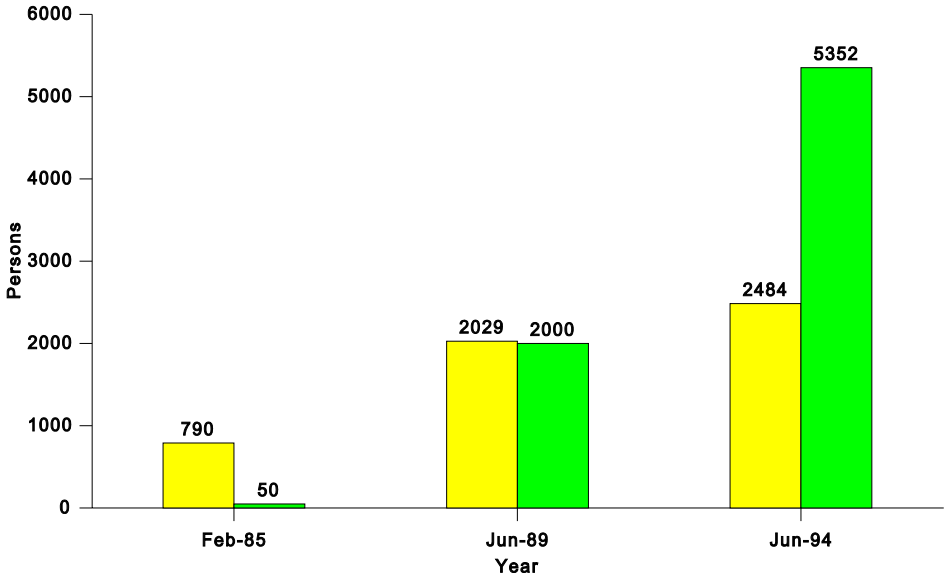
The extent of the growth of the Australian methadone program over the past decade is depicted in Figure 1 below. As can be seen from this graph, the program has grown from 2,203 patients in February 1985 to 14,996 as at June 1994, and has been growing in recent years at a rate of about 10% per year [2] (pers. comm. Commonwealth Department of Human Services and Health, 16 November, 1995).

Figure 1. Numbers of persons receiving methadone in Australia 1985-1994




New South Wales has by far the largest methadone program, with 55% (8305 patients) of the total recipients of methadone in Australia as at June 1994 coming from this state. New South Wales has also had the fastest rate of increase in the growth of the program over the past decade when compared with other states and territories[3]. Reflecting an increasing trend in most jurisdictions, this rapid increase in New South Wales has been largely achieved in the private sector. The extent to which the expansion of the New South Wales methadone program has depended upon the private sector in the last decade is shown in Figure 2. In the four years from 1985 to 1989 there was a 40-fold increase in the private sector compared with an approximate three-fold increase in the public sector. Over the past five years, there has been comparatively little expansion in the public sector (24%), while the private sector has increased again by 168%[4].

Figure 2. Numbers of persons receiving private clinics in New South Wales 1985




## Changes in policy and practice 1985-1995

At the commencement of NCADA in 1985, the original treatment program suggested by Dole and Nyswander had been compromised in a number of ways. The key features of the original program were relatively high doses of methadone (>60 mg per day), long-term maintenance as the goal of treatment, the provision of a range of services to assist patients in their recovery, and the delivery of treatment within a medical model which viewed heroin dependence as a medical condition not unlike diabetes and, as a result, patients in the program were to be treated as they would at any other medical clinic. Due to widespread opposition to the notion of drug substitution as a solution to the problem of opioid dependence by social activists and politicians in the United States and elsewhere, the treatment protocols were changed to be more suited to an abstinence-oriented treatment philosophy. These changes involved reducing the doses of methadone used and aiming for detoxification within a relatively short time (< 2 years). This was combined with a strict disciplinary approach to therapy which demanded abstinence from all illicit drugs during treatment, with dose reductions and eventual detoxification being used to punish non-compliance.

The key tasks for policy makers and treatment practitioners over the past decade have been to return methadone treatment to the harm reduction framework within which it originally arose, to ensure that there is sufficient treatment available to meet demand, and to further ensure that treatment remains effective. The move towards a harm reduction approach was given impetus by what was discovered about the association between injecting drug use and the transmission of blood borne infections such as HIV and hepatitis B and C.

The key changes that have taken place in methadone treatment policy and practice during the past decade are set out below.

- There has been a move away from short-term treatment aimed at abstinence to an approach that accepts that individuals should be maintained on methadone for as long

as is necessary.

- Treatment has been considerably liberalised with less therapeutic demands being placed on clients, which reflects a the view that it is more important for drug users to reduce risk behaviours and be in touch with health services than to unrealistically demand that they eliminate their drug use altogether.
- Along with a reduction in the therapeutic demands that are placed upon clients, there has been a reduction in the types and numbers of services that are provided at methadone clinics.
- To assist easy access to treatment, entry criteria have been liberalised and this has resulted in a change in the population being treated, with less motivated and less compliant individuals being accepted for, and kept in, treatment.
- There has been a move away from specialist clinics as the preferred mode of treatment delivery towards a range of options aimed at "mainstreaming" or "normalising" methadone treatment, including the management of prescriptions by general practitioners, dispensing in community pharmacies and the integration of methadone services into the activities of primary health care centres and hospitals.

Many of the changes described above were formalised in the first National Methadone Policy which was published in 1993[5].

Another important area recognised as being important as part of NCADA was appropriate training for workers in the drug treatment field[1]. The importance of this issue for methadone prescribers was reinforced by the reporting of a number of deaths due to methadone poisoning in Victoria mid-way through this past decade (1989-1990), with a lack of training and understanding about the basic pharmacodynamics of methadone being identified as one of the probable causes in a coronial investigation[6,7]. Since that time, all of the jurisdictions with methadone programs have responded with the development and/or implementation of training programs and treatment manuals which provide information for medical practitioners about the management of methadone.

## The decade in research

The past decade has seen the development of an active research program around the world investigating the effectiveness of methadone maintenance treatment and the factors which influence this effectiveness. Four comprehensive reviews of the accumulated methadone literature have been conducted, two in Australia and two in the United States. The National Drug and Alcohol Research Centre carried out two of these reviews. The first, commissioned by the New South Wales Department of Health, reviewed the literature on the effectiveness of methadone treatment and clinical issues in patient management[8]. The second, conducted as part of the Quality Assurance in the Treatment of Drug Dependence Project again provided a literature review and convened an expert panel which came up with recommendations to guarantee quality assurance in the delivery of methadone treatment[9]. The conclusions of these two Australian reviews were supported by two reviews conducted independently in the United States, one by the Institute of Medicine[10] and the other by the Office of Technology Assessment of the United States Congress[11]. All of these reviews concluded that there is sufficient evidence to conclude that methadone maintenance treatment leads to substantial reductions in heroin use, crime and opioid-related deaths, and that it is highly likely that methadone maintenance would also contribute significantly to preventing the spread of HIV among injecting opioid users. These reviews, therefore, support the endorsement of methadone maintenance as part of NCADA and the subsequent expansion that has taken place in methadone services around Australia.

*Methadone Maintenance and HIV*

An important area of research over the past decade has been to determine whether methadone maintenance contributes to the prevention of the spread of HIV among injecting drug users. There are two ways in which this might be established: from studies that examine whether being in methadone maintenance is protective against HIV infection, and by those which examine the extent to which methadone maintenance reduces the likelihood of needle sharing among its recipients. There is a growing number of reports that have found an association between being in methadone treatment, especially for long periods, and lowered rates of HIV infection compared with those observed in non-treatment samples of people who inject heroin[12-20]. The importance of methadone is reinforced by the findings of two studies which have reported an association between higher doses of methadone and a decreased likelihood of HIV infection[19, 21]. Similarly, there is growing evidence that being in methadone maintenance treatment is associated with less sharing of injecting equipment[12, 22-26].

*Ancillary Services*

A key area of interest for American researchers has been the contribution of ancillary services to successful methadone maintenance treatment [22, 27-29]. However despite strong assertions in the past that such services are essential for successful treatment, the evidence remains equivocal. It remains unclear what proportion of clients want and will make use of such services, and what kinds of problems might be addressed by them.

One promising area of research is one which suggests that exposure to primary health care services during methadone treatment leads to improved retention and better functioning[22, 27, 30]. Other studies have shown that clients rate medical services highly as a desirable component of their methadone treatment[31] and they are more likely to attend for treatment for their medical problems when such services are made available on-site at their methadone clinic, compared with when they are referred for treatment elsewhere[32].

*Dosage*

There is now clear evidence from both randomised and observational studies that higher doses of methadone (>60 mg) are associated with better retention and less heroin use[22, 33-37]. However, it is important to keep in mind that avoiding the error of the advocates of low doses for all clients does not imply that all clients have to be maintained on higher doses. While the low dose advocates made the mistake of generalising to the majority from exceptional cases, it is important not to fall into the associated fallacy of treating exceptional cases as if they were similar in kind to the majority[38]. Another important factor in setting doses is the client's goal of treatment. Do they wish to eliminate or control their heroin use? If a client wishes to control their heroin use by attending for low dose methadone maintenance and they would leave if forced onto a high dose regimen, then it is arguably the case that more harm would be prevented by adapting the treatment to suit their needs.

*The Effectiveness of Liberalised Methadone Treatment*

An important consequence of the HIV epidemic among injecting drug users has been the development of easy-to-access, user friendly methadone maintenance programs. However, the question arises as to whether such programs will be effective in reaching their goals. In terms of HIV prevention, a series of studies which examined such programs in Amsterdam found that they were not protective against HIV infection, not associated with significant reductions in injection-related risk behaviour, and not protective in terms of preventing the transition from non-injecting to injecting opiate use[39-43]. However, it is likely, as the authors of these studies point out, that this lack of effectiveness may be due to the use of low doses of

methadone (<40 mg per day) and less than daily dosing for most individuals attending the programs. It is perhaps then a misnomer to refer to these programs as methadone *maintenance* programs.

By contrast, a recent collaborative study carried out by the National Drug and Alcohol Research Centre and the Kirketon Road Centre found positive outcomes from liberalised methadone maintenance treatment with young "chaotic" opiate injectors in Kings Cross, Sydney[44]. This study found less heroin use, less crime, reduced injection-related risk behaviour and improved health as a result of being in methadone treatment. Continuous exposure to methadone and higher methadone doses were identified as active ingredients in the treatment.

## Future directions for treatment and research

It is important that the lessons of history are attended to and that long-term methadone maintenance be kept available as an option for individuals who need it. Many of the criticisms of methadone treatment that were made in 1970s are now resurfacing. For example, it is not uncommon now to hear that methadone treatment is merely a form of social control, without any comment about what the lives of heroin dependent people are like. An important area of research that needs to be developed, therefore, is one that would compare aspects of the quality of life of opioid dependent people in and out of treatment. At the same time as investigating the lives of those who wish to stay on methadone, it needs to be stressed that there is little in the way of after care available for methadone clients in Australia who wish to detoxify from methadone. Such services should be developed and evaluated.

There is an urgent need to evaluate the general practitioner/community pharmacy model of service provision which is increasingly becoming an option that governments are relying upon around Australia. There is also a need to expand the armentarium of pharmacotherapies available for treating opioid dependence in Australia and this would require the approval of agents such as LAAM and buprenorphine for use in opiate substitution programs.

## Conclusions

The research evidence that has accumulated over the past 30 years concerning the effectiveness of methadone maintenance treatment suggests that the endorsement of this form of treatment as an appropriate intervention for the opioid dependent at the commencement of NCADA 10 years ago was warranted. The research evidence further suggests that methadone maintenance has been an important part of NCADA and the NDS, and that it has significantly contributed to the reduction of harm to the individuals receiving this form of treatment and to Australian society as a whole. The tasks for the future are to ensure that methadone programs are not rendered ineffective by appeasing idealistic critics, and, at the same time, to ensure that the rights of clients and their quality of life are not compromised in the pursuit of social goals. The former is achieved by policy being informed by research, and the latter is achieved by placing the well being and interests of clients at the centre of policy development and treatment practice.

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# WHAT CONTRIBUTION HAS RESEARCH MADE TO THE NATIONAL DRUG STRATEGY?

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Ten years on from the commencement of the National Campaign Against Drug Abuse (NCADA) and facing the third review of the National Drug Strategy (NDS) early next year, it is indeed timely to be taking a hard look at what has been achieved and what still needs to be done.

The focus for this session is of course 'the contribution of research to policy' and in the time available what I would like to do is briefly:

- Discuss the role research plays in determining policy;
- Suggest how research (and researchers) can be more effective in influencing the policy process; and
- In doing so, attempt to impart a better understanding of how the sometimes mystifying process of policy development occurs.

From the very onset of NCADA in 1985, it is fair to say there has always been a strong emphasis on research: A quest for more accurate data; an attempt to better understand the patterns of use; a search for what prevention activities work best and; in the area of treatment, what works best and for whom.

We have always said that 'the strategy', and the policies upon which it is based, is research driven. And, to a large extent, this is true.

Probably the most striking example of this can be seen in the very beginning of the national campaign. Here, for largely political reasons, we saw a major focus on illicit drugs. To a large extent this reflected the community's perception of what constituted the 'drug problem' and initially, despite research evidence to the contrary, the campaign was structured accordingly.

It is of course history now but it did not take long for the emphasis of the campaign to change. It changed to reflect the 'real' problems. Or at least it changed to place greater emphasis on those drugs which demonstrably caused the most harm. And what caused this change? Quite simply, it was the existing and continuing findings from quality research, the weight of which was difficult to ignore. And since those early days, research has continued to play a vital role in bringing about some quite impressive achievements.

For example (and this list is by no means complete or in any order of importance):-

- In the area of prevention, we are just now seeing the benefits of the earlier research work done on standard drink labelling. This research laid the foundations for improved content labelling on alcoholic beverage containers which will come into force next month. This initiative has in turn provided the basis for a major alcohol education campaign aimed at getting consumers to monitor just how much they drink;

- In the area of treatment, much of the work done on methadone and quality assurance has guided policy development in the area and has been translated into practice;

- The excellent and ground-breaking work done estimating drug caused morbidity and mortality, and the economic costs of drug abuse, have also had a major impact on government drug policy;

- Under the funding provided by the NDS we have seen the development of the two National Research Centres into institutions of great standing both here and overseas;

- We have seen both the quantity and quality of research supported under the Research Into Drug Abuse Program (RIDAP) increase substantially, and

- We have seen a significant increase in the level of local drug and alcohol research expertise, through such initiatives as the NDS scholarship program.

In addition, as we have already heard earlier today, changes have occurred over the last decade with the patterns of drug use; changes have occurred in the health and social problems associated with drug use and there have been significant advancements in treatment and prevention.

The achievements of the drug strategy, and they are many despite the impression some of the less enlightened sections of the media may wish to portray, are quite impressive considering they have occurred in such a short time.

While I realise some of these points have already been raised I think many are worth re-emphasising.

## Tobacco

In the area of tobacco smoking for example, our number one cause of drug deaths.

- As a result of increased awareness, smoking is now a high profile health issue and has increasingly become a major concern to the community. Twenty four percent of people now readily identify tobacco use as a drug problem, compared with only nine percent in 1985;

- Through the introduction of legislation we have seen the virtual elimination of tobacco advertising;

- Likewise, we have seen strengthened health warnings on packaging; and

- We have seen the widespread introduction of smoke free workplaces and other public

areas.

And what has this achieved?

- Overall we have seen a significant decrease in the prevalence of smoking, although there is still some concern about the rate of decrease among young women;

- Death rates from tobacco caused illnesses have decreased by nearly five per cent; and

- Given the long lead times for many tobacco related conditions, we can expect to see even greater health benefits in future.

## Alcohol

The situation in relation to alcohol, one of our most widely used drugs, has also seen some positive changes.

- Again we have seen the issue of alcohol misuse, and the harm it causes, placed firmly on the community agenda by a series of targeted education and awareness media campaigns;

- Overall per capita consumption of alcohol has fallen by approximately 15 per cent;

- We have seen the widespread introduction of random breath testing and as a result road fatalities associated with drink driving have declined significantly; and

- Overall, alcohol related death rates have decreased by more than five per cent.

Australians are also demanding to be better informed about alcohol. They have demonstrated that they believe industry and the community should be held more accountable for their actions and, as a result:

- As mentioned earlier, new legislation has been passed which will see the introduction of standard drink labelling on all containers by the end of this year - for the first time consumers wanting a simple and practical way of monitoring their consumption will be able to do so;

- The standard of alcohol advertising, which has been the subject of ongoing scrutiny, has been improved with the introduction of revised pre-vetting systems;

- The issue of alcohol related violence is being systematically tackled through the implementation of uniform and simplified liquor licensing laws as well as legal reform of the model criminal code as it relates to intoxication; and

- Significant resources are being devoted to addressing the problem of underage binge drinking.

## Illicit drugs

With illicit drugs:

- Despite suggestions from some quarters, we have not seen large increases in the use of these drugs. In most cases rates of use have either remained constant or decreased;

- The estimated number of deaths from illicit drug use actually decreased by approximately 15 per cent between 1988 and 1992 (the latest year for which comparable data are available);

- Funding of treatment programs has been substantially enhanced; most notably

- Access to and the availability of methadone programs which have increased nine-fold to the stage where there are now more than 18,000 clients on programs around Australia;

- We have seen the introduction of needle exchange programs and targeted education initiative which have clearly lessened the transmission of the HIV and hepatitis viruses from intravenous drug use;

- The health and social consequences of cannabis, the most widely used of all the illicit drugs, has undergone one of the most rigorous assessments ever and a major education program, based on contemporary research findings, is being developed.

I think that you will all agree that there have indeed been many impressive achievements over the last decade.

And it is obvious too that good research, which in turn has directly influenced government policy, has played a major role in bringing them about.

Having said this though, it's apparent that many people, who have not had any direct involvement in government policy making, are somewhat perplexed by the whole policy process.

What I think they sometimes fail to appreciate is that policy is determined by a whole host of factors, and, while research findings are undoubtedly crucial in this process, many other issues also need to be considered.

Some expect that because a piece of research is able to show that an approach or strategy can achieve a desirable outcome, that it should automatically become part of policy. While this may appear to be logical it is also unrealistic.

For research to translate easily into policy it's not enough just to show that something works. A far more comprehensive assessment of both the direct and indirect impact of any option also needs to be taken into account.

Unfortunately, governments, or more specifically government programs, have to operate within finite resources and this means compromises must be reached. Often, apparently successful strategies are not implemented because they fail on any one of a number of criteria.

They may, for example, lose out to an alternate approach which, while appearing less effective in direct outcomes, may be more cost efficient. The 'most-bang-for-the-buck' is always going to be important consideration when developing new or revised policy.

Other research findings may fail in the policy stakes because external considerations have also not been adequately considered. Whether we like it or not commercial and economic considerations do play a part in public health policy. To believe otherwise is at best naive and at worst, if continually ignored, can undermine the 'real world' value of any particular stream of research.

In the area of drug policy we must also accept that we are, more often than not, dealing with peoples' behaviours. Behaviours which people have chosen to adopt and ones which in many instances are both legal and popular. In these cases, public acceptability of change must also be a consideration.

When it all boils down, research which fails to take account of the broader context into which its findings are intended to be implemented, is nothing more than theoretical. As such, it may be interesting and academically stimulating, but practically, it may be of little value.

How then should we make the jump from theoretical research to practical recommendations? What is it, from a government perspective, makes technically good research into first rate practical research?

I would suggest the answer lies in two relatively straightforward recommendations:

- Firstly, keep abreast of new and emerging issues. Know what the priority issues are and be pro-active in addressing them. Under the NDS large amounts of funds have been made available for both researcher initiated and commissioned research. All too frequently however, what we see in successive funding rounds are the same researchers, wanting to research the same topics and in areas which could hardly be described as a priority.

- Secondly, as I mentioned earlier, take account of the broader impact of findings and the implications of recommendations. It is of little use proposing a course of action without having undertaken at least some form of analysis as to its cost/benefit, its efficacy in relation to alternate approaches and the practical difficulties in having to implement it.

Over recent years we have seen an increasing reliance by government on external research to guide policy development.

At the same time the source of this advice has also become broader and there are some interesting lessons to be learnt from this trend.

Commercial consultancy groups have for some time now recognised the benefits of multi-disciplinary research teams. They have been successful in attracting a good portion of government research dollars because they recognise that policy issues are multi-faceted. They acknowledge that governments are looking for advice that takes a range of factors into account and they approach the tasks accordingly.

Academic research on the other hand has traditionally tended to be narrower and more focused. While academic organisations are excellent in managing research projects they are less skilled in project management. And by that I mean academia, on the whole, appears less willing or able to bring together multi-disciplinary, or even trans-national teams than their commercially oriented counterparts.

While inter-disciplinary collaboration and joint venture approaches are not unknown in academia, and a very good example of this were some of the studies undertaken as background for last year's alcohol and violence conference, it still tends to be the exception rather than the rule. For some it may not be the style they prefer or are used to, but in the area of commissioned research, this type of approach is undoubtedly the way of the future.

Having said this, there should, and always will of course be a place for the research project that may be out of the mainstream. The researcher-initiated type of study that approaches an issue from a different tack. It would be a foolish government program that did not preserve a segment of its research budget for originality and while all these projects may not always 'work', so to speak, we can often learn as much from failure as success.

There is a place for both types of research. But increasingly, policy is being influenced by the more comprehensive commissioned type of project and unless researchers are able to accommodate these changes we will continue to have potentially useful findings suffer because they only provide part of the answer.

Just while we are on the topic of making research more applicable, I think it is also worthwhile to highlight a potential pitfall in the area of dissemination of research findings. More specifically, the issue of researchers or institutions becoming advocates for particular policy.

A major problem faced by government when dealing with a sensitive issue such as drug use, is the need to be able to access and utilise research which is accepted as unbiased.

Researchers who continually align themselves too closely with a particular approach, and openly and continually advocate a specific course of action, run the risk of marginalising their impartiality. Once perceived as such, irrespective of the quality of the work they produce, it becomes increasingly difficult for government to commission further work without claims that the finding will be a foregone conclusion.

The temptation to advocate an approach which you passionately believe in is undoubtedly difficult to resist. But despite this temptation, the research (and researcher) which is of greatest value in influencing policy is that which limits itself to good design, sound methodology and statement of findings.

Of course advocacy of a particular line is useful, and in fact may be essential, in driving a policy debate. To be most effective in the long run however this is often best left to groups which are not directly aligned with government and which have nothing to lose in having a closed agenda. Advocacy should not be the role of the impartial researcher. Numerous groups already exist within our community, which are uniquely placed and adequately resourced, to undertake this role. Strong and impartial research findings are a powerful weapon in the public debate of policy, but they must also be used carefully.

I would suggest the most effective way in which findings can be used is to concentrate on providing strong ammunition but leave the fighting up to the mercenaries.

I'm not suggesting for one minute that drug and alcohol researchers in this country should be seen and not heard, far from it.

Too much money has been invested over the last decade to foster a strong base of quality

research and researchers to hide these talents under an academic 'bush'. Something in excess of $35 million has been made available since 1985 to directly support research and, despite some suggestions that this aspect of the strategy has been devalued in recent years, last year alone research accounted for over 25 per cent of the non cost-shared budget.

By all means researchers should be encouraged to disseminate their work as widely as possible. The trick however is to limit themselves to commenting on what the data indicate rather than continually advocating a particular approach which just happens to be supported by their research.

Enough of this chiding however.

To go back to my earlier statement regarding the need for researchers to keep abreast of new and emerging issues, perhaps it is worth listening to what we feel are some of the commonwealth government's priority issues for the next twelve months.

These include:

- Further reductions in tobacco consumption, particularly among young women, together with better enforcement of tobacco control measures;

- Adult alcohol education to complement and enhance the current standard drink labelling initiative;

- An exploration of options for the treatment of opioid dependence including, for example, the funding and delivery of methadone programs; and

- Further work to address the misuse of illicit drugs in general and specifically, heroin, psychostimulants and steroids;

And finally, in addressing all of these issues, we would like to see a greater emphasis placed on developing a better understanding of cost effectiveness across all drug related programs and strategies.

In summary, the challenges are for researchers to operate in a more strategic manner; to improve the dissemination of, and access to, their findings; and, to not be discouraged when that brilliant idea is not immediately translated into policy and legislation.

Hopefully we can continue to build on the successful partnership between policy makers and researchers so that we can be better placed to meet the challenges ahead.

# HOW CAN POLICY BE INFORMED BY RESEARCH IN THE FUTURE?

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In examining the future relationship between policy and research, I want to focus on three topics - the need to protect academic freedom, the need to integrate a range of disciplinary perspectives and, finally, the need to collaborate with the relevant interest groups.

## The need to protect academic freedom

Although I am a strong supporter of doing policy-relevant research; research that is actually going to be implemented and that will make a difference, I want to begin by arguing for academic freedom.

As Robin Room recently wrote, science has to be potentially inconvenient and even subversive[1]. While, quite rightly, the vast majority of research in the academy underpins rather than undermines the state, the academy must maintain the ability to seriously question government policy. It can only do this if it has some power to set the research agenda and, most importantly, to control funding.

As society becomes increasingly enmeshed by economic rationalist ideology, it becomes easier to attack so-called ivory tower research and for policy makers to increase their control over what researchers do.

Thus I argue that the pre-eminent future issue for drug researchers and policy makers is to find a way to protect academic freedom. The omens are not good. Most funding for drug research comes from one or two sources which are essentially controlled by policy makers, not researchers. Applications to other sources, which *are* controlled by researchers, are usually referred back to the ear-marked drug research bucket. As funding gets tighter there is more pressure to let contracts for research that policy makers want done rather than supporting investigator-initiated research. Even within investigator-initiated research, the move towards setting priority areas for funding is an effective way of setting limits. In addition, drug research in Australia is not well integrated into the university system. The National Centres, while attached to universities, are separately funded and are therefore more liable to government control, potentially if not in actuality.

It is precisely because at present government control is generally potential rather than actual that we must act. Once academic freedom is lost, it is very difficult to win back. We therefore must examine structures for setting the research agenda and allocating resources both as they exist now and whenever changes are mooted in future and ask what does this mean in terms of government versus academic control. We need to fight for a healthy balance. Finding that balance is, of course, not straight-forward and there will always be

uncomfortable trade-offs. But we need to accept these challenges and beware complacency.

## The need to integrate a range of disciplinary perspectives

One of the weaknesses of the academy is that despite recognition for more than 20 years that the disciplines must be better integrated to allow real world problems to be properly addressed, this is still a fringe rather than a central activity.

Research that crosses disciplinary boundaries or that integrates different disciplines is generally still confined to specially created Centres. As I have already mentioned, such Centres, which are often not funded as an integral part of a University, may be more vulnerable to government control.

One of the encouraging developments in the alcohol and other drugs area is the growing recognition of the value of a range of disciplines. Thus, while the area is still dominated by researchers with qualifications in medicine or psychology, there is growing input from sociologists, anthropologists, economists, pharmacologists, criminologists, historians, political scientists, ethicists, statisticians and public health professionals (apologies to those I have left out).

But there is still a long way to go in developing a way of fully integrating different disciplinary perspectives rather than putting them together in a piecemeal fashion.

For me that has been one of the challenges of the Feasibility Research into the Controlled Availability of Opioids[2]. Different disciplines have different methodological strengths and this can be built on so that research findings are more solid. In addition, integrating different disciplinary perspectives as well as different interest group perspectives highlights where the areas of tension and conflict are and therefore makes explicit where compromises have to be made.

## The need to collaborate with the relevant interest groups

There is growing acceptance of the value of close co-operation between researchers and relevant interest groups (key stakeholders as they are often called). Such a co-operative relationship can take a number of forms - participatory action research, other forms of collaboration, or formal or informal consultation. Again, one of the things we did as part of the feasibility research was try to interact as much as possible with the key interest groups. We conducted collaborative research projects with the Youth Affairs Network of the ACT[3,4] and Winnunga Nimmityjah, the Aboriginal Health Service[5,6]. There was a formal consultation process with a reference group of people who represent user interests - we met regularly to discuss the project overall, particularly how a trial would impact on users and various aspects of a survey we conducted with users. We held workshops on various topics with relevant interest groups - including police, doctors and other service providers and users. As well as that, there was a lot of informal consultation[2].

In the drugs area, there are basically three relevant interest groups:

- the people whose problem it is, in other words users and ex-users and, depending on the issue under investigation, their families;
- workers providing front line services, in other words police and providers of treatment and other services;

- politicians, policy makers and the community generally.

(i) The people whose problem it is

Users, ex-users and their families have a valuable role to play in defining issues of importance as well as sensible approaches to those issues. One of the best things that happened during the Feasibility Study was that a man with several years experience of dependent heroin use asked if he could work with us when we were putting together the survey for users. I should add that while this was greatly beneficial for us researchers, it was hard for him. When he saw our draft he got quite angry and then he painstakingly worked us through the negative stereotypes embodied both in the areas we chose to cover and the way we framed the questions. It is important that as researchers we are not complicit in legitimising or entrenching misinformation. Working closely with people directly affected by the problem is one way of minimising this possibility.

(ii) Workers in front-line services

In terms of workers providing front line services, the main research need is for evaluation, in order to provide the most effective service possible and to adapt as needs change. For many police and service providers, the collection of "statistics" is a chore on top of their "real work" and one which they see to be of little value. They may be distrustful of the data they collect, because in their day-to-day dealings with real people in social context, they are only too aware of the limitations of numbers entered into databases. They may also have had unpleasant experiences with, so-called independent evaluation - they may have felt that they were not heard as part of the evaluation process, the results may not have tallied with their experience and changes that they disagreed with or that affected them negatively might have been introduced. That is not to say that they do not see the need to evaluate, nor to say that they don't evaluate. They do. The methods they use are predominantly experiential and qualitative. In general their review of data is unsystematic, covers a short time frame and may be reactive (responding to a crisis) rather than proactive (planning and longer term review). As researchers we need to collaborate with front line workers to build on the ways they already evaluate, to show the value of a range of data and to help them develop more reliable and valid methods of evaluation.

A main focus of future research activity, therefore, should be to instil a culture of self-evaluation and reflexive practice among police and the providers of treatment and other services. One way of achieving this is through learning by doing. As researchers we can work more closely with people in the front line when conducting research that is relevant to them. At a minimum we can ensure that they have a chance to comment on reports before they are finalised. A better option is for some of the workers to be collaborators in the research project - helping develop the research questions and methodologies, collect and analyse the data, and write the report and disseminate the results. There should also be encouragement for workers to initiate and control research proposals, bringing in technical expertise as it is needed. The focus of such research should be around improving practice, not in more general areas.

(iii) Politicians, policy makers and the community

The third interest group consists of politicians, policy makers and the community generally. This is the group which sets the boundaries of what is possible. To recapitulate on some points about the relationship between researchers and this interest group: there are roles for

policy-relevant research and for research which challenges accepted policy. I also want to reiterate another point, which is that researchers should not be complicit in legitimising or perpetuating misinformation.

Policy on drugs has been shaped by politics, not by empirical evidence, so that we are now in a situation where there is no area in drug research which is not highly political. That has advantages. Compared to many other areas, drug research is well-funded and it is easy to generate interest, especially media interest, in what we do.

On the other hand there can be massive constraints against asking simple and straightforward research questions. If I can again draw on my own research: all we have said as a result of the feasibility research is "here is a potential new form of treatment for heroin dependence and it is worth conducting a standard drug trial to see whether or not it works. At the end of the trial we will have better evidence to assess whether or not this is a treatment option worth pursuing". To the best of my knowledge there are at least three government committees investigating the proposal and there are countless smaller non-government based committees. Let me say that I am not making these remarks as a criticism of the process, what I am trying to illustrate is the strength of political constraints. These constraints do not only surround illicit drugs, as those who have challenged the interests of companies which manufacture licit drugs can attest.

The politically charged nature of research in the drugs area has ramifications for the relationship between researchers and policy makers when the two are working together on policy relevant research. Researchers are often berated by policy makers for certain skills we lack and Tony Kingdon's paper given earlier in this session illustrates some of these points. There are certainly lessons here which must be taken seriously. But a successful collaboration also means that policy makers have to change and consider the position of researchers.

For many researchers policy making is an impenetrable black box. Our research findings disappear into the maw, perhaps to sink without trace or to come back in an embarrassingly mangled form. There seems to be no consultation to make sure that what our hard labour has produced is being correctly interpreted and no accountability for how it is dealt (or not dealt) with.

In recent years there has been increasing sophistication in understanding the limitations of research, including the influence of values in choosing questions and approaches, the limitations of any methodology and the difficulties of extrapolation to the real world. One frustration is that this has often fostered an anti-intellectual and anti-science mentality. What is needed instead is an appreciation that, although all research has limitations, all research is not equal and that, for all its limitations, the scientific method is generally still the best way of getting handles on the world. It is galling therefore when policy makers, politicians and the community misuse the limitations of research to dismiss that which is well conceived and constructed because it does not fit their world view or the current political realities.

Policy makers sometimes also express discomfort about the public role some researchers take. Thanks to Barry Jones we have stopped being wimps and many of us have learnt to use the media to disseminate and explain our research findings to the community at large. And drug stories have good currency in the media. Where the issue becomes vexed and a potential source of conflict is when researchers, on the basis of their findings or the findings of others, comment on policy. There is no answer to this dilemma and I only have time to

make some brief points. Another change which has happened in science is that it is now widely accepted both inside and outside the research community, that researchers must take some responsibility for the consequences of research findings. Thus saying that implementation is someone else's responsibility is often seen to be unethical, especially when the public's health is at stake. So researchers are now more likely to speak out publicly and to say things which may be inconvenient to policy makers and politicians. This issue is closely tied to academic freedom, where I began.

So, let me close where I started by stating three priorities, which are matters of process not content, for research to more effectively inform policy: the maintenance of academic freedom, the fostering of multidisciplinary research and the need for researchers to work with interest groups.

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# AGENDA FOR THE NEXT TEN YEARS

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**The subject of this paper is Drug & Alcohol Health Policy in NSW. The key message is that the research agenda for Drug and Alcohol policy over the next ten years must respond to the broader agenda which is shaping health policy generally throughout Australia.**

**In developing the arguments of this paper I have made the following assumptions:**

- **that the general purpose of research in the Drug and Alcohol social policy area is to contribute to our understanding of drug and alcohol related problems and our ability to remedy these.**
- **that Drug and Alcohol policy is intended to inform or facilitate action to reduce drug and alcohol related problems.**

- **that Drug and Alcohol policy is produced and executed in a broader policy environment.**

**There is much evidence in Australia of the growth and refinement of research in the Drug and Alcohol field over the past decade. There is also increasing evidence of research informing policy which is intended to prevent or treat drug and alcohol related problems and control the availability of legal and illegal substances.**

**Also during the past ten years there has been growing momentum in the national reform agenda of social and economic policy. The implications and effects of this reform process have reached all aspects of social, economic and industrial policy directly or indirectly and will continue to do so in a substantial way for the foreseeable future. The primary purpose of the national reform agenda has been to achieve ways of maintaining and improving standards of living in Australia in the face of significant national and international pressures. Central goals of this reform agenda have been to:-**

- **improve Australia's international economic competitiveness**

- **increase attention and give effect to certain social justice issues**

- **improve general efficiency and achieve greater benefits from the use of limited resources**

- **increase the use of sustainable methods of social and economic development.**

**The general orientation of economic policy, and to an increasing extent social policy, is based on a change in some of the primary values involved in policy creation and judgements about the quality of policy. High quality social policy today is much less concerned about volumes, activities and costs and much more concerned about performance, outcomes and economy.**

**It is in relation to this emergent value system that Drug & Alcohol policy is being increasingly evaluated in terms of its importance and quality. In New South Wales significant developments have occurred in health policy which reflect the values and objectives of the national health reform agenda[1,2]. These include for example:-**

- **the implementation of a resource allocation formula, now the Resource Distribution Formula.**
- **the development of "output" based funding allocations to health services.**
- **the implementation of performance management systems.**
- **the drive for improved structural efficiency.**
- **the restructuring of health organisations to facilitate the development and delivery of services across traditional service boundaries.**

**These broad policy developments are significantly shaping the structure and operation of health services in NSW and the rest of the country. Within this context Drug & Alcohol Services are also effected. To minimise adverse consequences arising from these changes and optimise potential gains, it is fundamentally important that Drug & Alcohol policy be designed, at least in part, to respond to this broad policy agenda. I will use two examples to briefly support this point and note implications for the research agenda in the Drug & Alcohol field for the next decade.**

## "Output" based funding mechanisms

**Over the past ten years increasing attempts have been made at national and state/territory levels to fund health services on the basis of services provided, that is outputs, rather than service costs which have usually been described in historical terms and not in relation to the performance of the service. One method of supporting this process, which has significant currency at this time, is the use of casemix models of funding. Casemix funding models have been applied mainly to inpatient services of hospitals. A patient classification scheme, namely diagnosis related groups (DRG's), provide a means of relating a hospital's casemix, that is its number and type of patients, to the services required to treat them.**

**Australian National DRG's (AN-DRG's) have been progressively customised from the DRG classification scheme which originated in the USA[3]. In 1996 all public hospitals in Australia will be using the Australian national DRG's based casemix system[3]. The primary data source for compiling hospital DRG's and describing casemix is patient medical records. Public hospital medical records allow for primary and secondary diagnoses of patients' conditions to be recorded. There is documented and anecdotal evidence of wide variability in the reliability and accuracy with which diagnosis are recorded in medical records[4]. Without doubt the way in which hospital casemix is currently calculated underestimates:**

- **the services actually provided by *designated* Drug & Alcohol Services directly to**

**patients or through consultation about patients to other service providers.**

- **drug & alcohol services provided by "non-drug & alcohol" service providers which is being achieved by mainstream training of health workforces, for example nurses.**

- **drug & alcohol services that ought to have been provided to inpatients but which were not provided because the contribution of drug and alcohol use to illness was unidentified or ignored.**

**The result of this is that if the DRG configuration of casemix weighting is not determined on the basis of all clinical inputs required to provide the service inadequate funding will be allocated to support the service.**

**DRG based casemix funding models apply almost exclusively to inpatient hospital services. However, it is planned that casemix type classification systems will be developed for ambulatory services and this process is underway, for example by the Australian Casemix Clinical Committee (ACCC). It is well recognised that much of the work to prevent and treat drug and alcohol related problems is pursued through outpatient and community based services and programs. Consequently the way in which ambulatory service classification systems are developed is directly relevant to Drug & Alcohol Services. There are a number of important implications for the research agenda in Drug & Alcohol policy arising from the use of casemix information systems for inpatient services and the development of ambulatory service classification systems. For example,**

- **Further investigation must be undertaken to determine the adequacy with which primary and secondary drug and alcohol diagnoses are recorded in hospital separations.**

- **Service models should be developed which illustrate the contribution of designated and non-designated Drug & Alcohol Services to the treatment of various relevant conditions. To some extent at least, this is not as difficult as it sounds. It is possible to identify a range of conditions or illnesses according to the ICD9 classification which typically require drug and alcohol intervention or consultation.**

**To continue the endeavour to reduce alcohol and other drug problems there must be an adequate and durable funding base to support Drug & Alcohol Services and to attract and maintain high quality staff. One key issue for Drug & Alcohol policy over the next ten years is to ensure that service funding models for hospital and non-hospital health services are provided with high quality data which illustrates the actual provision of Drug & Alcohol type services. Indeed, to ensure the best possible representation of these issues it would be beneficial for the Drug & Alcohol field to undertake some cost modelling investigations of its own.**

**Example two: Performance Requirements. Social policy in the public sector in New South Wales is being increasingly designed within a performance based framework. The expected achievements of services or programs should be stated clearly in measurable terms, and increasingly in relation to outcomes. Performance management systems have been implemented for the senior executive as part of this framework of the**

**Health Department, Area Health Services and Health Districts[5] ,for senior nurses[6] and doctors[7] in public hospitals in NSW and for middle management and senior middle management of public health services[8] in NSW. Performance management systems are a further method of requiring health services to be designed and managed on the basis of service targets and outputs rather than merely activity. Within this environment Drug & Alcohol Services must be designed on the basis of planned achievements and their performance judged, at least in a large part, on meeting those achievements. Indeed within the context of a performance orientated health system funding allocations will be linked more and more closely with demonstrated performance of services. Services which are assessed to be inappropriate, poorly designed, ineffectively executed or poorly managed will progressively have their resource base threatened. Arising from this are significant items for the research agenda in the Drug & Alcohol field for the next ten years. These include:**

- **Further and more extensive evaluation of the nature and extent to which evidence based practices are indeed executed in service and program delivery.**

- **To what extent and in what manner are knowledge and skills acquired through education and training, at all levels, transferred into practice and maintained in practice.**

- **There is the need for significant development of tools to measure and monitor the processes of service design, operation and delivery and the relationship of these to the type and quality of services provided.**

**It is often assumed that the quality of service outputs is directly linked with the quality of inputs. There is clearly some relationship between the two, however it would be wrong to overstate this relationship. The structure, operation and management of the service are the link between resource inputs and the quality of service outputs. Quality organisations have tools or methods for gathering and analysing information about the appropriateness of organisational structure, the adequacy of information systems to evaluate the performance of services, the effectiveness of strategy and planning, and the degree of fit between service design and service performance.[9]**

## Conclusion

**There are many achievements of the National Campaign Against Drug Abuse over the past ten years. However, the social political and organisational environment relevant to drug and alcohol health policy has changed over that time. Drug & Alcohol policy over the next ten years must be designed in relation to the current and emerging environment. In large part this means responding and *contributing to* the national health reform agenda.**

**Increasingly, funding to health services will be maintained or commenced on the basis of demonstrable service performance. In the Drug & Alcohol field important information and literature is required on the description and quality of service outputs and the ways in which service design, operation and management influence service performance.**

**These issues should significantly influence the research agenda of the Drug & Alcohol**

**field over the next ten years.**

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# WHAT STILL NEEDS TO BE DONE IN RELATION TO THE PREVENTION OF ALCOHOL RELATED PROBLEMS?

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Those responsible for the organisation of this Symposium while seeking to assess the achievement of the National Campaign Against Drug Abuse have also, properly in my view, asked its contributors to reflect on what still needs to be done - in my case, to further prevent problems associated with our use of alcohol.

In the paper I gave yesterday I identified some of the initiatives taken under the auspices of the campaign which have had an impact on the prevalence and incidence of alcohol related problems. In this paper I will attempt to depict the initiatives still to be taken or, in some cases, pursued further.

## The prolongation of the probationary period for driving

The introduction of truly random breath testing, and the progressive lowering of the permissible blood alcohol level while driving, has had the effect of reducing the contribution made by alcohol to road traffic fatalities and accidents[1-3] and has probably contributed to the decline in beer consumption witnessed in Australia in recent years and the substitution of lighter for"heavier" brands of beer[4,5].

Research undertaken by Smith[6] suggested that the adoption of zero or near zero (.02) blood alcohol levels for probationary drivers significantly contributed to a decline in alcohol related traffic morbidity and mortality among those newly licensed drivers; while raising the drinking age in the United States would seem to have had the same effect among drivers aged 18 to 21[7].

Such evidence taken together would suggest that there would be a significant gain in the Australian context in prolonging the probationary licence period from one to three years which, if combined with extensive road-side breath testing, would have the effect of raising the drinking age for drivers when they are driving. The latter emphasis is important since the effect of such a prolongation of the probationary period would not be to render drinking before, say, age 21 illegal (as in the United States), but only to make it illegal to have any alcohol in the blood while driving until aged 21. Both drinking and driving would continue to be legal activities from aged 18 if carried out separately, but not if pursued in combination[8].

## The introduction of a rational system of taxing alcohol

The present system of taxing alcoholic beverages in Australia comprises a combination of state and federally administered imposts. While those components imposed by the states show some variation, the resulting composite tax bears no logical relationship to the alcoholic content of the several beverages (with the exception of the range of beers). In that the tax paid on alcohol represents a significant component of its total cost to the consumer there is no price incentive for consumers to prefer the least alcoholic beverage or even the least alcoholic variant of their preferred beverage. For example, the alcohol contained in bulk wine is taxed at a much lower level than the alcohol contained in bottled wine or even regular beer, despite such wines having generally a higher alcoholic content than most regular beers[5,9].

Considerations of equity and public health would recommend that the tax paid on alcoholic beverages be relative to the alcohol contained in those beverages, while consideration of the costs associated with our consumption of alcohol would recommend that the standard tax paid per unit of alcohol be increased to compensate for these costs and serve to reduce per capita consumption[10].

While these arguments were put to the recently reporting Inquiry into the Winegrape and Wine Industry, and were even favoured by its Chairman, the government has recently declared that it will not be moving to change the tax arrangements in relation to wine so raising the question whether the government is truly committed to a health policy in relation to alcohol as distinct from an industry orientated policy[11].

## The indexation of all alcoholic beverages

The sensitivity of alcohol consumption to price is perhaps the most consistently reported finding of the international prevention literature[12,13]. As the price of alcohol relative to disposable income increases so does, in general, consumption decrease. While a component of the price of beer is indexed in Australia that of the other alcoholic beverages is not, except in so far as increases in their production costs will result in a higher sales tax component.

While not the only factor contributing to the declining popularity of beer in the Australian market, the indexation of the price of beer is considered by beer producers to be one of the factors contributing to its declining popularity relative to wine[5], leading to the conclusion that if less alcoholic beers are not to be replaced by more alcoholic wines, not only does the tax component of wine need to increase, its price needs also to be linked to salary increases so maintaining its relativity to the other beverages.

## The greater involvement of the public in licensing decisions

While the sale of alcohol is regulated in law, that law, particularly as it relates to the sale of alcohol to minors and the service of intoxicated customers, is widely flouted with some licensees defending such practices on the grounds that they are essential if they are to maintain their financial viability[14]. Increasingly, however, we are seeing a public, particularly those living in close proximity to licensed premises, objecting to the view that the only basis on which licences should be granted, or continue to operate, is a commercial one (that is, operating in the interests of licensees). Alcohol is a potent substance with known and widespread toxic effects which have implications not only for the individual drinker but for society in general.

Submissions made to a number of recent reviews of Licensing Acts[15] suggest that the public want a larger say in the decision to grant a licence and in its day to day operation, with the

suggestion made in some cases that authority to grant licences and monitor their operation should be vested in local government.

While localised control of licensed premises may result in undesirable variation in the management of licences, it is clear that among the objects of any licensing law must be the minimisation of the harm associated with the sale of alcohol. The public is decreasingly prepared to allow that alcohol is just like any other commodity, the availability of which and the promotion of which should only be governed by commercial considerations. Ensuring greater public input into licensing decisions and the greater responsiveness of licensees to public opinion can be expected to result in the more responsible service of alcohol.

## The enforcement of responsible service

While there have been several attempts to introduce responsible service on a voluntary basis with some being more successful than others, and at least one joint industry government initiative, research evidence suggests that continued service to intoxicated patrons is a frequent occurrence in many licensed premises[14,16-18]. This despite the fact that surveys suggest the public would support the stricter enforcement of licensing laws and the fact that such service is already defined as illegal in all state Liquor Acts. It must be assumed, as a consequence, that the perceived commercial imperative is such that many licensees will not enforce the responsible service or promotion or alcohol except that such is given legal force by way of enforcement. Current practice is for very few prosecutions to be brought against licensees for irresponsible service, except in response to particular blitzes or local campaigns. By contrast, research evidence indicates that the enforcement of such regulations, if combined with the training of serving staff, is particularly effective in reducing the number of intoxicated patrons who continue to be served[19-21]. The fact that those who regularly drink at licensed premises contribute the bulk of the harm whether individual or societal, while representing the minority of drinkers, would suggest that ensuring responsible service would make a significant contribution to the prevention of alcohol related problems.

## The legal recognition of server liability

Related to the need to establish an apprehension of prosecution for serving intoxicated patrons is the need to establish case law which identifies the legal liability of servers who continue to serve intoxicated patrons who subsequently harm themselves or occasion harm to others. While an examination of Australian law in this area suggests that such legal liability could be established, very few such cases have ever been brought to trial[22]. While it might be claimed that drinkers retain some responsibility for their intoxication, it is nonetheless clear that that capacity is diminished over time while continuing to drink. That patrons might subsequently harm themselves or others would appear, therefore, to at least partly be the responsibility of those charged with serving them. As it is, apart from the requirement that servers be aged over 18, no formal training is required of them nor does research suggest that they are well-acquainted or even sympathetic to the laws governing their occupation[23] ; this despite the fact that they are employed to serve a toxic substance, the potential for harm of which is widely recognised.

## The minimisation of occasions of "hazardous" alcohol consumption

Analyses which have sought to establish the exact relationship between occasions of harm and the quantity and frequency of drinking have shown that, not surprisingly, occasions of

acute harm are most often associated with those occasions on which drinkers drank at hazardous levels (that is, in excess of four standard drinks for women and six standard drinks for men)[24,25].

Furthermore, research[24,25] suggests that a significant reduction in acute problems would result if the number of occasions of hazardous consumption could be reduced (that is, if all drinkers drank moderately - or within safe limits - on all occasions) and abstainers were not encouraged to start drinking.

A number of the measures already reviewed could be expected to contribute to this end - raising the price of alcohol, enforcing responsible service, imposing random breath testing, providing information on what constitutes risky drinking, and the labelling of alcohol containers. What is also required, however, is the cultivation and encouragement of a climate of intolerance of drunkenness in the same way as has been achieved in relation to smoking tobacco in enclosed spaces.

## The statutory regulation of alcohol advertising and promotion

While laudable attempts have been made to educate the public as to the harmful effects of alcohol, to inform them as to the limits of safe drinking and provide them with information as allows them to calibrate their drinking, such efforts continue to be undermined by the association of alcohol with such important Australian icons as sport. The formal advertising of alcohol regulated through the Advertising Code and administered by the Media Council of Australia is now, at least in my estimation, largely unobjectionable. The greater sensitivity shown by the industry which appointed pre-vetting Councils with some independent members is to be applauded. However, such restraint is more than offset by the proliferation of sports sponsorship by the alcohol industry in part, one suspects, as the consequence of the banning of tobacco sponsorship except for major international events. Not content to ensure that the perimeters of sporting arenas are used as advertising billboards, the alcohol industry has now succeeded in recruiting the actual players as moving billboards the images which are of necessity transmitted to the homes of those viewing these sports. The sponsorship of sport by the alcohol industry being outside the remit of the Advertising Code, concerns as to when the broadcast is seen and whether an association between alcohol and sport is being established cannot be raised with that forum. Such concerns cannot, however, be considered irrelevant to the government's aim to ensure the depiction of responsible consumption of alcohol uninfluenced by any spurious association of consumption with sporting prowess.

## Earlier and more effective intervention in the diagnosis of alcohol related problems

The borderline between prevention and treatment not being distinct, it is appropriate to consider what role the earlier and better diagnosis of alcohol related problems might make to their prevention. While, obviously, such diagnosis cannot contribute to their primary prevention, the early diagnosis of alcohol related problems and their effective treatment can make a substantial contribution to preventing the intensification and chronic development of problems.

Despite the fact that there is now widespread evidence supporting the effectiveness of early diagnosis and minimal intervention in the treatment of alcohol related problems[26-32], surveys continue to show that many GPs are reluctant, or believe themselves to be insufficiently

skilled, to address alcohol related problems in their general practice[33,34] and, while dealing with the consequences of the abuse of alcohol, hospital departments less often address the abuse itself, despite the fact that audits carried out in either setting confirm that a substantial number of problems presenting to them implicate the excessive use of alcohol.

Treatment, clearly, has an important role in the secondary prevention of alcohol related problems. For it to make that significant contribution, however, will require that the diagnosis and treatment of alcohol related problems become a routine part of clinical practice whether in general practice or hospitals and not, as is largely the case at present, the province of a few specialised units and clinicians. For treatment itself, however, to be a realistic response to the widespread prevalence of alcohol related problems will require that we have, to a greater extent than is presently the case, prevented these problems occurring in the first place.

In summary then - for the prevention of alcohol related harm to be further advanced will require:

- The continued enforcement of the drink driving laws and, in particular, the prolongation of the probationary period during which probationer drivers are required to have zero blood alcohol levels.

- The employment of fiscal measures to favour the consumption of the least alcoholic variants of each of the beverages, and the indexation of such measures to ensure their relativity to disposable income.

- The enforcement of legislation prohibiting the sale of alcohol to persons affected by alcohol in definable ways, and the mandatory training of all staff in licensed premises in the responsible service of alcohol.

- Recognition of the public interest in licensing provisions and, in particular, ensuring the ready access of the public to those responsible for the licensing of premises.

- The regulation of the advertising of alcohol and its sponsorship in a way consistent with the overall aim of minimising the harm associated with alcohol.

- The institutionalisation of the practice of taking a drinking history in all appropriate medical settings and the application of minimal intervention techniques where indicated.

- And lastly, and perhaps most contentiously, the cultivation of an intolerance of drinking to intoxication in settings in which such is likely to result in harm, whether to the individual drinker or others in his or her proximity.

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# BENZODIAZEPINES: DOCTOR'S OR PATIENT'S DILEMMA? THE CONTRIBUTION OF THE NATIONAL DRUG STRATEGY TO THE PREVENTION OF BENZODIAZEPINE RELATED HARM. WHAT MORE NEEDS TO BE DONE?

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## Introduction

**The benzodiazepines are unique amongst the drugs of dependence in that the majority of users are elderly women, and the adverse consequences or 'harms' are of a type that are less likely to attract the interest of government agencies, the media and politicians. They are not, for example, illicit like heroin and the amphetamines and therefore do not have the problems of dose, quality control and cost (which promote illegal activities) associated with these substances. Their availability only on prescription (at least in the first instance) also diminishes any potential profit incentive that would otherwise attract the interests of organised crime.**

**The benzodiazepines do not have the major health and mortality problems of tobacco or alcohol and therefore are not usually mentioned in many morbidity or mortality studies. Likewise, the aggression and violence associated with alcohol use is also only occasionally linked with benzodiazepine use, and the latter do not yet rate as a statistical risk factor for road traffic accidents. The restriction on benzodiazepine availability would also, in theory, appear to make them more readily controllable than either tobacco or alcohol.**

**The use of the benzodiazepines do, however, produce adverse consequences, albeit less visible than those outlined above. In a paper, therefore, reviewing the impact of the National Campaign Against Drug Abuse (NCADA) and the National Drug Strategy (NDS) on reducing the harm associated with their use, we need to first determine what these harms are.**

## Benzodiazepine related harm

**It was not until the 1980s, roughly 20 years after the benzodiazepines first became available, that it became widely known that long term use of these substances could produce physical dependency. This dependency differed from that of most other drugs in that it often occurred at therapeutic doses without the individual escalating the dose, and in spite of the fact that tolerance can occur to all effects of these drugs. Dependency was therefore determined by the presence of an abstinence syndrome on withdrawal.**

**This is said to occur in 15-50% of long term users, depending on the study[1,2].**

**It has also now been demonstrated that long term use of the benzodiazepines may be associated with falls[3] and fractures [4], an increase in consultations for accidents [5], and cognitive dysfunction[6]. Intoxication can occur with both short and long term use, with care being necessary in operating machinery and driving. Studies of road traffic accidents, as stated above, have so far not implicated the benzodiazepines as a major risk factor[7], although they can be involved in individual cases.**

**The number of prescriptions for benzodiazepine hypnotics in Australia increases markedly with age, with nearly 1 in 4 of those 75 years or older reporting use. Anxiolytic use levels off after middle age[8]. Nursing home populations are particularly at risk of receiving these medications[9], which is of particular concern as even the healthy elderly have a 2-3 fold greater response to them when compared to young adults. This is not explained by disease or by altered plasma concentrations but is thought to be due to a post-receptor mechanism[10]. Those with chronic illnesses that slow drug metabolism and elimination, such as renal failure or liver failure, will accumulate the drug further. Some commonly prescribed medications such as cimetidine and propranolol can also cause benzodiazepine accumulation when used concurrently. Regular daily dosing in the elderly can therefore produce more sedation, confusional states, ataxic falls and memory impairment[10] and yet the elderly receive the majority of these medications.**

**Across all age groups, women are twice as likely to report use as men. This has variously been attributed to doctors being more likely to dismiss the complaints of women as being emotional in nature, pharmaceutical company advertising targeting women, and medicalisation of social problems. Studies by Mant et al[11] however, indicate that the increased frequency with which women consult doctors accounts for most of the variation in prescribing rates in Australia, and that once men attend a medical practitioner they are as likely to be prescribed these as women. If they take these drugs, men are also just as likely as women to take them long-term.**

**Most of the above adverse consequences relate to long-term low-dose benzodiazepine use but there is a cohort of high-dose users who exhibit drug seeking behaviour more typical of the usual concepts of drug users. They escalate the dose, 'doctor shop', may use several benzodiazepine types and may administer these orally formulated preparations intravenously, with the associated risks of thrombosis and vascular morbidity. 48% of a sample of Sydney heroin users interviewed by Ross et al[12] had injected benzodiazepines, with diazepam and temazepam being equally used for this purpose. Use of other drugs of dependence (eg methadone, heroin, amphetamine) is also common with Busto et al[13] finding that, of those taking over 60 mg equivalent of diazepam per day, 71% were 'poly-drug users'. They were also younger, more likely to be male and have higher daily doses and higher lifetime exposure than the low or non-benzodiazepine using-groups.**

**Higher levels of needle sharing, with its associated risks of transmission of HIV and other blood borne viruses, is also associated with use of benzodiazepines by injecting drug users[14]. A study of non-fatal heroin overdose in Sydney also revealed that 25% of individuals reported having used benzodiazepines at the time of their last overdose[12]. High-dose benzodiazepine users therefore represent a small but high risk group of individuals.**

**In spite of the potential for harm outlined above, the benzodiazepines are a useful and relatively safe drug when used in the short term. They are efficacious as an sedative/hypnotic for periods of use of up to 2 weeks, and as an anxiolytic for durations**

**of 3 to 4 months and are much safer than other drugs both past and present which have been prescribed for these same reasons. Mortality from overdose using the benzodiazepines alone is exceedingly rare[15]. Some psychiatric opinion would even support the long-term use of these medications in some individuals with severely disabling agoraphobia or other anxiety disorders[16,17]. They are also a first line of treatment in alcohol withdrawal and amphetamine intoxication, are useful in anaesthesia and neuromuscular disorders, and are effective as an anticonvulsant.**

**The prescribing of the benzodiazepines with harm reduction in mind is therefore a complex risk-benefit analysis. To quote Professor Clare[17]:**

***Prescribing the benzodiazepine group of drugs is no mere doctor patient transaction undertaken within the confines of the consulting rooms. It is a complex cultural and social process with political, economic, moral as well as medico-social implications.***

## Advances in harm minimisation over the last decade

**Given the usefulness of the benzodiazepines it would be inappropriate to severely limit their availability on prescription. The most relevant way to minimise the harms associated with their use would be to ensure judicious short term prescribing when non-pharmacological treatments are not sufficient. Some of the ways of doing this and some of the initiatives in these categories are outlined below.**

**Policies and guidelines based on research to determine the most appropriate prescribing practices for the benzodiazepines have been produced by various government departments and medical colleges including the Royal Australian and New Zealand College of Psychiatrists, the Royal Australian College of General Practitioners, the Victorian Medical Postgraduate Foundation and the National Health and Medical Research Council. Appropriate benzodiazepine prescribing has also been included in most medical school curricula, along with a greater emphasis on the role of counselling and non-pharmacological treatments in clinical practice. Mant et al[18] have also developed a resource kit on the management of drug and alcohol problems (including the benzodiazepines) targeting undergraduate medical teaching and continuing medical education for primary health care specialists.**

**Information packages on various aspects of benzodiazepine prescribing with stress and sleep management strategies have been produced with NCADA and other funding (eg. RACGP, PBS Education Program) for both the professional and the consumer, and articles on appropriate prescribing and the management of withdrawal have been published in various medical journals with a wide circulation (e.g. Mant, et al[19]).**

**The influence of these changes has been noted subjectively by the author who has been involved in teaching about benzodiazepine use to General Practice Trainees over the past nine years. Initially information needed to be given on the effects of these drugs and why long term prescribing was inappropriate. This gradually changed with the main concern being how not to prescribe these drugs to new users in the face of patient demand, and how to convince long term users of the benefits of withdrawing. The dilemma had changed from that of the patient getting inappropriate prescriptions, to that of the doctor not wanting to prescribe.**

**Patients also need to be educated and informed about the harm associated with their use of these medications, and the need to learn new methods of coping with stress without relying on the 'quick fix' of drug use. One of these patient centred initiatives was a NCADA funded Women and Tranquillisers Community Education Project in**

**1986 which developed a Community Education Campaign where 579 trained workers responded to an estimated 2000 callers[20].**

**Early advertising of the benzodiazepines often promoted them as an aid to women in maintaining their roles in society. Men, if they were targeted, were usually depicted as having a medical condition requiring a benzodiazepine to assist with anxiety during the rehabilitation process. Changes have occurred such that, currently, most advertisements for the benzodiazepines do not portray images of humans at all but serene scenes or abstracts designs.**

**The number of tablets available on a Pharmaceutical Benefits Scheme (PBS) prescription, which attracts a government subsidy, has decreased over the last ten years to assist with more judicious prescribing and frequent follow-up. The latest alteration, which took effect on November 1st of 1995, concerned clonazepam, a benzodiazepine used for the treatment of epilepsy but in recent time being prescribed in increasing numbers to high-dose poly-drug users. To be eligible for PBS subsidy, it can now only be prescribed for patients with epilepsy on special (authority) request.**

**In order to monitor and analyse changes in prescribing rates which the above and other initiatives may have induced, an appropriate database needs to be available for analysis. In 1989 a new database was established by the Department of Health, Housing, Local Government and Community Services that combines PBS and RPBS (Repatriation Pharmaceutical Benefits Scheme) prescription data with an estimate of prescriptions from other prescribing categories (eg private prescriptions). This has allowed the first comprehensive statistics on the utilisation of benzodiazepines in Australia. An analysis by Mant (1993)[8] has demonstrated a small recent decrease in the amounts prescribed from 10.55 million total prescriptions in 1990 to 9.21 million in 1991. It is to be hoped that this is a real reduction and that it will be sustained over time. Importantly this reduction in use is not reflected in an increase in the prescribing of other drugs which could be substituted for benzodiazepines such as the tricyclic antidepressants. These drugs do not have the margins of safety of the benzodiazepines and an increase in their use would reflect a harmful shift in prescribing, rather than a welcome reduction. It is also yet to be seen how the new generation of antidepressants such as Prozac and Zoloft influence the prescribing of the benzodiazepines or if they themselves become a problem.**

**There have often been calls to make the medical profession more accountable with respect to the prescribing of these drugs. This was attempted in New York State in 1989 where prescriptions for benzodiazepines were monitored in a setting of strict prescribing guidelines. Benzodiazepine prescriptions fell by 44% but there was an increase in the prescribing of less safe alternatives as mentioned above, and an increase in more serious overdoses from these latter drugs. The availability and price of street benzodiazepines, however remained about the same as prior to regulation[21]. This illustrates the importance of examining any potential regulatory program and weighing the potential negative clinical impact against any potential benefits.**

**In Australia there are already mechanisms in place where-by doctors who prescribe 'without proper or professional judgement and discretion' can be penalised[22]. It may be that these mechanisms need to be pursued more often or more vigorously, but what is not required is further controls, with the increased resources and bureaucracy that they would entail, and with the possible overall negative outcomes, such as those experienced by New York State.**

**The above brief synopsis demonstrates that, over the past decade during the National Campaign Against Drug Abuse and the National Drug Strategy, initiatives have been**

**implemented on many fronts to tackle the harms associated with benzodiazepine use. There is, however, much that could still be done. Some of the research priorities are outlined below.**

## Key research priorities

**Benzodiazepine related harm could be reduced by further research and education into appropriate prescribing practices and the development of specific strategies to achieve this. Prescribing occurs in the settings of hospitals, other institutions such as nursing homes and in specialist and general practice (GP) surgeries. To date most data has been collected and interventions targeted at the GP, but more could still be done in this area, particularly with regards to the consultation with the high dose user. Personal discussions with many GPs concerning these interactions reveal the difficulties they have in dealing with these often intimidating patients. Better and widely disseminated strategies for conducting the consultation could result from such research.**

**Research is also required into the cost-effectiveness and availability, and the best motivational strategies to engage patients in psychological counselling. This is usually touted both as the alternative to, and advocated for use in conjunction with benzodiazepine prescribing. It is assumed to prevent long term use, although this has not yet been determined[23].**

**There is little research into the rate and reasons for prescriptions of these drugs by specialist doctors other than psychiatrists. Indeed some patients who visit various specialists because of multiple illnesses may find themselves prescribed a different benzodiazepine by each. This area needs more investigation.**

**The databases mentioned above on rates benzodiazepine use do not include those prescribed in hospitals. The few studies concerning hospital prescribing indicate that problems do exist in this area. Hecker et al[24] in a study of an Adelaide hospital found that 14% of patients who had not used benzodiazepine hypnotics prior to their hospital stay were still taking these drugs three to four months after discharge. Howes et al[25] found that 5.3% of patients not taking benzodiazepine prior to admission to a Sydney hospital were discharged on these drugs. They also found that 28.5% of patients who gave a history of long term use of these drugs were not continued on them when admitted, and at least four of these developed acute confusional states said to be caused by benzodiazepine withdrawal. More information on hospital prescribing and education of hospital doctors is therefore required.**

**The only systematic studies of high-dose benzodiazepine use have related to the safety and rapidity of detoxifying patients in an in-patient setting. There is no data on the long term outcome of this process but if the rate of relapse one year after an in-patient detoxification from opioids gives any indication, it may be as high as 97%[26]. In view of the frequency with which in-patient detoxification from high dose benzodiazepines is undertaken, research into this area is long overdue. If the rate of relapse is shown to be high, consideration needs to be given to alternative treatment options such as benzodiazepine maintenance, or the use of injectable methadone for combined temazepam and opioid users, as there are early indications are that temazepam injecting decreases with this treatment[27].**

**Benzodiazepine tolerance and dependence, and hence subsequent withdrawal, are a function of duration of treatment and dose, and appear to be mediated through a conformation change at the benzodiazepine receptor. Experimental work has shown that the competitive benzodiazepine antagonist, flumazenil, can reverse this receptor**

**change and in essence reset the receptor back to the non-dependent state[28]. There are some early clinical studies which suggest that this property can be utilised to prevent either the development of dependence or withdrawal symptoms with long term use[28-30]. This exciting area needs further investigation.**

**These are only a few of the many diverse areas of further investigation which could do much to add to our knowledge of the benzodiazepines. A National Benzodiazepine Strategic Plan proposing goals, objectives and priorities for education, research and other initiatives could go a long way to focus and coordinate action with regards to reducing the harm that can be associated with these drugs, and ensuring ongoing prescribing in situations where they remain the drug of choice.**

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# A REVIEW OF SMOKING RESEARCH OVER THE PAST TEN YEARS AND SOME SUGGESTIONS FOR FUNDABLE RESEARCH PROJECTS

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Research activity in the area of smoking prevention and treatment has increased substantially over the past decade. Several research issues that were popular 10 years ago no long attract as much attention, but new issues have emerged to replace them. This paper will examine some of these changes over time, then briefly examine Australian research activity in the smoking area, and then offer some suggestions for potentially useful and fundable new research projects.

The research review is based on the results of a Medline search which used as key words: "smoking; tobacco; cigarette; prevention; cessation; quitting". The search was conducted on the 1985 and 1994 Medline databases, and the review covers all published studies that reported newly-collected data. The number of published studies that met those criteria in 1994 was roughly double the 1985 figure in both the smoking prevention and smoking cessation areas. The retrieved studies were grouped into a set of ad-hoc categories on the basis of information included in their abstracts in order to identify the issues that generated most activity.

Research activity in the smoking **prevention** area is summarised in Table 1. It appears that interest in the area of school-based smoking prevention programs has waned a little over that time, with 14 studies published in 1985 compared with 10 studies in 1994. However, the related issue of predictors of uptake of smoking and the implications of those predictors for intervention activities was examined in only three studies in 1985 compared with 16 studies in 1994. Two new areas that have received significant attention recently are restriction on tobacco sales to minors, and prevention of the effects of passive smoking through the introduction of smoke-free area policies. Six or seven such studies were published in each of those two areas in 1994 compared with none in 1985. Recently, there has also been more interest in examining the effects of tobacco taxation, tobacco marketing strategies, and political donations by tobacco companies which are intended to influence the votes of politicians on tobacco-related legislation. Five studies were published on these issues in 1994 compared with two studies in 1985. Finally, one recent study examined the idea of general practitioner brief interventions for preventing uptake of smoking by young people.

**Table 1:**
**Smoking prevention intervention studies**

| | 1985 | 1994 |
|---|---|---|
| School-based prevention programs | 14 | 10 |
| Predictors of uptake, implications for intervention | 3 | 16 |
| Smoke-free policies (passive smoking) | --- | 7 |
| Tobacco sales to minors | --- | 6 |
| Effects of tobacco marketing, political donations | 2 | 4 |
| Effects of tobacco taxation | --- | 1 |
| G.P. prevention counselling | --- | 1 |

Table 2 shows the issues in the smoking **cessation** area that have attracted researchers' attention. The area in which activity has increased most dramatically relates to brief interventions delivered in primary health care settings by general practitioners, nurses and dentists. Ten such studies were published in 1985 compared with 30 studies in 1994. As well, six or seven studies were published in both years on community-wide, mass-reach interventions. As part of the increasing interest in the passive smoking issue, there have also been more studies recently on the effects of smoke-free policies on reducing smoking behaviour, particularly in workplace settings. Inconsistent with the trend towards a "public health approach" to intervention, there has been a rather surprising increase in the number of studies on relatively intensive smoking cessation programs, with the number having nearly tripled from 8 to 22. Another area that has received continuing attention relates to cessation programs for "high-risk" target groups, such as post-coronary, cancer, lung diseased and psychiatric patients, and pregnant women (10 studies in 1985, 11 in 1994).

Many studies were also published during both years on predictors of quitting and predictors of relapse. This popularity may largely reflect the fact that baseline data on a range of variables are usually recorded in any intervention study, and therefore such research papers are relatively easy to generate, even in the absence of significant intervention effects.

The peak in interest in nicotine gum that occurred in the late 1980's has largely dissipated (4 studies in each of 1985 and 1994), but has been replaced by a focus on nicotine transdermal patches, with one such study in 1985 compared with 12 in 1994. Interest in other forms of pharmacotherapy for smoking cessation, including clonidine and mecamylamine, has been weaker, with no studies published in 1985 and six studies in 1994. The research on pharmacotherapies has generated an increasing number of publications on factors affecting withdrawal symptoms.

Following recommendations from literature reviewers over the past 20 years, there has been increasing interest in the issue of matching smokers optimally to different treatments and the related narrower issue of measuring nicotine dependence. One study was published on these issues in 1985 and eight studies in 1994.

In spite of the popularity at a clinical level of Prochaska and Di Clemente's Stages of Change Model, there has been relatively little research activity on this model, and in particular, liitle work on developing interventions suitable for smokers in the different stages, with only three studies published in 1985 and six studies in 1994. Finally, very little attention has been given to cost-benefit analysis of smoking interventions, with no studies published in 1985 and only one study in 1994.

**Table 2:**
**Smoking cessation intervention studies**

| | 1985 | 1994 |
|---|---|---|
| Brief interventions in primary health settings | 10 | 30 |
| Predictors of quitting and relapse | 20 | 24 |
| Intensive cessation programs | 8 | 22 |
| Cessation for high-risk patient groups | 10 | 11 |
| Factors affecting withdrawal | 5 | 9 |
| Community-wide, quit & win, telephone, media | 6 | 7 |
| Stages of Change | 3 | 6 |
| Nicotine patches | 1 | 12 |
| Nicotine gum | 4 | 4 |
| Smoke-free policies (effects on smoking behaviour) | 1 | 7 |
| Other pharmacotherapy | --- | 6 |
| Matching smokers to treatments | --- | 5 |
| Measurement of nicotine dependence | 1 | 3 |
| Cost-benefit analysis | --- | 1 |

## Australian smoking research activity

I would now like to briefly consider Australian research activity in the smoking intervention area. Such studies receive funding from a number of sources in Australia, including Commonwealth and State Governments, and State Cancer Councils. In order to get an impression of the nature of our smoking related activities, RIDAP's funding pattern since 1985 and NDARC's 1995 Annual Report were examined.

Table 3 shows a list of the smoking-related studies that RIDAP has funded since it began in 1985. The list includes 12 projects that were identified by RIDAP staff through a keyword search on project abstracts. This list may not be comprehensive given that other projects may also have examined the smoking issue without having explicitly mentioned this in the project abstracts. The list shows that RIDAP funded one or two projects in each year from 1985 to 1990 that were at least partly smoking-related, but has only funded two smoking-related studies since then. Four of the studies related to school-based prevention and cessation programs, two studies related general drug use screening, two studies related to brief interventions - one for patients in a general practice setting and the other for pregnant women at an outpatient clinic. One study examined workplace cessation programs, and another study followed up a community sample of smokers identified during a Quit for Life media campaign. Finally, one study examined the relationship between smoking, alcohol use and heart disease. RIDAP's total expenditure on all research projects until the end of 1994 was around 12 million dollars, of which approximately $600,000, that is 5%, was spent on these tobacco-related projects.

NDARC's 1995 Annual Report lists a total of 84 publications, of which only four (5%) are explicitly about smoking. Three of those publications arose from the Quality Assurance Project, and the fourth publication related to cue reactivity in smokers. The Report's list of research in progress is a little more promising, with eight of 43 current projects (19%) being smoking-related. Two projects relate to smoking intervention by staff in hospital antenatal clinics, two relate to transdermal nicotine patches, two studies examine smoking-related

training, knowledge and attitudes among medical students, one examines utilisation of the Smokescreen brief intervention package by general practitioners, and one study examines the effects of a smoke-free policy at a detoxification facility.

Given that tobacco accounts for more than 70% of all drug-related deaths in Australia, it is surprising and disconcerting that it appears to receive so little funding and attention from our researchers.

**Table 3:**
**RIDAP-Funded Tobacco-Related Projects, 1985 - 1994**

- **1985** Screening for tobacco & other drugs in clinical settings.
  Intervention in general practice setting.
- **1986** School drug misuse prevention program.
  Follow-up community cohort of smokers & ex-smokers (QFL).
- **1987** Pilot for school drug education program.
  Workplace cessation programs.
- **1988** Adolescent cessation programs at school.
- **1989** Follow-up school smoking prevention program.
  General practice screening for tobacco & other drugs.
- **1990** Outpatient intervention for pregnant smokers.
- **1994** Hospital costs for tobacco & other drug-related disease.
  Relationship between smoking, alcohol and heart disease.

**Total expenditure all grants:** **$12,230,000**
**Tobacco-related grants:** **628,000 ( 5%)**

## Suggestions for fundable projects

It has been suggested that the relatively low level of activity in the smoking area is partly attributable to a scarcity of proposals being submitted to funding bodies. I would therefore now like to suggest some possibilities for research projects that might be worth considering locally. Many of these suggestions have been "borrowed" from recent reviews[1-5]. Smoking generates a substantial amount of research activity internationally. Given the limited funding that is available for drug and alcohol research in Australia, it is important that our work does not simply duplicate work that is being done in other countries, often on a much larger scale than we are able to do here. Rather, we should be focusing our efforts on issues that have local relevance, and in areas in which our particular political, social and health environment might lead to different results from those that are observed in other countries.

Smoking prevalence among young people in Australia has increased over the last few years. Many smoking prevention studies have found that school-based prevention programs can have useful effects if the programs are sufficiently intensive and are sustained over several school years. However, local surveys have found that very little smoking prevention education is actually delivered in our schools. Thus, the most important issue in this area relates to identifying barriers to implementation of such programs in schools, and identifying incentives that are effective in increasing the amount of prevention education that is actually delivered. We also need to try to develop prevention interventions that go beyond the school setting to reach "high-risk" young people who are not at school. Another issue relates to

smoking cessation programs for adolescents. Many secondary school principals would be keen to implement such programs but generally do not have access to interventions that are effective for assisting students to stop smoking. The few studies that have been done in this area have typically shown weak, short-lived treatment effects, and this is an area that will require substantial creative attention from researchers. In particular, it would be interesting to examine the effects of "coercing" students who are caught smoking at school into attending structured cessation programs.

Nicotine replacement treatment has become increasingly popular over the past decade, with dozens of studies having shown that nicotine gum and transdermal patches approximately double the cessation rates that are achievable with behavioural programs. However, many smokers are not satisfied with the effects of nicotine gum and patches, and new nicotine delivery systems based on nasal sprays and oral inhalers are being developed that more closely mimic the rapid nicotine delivery that cigarettes provide. It would be important to study the effectiveness of these products as soon as they become locally available with a view to speeding up their commercial availability to the Australian public. American studies have shown that nicotine replacement products are used more appropriately and for longer, and are therefore more effective when they are provided for free rather than when they are paid for by clients. Given that these products are not presently available on the Australian Pharmaceutical Benefits Scheme, it would be useful to conduct local studies to investigate whether making them available more cheaply or free would increase their penetration into the community and thus their effectiveness in reducing smoking prevalence. Such evidence might help to persuade our politicians to change the PBS status of these products.

Increasingly the drug and alcohol area has adopted a public health approach to intervention, with the goal of reducing harm across the entire community rather than focusing mainly on assisting individual smokers who present to treatment agencies requesting help. Studies have shown that only a very small minority of smokers (mostly in the Action stage) attend smoking cessation clinics. We need to give more attention to developing interventions for smokers who are in the Pre-contemplation and Contemplation stages that can be delivered though a range of health and other communication channels. We also need to find effective ways to activate our politicians to make social and legislative changes that will reduce tobacco use.

In spite of 20 years of recommendations by reviewers and researchers, the goal of matching individual smokers optimally to different types of treatments remains largely unrealised. For this goal to be achieved, we need to develop assessment methods that reliably discriminate sub-groups of smokers and distinct treatments that actually benefit different sub-groups of smokers. This is a lot more difficult than it sounds!

Given the limited resources that are available for smoking intervention, we very much need information regarding the relative cost-effectiveness of different forms of intervention, that is, which types of intervention will deliver the most quitters for every $1,000 spent. We also need to identify ways of encouraging widespread implementation of interventions and useful policy changes in the community. Several of the speakers at this symposium, including Ian Webster, Roger Allnut, Helen Lapsley and Danny O'Connor, have mentioned this idea, and I would like to reinforce it here. We need evidence to show whether smoking cessation interventions are cheaper than medical treatment costs. We need to show whether employers who offer smoking cessation programs to their staff are likely to gain in terms of improved productivity, morale and reductions in sick leave. We also need to find ways of motivating small businesses and workplaces to implement smoke-free policies and show that, at the very

least, such policies do not drive their customers away.

In closing I would like to briefly mention the recently-reported results of the American COMMIT study [6,7]. This study was the largest community smoking cessation intervention study that has ever been conducted. It involved 11 matched pairs of communities randomly assigned to either an intervention or a control condition. The intervention involved community education, provision of training to health professionals, worksite activities and increased provision of cessation resources, and included 58 mandated activities in each of the intervention communities. The project had an intervention budget of approximately $2,400,000 per year over four years and the intervention communities included approximately one million people. In local terms, this would be equivalent to the N.S.W. QUIT campaign being funded to the extent of around $14,000,000 per annum rather than the approximately $1,000,000 that it actually receives.

Cross-sectional population surveys conducted in the COMMIT study found that smoking prevalence decreased by 2.7% in the Control communities compared with 2.9% in the Intervention communities, a 0.2% difference that was not statistically significant . In the Control communities 24.7% of those who were initially smokers had stopped smoking at the follow up compared with 26.5% in the Intervention communities, a difference of 1.8% which, while statistically significant, was very small. The reason for mentioning the COMMIT study here is to point out that smoking behaviour is very difficult to change once it is established, even with a large amount of reasonably state-of-the-art intervention activity. We should therefore try to ensure that the limited resources that are available for smoking research are targeted carefully in ways that will make a difference in the future, rather than being wasted on investigating obscure topics and issues that are likely to have little or no potential for implementation, and little or no impact on reducing smoking prevalence.

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# ADDICTION STUDIES: DEVELOPING QUALITY PRACTICE

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## Introduction

**It is frequently bemoaned that there is little transfer of research and innovation into practice. In the alcohol and other drug field, numerous reviewers[1,2] have noted that research has had very limited impact on treatment effort. In their telling review of treatment and research in the US, Miller and Hester[2] reported that most treatment programs had little empirical basis, while interventions that did have research support were rarely employed.**

**The factors which militate against knowledge transfer have been described elsewhere[3-5]. They include the observation that policy agenda are affected by a range of issues and research is but one, often weak, influence. In addition, researchers and practitioners often have different priorities, rewards and incentives in their work. There is also a substantial literature which has identified strategies which have facilitated the diffusion of innovation[6,7]. Education and training, the focus of this paper, have been included among such strategies.**

## The development of "Addiction Studies"

**While alcohol and other drug (AOD) problems are relatively common, few professionals receive training on how to effectively respond. Consequently, a number of reviews and reports have recommended the implementation of professional education strategies[8-10]. For example, in 1989 the Ministerial Council on Drug Strategy (MCDS) ratified the National Health Policy on Alcohol in Australia[11]. This document recommended adopting strategies which ensured that:**

- **'Drug studies' became a part of undergraduate courses in health related disciplines;**
- **In-service and postgraduate programs were developed for those who specifically worked in the AOD field and others whose day to day work brought them into contact with AOD related problems;**
- **A broad range of groups and individuals were equipped to undertake an effective preventive role.**

**In the context of such recommendations, Pols et al[9] reviewed education and training initiatives in Australia. While they acknowledged a number of significant and successful endeavours, they concluded that programs were unevenly distributed through the**

**various jurisdictions and noted that there were substantial gaps in education provision. For example, they found that:**

- **Only 20% of human service awards contained AOD curricula and half of these were electives;**
- **There were few qualified tertiary educators on AOD issues;**
- **There were inadequate skill training opportunities and courses.**

**There is a substantial mainstream education literature which can guide the development of effective programs in the AOD field. For example, Gagne, Briggs and Wager[12] identified key factors which contribute to quality instructional design. Annett and Sparrow[13] described strategies which enhance the transfer of training into practice. Cooper and Heenan[14] described what they termed "humanistic approaches" which have underpinned the work of some trainers in the AOD field[15]. Dryden and colleagues[16,17] have described specific strategies which can enhance the effectiveness of counsellor training and supervision. A review of this literature suggests a number of important elements which can be employed to improve the quality of education initiatives and facilitate knowledge and skill transfer to the workplace. These include:**

**Using methods consistent with adult learning principles;**

- **Employing experiential and participative learning strategies;**
- **Establishing links between course content and participants' previous experience, learning and skills. This will include ensuring the establishment of links between course content and the participants' usual work role;**
- **Ensuring that practice is underpinned by theory;**
- **Using methods which encourage participants to take responsibility for their own learning and translation of new knowledge and skills into the workplace;**
- **Providing the opportunity for post training practice, support and supervision;**
- **Linking education and training to leadership/championship which supports and legitimises use of the course knowledge and skills within the participants' agencies.**

**Despite consistent calls for improvement in the provision of education and training in the AOD field, there are relatively few analyses in this field which can directly guide good practice. Much of the available literature[10,18,19] focuses on strategies to engage mainstream health staff in responding to AOD related harm. Although the body of work is limited in volume, it does offer a context in which to examine education activities.**

**Shaw et al[10] identified a number of factors which influenced whether or not mainstream health staff responded to clients with AOD problems. These included *role competence* ("I have the skills"), *role confidence* ("I can do this") and *role legitimacy* ("It is appropriate for me to respond - this is a legitimate part of my job role"). This analysis can be used to suggest strategies to improve education provision for all human service providers who come into contact with AOD related harm. First, there is a need to ensure that undergraduate and post-graduate programs for health, law and other relevant disciplines include a focus on (and examination of) AOD issues. Such programs not only provide an opportunity to enhance knowledge and sometimes develop skills, they imbue the subject with legitimacy. Second, there is a need to ensure that continuing, or in-service, education programs are available to enhance knowledge and skills. It is important to note that there is a small but consistent literature which**

**indicates that post training support is a crucial ingredient in transferring the content of in-service programs into practice [17-19]. Third, structural issues need to be considered. The most effective education and training programs are likely to have limited impact if a highly skilled and enthusiastic graduate returns to a work environment which does not legitimise or value the newly acquired skills. Education and training programs need be coupled with strategies to ensure organisational and professional support.**

## Critical review of education and training programs

**The current paper will employ the models and analyses briefly described above as a context for a critical review of education and training programs. The examples have been selected to cover a range of methods and target groups. It is important to stress that this review is drawn from a descriptive and not a quantitative analysis. Detailed formal outcome evaluation of these programs has not occurred.**

*WA Tertiary Education Programs*

**In their national evaluation of education and training, Pols et al[9] concluded that Western Australia had (in terms of provision per head of population) been the most successful region to develop tertiary education courses. These programs were the outcome of effort from individual universities (e.g., Curtin University of Technology) and the WA Alcohol and Drug Authority (ADA). By 1993 addiction studies courses were available in all four universities and TAFE, at undergraduate, post-graduate and/or continuing education level.**

**A variety of strategies were employed in these developments. Initially, government agencies provided substantial "pump-priming" funds to Curtin University to employ academic staff dedicated to developing and implementing addiction studies courses in that institution. In the other universities and TAFE, government education and clinical staff were made available to develop and implement programs and/or assist in course delivery. After initial support from the government sector these programs were sustained within the tertiary education systems, resulting in some cases in tenured academic positions dedicated to delivering addiction studies programs.**

*WA "Key Worker" Program*

**In an effort to enhance program legitimacy, "key worker" initiatives utilise staff from mainstream agencies to deliver education and training to their colleagues. In WA, the ADA provided funds to facilitate the development of AOD expertise and programs in mainstream human service agencies, such as a regional hospital and the Department of Corrective Services.**

**For example, in the hospital setting, it was agreed that the ADA would pay one years salary for a nurse who was recruited from existing staff. Senior staff from both agencies negotiated program objectives. It was agreed that the "key worker" role was to deliver training and support programs for clinical staff in the hospital (and another hospital in the region) and to facilitate the implementation of intervention programs for patients with AOD related problems. The "key worker" was provided with an intensive three month training program in the ADA and subsequently returned to the hospital to implement the agreed initiatives. During the following nine months she was supervised by the hospital Director of Nursing and received further support, supervision and material resources from the ADA.**

**The program in the Department of Corrective Services was conducted over an 18 month period. Again the ADA paid the salary for an education officer from the Department (they paid associated on-costs). The program was developed after negotiation between the agencies and jointly managed. This initiative culminated in three Corrective Services education staff being co-located in the ADA's clinical education unit. This facilitated the implementation of a broad range of education and training programs for Corrective Services staff.**

***WA Volunteer Training Program***

**This program was a joint initiative of Curtin University of Technology and the WA ADA, and is now in its seventh year[20]. Each course, advertised under the continuing education banner of Curtin University, results in approximately 600 inquiries and 200 written applications. Careful selection procedures result in approximately 20 people being admitted to the course. The 80 hour teaching program (in three-to four-hour blocks delivered over six months) is provided by highly experienced clinical and teaching staff. Regular attendance at training is required before participants take up a clinical role. "Graduates" of the training program are expected to work for a minimum four to five hours per week in a clinical service. During this time they receive one hours supervision per fortnight by an experienced professional and have the opportunity to attend training updates. Funding under the National Drug Strategy (NDS) has been provided to develop the program into a format that can be easily adopted by other jurisdictions. Initial trialing of the program will be conducted in a WA country town and metropolitan South Australia.**

***SA Police Education Program***

**Funding from the NDS was provided to South Australia to develop and implement a training program for police. This project aimed to ensure that police were informed about the principles of harm minimisation and were able to identify harm reduction strategies consistent with their role. The project resulted in training programs being established for police during recruit, vocational and promotional training and a number of collaborative initiatives between police and health staff have been implemented[21].**

**Two specific outcomes are worth noting. The first was that the SA police will soon co-locate some of their education officers in the education services of the Drug and Alcohol Services Council (DASC). This project will be similar to the "key worker" initiative and will enhance and legitimise harm minimisation training activities.**

**The second outcome followed the implementation of workshops which focused on the police role in reducing alcohol related crime, particularly violence, in and around licensed premises. This project involved presentations given by senior police officers, each of whom had been intimately involved in developing and delivering such initiatives. The first workshop was attended by approximately 100 police officers, many of whom were senior operational staff (including the Assistant Commissioner). The second workshop was convened by the Coalition Against Crime. This involved representatives of the alcohol retail industry, local government, community members, senior police who had attended the first workshop, health services and the State Attorney General. Shortly after the workshops, the Assistant Commissioner of Police requested that all regional police commanders develop a strategic plan to reduce alcohol related violence in their areas. In addition, legislative changes were made which specifically aimed to prevent alcohol being served in a high risk manner. There are now**

**clear indications that there has been a substantial change in police practice in the enforcement of the relevant legislation. The National Drug Crime Prevention Fund has subsequently funded a national application of this initiative.**

***SA Private Methadone Prescriber Training Program***

**Until relatively recently, the methadone program in SA was exclusively delivered by the DASC at a central location. To give greater choice and provide more accessible services in accordance with primary health care, it was decided to implement a program that enabled private medical practitioners to become authorised methadone prescribers. The SA Private Prescriber Program drew extensively on training materials developed by Bell[22].**

**While the DASC adopted the role of trainer/mentor, a Methadone Review Committee was established to oversee the program. This group consists of representatives from the AMA (SA Branch), the SA Health Commission (Therapeutic Goods), the Medical Board of SA and the RACGP (SA Faculty). The SA Health Commission determines authorisation to prescribe methadone on the basis of recommendations from this Committee.**

**The process of authorisation involves the following steps. Medical practitioners apply to the DASC to attend the training program. If an applicant is not likely to be given authorisation after completing the training requirements (e.g., due to previous prescribing practice), they are advised by the Review Committee. Successful applicants are required to attend a two day training program and subsequently pass a written examination before engaging in a practical clinical placement for a minimum of two sessions (e.g., two half days). This placement involves one-to-one interaction with an experienced prescriber, and the opportunity to observe and conduct assessment and medical reviews. This clinical practice is assessed. The outcome of the written exam and the clinical placement is then provided to the Review Committee who determine whether to recommend authorisation to the SA Health Commission.**

**Authorised prescribers are expected to attend continuing education which is related to work with illicit drug users (e.g., developing counselling skills). This may consist, in part, of attendance at methadone prescriber focus/support groups. As part of the post-training support system, a nurse from the Public Methadone Program makes regular contact with the prescribers and there is occasional contact with a DASC prescriber. This follow-up contact includes support in the management of complex cases.**

**The DASC also offers associated training for pharmacists. A program for medical receptionists who work with authorised prescribers is currently being explored. Recently, funds under the NDS were provided to the National Methadone Committee to identify/develop learning objectives which could be used to facilitate the development of innovative and flexible training methods and assessment procedures used for authorisation.**

## Common features of effective education

**A critical review of the programs briefly described above identified a number of common features (not necessarily common to all) which are consistent with good practice in education, training and knowledge transfer and utilisation.**

***Objectives*: The program objectives were carefully identified and often developed in collaboration with target professions/agencies. The resulting programs were consistent with these objectives.**

***Careful Selection of Participants*: Many of the programs had careful participant selection processes.**

***Well Resourced High Quality Training*: All of the initiatives were financially and materially well resourced. Program providers had substantial knowledge of the AOD field and experience in delivering education and training programs.**

***Training Based on Quality*: The training programs were empirically underpinned or based on consensus of quality practice.**

***Related to Accepted Standards and Assessed*: This was one of the least common elements of programs conducted outside of the tertiary education sector. However, given the national training agenda and the increasing demand that education and training programs articulate into professional and education qualifications which are portable[23], it is likely that this issue will assume a greater influence in training development and delivery.**

***Relevant to Job Role*: In all of the in-service programs, substantial effort was expended in ensuring that the training was developed, promoted and delivered as being clearly relevant to the agency or profession. For example, the high proportion of prisoners with AOD related problems was highlighted and the Corrections initiative was developed on the basis of assisting the agency respond more efficiently to an existing issue. It was emphasised that the program did not aim to have Corrections staff address a new problem or job role.**

***Legitimacy in Agency*: Consistent with the previous point, it was important that in all services, utilisation of the knowledge and skills was valued and perceived as legitimate. A number of activities were employed, with varying degrees of success: Ensuring and supporting "champions" (credible individuals who acknowledge the value of responding to AOD problems and who could articulate their support) at senior level; Paying salaries to create legitimate specialist job roles; Training supervisors as well as individual staff; Encouraging the profession to take ownership of the program.**

***Attempt to Enhance Access*: A number of strategies were employed to enhance access. These have included conducting residential programs, providing courses out of normal work hours and developing distance learning programs. Unfortunately, the emphasis has been on temporal and geographical issues, not on developing strategies that relate to varieties of learning styles. New technologies and methodologies enhance the capacity to develop accessible training.**

***Post-Training Support:* A number of the training programs (e.g., the volunteer training and private prescriber) were distinguished by their level of post training support and supervision.**

***Rewards*: Many of the courses carried actual and intrinsic rewards. Sometimes these were the specific rewards of courses leading to tertiary education qualifications or professional credit (e.g., CME points for GP's). However, rewards also included the intrinsic rewards of attending an enjoyable learning experience which helped people in**

**their day to day work. While some courses did not lead to any formal accreditation, they clearly improved the career prospects of many participants.**

***Strategy/timing/luck:*** **With limited resources, programs should attempt to have the maximum strategic impact. All of the cited examples involved principle agents being able to create and take advantage of opportunity. For example, the development of vocational training requirements for GP's has enhanced the attractiveness of AOD training programs. In a number of projects, key change agents were identified, supporters supported and activity strategically directed to where it was most likely to have impact.**

## Implications for the future

**Despite substantial research endeavour, both here and overseas, we must acknowledge that there has been limited diffusion of innovation in drug specialist and mainstream human service agencies. When funding research initiatives we must also attend to, and fund, the dissemination of research findings.**

**Education and innovation diffusion should also be strategically implemented. For example, while it is important that sobering up services have access to well trained staff, perhaps we should also be focusing on training police in strategies to reduce harm arising from alcohol intoxication. Police who have the role competence, confidence and legitimacy to prevent drunkenness may reduce the demand for sobering up services.**
**An aim of the presentations at this symposium was to identify key priorities for the next five years. A simple response is to suggest that we should address the many recommendations made in the numerous reviews of AOD education in Australia.**

**In addition to the need to adequately resource education initiatives and innovation dissemination, there are some key questions that should receive attention:**

- **What strategies will result in the establishment of education and training initiatives which are not reliant on funding through the NDS?**
- **What structures and supports should be created to ensure that education and training has impact on work practices?**
- **How can we use advances in technology and education methodologies to develop innovative and accessible education and training programs?**
- **How can we ensure the development of accredited and portable programs?**

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# DRUGS AND DEGREES: INJECTING DRUGS INTO TERTIARY EDUCATION?

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In this paper, I will discuss the relevance of tertiary education to the National Drug Strategy (NDS), with a major focus on Addiction Studies at Flinders University, analysing its strengths in addressing the educational agenda of the NDS, as well as areas for potential improvement.

## NDS and education

Education clearly has a role in the NDS, but where does *tertiary* education fit in? It is worth comparing the respective goals of the NDS and a university:

> *The overall mission of the National Drug Strategy is to minimise the harmful effects of drugs and drug use in Australian society.*
>
> *The mission of the Flinders University of South Australia is to achieve excellence in research and teaching, which will contribute to the economic, cultural and social development of Australia.*

There is a potential difference in spirit between the two: minimising harm versus contributing to development. Whereas the ultimate goal of FUSA is explicitly development, nearly all the NDS key national indicators are expressed in terms of *reductions*: reduction in deaths due to tobacco, in alcohol-related motor vehicle deaths, in drug-related hospital separations, and so on.

Furthermore, there is the potential for direct conflict between the missions. For example, some universities have wine-making courses, which are important to the wine industry, and in turn to the economy. The perspective of many people within the wine industry is often very different from the NDS perspective.

Even without such potential conflict, universities have traditionally not paid much attention to drug issues. So it is not surprising that university-trained human services professionals frequently lack skills for intervening.

## Tertiary drug courses in Australia

In 1991, a national evaluation of courses on drug education and training in Australia was conducted by the newly established NCETA, commissioned by the Australian Research Council (ARC). The evaluation revealed an overall *paucity of alcohol and other drug teaching in higher education courses in 1991*[1], especially in nursing, Aboriginal health and welfare, psychology, education and nutrition/dietetics. Four years later, it is still probably

true to say that the overall paucity remains. However, there have been significant positive developments.

## Addiction Studies at Flinders University

One of these developments is the consolidation and expansion of Addiction Studies at FUSA. Addiction Studies is run by NCETA in conjunction with the Department of Primary Health Care. Most students are enrolled in either the Master of Primary Health Care or the Graduate Certificate in Health: Addiction Studies, although topics can also be taken as electives and via cross-school and cross-institutional enrolment. Most students study via distance education.

So how does Addiction Studies address the NDS? Firstly, it takes a strong public/social health perspective, in line with the NDS emphasis on the environment and social context as well as drugs per se. Secondly, it has a primary health care orientation. Thirdly, it caters for workers from a range of disciplines, e.g. nursing, medicine, education, social work. Students from these and other disciplines can also take individual topics as electives.

Key features of the NDS policy approach inform the curriculum: harm minimisation, social justice, accountability through needs-based planning and evaluation, and an emphasis on intersectoral collaboration. The availability of Addiction Studies throughout Australia contributes to national consistency in drug policy and practice, for example by disseminating evidence-based knowledge and skills. At the same time, students have opportunities to focus on local issues, but with the benefit of a broad national perspective.

In terms of specific curriculum content, Addiction Studies includes a very wide range of content relevant to the NDS. Rather than laboriously detailing the content of each of the five topics, I will highlight some significant features.

Firstly, the *Counselling* and *Intervention* topics clearly address professional skill development, for example by teaching clinical skills. The *Counselling* topic has a strong emphasis on evidence-based clinical practice, with the three NCADA/NDS monographs from the Quality Assurance Project incorporated into the learning process, as is the treatment manual derived from them[2]. Based on these publications are exercises designed to assist students to translate research into practice.

The *Assessment* topic focuses on needs-analysis at a community and population level. The *Policy and prevention* topic emphasises policy development which is both empirically informed and politically street-wise. There is also a historical and international perspective, particularly in the *Policy* and *Intervention* topics.

Throughout the topics, there is an emphasis on critical analysis of the literature, of research methodology, of policy and practice. The drug field will continue to change, and topic content will become obsolete, but critical analytical skills can survive multiple changes in policy and orthodoxy.

Another key feature is the degree to which the learning process is work-based. Most students are currently employed in the health/welfare field, at varying points on the generalist/specialist continuum, some in quite senior positions. The topics draw on their often considerable experience and provide opportunities to do assignments with direct relevance to their current work. The students are well placed both to disseminate current knowledge into their work-places and to provide feedback to academic staff about the relevance and value of

topic content.

The distance education packages are complemented by optional four 4-day National Intensives which have a best-practice orientation, bringing together educators, researchers, practitioners and policy-makers to present cutting-edge demonstration projects and other policy and practice initiatives. The Intensives are targeted at people in a position to translate knowledge and skills to others within their agencies or regions, for example via supervision or training.

In addition, the MSc(PHC) includes a research thesis, and the MPHC a practicum, both of which can potentially contribute to the bridging of research, policy, and practice.

## Other postgraduate courses

Contrasting with, and complementing, the primary health care courses at FUSA is the new Graduate Diploma in Alcohol and Drug Studies at the University of Adelaide. This has a distinctly clinical and specialist focus, aiming to provide doctors, nurses, psychologists and social workers with *an advanced level of knowledge and skill in the management of alcohol and other drug problems*, and less of a public health and primary health care orientation. There are also well-established postgraduate courses at Macquarie, Curtin, Deakin, and other universities[3].

## Undergraduate education

Drug education has its place in undergraduate as well as postgraduate programs. It has an important role in professional vocational undergraduate courses such as nursing, medicine, education, social work, and psychology. In some cases it is well established; in others it is constantly competing for air-play, for example in some medical school curricula, where there may be the added challenge of reductionist perspectives claiming "ownership" of drug issues.

Medical schools were, in fact, identified as a priority education area some years ago, and in 1988 Commonwealth DEET funds were allocated to all medical schools to appoint drug coordinators under the CADEMS (Committee on Alcohol and Drug Education in Medical Schools) program. An evaluation has found significant increases in key teaching areas[4]. For example, there was a 158% increase in required teaching hours. The CADEMS program demonstrates, among other things, the value of a concerted effort and investment of resources in a strategic area.

## TAFE

TAFE colleges are currently expanding beyond their traditional vocational role and are playing an increasingly important role in tertiary education in general, with relatively flexible access, for example via after-hours classes and distance education. TAFE colleges provide a substantial amount of drug training in the context of para-professional human services training. Drug workers in non-government organisations frequently lack formal qualifications, and are sometimes heavily invested in the twelve-step model. Courses such as the NSW Advanced Certificate in Alcohol and Other Drug Studies aim to broaden the perspective of such workers and equip them with basic skills and knowledge to enable them to operate more professionally within their agencies[5]. Drug topics are also included in more general para-professional courses. Welfare workers, in particular, would frequently encounter

drug-related harms such as violence and family disruption.

TAFE is currently developing competency standards, guided by the National Training Reform Agenda, a set of reforms introduced in the mid to late 1980s aimed at providing a skilled and flexible workforce and thereby making Australian industry more competitive internationally. Although the TAFE system is still state-based, there are moves towards joint Federal/state ownership and national curricula and accreditation and articulation of courses. Both of these directions are desirable from the perspective of the NDS, because they facilitate national consistency.

## Future improvements

Having discussed how the NDS is currently being addressed by a range of tertiary courses, I will now turn to areas where there is room for substantial improvement. Firstly, I will focus briefly on law enforcement as a neglected sector and pharmaceuticals as a neglected drug category.

*Law enforcement*
A key NDS policy goal is: *To minimise the level and impact of criminal drug offences and other drug-related crime, violence and antisocial behaviour within the community.* Law enforcement professionals are frequently identified in tandem with health professionals as an appropriate group for knowledge and skill development. Community policing strategies and crime prevention programs are also advocated.

However, despite being a critical stakeholder, law enforcement was not sufficiently involved in the NCADA[6]. This is a major obstacle to intersectoral collaboration. The situation is exacerbated by confusion regarding key concepts such as harm minimisation, leaving statements like *Control measures should adequately address harm minimisation concerns* (NDS, p. 4) open to potentially conflicting interpretation.

In terms of education, the NCETA evaluation found that police studies was one of a number of disciplines lacking sufficient drug content[7]. There has been a significant increase in training since then[8,9] , but this needs to be consolidated and extended. However, the increasing attention being paid by police forces to training augurs well for this.

*Pharmaceuticals*
The NDS *recognises the misuse of pharmaceuticals as a major cause of ill health for many thousands of Australians*, and acknowledges the problem of adverse drug reactions, particularly among elderly people[10]. However, it does not give sufficient emphasis to the fact that many GPs and psychiatrists routinely prescribe psychotropic medications for social problems, especially for elderly women and marginalised young people.

Attention needs to be directed at community expectations of doctors, and structural factors influencing prescribing habits, for example the Medicare fee structure. Medical students may also need more input about potentially adverse effects of prescription medications, about responsible prescribing practices, and about alternatives to medication, especially for the management of anxiety.

There is also a largely untapped resource in pharmacists, many of whom are keen to play an active role in health promotion. They are well placed to give advice about over-the-counter medications, to distribute self-help resources, and in some cases to undertake brief

interventions. Their interest in drug problems is demonstrated by their significant role in methadone maintenance programs. However, pharmacy courses allocate limited time to drug problems[7].

## The big picture

Looking at tertiary drug education more generally, what do we really need? Firstly, there is an ongoing need for courses and topics focusing specifically on drugs. These should be primarily orientated towards primary health care, welfare, and law enforcement workers, but there is also a place for some specialist courses and topics. Courses and topics should be available in both TAFE colleges and universities, and at both undergraduate and postgraduate levels. They should be more accessible and more flexible than is currently the case, and there should be greater accreditation and articulation and portability of qualifications. There should be more national collaboration, and less duplication and re-inventing the wheel.

Secondly, there is a place for some drug content in a wide range of other courses and topics. Drugs are a public health issue, a legal issue, an economic issue, a welfare issue, a personnel management issue, and so on, and therefore they can legitimately be included in such curricula. However, it is important to avoid injecting a one-off bolus of drug education, a dose of something unsavoury, tedious, unpleasant or even painful, but good for you (like castor oil), or a vaccination. This was the approach to sex education when I was at school; it also seems to be the way occupational health and safety is dealt with in many organisations (the annual fire-drill, something to be endured and then forgotten). This approach may sometimes work, but generally is not appropriate. Instead, drugs should be woven into curricula in ways that reflect their relevance to everyday life. So, for example, an orthopaedics problem-based learning case might focus on a patient admitted to hospital after an alcohol-related car crash, and an economics tutorial might consider the relevance of US drug policy to international trade.

Not only do drug issues have a place in multiple disciplines, but multiple disciplines also have a place in drug education. According to Bill Saunders: *from anthropology to zoology, addiction studies is a multidisciplinary business*. Medicine long dominated the field; psychology, sociology, and anthropology have more recently had major influences. Other disciplines such as communications and gender studies are beginning to make useful contributions.

What are the obstacles to strengthening drug issues in tertiary education? Apart from diminishing resources, there is still stigma to contend with, and the perception (reinforced by the clinician's illusion) that drug problems are 'too hard', that they are the realm of psychiatrists and other specialists. There are also vested interests, such as the pharmaceutical and tobacco industries and their connections. There is also, as mentioned, the potential for conflict between the aims of tertiary institutions and the NDS.

This potential for conflict is not necessarily all bad, because it is also the place of the tertiary education sector to challenge established policy and practice. Bill Saunders described this as *making people think and stretching horizons*[11]. This includes challenging the NDS and its ramifications.

One important challenge is to established thinking about drug issues and drug problems. The NDS emphasises that drug problems need to be seen in the social, physical and economic

contexts in which they occur, but the complex relationships between drug problems and social problems such as poverty and unemployment are all but ignored. Social justice is cited as an underlying principle, but mainly in the sense of targeting disadvantaged groups for prevention and treatment, rather than acknowledging that inequality may contribute to the development and maintenance of drug problems, not just to difficulties in accessing services. There is also the need to challenge ethnocentric assumptions such as the idea that alcohol per se causes violence. Gail Reekie[12] takes this further by advocating the 'deconstruction', via discourse analysis, of problems such as teenage pregnancy and teenage drinking, arguing that this opens space for both individuals with problems, and society as a whole, to find more helpful ways of dealing with them.

Finally, there is a tendency for some of us to feel a bit smug at times, especially when we compare ourselves with our counterparts in the USA. But many of us, and the NDS, suffer from a touch of solemn problem-focused zealotry. We focus on the negative consequences of drug use to justify our professional existence and compete for scarce resources, including space in curricula.

We sometimes forget that:

> *In most human societies, the regular use of some psychoactive substance is not only tolerated, but culturally prescribed. Moreover, some drug habits have important social benefits which may outweigh their harmful effects, particularly when the latter are experienced by a minority of users only. The abolition of drug use may thus be as undesirable as it is unattainable*[13].

The philosophy of harm reduction, which underpins the NDS, is sometimes associated with the idea that abstinence would really be the ideal goal, the peak in the hierarchy of goals, but is for a variety of reasons unattainable. This thinking coexists uneasily with the idea of normalising and destigmatising drug use.

Also, harm minimisation sometimes seems to translate into *fun* minimisation and *boredom* maximisation, which unfortunately is a common occurrence in the health promotion field. Dorothy Broom, discussing cardiovascular health promotion, has this to say:

> *We might learn a lot from the initiatives of gay men in eroticising safe sex. They have transformed prevention into a positive and pleasurable part of gay masculinity. By contrast, the heart disease prevention message has largely been a dour lesson in asceticism and denial, including denial of certain forms of masculine self-expression and pleasure. If a man suggests that 'doing these things won't actually make you live longer...it'll just seem longer', nobody should be surprised*[14].

This challenge is relevant to both educators and policy-makers in the drug field. We need to continue to draw attention to the costs of drug use, but also to consider more positive ways of selling our vision within tertiary institutions and within the community.

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# WOMEN AND DRUGS: DEVELOPMENTS & DIRECTIONS

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This paper provides an overview of how women have fared in the research and treatment of substance dependence and what has been learned about women and substance use over the ten years of the National Campaign Against Drug Abuse (NCADA). The topic areas covered include women's patterns of substance use, correlates of substance use, drug-related morbidity and mortality, treatment seeking, treatment utilisation, research issues, treatment needs, prevention activities, and suggested future priorities for the National Drug Strategy.

## Women and Research into Drug Abuse Grants

The NCADA's Research into Drug Abuse Grants Program (RIDAGP) has provided an extremely valuable enhancement of research activities in non-biomedical aspects of drug use. During the first ten years of the program the figure quoted by the Department of Human Services and Health concerning funding of research into women and drugs was "about 11%"[1]. Upon further analysis, however, it was found that 8.9% of the projects targeted women and the remaining 2.1% focussed on children of drug dependent people. Of those 8.9% of grants addressing research on women with alcohol and other drug problems, over a quarter (27.3%) only studied pregnant women. While less than 6% of studies funded examined issues related to women and substance use specifically, it is not possible to say what percentage of the budget this represents, as such data has not been provided by the Commonwealth. By examining the nature of the projects an experienced researcher in the field might estimate that it would be in the order of less than one percent. It can be argued, therefore, that women in general remain poorly represented among the research funds allocated in this country over the previous ten years.

The picture is much more encouraging for women alcohol and other drugs researchers in Australia. Over the ten years of the Campaign, 31.8% of Principal Investigators of projects funded under RIDAGP were women. This appears to be a much higher proportion of women researchers than larger and more mainstream funding bodies such as the National Health and Medical Research Council can boast. The proportion of women receiving doctoral scholarships from the National Campaign funds is even higher, from one in four in 1992, to all female recipients of new scholarships in 1995. The reason for the significantly higher proportion of women researchers and scholarships recipients may be that the alcohol and other drugs field remains less professional than similar sectors of health and social sciences, and women are more willing and able to take up opportunities in lower status and more marginalised areas of research.

## Patterns of substance use

The 1993 Ministerial Council on Drug Strategy's Australian National Drug Household Survey interviewed 3,500 people over the age of 14 years, drawn from a representative

national sample[2]. They found that patterns of drug use in Australia were very stable when compared to the 1991 survey, and that men were more likely than women to have ever tried tobacco (84% vs 75%) and cannabis (41% vs 28%). Illicit drugs were only slightly more likely to be used by men, with 2% of men and 1% of women reporting having injected a drug in their lifetime. Women were more likely than men to report having tried analgesics (86% vs 75%) and hypno-sedatives (42% vs 25%). The higher rates of hypnosedative and anti-depressant usage among elderly women is also a significant contributor to morbidity and mortality associated with falls among this group.

The 1993 Household Survey also found that 33% of men and 27% of women are current smokers, with teenage girls more likely to be smokers than teenage boys. It has been suggested that if the current trends continue, the smoking rates for men and women will have converged by the year 2000. The pervasive social messages of slimness for women and the regular photographs of models such as Kate Moss smoking cigarettes, makes it difficult to counter the message of nicotine as a slimming aid to young girls.

In that survey, 34% of men and 25% of women drank at intermediate to high risk levels at least once a week, with women's rates of drinking at this levels decreasing more slowly than those of men. Of particular concern is the high rates of binge drinking among young people. Forty three percent of males and one third of females aged 14 to 19 years have consumed five or more drinks on one occasion in the last two weeks. The survey also found that 50% of teenage girls had their first drink by the time they were 15 years of age, almost as high as for boys, and two-thirds of young female drinkers were heavy drinkers, the highest incidence of any population group.

A recent population survey of alcohol use among women in inner city Melbourne, reported that 93% had drunk alcohol at some time in their lives and 88% had drunk in the last year[3]. Of these, 25% of current drinkers scored 8 or more on the AUDIT and 18% were classified as hazardous and 5% as harmful drinkers. In addition, over a quarter of the sample reported currently using marijuana. One of the negative aspects of alcohol use identified by the women in the study was the perceived association between alcohol and violence towards women, with a little over a quarter of the sample having experienced some form of abuse. These figures appear to suggest that women's hazardous and harmful consumption of alcohol may be under-represented in current national surveys.

One of the consequences of the social and cultural influences on women's behaviour is that alcohol dependent women are more socially isolated than alcohol dependent men. Women often favour private drinking, either alone or with their partners at home, rather than in public places where they may be vulnerable to physical attack and strong social disapproval[4]. In addition, women with alcohol and other drug dependency are more likely to have a partner with the same problem[5,6], and so they are more frequently the victims of violence than non-substance dependent women in the community[7]. The home is the most frequent site for that violence[8].

## Correlates of substance use

*The development of dependence*

A number of studies indicate that alcohol dependent women start both social and heavy drinking at a later age than alcohol dependent men[9]. In addition, women drink smaller amounts, and less often, for comparable levels of alcohol dependence[10]. These data indicate a "telescoping" in the development of alcohol dependence in women, with a more rapid

development of alcohol dependence problems in women than men. The addiction career for opiate dependent women has also been reported to be compressed into a shorter cycle[11].

*Family history and genetic factors*

The difference in the time course for the development of dependence may reflect differences between men and women in the importance of genetic and environmental contributions to alcohol and other drugs dependence. Although the research in the past two decades has demonstrated a genetic contribution to alcohol dependence, this has primarily been conducted on male samples. Adoption studies in the 1970s provided stronger evidence of genetic influences for males than for females although these studies were limited by the small numbers of alcohol dependent women examined. More recent studies have also supported a stronger genetic contribution for males than females[12]. A later study that also used family history data by Gilligan, Reich and Cloninger also concluded a greater genetic involvement in male alcoholism than female alcoholism[13]. In reviewing the adoption study evidence on genetic vulnerability, Hill concluded that such studies do not reveal definitive answers due to the extremely small numbers of female adoptees who were alcoholics in the samples[14]. The female twin studies also provide a contrariety of evidence, with some studies not discounting the possibility of equal genetic mediation in women and men and others providing either equivocal evidence of genetic mediation, or a predominantly male pattern in such mediation.

Given the likelihood of a stronger genetic contribution to the development of alcoholism for males, it may seem paradoxical that several studies have also reported that alcohol dependent women are more likely to report a family history of alcohol problems than are alcohol dependent men. Maternal alcoholism, however, only increases the risk of alcoholism in female offspring[15].

In the United States National Drinking Practices Survey, for example, women with an alcohol problem were nearly twice as likely to have a father with an alcohol problem, and more than five times as likely to have a mother with an alcohol problem, than were men with alcohol problems[16]. There are several possible explanations of this finding. It may be that because of the greater social disapproval of heavy drinking among women, women who develop dependence are more likely to have a family history of alcohol problems, and are more likely to present for treatment. Alternatively, it may be that women are more strongly influenced by parental modelling of heavy drinking, or it may simply be that women are more willing to recall alcohol problems in the family than are men.

*Substance use related problems*

The consequences of heavy drinking differ between men and women. A survey conducted in Canada of 229 male and 198 female patients who met lifetime DSM-III criteria for alcohol abuse or dependence found that, while women accumulate the same number of alcohol related problems as men in treatment, they do so in four less years[17].

The types of problems alcohol and drug dependent women experience also differ. Early studies of consequences of alcohol and other drug misuse have been criticised for using measures that were based on experiences more common to men's than women's experiences with drinking, such as drunken driving, aggressive behaviour, and criminality.

A review of the research literature from 1970 to 1986 which examined indicators of women's alcohol problems by Schmidt, Klee and Ames distinguished two sets of consequences: physiological and marital/family[18]. They noted that health problems appear earlier in women's drinking careers and that women experience greater family and marital disruption. Perodeau also reported that women with alcohol problems report more marital and familial

disruption as a result of their drinking than do men[19].

Women are less likely to experience legal and employment problems as a result of substance misuse than are men. Robbins examining the data of the American 1985 National Institute on Drug Abuse National Household Survey, concluded that drug abuse is related more strongly to problems such as depression, irritability and anxiety in women and to problems of social functioning such as employment, financial and legal problems among men[20].

*Parenting*

More than half of the women in alcohol and drug treatment services are mothers, and up to 22% have lost custody of their children at some time[21,22]. A significant proportion of women not only have concerns about government agencies removing their children, but are also unable to afford, or do not have access to, appropriate childcare while they seek treatment. The fear of loss of custody or care of their children by women with alcohol and other drug problems is real. A survey of clients of a women-only treatment service in Australia reported that of those women with children, 56% of them had children living outside their care[23]. In the same study, the two most commonly cited reasons for not continuing treatment were difficulties with child care and fear of the unknown.

*Sexual Assault*

Women who have a history of sexual abuse in childhood and adult life appear to be over-represented among women seeking treatment for alcohol and drug dependence and psychiatric disorders. A recent study by Miller and Downes reported that 66% of 98 women in alcoholism treatment programs reported a history of any childhood sexual assault (including exposure and touching) compared to 37% of a random sample of 100 women in the community[24]. In the same study childhood sexual assault (CSA) that included penetration was reported by 47% of the women in alcoholism treatment programs compared to 10% of women in the community. Australian studies report rates of CSA in substance use treatment services from 38% to 50% depending on the type of agency[25]. Sexual assault in childhood also appears to make women more vulnerable to revictimisation in later life. Women sexually abused as children are twice as likely as nonabused women to be raped or to experience an attempted rape in adulthood[21,22]. Studies of women in the sex industry have also reported CSA rates of 55%-60%[26].

A recent Australian study of the relationship between a history of CSA compared women in alcohol and other drug treatment services with and without a history of CSA and women in CSA counselling services with and without a history of substance use problems. They found that regardless of the type of agency attended women with such a history first got drunk or stoned at a significantly earlier age than women with no such history, whether or not they went on to develop substance dependence. There were no significant differences, however, in severity of dependence or consumption levels among women with and without a history of CSA who were in treatment for alcohol and other drug related problems[27].

*Domestic Violence*

The linkages between childhood sexual assault, subsequent victimisation, and intoxication by the perpetrator and/or victim have been commented on in the literature. Estimates of the percentage of perpetrators who assault their partners while intoxicated range from 48% to 87%[28].

Research examining the impact of the woman's alcohol misuse suggests that her alcohol problems not only increase her chances of victimisation but also increase the likelihood that

she would kill her abuser[29]. While men appear to be held less responsible for their violent behaviour while intoxicated, women under the influence of alcohol tend to be perceived as being more responsible when they are raped and assaulted[30]. These attributions belie the finding that men with alcohol and other drug problems are apt to be violent whether intoxicated or sober and tend to be violent more frequently and to inflict more serious injuries than abusive men without a history of substance misuse.

The additional stigma for a woman with alcohol and other drugs problems who experiences domestic violence make it unlikely that she would readily present to specialist alcohol and other drug treatment services, or immediately disclose her experiences of domestic violence upon presentation at health care services.

## Morbidity and mortality

A recent national review of the quantifiable drug-caused morbidity and mortality in Australia has revealed that in 1992 hazardous and harmful drug use caused the loss of life of 16, 762 men and 6,306 women. They also led to 567, 564 bed days in hospital among women and 1,020,993 among men, with active smoking accounting for 21% of all causes of death among men and 8.8% among women[31]. The same study reported women drinking on average more than 20 grams of alcohol per day had a relative risk of contracting breast cancer of 1.54, injuring road trauma of 9.59, hypertension of 2.11 and stroke of 13.7 compared to women who drank less than 20 grams of alcohol per day. This relative risk of having a cerebro-vascular accident among women was more than four times that of men drinking in the hazardous to harmful range (RR 3.0 versus 13.7).

*Psychological health*

Dependence on alcohol and/or other drugs is also associated with a number of debilitating psychological disorders in women. The causal relationship between many of these disorders and substance misuse are extremely complex and remain unclear. A number of studies report the co-occurrence of anxiety disorders, panic disorders, and agoraphobia with alcohol and other drug dependence among women. Some of the many complicating factors in this nexus of anxiety-related disorders and psychoactive substance dependence include the increased likelihood of women being inappropriately prescribed benzodiazepines and other sedatives for social rather than therapeutic reasons[32]. As withdrawal from both alcohol and benzodiazepines may precipitate and intensify anxiety and panic symptoms it can create an extremely complex clinical problem. Benzodiazepine use has been associated with a dependence syndrome and as contributing to morbidity and mortality from abuse, poisonings and attempted suicides among women[33]. Among injecting drug users, benzodiazepine use has been identified as a predictor of higher rates of injecting and engaging in more HIV risk-taking behaviours[34].

A number of authors have suggested that various forms of addictive disorders co-exist. The most significant group of co-existing disorders among women are eating related. Cross-sectional studies of women with eating disorders have documented higher prevalences of alcohol and other drug misuse in these women than are reported in the general female population[35]. Conversely, women with substance dependence problems report eating-disordered behaviour more often than the general population[36]. Such co-morbidity may lessen the effectiveness of treatment, and may not be recognised by clinicians who specialise in one form of addiction.

*HIV risk-taking*

Currently in the United States, 70% of AIDS cases among women are drug-related. A number of Australian studies have reported that women are at increased risk of sharing injecting equipment with their sexual partners[37], and hence their risk of contracting blood-borne diseases. Women injecting drug users are also exposed to potentially greater risk of contracting blood-borne diseases as a result of the increased likelihood of their working in the sex industry.

## Treatment seeking

Women with substance abuse disorders are acutely aware of the strong social sanctions upon them. As a result of this enhanced social stigma, women are generally more reluctant to enter specialist substance abuse treatment programs. They are more likely than are men to seek medical treatment for interpersonal or psychological problems or to contact psychiatric services without informing these professionals about their substance use problems. Female problem drinkers are more likely to use non-alcohol specific health care settings, and to report greater symptom severity.

*Self-managed change*

According to the American population data, women are more likely to self-manage changes in their substance use disorders than are men. An Australian study of self-managed chance among women indicated that the process is consistent with the model described by Biernacki[38]. There were, however, important gender differences. These include the role of pregnancy, lactation, and concerns about vulnerability to sexual victimisation and risky sexual behaviours whilst intoxicated[39].

A comparison of women in two Australian studies has revealed that women who do and do not seek treatment have comparable levels of problem severity but those in treatment are more likely to have a history of childhood and lifetime sexual assault, to have a mother or father with a history of substance dependence and less likely to be in a stable relationship, to be employed, or to have a tertiary education than women who self-managed change in their substance use problems[39].

*Barriers to treatment seeking*

A recent Australian national survey of treatment issues for women has revealed that women indicated that ignorance about options for treatment, fear of the unknown, shame at their substance dependence becoming known, hopelessness, the lack of social support to seek treatment and make changes in their lives, and the lack of childcare available as the primary barriers to their seeking assistance earlier in their addiction careers[40].

The same survey reported that women nominated a flexible treatment philosophy, friendly staff, minimal rules, individual counselling, women-only services, and the provision of childcare as factors that would minimise premature treatment drop-out[40]. A serious finding of this study was that 25% of the women in the study reported having been physically or sexually harassed in treatment, predominantly by male clients and staff.

## Treatment utilisation

The 1995 Census of Clients of Treatment Service Agencies reported that only 29% of primary clients were women[41]. Women were more likely to present with opiate and benzodiazepine dependence and to have injected drugs in the previous 12 months than were men. Women were also more likely to be in non-residential treatment services. These findings have remained unchanged over the course of the three censuses.

A recent study of juveniles in detention in New South Wales, which over-sampled girls in detention, reported that girls were four times more likely to have been told they have a substance use problem and nearly ten times more likely to have a problems with heroin use than were boys. Girls were also more than six times more likely to have injected drugs in the month prior to incarceration and to have shared a needle, especially to have used it after someone else, than were boys. In addition, girls were more likely to have been intoxicated during the commission of the crime that resulted in their incarceration (70% versus 54%) and to have committed the offence to obtain money for drugs (55% versus 47%) than were boys[42].

## Research issues

The majority of research on alcohol and other drug dependence and, indeed, on patterns of non-problematic alcohol and other drug use, has been conducted on men. The existing treatment models used with women, therefore, have largely been developed by and for men, and continue to be refined on the basis of research largely conducted on male subjects. Little consideration has been paid to any psychological and physiological differences between men and women, or to the socio-political context of women's lives.

*Specialist women's services*

The effect on treatment outcome of moving away from the prevailing male-dominated models of treatment for women has yet to be adequately tested. The sole controlled treatment outcome study was that conducted by Dahlgren and Willander in Sweden[43]. This was a 2-year follow-up study of 200 women who were attracted into treatment at an early stage of alcohol dependence. At two year follow-up, 72% of the sample were contacted and the women who attended the specialist women's service had a more successful outcome in terms of alcohol consumption and social adjustment than the women who attended the traditional mixed-sex service for a comparable length of time. The social aspects of treatment outcome that reached statistical significance included job loss (4% versus 17%), improved relationship with their children (35% versus 12%), and voluntary removal of their children (5% versus 25%).

Outcomes measures related to mortality found that there was a statistically significant excess mortality for traditional mixed-sex clients, but not the specialist women's service clients. In addition, women attending the specialist women's service were less likely to require subsequent inpatient care for relapse (16% versus 31%) during the follow-up period than were women attending the mixed-sex treatment.

An Australian comparative longitudinal study of 160 women attending specialist women's and traditional mixed-sex treatment services reported that specialist women's service attracted and retained in treatment significantly more women with dependent children, lesbian women, women with a history of childhood sexual assault and women with a maternal history of substance dependence than traditional mixed-sex services. At six months following admission there were no statistically significant differences in treatment outcome due to low statistical power and the lack of difference in treatment content between the two types of services. All of the differences in outcomes, however, were in favour of the specialist women's service[25].

## Treatment needs

- Principles of treatment should encompass a Social Model of Health and be consistent with the *1989 National Women's Health Policy Guidelines*. These include recognition of a woman's right to be treated in an environment that provides for privacy, informed consent and confidentiality. She should be provided with interventions that are based on appropriate research;

- At least one specialist women's service should be provided in each capital city. While all services should be gender-sensitive, model demonstration programs are necessary for training and research purposes, in addition to optimising treatment outcome for those women who would only be comfortable in a women-only environment;

- A non-threatening physical and psychological environment should be provided;

- Childcare should be available

- Women should be able to make an *informed choice* of treatment goal

- Gender issues in relapse

- Individual counselling by professional staff should be available with the option of a female counsellor

- Women-only groups should be provided frequently

- Parenting issues should be addressed, including the possible intervention needs of the children

- The question of sexual and other assault should be discussed. On-going counselling MUST be available and the decision of the client respected

- As dictated by the Social Model of Health concerns about welfare, housing, educational and vocational issues should be addressed in interventions and an appropriate network of suitable referrals developed

## Prevention activities

The priorities for prevention activities among women include:

- young women and smoking

- Aboriginal women and smoking

- girls with a family history of substance abuse

- girls experiencing childhood sexual abuse

- girls suffering from abuse and neglect

- girls involved in the juvenile justice system
- women experiencing domestic violence
- older women and hypnosedative and anti-depressant use related problems

## Future directions

- Women should continue to be a NCADA priority group for research and treatment provision funding
- Research priorities:
    - to facilitate research uptake by establishing the most effective ways to communicate research findings and facilitate modifications in clinical practice
    - to ensure gender is a covariate in all studies and that gender analyses are reported for all research and evaluation projects
    - intervention strategies for women in custody, rural women, Aboriginal women and smoking uptake among girls.

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# AN OVERVIEW OF THE NATIONAL DRUG STRATEGY IN RELATION TO ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLES

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## National Drug Strategy

Consistent with the National Drug Strategy, the Department of Human Services and Health supports a policy of 'harm minimisation'. Obviously, in the context of Aboriginal and Torres Strait Islander peoples, this must occur in a self-determination and community empowerment context.

Indigenous health issues, including the use of alcohol and other drugs, have too often been placed in the 'too hard' basket by governments and the Australian community. Further, initiatives undertaken have more often than not been 'reactive' and treatment oriented, rather than 'proactive' and focusing on prevention and health promotion. This is not to deny the validity of both perspectives, just to ensure commitment to reducing otherwise preventable ill health.

The Department of Human Services and Health, as a lead health agency, has really only begun to deal with Aboriginal and Torres Strait Islander alcohol and other drug issues in the last few years. Prior to this, the Department played a lesser role through providing public health policy and medical advice to the Department of Aboriginal Affairs, which was replaced by the Aboriginal and Torres Strait Islander Commission (ATSIC). Aboriginal and Torres Strait Islander peoples are now identified in the National Drug Strategic Plan as a priority population group to be targeted for prevention and treatment activities in the context of alcohol and other drug use.

The Department of Human Services and Health function has largely been through Drugs of Dependence initiatives targeting indigenous Australians.

## Tobacco strategies

As no national data related to smoking levels among indigenous Australians exists, general smoking levels among Aboriginal and Torres Strait Islander peoples can only be estimated from surveys collecting regional data. These data sources indicate that tobacco consumption among Aboriginal and Torres Strait Islander peoples can be estimated to be at least two to three times greater than among non-indigenous people. Estimates such as this, coupled with indigenous morbidity and mortality data, indicate the magnitude of the problem, and

reinforce the immense need for appropriate anti-smoking campaigns and education programs targeting Aboriginal and Torres Strait Islander peoples.
Potential communication strategies and aims indicated by the Drugs of Dependence area of the Commonwealth Department of Human Services and Health to address this problem are:

- to re-prioritise the relevance of the ill effects of smoking (addressing housing, education, provision of better health care, etc);
- to redefine the status of tobacco and smoking issues (for instance, highlighting some of the priority problems faced by Aboriginal and Torres Strait Islander peoples such as asthma, coronary disease, low birth weights of newborns, etc);
- to remodel the education and program approach (for instance, rather than taking the mainstream message of 'don't smoke because ....', perhaps using a harm minimisation approach and dealing with related issues such as asthma and smoking, pregnancy and smoking, etc);
- to target Aboriginal and Torres Strait Islander youths, who take up tobacco use much earlier than the general population;
- to recognise cultural differences; and
- to secure a firm commitment to addressing this problem from all Governments and relevant non-government organisations, and to involve Aboriginal and Torres Strait Islander peoples in the decision-making processes affecting them.

Given the cultural similarities and diversity with Aboriginal and Torres Strait Islander Australia, both qualitative and quantitative research at the individual community level is required to ensure maximum ownership and acceptance of health strategies and interventions.

## Alcohol strategies

The Report of the Royal Commission into Aboriginal Deaths in Custody highlighted alcohol as a major factor in the encounters between Aboriginal and Torres Strait Islander peoples and the police and judicial systems. It was also found that young indigenous people were over represented within the justice system.

In response to this, the Commission recommended that a National Aboriginal and Torres Strait Islander youth alcohol campaign be developed and implemented by this Department.

The Aboriginal Youth Alcohol Abuse Campaign began in 1992, and its first phase of activity has been evaluated.

This phase of activity centred in the Northern Territory. The Bush Tour Project, RAYPIRRI - A MATTER OF BEING SENSIBLE, featured visits by Aboriginal band Yothu Yindi to eight remote communities. These visits were co-ordinated with existing community strategies so that they formed a positive component and reinforcement to the longer term ongoing community programs. The campaign was evaluated in 1992-93, with results showing that a mix of media elements such as television, outdoor advertising, merchandising, etc, can highlight positive, sensible, approaches and alternatives to alcohol messages in Aboriginal communities in the short term.

Aboriginal health workers and school teachers expressed the need for supporting information and project material which could be used before and after tour visits. Tour concerts were effective in exposing the message to the target group, with a total attendance of ten and a half thousand people - predominantly Aboriginal. It is estimated that of those who attended the

tour concerts, 20 to 25% of the total campaign target group (youths aged 12-18 living in the Northern Territory) were represented.

The experience of celebrating Aboriginal culture in an alcohol-free environment appeared to have a major impact on those exposed to the campaign message. The campaign was also successful in highlighting the existing anti-alcohol abuse agendas in communities. This model of helping to sponsor 'alcohol-free events' in order to promote family/community health, with all that entails, is growing in popularity.

A second phase of campaign activity is presently taking place in Western Australia.

The Western Australian state-wide campaign is a reflection of the large Aboriginal and Torres Strait Islander population in the State, the number of deaths in custody reported and the high levels of alcohol consumption in many Western Australian communities.

The Western Australian campaign strategy has been developed through extensive state-wide community and agency consultations and through the establishment of a state-wide Youth and Advisory Reference Group.

The campaign will promote the overall message that if a person chooses to drink, it is better to drink responsibly, not only in the personal sense, but also with reference to community and cultural responsibility. The campaign slogan 'Respect yourself - Respect your Culture' was selected on the basis that it conveys the idea that excessive alcohol consumption is incompatible with a positive expression of Aboriginal culture, and it reinforces the link between personal respect and respect for the community. This theme also allows for abstinence messages to be given reinforcement.

The arts and cultural activities form the core of the community events under the campaign and include a concert tour by the 'Rock Rig', music and dance competitions and theatre performance by Aboriginal and Torres Strait Islander youth drama groups.

The next phases of activity (to be held concurrently) are in New South Wales and Queensland, with other states to follow.

The Aboriginal youth alcohol campaign is also involved with a radio sponsorship of the Deadly Sounds radio program. It is broadcast on a national network of community and regional radio stations. The program promotes healthy lifestyle messages to youth in a contemporary music format. The sponsorship was chosen since radio is one of the most widely accepted mediums for indigenous peoples and youth in particular.

## Education grants

Commencing in 1992-93, program monies of $1.36 million over five years have been allocated to the National Drug Strategy for education grants which focus on alcohol and other drug issues. This is a direct result of the findings of the Royal Commission into Aboriginal Deaths in Custody. All projects must conform to the need for consultation with Aboriginal and Torres Strait Islander communities and must incorporate the principles of empowerment and self-determination.

Examples of projects which have received funding are the development of a 'best practice' model for the co-ordination and integration of Aboriginal alcohol and substance abuse

services in the Kalgoorlie area (WA), the Second World Indigenous Conference on Substance Abuse and Spiritual Healing (NSW), and to develop a culturally appropriate substance abuse education and prevention program for the Cummeragunja community (Vic).

The success of this intervention cannot be detailed as the initative is yet to be evaluated.

## Future directions

Further research into patterns of drug use in Aboriginal and Torres Strait Islander communities should involve each of the major stakeholders - the Commonwealth, states and territories and other appropriate non-government organisations such as the National Aboriginal Community Controlled Health Organisations, state and territory Aboriginal and Torres Strait Islander peak health bodies and research bodies such as the National Drug and Alcohol Research Centre.

The Commonwealth's commitment to directly funding community controlled health and substance abuse services must also be given serious consideration when commissioning research. Drawing advice from a particular community about how best to target that community will logically best succeed if the community, or appropriate representatives, are 'equal' partners in the development and implementation phases. The issue of data ownership and feedback is of equally critical importance.

Another area requiring further exploration in the Aboriginal and Torres Strait Islander context of alcohol and other drug use is the issue of recurrent funding. Projects funded under the National Drug Strategy's Grants program are presently one-off projects which are not formally evaluated. Given that many of these projects are 'deemed' successful, mechanisms should be in place to ensure that, where appropriate, a commitment is made to ensure a sustainable outcome. A model for this is the approach being taken by the Office for Aboriginal and Torres Strait Islander Health services in respect of existing health and substance abuse services. This Office is considering the introduction of more stable funding arrangements whereby negotiation of long-term funding of up to three years will take place with individual Aboriginal Health and Substance Abuse Services.

On the issue of future directions in Aboriginal and Torres Strait Islander health, brief discussion on the transfer of portfolio responsibility from ATSIC to the Department of Human Services and Health must occur.

The 1995-96 Federal Budget transferred responsibility for primary health care programs for Aboriginal and Torres Strait Islander peoples from the Aboriginal and Torres Strait Islander Commission to the Department of Human Services and Health. This move is intended to ensure that Australia's indigenous peoples receive a priority position within the mainstream health system based on need.

The transfer of responsibility formally took place on the 1st of July, 1995. While this administrative shift is aimed at developing a greater focus on indigenous needs in mainstream health programs, Aboriginal Community Controlled Health Services will continue to be the main model for Commonwealth funded primary health care for Aboriginal and Torres Strait Islander peoples.

In 1995-96, the focus for alcohol and other drug use services will be on improved planning and assessment of local needs. During this coming year, Aboriginal Health and Substance

Abuse Services will be invited to develop joint action plans to meet the health needs of their local area.

Negotiations for bilateral agreements with the states and territories are presently underway. They have, as their centrepiece, a commitment to a joint regional needs assessment and planning process, and the use of community health plans as a precondition for the identification of local priorities and service delivery mechanisms.

It is proposed that, to the extent that funds are available, this process will be used by the Commonwealth to identify where services require expansion or additional services are needed.

On internal departmental service improvements, the Office for Aboriginal and Torres Strait Islander Health Services has recently outposted three of its staff to the Public Health Division. The aim of this exercise is for staff to analyse present mainstream health policies and establish whether these are accessible to Aboriginal and Torres Strait Islander clients. Where barriers to access exist, the outposted officers will be identifying options for the Public Health Division to allow greater accessibility for indigenous peoples. These staff will also be looking at areas within the Division which overlap, and developments made to ensure cross program initiatives where appropriate. This will ensure a greater focus on an holistic approach to health service delivery.

To conclude, responsibility for Aboriginal and Torres Strait Islander alcohol and other drug issues will continue to be shared by the Drugs of Dependence Branch and the Office for Aboriginal and Torres Strait Islander Health Services. To this end, the Office for Aboriginal and Torres Strait Islander Health Services has initiated liaison to prevent duplication of services, and to provide guidance and support for Aboriginal and Torres Strait Islander initiatives. All this will also occur in the context of on-going collaboration with client communities and the Aboriginal and Torres Strait Islander Commission.

# ADOLESCENT SUBSTANCE USE AND PREVENTION: WHAT DO WE KNOW?

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## Introduction

Adolescent psychoactive substance use and dependence are complex and dynamic public health issues which require comprehensive and integrated approaches. Characterised by rapid changes in the pattern and context of use, types of substances used, and related problems in countries worldwide, they are products of a constellation of factors in the personal and social lives of individual young people and communities. The popular view that illicit substances are the major problem contradicts the evidence that the harm to public health induced by those which are illicit, such as alcohol and tobacco, is far greater[1].

In developing countries, the problems related to the use of tobacco, alcohol and other psychoactive substances are parallel to and associated with other enormous health, economic and social problems, making it difficult to prioritise actions[2]. In addition, the 'drug industry' can be a source of income to the poor[1]. The arrival of HIV/AIDS has exacerbated the situation and added a sense of urgency, especially where injecting is common and sexual safety compromised by intoxication and other substance-use related events, such as impaired judgement[3,4].

Despite many commonalities, developed and developing countries differ in their experience of substance use and related harm. Most developed countries have seen a stabilisation, and even a decline in alcohol and tobacco use among school youth; although tobacco and alcohol continue to be the most important in terms of public health consequences[5-8]. However, some of the gains have begun to erode, with increases in cannabis use, and in some time periods, more young women than men smoking, and little impact on those young people who regularly use alcohol[9-12]. In contrast, alcohol and tobacco use and related harm have been rapidly increasing in developing countries[13].

In many countries, particularly in the developed world, other changes are occurring; multiple substance use, the use of new substances such as Ecstasy (MDMA),

combining substances, and changes in modes of administration, particularly to injecting[11,14]. In both developed and developing countries, solvent use is an increasing problem, especially among marginalised groups which include street children and indigenous young people[1,9,13].

It is generally accepted that the best predictor of experimentation with both illicit and licit substances by young people is being young. Adolescence is a time of experimentation, exploration, curiosity and identity search, and part of such a quest involves some risk taking. By the time of adolescence young people have also been exposed to many substances, especially those which are easily available and relatively cheap such as glue, tobacco, petrol, alcohol and cannabis. Within a milieu of social and peer influence and expectations, together with easy availability and variety, substance use can become one aspect of the development process, and even a part of life. Adolescence is also the time wherein many behaviour patterns become more entrenched; including personality disorders, substance use and associated problem behaviour[8,14,15].

Most young people who try substances do not continue their use or develop significant problems [14,16]. Some US studies indicate that only between 6% and 10% of adolescents meet criteria for substance dependence[5]. Experimentation and a variable pattern of use and cessation are common.

Much use of substances is not mindless or pathological, but functional. When surveyed, young people in developed and developing countries cite boredom, curiosity and wanting to feel good (or better) as the main reasons for use[1,14]. Other functions served by substance use are to relieve pain, keep awake or get to sleep, or to dream. Therefore, substance use is often seen by young people as a solution, rather than a problem.

The pathways for young people who develop patterns of regular and problematic or harmful use appear to differ from those who merely experiment or maintain irregular use. Personality characteristics, individual differences in vulnerability, family difficulties, association with substance using peers, differential exposure to substances, shared and non-shared environments, and accumulation of social disadvantage all play a role[5,14,16,17]. The interplay of these variables in particular cultures and situations, or more broadly varying contexts, is crucial.

Some groups of young people have been identified as being at risk of substance use and associated problems, usually due in part to a greater number of stressors in their lives and/or weakened resilience. Of special concern are young people from war-torn societies, refugees, indigenous young people, street children and other marginalised young people, for example young gays/lesbians and those involved in juvenile justice systems[1]. These young people may have different patterns of initiation and maintenance of use, and may need specific approaches. However, they appear to have been significantly under serviced or ignored.

Young people have particular issues in relation to substance use that require attention. There are, in addition to physiological differences, social and economic ones which impinge on their functioning and their health. Often, young women are

introduced to substance use by male partners, and use may be maintained, for some involved in commercial sex work, by their 'pimps'. Sexual assault may be more common for young women than young men, and young women 'on the street' tend to exhibit greater levels of psychosocial distress and negative life events than do the young men[18]. Pregnancy is also a major issue for them, and young women substance users are often viewed more negatively than young males. In addition, in many parts of the world, young females have fewer economic opportunities and receive less nutritious and smaller quantities of food than their brothers[1].

Just as there are diverse patters of substance use among young people there is a wide range of consequences related to such use. These include harmful health consequences (physical and mental) related to the direct effects of the substances themselves, the ways in which substances are used and the situations themselves, the ways in which substances are used and the situations in which use occurs. The toxic effects of specific substances cause short term and long term health damage, such as acute psychotic reactions and cardiac arrhythmias from psychostimulant use, brain damage from inhalation of volatile solvents, and respiratory and cardio-vascular disease from chronic smoking and alcohol consumption after years of use[1,16,19].

Other consequences of use are determined by the cultural, legal, social and economic context of use. Furthermore, harmful effects of substance use by young people are often felt by families, communities and society at large. Harm results directly from personal use as well as from the use of those around them; including other young people, family members and other adults. Harm also results from the criminalisation of users, and in particular their incarceration, which can increase their marginalisation and decrease their access to and participation in interventions to address any substance use-related harm.

Substance use is associated with many risky behaviours, and broad rather than narrow interventions are required to deal with the range. Risky sexual behaviour while intoxicated increases the risk of unplanned pregnancies and sexually transmissible diseases. Road traffic and other accidents, often associated with substance use, are a major cause of mortality and injury among children and young people. To survive, many young people put themselves at risk of violence by working in the illicit substance and commercial sex industries[1]. Finally, the increase in suicides and homicides among young people, in developed countries in particular, is seen to be associated with substance use.

As substance use spreads through communities, family and social problems are more frequent. Young substance users become alienated within their communities, making them more difficult to reach and more vulnerable to health problems. They find themselves discriminated against and used as scapegoats. Failure at school, early 'drop out' and underachievement are further consequences. These problems translate into reduced opportunities for productive employment and independence. Substance use by both parents and children often increases family tension, which may result in family breakdown and child abuse. Health consequences may be immediate, or the development of chronic often fatal conditions may begin: for example with tobacco[1]. However, the use of substances brings many rewards, such

as escape and status, and these can distract from concern over serious health and social consequences.

The age at which initiation and, in particular escalation and maintenance of use occur is crucial. Intensive and/or prolonged use can truncate, interfere with or circumvent essential maturational processes and development, producing 'developmental lags'. The initial route of administration of the substance, dose, where and with whom substances are used, and any changes over time are also significant variables. Risks can be greater for experimenters with limited access to accurate information, equipment and supports, and for chronic dependent users. Thus, how to delay onset of use, or escalation, and route of administration are important considerations[8,14,20,21].

## Prevention

The purpose of prevention can be to prevent use, even experimental, reduce use, encourage safer use, or provide for harm/risk minimisation. It may be seen as an active, assertive process of creating conditions and/or personal attributes that promote the well-being of people.

Prevention interventions have typically focused on:

* mass media campaigns,
* school-located interventions, where students may receive specific input on substances and their effects, on-going substance use eduction as part of a life skills/personal development curriculum, or short programs delivered by persons external to the school-education system, such as nurses, mental health professionals or police officers,
* community-wide interventions,
* projects directed toward 'high risk' out-of-school youth, and
* various activities such as rock concerts and sporting events sponsored by the health promotion sector.

These efforts have typically targeted tobacco and alcohol, in part due to the belief that earlier and regular use of these substances is associated with other problem behaviour; other substance use and anti-social activities in particular[22]. This paper will focus on school-based interventions.

Most available outcome research on these interventions is from English speaking and developed countries, and any generalising from this research to non-Anglophone and/or developing countries should be cautious. That said, the outcomes of prevention efforts to date have not generally been seen as cause for enthusiasm. There have been claims of success and counter claims of negative outcomes, but, on balance the view of Wheeler appears cogent: "The history of drug education has not been one of spectacular success..... This history of failure can be traced to the inability of earlier drug educators to comprehend why people take drugs. Perceiving

drug taking to be a totally negative experience, they were forced to conclude that there must be something wrong with drug takers[23]."

In addition, school-located programs can be limited in only being able to address a small range of the complex factors which are associated with the onset, escalation and maintenance of substance use. Schools do not exist within a social vacuum, and issues of poverty, criminal gangs, the need for income generation for individuals and families (often to support continued involvement in education), and various elements of family dysfunction and breakdown, are often beyond the reach of schools. Their focus is often, then, more on the individual and negative peer influence resistance.

An additional concern is that many young people who most need an effective intervention are not at school when it is delivered; they are truanting, have been suspended, or are needed by their parents to generate income or provide child/house minding tasks. The latter is particularly the case in some developing countries where only a small percentage of young people enter and remain in education.

The *first generation* of drug education (the 'information deficit model') assumed that if people knew the dangers they would not take drugs. Results of this generation of programs have yielded results which generally indicated no change to an increase in use[4,15,23,24].

The *second generation* of drug education (the 'affective and psycho-social models') assumed that young people had inadequate personal and social development, and that if they had better self-esteem, communication and decision making skills they would not take drugs. This was a blend of social inoculation, social learning and problem behaviour theory. The approach tended to see peer pressure and advertising as the mediating variables, and low self-esteem and personal competence as significant driving forces. However, the relationship has been questioned; is it peer pressure or self-selection of peers with similar interests?

In relation to the impact of advertising, the US Surgeon General has suggested that "... cigarette advertising appears to increase young people's risk of smoking[4]" and that the evidence to date on the bans on tobacco advertising in Norway, Finland, Canada and New Zealand has indicated an impact on consumption.

The most prevalent school based prevention program in the United States of America, Project DARE (Drug Abuse Resistance Education) is based on the social influence approach - refusal skills. About 17 lessons of about 50 minutes each during a semester are taught by a police officer. The approach has been used in Australia, particularly in the Northern Territory and Western Australia. Extensive evaluations show that exposure to DARE had "....no statistically significant effect on subjects' initiation of alcohol use, cigarette smoking, or heavy drinking immediately after DARE, or 1 year or 2 years later[25]." Additionally, DARE had no impact on students' existing levels of substance use[26,27].

The evaluations of the ALERT and Life Education programs have yielded similar

findings[27,28]. In the report of the Government of Western Australia[29] it is suggested that these types of programs, if used, should be additions to a formal school-based curricula and not replace it.

However, Tobler's review of 91 prevention programs is less pessimistic[30]. While she confirmed some of the views presented above, Tobler asserted that there have been some successes. She cited peer-led group interventions, facilitated by mental-health professionals, as showing promise.

Others also report more optimistic outcomes. Eggert, Thompson, Herting, et al[31] have shown that an approach utilising decision making, personal control and interpersonal communication, and attention to self-esteem, with an emphasis on the development of social networks within a group where support, friendship and positive teacher-student and peer-group relationships were fostered was useful with 'high risk' youth in years 9 to 12. However, they also reported that a comparison between the experimental group of 101 subjects and a control group of 158, showed that the program had only a short-term impact on reducing problems and consequences related to involvement with substances and improving school achievement, and little impact on reversing the progression of actual substance use.

A Minnesota community-wide smoking prevention project yielded better results, which appear to have been sustained over 6 years [32]. Over 1400 students were available to follow-up in the 6th year of the study. The project included a sustained school-based psycho-social intervention similar to that outlined by Eggert, Thompson, Herting, et al[31], and community-located interventions, such as risk factor screening in the community, point-of-purchase food labelling, citizen task forces, continuing education of health professionals, and mass media education.

Overall, it appears that the sustainability of the putative positive outcomes for most school-located programs is limited; particularly so for substances other than tobacco. What we tend to see are changes on scales measuring attitudes, intentions or indices of psychological distress, which do not appear to effect behaviour change in relation to initiation, reduction or cessation of substance use. Often there is a 'halo effect' with new programs which disappears over time[33,34]. Attention to variables outside the school appear to sustain any impact; for example family variables, availability and advertising[12,29,35-38].

While pessimistic (or realistic) Kay's cautions appear timely: ".... we have largely ineffective drug education programs being taught for a few hours a year in the turbulent lives of teenagers who live in a drug-using world, surrounded by contradictory messages about those drugs. The youths most needing the message are those least likely to be receptive to them and they may not even be there when the messages are delivered[34]."

## Toward more effective prevention

Whatever the ***target(s)***, it is crucial that they be ***involved*** in all stages of the intervention; assessment, planning, delivery, monitoring and evaluation[1,7,19,20,27,39].

As we cannot as yet predict well who will develop problematic or harmful use, it appears to be best to target all youth, as all/most are exposed to licit substances, and many/most to at least some illicit ones. As Tobler has said "Today most adolescents are 'at risk' for drug use and few, if any, are invulnerable[30]."

*Families* need to be involved and also seen as a target for interventions[7,35,38]. Strategies with families include: family effectiveness training, systematic training for effective parenting, and family therapy and self-help groups. Special attention is also required for young people from particular cultural backgrounds, especially indigenous young people and young gays and lesbians.

Goals may vary and include abstinence, delaying experimentation, and harm minimisation[20]. In general, they will be determined by legal or moral constraints, vary from culture to culture, and be shaped by concerns over substance use per se or harm associated with use. However, it should be noted that in most cultures young people are exposed to licit and illicit substances, and to assume that they will readily embrace abstention is naive. Consequently, attention is required to harm minimisation strategies, even if abstinence is the goal.

'Western' notions of independence can be anathema in many developing countries, where more emphasis is placed on interdependence. Thus an undue emphasis on individualism and individual responsibility can work against effective interventions in such countries/cultures. It may also be timely to question the usefulness of such notions in western societies.

Similarly, the stages of development posited by mainly western developmental psychologists, identity formation, and what is regarded as 'maturity' will differ in other cultures. Likewise, programs which yield some success in one setting in one country may not do so elsewhere. Naive translocation is not useful, and more developed nations should be wary of promoting their programs in less developed ones.

Strategies need to be based, in part, on ***local needs assessments.*** Rapid assessment techniques can be useful, in addition to surveys, and include focus groups, the narrative research method, key informant and case studies[1,13,19,39]. Instead of speculating about what causes substance use, those involved in prevention need to discover what actually motivates their target population(s) to use substances. In doing so they find out what the target population see as viable solutions to acknowledged substance use problems and whether or not they are ready to act on them[23].

Interventions which imply a general deficit among adolescents to resist negative peer influences, and are simply based on a 'just say No' approach tend to miss the point, are naive and simplistic and decontextualise the initiation and maintenance of substance use. Any intervention needs to be culturally sensitive, comprehensive, based on assessed local/target need, and be delivered over time, with boosters provided. Attention needs to be given to the following:

- providing accurate, unbiased information.

- attending to personal variables that may be associated with increased vulnerability to negative peer influence for some individuals or groups.
- teaching of decision making skills and those associated with resistance to negative influences.
- challenging and changing incorrect normative beliefs about the extent of use in a particular area or among a particular target population[40].
- improving communication between young people and their parents, teachers, other adults and each other.
- providing harm minimisation strategies (e.g. safer using techniques) as appropriate, and
- exposing participants to alternative, satisfying and acceptable alternatives to substance use.

The second review of the National Campaign Against Drug Abuse[37] recommended that principles for formal drug education be developed. Consequently, *Principles for Drug Education in Schools* have been developed nationally[39] and most state strategic plans utilise them. They are:

1. Drug education is best taught in the context of the school health curriculum.
2. Drug education in schools should be conducted by the teacher of the health curriculum.
3. Drug education programs should have sequence, progression and continuity over time throughout schooling.
4. Drug education messages across the school environment should be consistent and coherent.
5. Drug education programs and resources should be selected to complement the role of the classroom teacher, with selected external resources enhancing not replacing that role.
6. Approaches to drug education should address the values, attitudes and behaviours of the community and the individual.
7. Drug education needs to be based on research, effective curriculum practice and identified students needs.
8. Objectives for drug education in schools should be linked to the overall goal of harm minimisation.
9. Drug education strategies should be related directly to the achievement of the program objectives.
10. The emphasis of drug education programs should be on drug use likely to occur in the target group, and drug use which causes the most harm to the individual and society.
11. Effective drug education should reflect an understanding of characteristics of the individual, the social context, the drug, and the interrelationship of these factors.
12. Drug education programs should respond to developmental, gender, cultural, language, socio-economic and lifestyle differences relevant to the level of student drug use.
13. Mechanisms should be developed to involve students, parents, and the wider community in the school drug education program at both planning and implementation stages.
14. The achievement of drug education objectives, processes and outcomes

should be evaluated.

15. The selection of drug education programs, activities and resources should be made on the basis of an ability to contribute to long term positive outcomes in the health curriculum and the health environment of the school.

Many of the key themes from the literature are to be found in this list, including: co-ordination of interventions, that interventions be comprehensive and embrace a harm minimisation goal, that context not be ignored, that students and parents be involved at all stages, and that education be continuous throughout the school years.

While schools provide a 'captive audience', many young people are not there who need interventions. In addition, formal curricula can be undermined by the informal one(s). It is also pertinent to note that many of the expectations placed on school-based drug education programs are unrealistic[29]. Other settings can also be utilised for prevention interventions such as: juvenile justice centres, the streets, shopping malls, youth oriented media, youth organisations, youth accommodation services, sport and leisure activities.

Most commentators stress that any approach should be ***co-ordinated***; any school-based program should be reinforced in the broader community[37,41]. For example, the report to the Government of Western Australia noted "Much drug education is ad hoc and isolated, rather than planned and co-ordinated. Often drug education programs have been developed out of frustration and enthusiasm, rather than as part of a carefully planned comprehensive program[29]." One of the guiding principles of the Victorian Youth Drug Strategy is to "bring about coordinated approach within and between Government Departments, the community and youth sectors, and alcohol and pharmaceutical industries in addressing alcohol, tobacco and other drug issues[7]".

Focused and 'relapse prevention' models appear to be more appropriate when young people have already begun to develop substance use-related difficulties. These models aim at identifying intrapersonal, interpersonal and environmental cues and situations which appear to be associated with return to use. Thus, the substance, the individual and the context all receive attention[14,42-44].

While school-located strategies appear to be most appropriately delivered by trained teachers known to the students, there is some evidence that this may be more appropriate in primary school environments[29,39]. Appropriate non-teacher mental health professionals, such as nurses, appear to be effective, as do trained, supervised and supported peer educators, especially for older adolescents. There appears to be a limited role for ex-users/recovering persons in the delivery of preventive interventions[30].

For out-of-school populations, peer education (peer to peer) offers promise[15], via modelling by high status peers or through specific, planned interventions, such as street theatre/drama. These approaches have not been well developed as yet in Australia. Again, peer educators need to be trained, supported and supervised.

## Conclusion

While, overall, there appears to be little to be enthusiastic about in our attempts to prevent substance use and/or substance use related difficulties among young people in the developed or developing world, some directions for the future emerge. Interventions which are initiated, developed and delivered with the involvement of young people themselves appear to have a better chance of success. Likewise, attention to out-of-school variables and interventions which are broad and include the whole community appears to be associated with more positive outcomes. These broader and more inclusive interventions do not have to be financially burdensome; different ways of thinking and acting can consume far less money than many of the glossy, heavily publicised, and essentially ineffective interventions we have seen to date.

The task is to undertake more and better evaluations of what exists and be brave enough to experiment and challenge the continuation of funding to those programs/strategies which do not yield any positive impact on behaviour. We should by now have well learned that knowledge and attitude change do not necessarily lead to behaviour change. Most evaluations to date show knowledge and/or attitude change at best, but few show any positive changes in substance use. Many evaluations have not even attempted to explore behaviour change, yet are enthusiastically lauded by politicians and others to support certain programs and ensure that they are funded. Some programs have been funded which have consistently yielded neutral or negative outcomes.

The task, then, is to develop better strategies to influence the public, church groups, well meaning people, politicians, etc. that there is "no quick fix", and that money spent on good intentions may not have any positive outcome.

We have something of an up hill task in all of this. Part of the current youth substance use scene is up, energetic, and healthy looking. It is a way of dancing over any depression, forgetting about there being little or no perceived future worth keeping oneself nice for. It is an opportunity for partying and enjoying the moment for those who missed Woodstock and our much praised era of free love and happiness. And at least they don't look like "junkies". The music, the talk, the clothes, the hair, the mobiles, and the drugs are all parts of a desirable image. Substance use is obviously not context free.

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# WHAT HAVE WE LEARNT ABOUT YOUTH INTERVENTIONS AND RESEARCH?

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## Introduction

This paper is concerned with what we have learnt in relation to youth in the past ten years and what research yet needs to be done. Specifically, this paper will look at what we have learnt and what further research needs to be done in the areas of:

- the factors that contribute to drug use behaviours by young people
- the consequences of drug use behaviours for young people
- youth participation
- differences between adolescents and adults and
- the study of young illicit drug users.

To preface this discussion, some terminology and parameters of the paper shall be noted. Firstly, `drug use', refers to any drug use, whether that use be safe, risky or harmful. `Drug misuse', refers to use that is risky or harmful but may not necessarily denote chronic abuse or dependence. `Drug abuse' is used in reference to a maladaptive pattern of use that may meet DSM criteria for substance abuse or dependence[1]. Secondly, the terms `drugs' or `substances', refer to any substances used for their psychoactive effects, including alcohol, barbiturates and volatile substances as well as marijuana, amphetamines, heroin and so on. Finally, each of the topics discussed in this paper are relevant to both prevention and treatment interventions and examples will be drawn from a spectrum of youth interventions.

## Factors that contribute to drug abuse

Our understanding of why adolescents abuse drugs helps us to plan interventions. However, the literature is full of inconsistencies on the factors that contribute to drug use behaviours[2] . Over the past ten years, we have moved from simple, correlational research to more sophisticated, multivariate, prospective research methods. As a result, we have learned a lot about the causes of drug use and abuse and started to understand the apparent inconsistencies.

Firstly, we have learnt that simple correlational studies can give conflicting and misleading results, as the relationships between variables can be very ***complex and dynamic.*** A variable

that is associated with drug use does not necessarily cause drug use or abuse:

- It could be a consequence of drug use.

- It might be that they do not affect each other directly, but they are both influenced by a third variable (or set of variables). For example, being in a single parent household has often been alleged to be a major risk factor for drug abuse[3]. However, when family relations[4] or socio-economic status[5] have been controlled for, family structure has been found to have little or no direct effect on the child's drug abuse.

- It could be both a cause and a consequence of drug use: that is, a variable that contributed to drug abuse may then be exacerbated by drug use and so, become a consequence of use, so one perpetuates the other in a spiralling fashion[6].

Alternately, inconsistencies between studies can occur because risk factors can be specific to the target group and the specific drug behaviour being studied. For example, the age of the study group can be important as the role of each risk factor varies with age. For example, the family is more important early in a child's life while peers are more important later in life[7]. Also, the risk factors for drug use are different to the risk factors for drug abuse[8] .

So, with more sophisticated research methods, we have been able to resolve some inconsistencies between studies and dispel some myths about risk factors for drug use.

Secondly, we have learnt that there are ***multiple factors*** that contribute to drug use behaviours so it is inappropriate to concentrate on a single risk factor. In fact, the number of risk factors has been found to be more predictive of subsequent drug use and misuse than any individual risk factor[9,10] . For example, there is a fair amount of research to suggest that each of the following factors are risk factors for drug abuse[5,8,11,12]

lack of social bonding
lack of coping skills
delinquency
early age of first use
being male
low commitment to education
poor family functioning
associating with drug using peers
belief that drug use is safe
being labelled as a user
childhood physical and sexual assault
macro-environmental factors such as socio-economic status and availability of substances
genetic predisposition

Looking at the above list, it is clear that a single risk-factor approach is unlikely to be effective. Unfortunately, we have a history of failed programs based upon single-risk-factors. Perhaps the most common example has been drug education programs based upon the erroneous assumption that simply providing knowledge about the harms of drug use will prevent drug use[13].

Thirdly, we have come to realise that it is generally not appropriate to look at drug abuse

alone. Evidence suggests that drug abuse is part of a ***problem behaviour syndrome*** that includes delinquency, school failure and other problem behaviours[5,14] . While these other behaviours have sometimes been described as causes of drug abuse and at other times described as consequences, we now realise that the relationship is more complex and intertwined than simple cause and effect.

Fourthly, there has been a shift from concentrating solely on risk factors for drug abuse, to looking at factors that are *protective* (or prevent drug abuse)[11]. For example, while a dysfunctional family may be a risk factor for drug abuse, family attachment can serve as a deterrent to drug use[15,16]. Current thinking is that it is not any particular set of risk factors that determines whether or not an adolescent will abuse drugs, but the balance of the number of risk factors and protective factors which each child has[17].

There has also been increasing attention given to the reasons adolescents use drugs from a youth perspective. Adolescents do not just use drugs because they come from a dysfunctional family and started hanging around with drug using peers. Adolescents are like adults in that they use drugs for a reason and the choice of drug type is at least partially determined by the effect being sought. For example, research with adolescent illicit drug users has found that amphetamines are more likely to be used for recreational reasons whereas sedatives and opioids are more likely to be used to help cope with problems[18].

We have learnt that when we are looking at the factors that contribute to a drug use behaviour, we need to look at all of the risk factors, the protective factors and the functional purpose of drug use. For example, family work to improve family functioning will not necessarily alleviate the boredom or social loneliness that an adolescent may be trying to alleviate via drug use. Strategies for planning on the basis of these factors have been developed to assist workers and planners to develop comprehensive, relevant and effective interventions[19].

To sum up this section on the causes of drug abuse: the aetiology of drug abuse is very complex. Research has demonstrated that there is no single cause so there is no single cure. The history of drug interventions has been one of many mistakes. However, prevention and treatment program planners are now somewhat more aware of the need to address the multiple factors related to a particular problem behaviour. Perhaps the main research activity that needs to be done at this stage with regard to the aetiology of drug use and abuse, is simplifying and disseminating what we already know. Also, most of the large scale, multivariate, prospective research that has told us so much about the aetiology of drug abuse has been conducted in the United States of America. Perhaps it is time for Australia to build upon that research and check its relevance for Australia in the 1990's and beyond. Finally, as argued by David Moore who has done a significant amount of ethnographic research with young drug users in Perth, we could go beyond the correlational studies and do more ethnographic research to increase our understanding of the social controls that prevent drug abuse[20].

## Consequences of drug use behaviours

Ten years ago, abstinence was the primary objective of most drug treatment and prevention interventions. However, with the advent of harm minimisation, there has been much more attention paid to the need to reduce specific harmful consequences of specific drug use behaviours. The consequences of drug use vary according to factors such as the type and pattern of substance use. For example, the consequences of tobacco smoking are different to the consequences of polysubstance abuse and the consequences of injecting can vary depending upon whether or not sterile injecting equipment is used. Via research, we have learnt a great deal about the various problems associated with specific patterns of drug use. Conversely, we have learnt about the factors that can contribute to drug use being safer or more risky. Below is a list of the major negative consequences of psycho-active substance abuse for adolescents[12].

- poor ***general health*** and greater susceptibility to infection

- involvement in ***criminal*** or delinquent activities either as a result of:
  - being intoxicated (such as drink-driving or getting into fights) or
  - to obtain money to buy drugs

  not to mention the fact that illicit drug use is, by definition, a criminal activity and can place the user at risk of being arrested

- higher risk of *suicide*

- fatal overdose is rare among adolescents, but still a risk

- for a large number of reasons, adolescents are at particular risk of contracting *HIV, hepatitis and sexually transmittable diseases*. For example, adolescents tend to think they are invulnerable and are less likely to be concerned with taking safety precautions than adults

- *injuries* range from falls or car accidents while intoxicated, to being murdered as a result of being involved with a drug syndicate or living `on the street'

- reactions to *street chemistry* if the drug is illicitly manufactured and distributed: there is no quality control with street-drugs, so they can have adverse side effects because they have been badly made or cut with dangerous substances

- detrimental effects on the *family, education, vocation & social functioning*

- *maturational lag*, that is, when much of the time is spent under the influence of substances, cognitive development can be hindered or distorted.

There are a number of implications from such a list of negative consequences of drug abuse. Firstly, it underlies why harm minimisation is so important. We now realise that we cannot and need not stop all young people from using any drugs. Consequently, we need to be clear about exactly what it is we are trying to prevent or deal with. For prevention interventions, this means targeting specific behaviours that contribute to specific consequences so that the target group understands, accepts and responds to the prevention message. For treatment programs, it means that clients will have already experienced a range of problems relating to their drug use and be at risk of a number of other problems, so comprehensive (or holistic) interventions are required.

Secondly, while this list advises planners about the outcomes health and welfare professionals would like to prevent, many tend not to be outcomes of major concern to adolescents. The risk may seem too small or too distant in time to be of personal or immediate concern. Prevention campaigns such as Stay In Control, QUIT and Drink Drunk the Difference is U, have conducted research with adolescents to ascertain their immediate and real concerns, and based their campaigns on that research. Consequently, their messages were much more relevant than earlier campaigns based upon general health concerns. Similarly, there has been growing awareness of the need to tailor treatment interventions to the immediate concerns of the client, for whom homelessness may be more important than long term health risks.

One suggestion for the future is for more research into the concerns of youth, rather than simply using the morbidity and mortality data to guide our program planning.

## Differences between adolescents and adults

Communications research has for some time emphasised the importance of message targeting[22]. It is only recently that we have realised that treatment interventions for adolescents cannot be the same as treatment interventions for adults. What is it that makes adolescents different? If you were asked to brainstorm some words that would describe adolescents, you would probably include most of the descriptors listed here, plus more[23].

They tend to be:
- risk-takers
- attention-seeking
- ego-centric
- impressionable
- moving from concrete to abstract thought
- highly concerned with peer issues

They tend to have:
- incomplete impulse control
- a limited attention span

They tend to feel:
- invulnerable
- that they will live forever

They tend to want:
- to have fun
- to be nurtured
- freedom

They tend to need:
- boundaries

Because of these tendencies, treatment services cannot treat adolescents the same as adults, nor have the same expectations[24]. For example, services need to deal with low or at least ambivalent commitment to change[25]. Youths feel they are invulnerable and will live forever,

many are still having fun with drug use, their self-identity centres around their drug use and they think they will be a social outcast if they stop using drugs. On the other hand, adults in treatment have generally come to realise that time, and perhaps luck, is running out and that they have no real friends, just associates who use drugs. One way of keeping adolescents engaged is to ensure that the services provided are attractive, relevant and not too demanding[26].

Adolescents in treatment are also different from adults in treatment in other ways besides their adolescent tendencies. For example, they tend to have different drug use patterns, different reasons for use and different constraints on use, be prone to relapse for different reasons, to be more psychologically affected by their alcohol and other drug abuse, and to be more likely to have had problematic family backgrounds relative to adults [27-29].

In sum, services do need to treat adolescents differently to adults. Unfortunately, there is a dearth of research into effective treatment interventions for adolescents, so program planners are reliant upon research with adults (usually alcohol or opioid dependent adults in the USA) which has unknown relevance for Australian adolescents[12]. There is a particular need for randomised controlled trials of treatment interventions for adolescents in Australia.

## Youth participation

Over the past ten years, there have been increasing calls for youth participation. Young people from the target group can contribute to program planning, implementation and evaluation and thereby increase the attractiveness, appropriateness, and effectiveness of an intervention. They can also be involved in youth research. However, the practice of youth participation may not always be well thought out. Consideration needs to be given to the following issues.

What are the benefits to the young person of contributing to an intervention - what will they get out of it? The benefit may be that they learn a valuable skill, that participation is fun, that the service they receive is what they want or simply money. It must be clear from the outset what the young people will receive in return for their efforts; they are generally not on a salary and it is not ethical and sometimes not even feasible to ask for young people to do work for nothing.

What are the consequences of participating? Are they all positive? Consideration needs to be given to the possibility of negative consequences of participation. For example, a project that was implemented in 1986 employed young people to help develop material for a drug awareness campaign for young, illicit drug users. These young people were employed because of their drug use experiences and expected to draw upon that experience to develop material for the project. However, there was insufficient capacity for dealing with the young peoples' issues as they arose during the process of the project. When problems did arise, workers were stressed because they were unable to deal with them adequately and then concerned that the young people were not able to do their work on the project[30]. All of the consequences need to be considered before asking young people to be involved. Are there strategies for preventing or dealing with negative consequences? Are the young people and the project staff prepared to deal with those negative consequences?

Who should participate? If a specific task is in mind, is anybody from the target group sufficient or should input from people who have other related experience or skills be sought? Alternately, are the training and support necessary to assist the young person to make a

valuable (rather than `naive') contribution able to be provided? Just because a young person is from the target group, it does not mean that they have all of the knowledge or skills for the task.

These are just a few of the issues that need to be considered when involving youth in interventions and research. It is not as simple as it sounds. A valuable area for research would be to document how youth participation can work, what mistakes people have made, how others have had success. With all of the talk of youth participation in the last ten years, there must be a wealth of experience worth documenting and sharing.

## Studying young illicit drug users

Ten years ago, the bulk of information about youth drug use came from school surveys. The bulk of information about illicit drug users came from surveys of clients at treatment agencies (generally adults). There seemed to be very little in between. In 1985, I raised the idea of studying young illicit drug users by hiring peer-interviewers to go out into the street to recruit and conduct interviews. Experienced researchers at the time said that it could not be done and that, even if it could be done, the results could not be trusted. Since that time, research with illicit drug users outside institutional settings has become established practice, and we have learnt a lot about youth drug use [18,31]. For example, it came as a surprise to many to discover that the majority of young people using illicit drugs did so on an occasional basis in an apparently controlled manner. No wonder those scare tactics were not working - messages about the evils of illicit drug use had very little relevance to what most young illicit drug users were doing or seeing. What is needed now is a prospective study of young illicit drug users and/or drug misusers. How many end up having problems and how many never experience significant problems? How many have problems but get back on track without professional help? What factors make the difference between the outcomes?

## TNF's PALM program

Before concluding, an adolescent program that has been developed via a collaborative project between the Ted Noffs Foundation (TNF) and the National Drug and Alcohol Research Centre[12] will be mentioned for two reasons. Firstly, it represents a model project of collaboration between a service delivery organisation and a research centre. As mentioned above, one of the challenges for researchers is the transfer of knowledge to practice. Secondly, the program plan incorporates much of what we have learnt over the past ten years.

The program is called the Program for Adolescent Life Management (or PALM). It is deliberately not called a drug treatment program for two reasons. Firstly, it reduces the chances of the clients being labelled as `drug addicts'. As mentioned above, being labelled as a drug addict can maintain or exacerbate drug abuse[32]. Secondly, the name reflects the comprehensive nature of the program. There are strategies to deal with the multiple risk factors and the multiple consequences of adolescent drug abuse. The program includes:

- assessment
- referral (e.g. for medical, psychiatric & other problems)
- case-management
- education
- motivational interviewing
- values clarification
- intrapersonal skills training (e.g. mood management, relaxation, decision making)

- interpersonal skills training (e.g. communication, assertiveness)
- counselling
- drug-free experiences (e.g. art, sport)
- family interventions
- living skills training
- relapse prevention training
- development of supports
- aftercare

The objectives of the program are not about abstinence from drug use, but about improving the client's ability to manage their lives effectively. The program is adolescent specific, not only in its entrance criteria, but in its program plan and service delivery. For example, there is a significant emphasis on drug-free recreation, partly because kids need to have fun in the short term, partly because the clients need to learn how to have fun without relying upon drugs. Finally, youth consultations were conducted to assist in the development of the plan, and ongoing client consultations are part of the program monitoring procedure, to ensure their input into service development.

These are just a few of the ways in which PALM represents the new age of interventions for and with young people. The program has been developed on the basis of research conducted over the past ten years, as well as some original research conducted to assist program planning. However, as stated above, there was a dearth of randomised controlled trials of interventions for adolescent drug abusers to inform the PALM program plan. Such research is urgently needed to check that we really are going in the right direction.

## Conclusions

We have come a long way in the last ten years. We have finally realised that there is a multitude of factors that contribute to or prevent specific drug use behaviours and a multitude of problems: so comprehensive approaches are required. Also, adolescents differ to adults so programs need to be adolescent friendly and relevant. Youth participation is one means of achieving this and we need to learn more about doing this effectively. Finally, research into youth drug use has diversified so that we have trialed new methods to obtain new information about difficult to access groups. Some avenues for future research have been suggested as we still have a lot to learn. However, we still need to go further in implementing what we already know.

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# IN AND OUT OF JAIL FOR THE LAST TEN YEARS: RISKS BEHAVIOURS AND PREVENTION IN PRISON

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## Introduction

The title, `In and out of jail for the last ten years', is based on what a number of people have said when I've asked about their prison experience. This suggests that perhaps incarcerating drug users is not an effective strategy. Now more than ever though the repetitive incarceration of IDUs is a major concern with respect to HIV, hepatitis B and C. This paper will cover the following areas: the relevance of the National Drug Strategy (NDS) to prisoners, studies of risk behaviours, (1995)[29]HIV prevention in the prison setting and evidence of effectiveness of such measures. Finally, research priorities will be suggested and policy changes will be recommended.

According to the National Drug Strategy[1]:

> prisoners should be targeted in prevention and treatment activities, in particular, hepatitis and HIV should be prevented; non medical drug use, and especially use by injection, should be reduced; treatment should be increased in prison and finally offenders should be diverted to community based treatment.

While these targets are appropriate, very few measures have been implemented and those that have been implemented, have not been adequately evaluated.

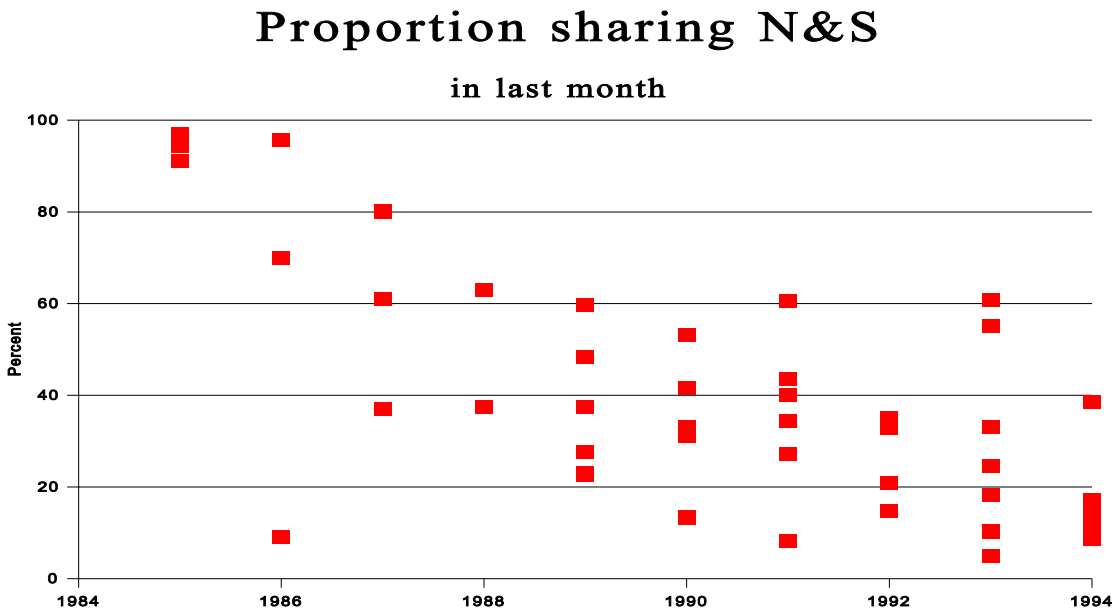
Conducting research in prison is not an easy task. But the inmates are not the problem. Often prison authorities and ethics committees have impeded research. A number of researchers report that they have been blocked from carrying out even the most basic, yet crucial, research - that of risk behaviour in prison. In the USA, Brewer reported that *prior ethic committee review precluded individual interviews for high risk histories*[2]; and in Canada, Toepell reported that *permission was granted providing the behaviour question did not inquire about sex and drug use in prison*[3]; and in the UK apparently Home Office ministers have not (until recently) been convinced that making condoms available in prison would be appropriate or helpful[4].

However, the obstacles have not been restricted to carrying out research but also to the release of findings from studies that were undertaken. Apparently the Home Office has delayed the release of a report on a study of HIV risk behaviour and prevalence among

inmates in the UK since 1995[5].

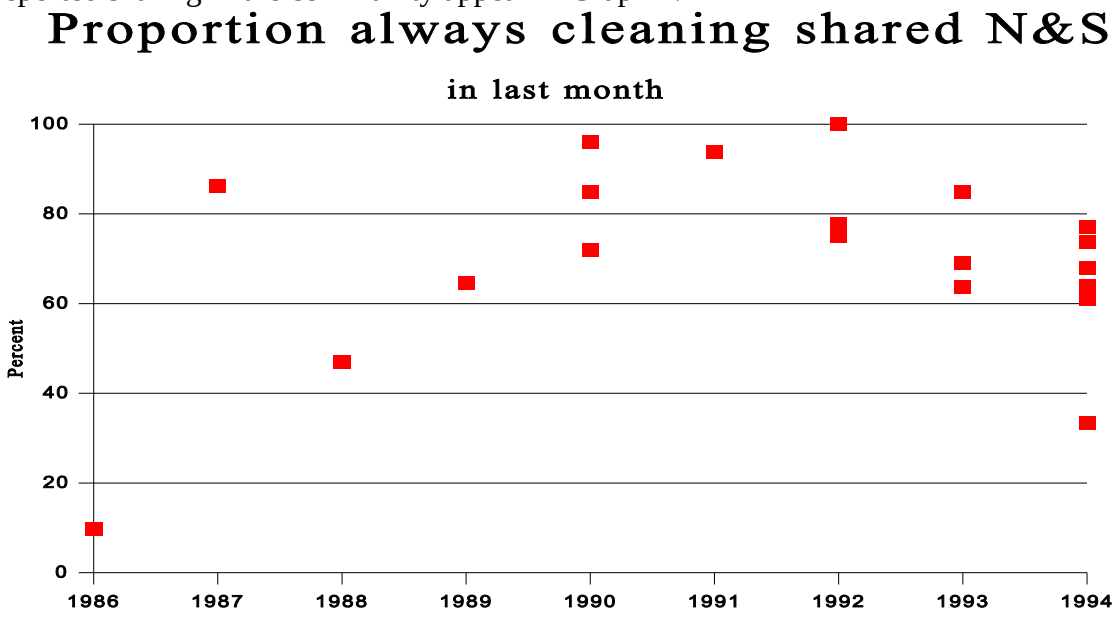
## Studies of risk behaviour

Findings from all Australian research conducted into drug injecting in the community and in prison were reviewed by Dr Nick Crofts, Julie Webb-Pullman and the author as part of the evaluation of the National HIV Strategy[6,7]. First, data from studies of IDUs in the community are presented followed by studies of IDUs in prison. In Graph 1, 40 studies of IDUs in the community show the proportion who reported sharing needles and syringes in the month prior to interview. The proportion of IDUs who report sharing has declined over time.




Graph 1

The risks of syringe sharing can be reduced if injecting equipment is adequately cleaned with a disinfectant. Twenty eight studies which have investigated the use of bleach by IDUs who reported sharing in the community appear in Graph 2.

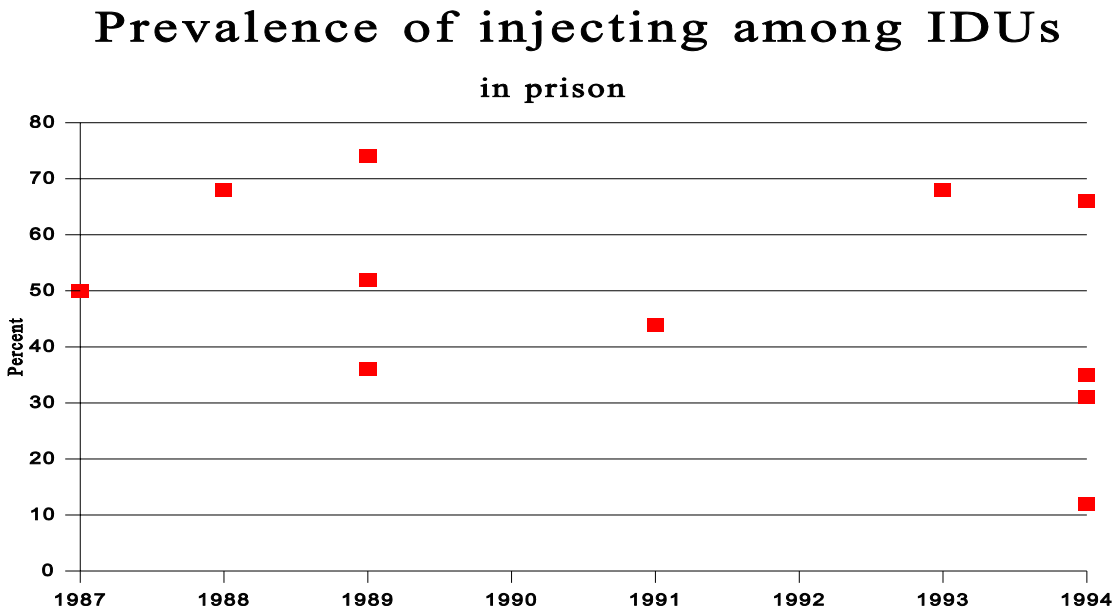



Graph 2

There appears to have been an increase in the proportion of IDUs who reported using bleach to clean their injecting equipment. Unfortunately though, recent evidence[8] indicates that guidelines for syringe cleaning is not as effective as previously thought in destroying HIV and of unknown efficacy against hepatitis B and C. Therefore it is likely that most syringe cleaning which involved the '2x2x2' method was ineffective. New guidelines for syringe cleaning - which requires equipment to be immersion in full strength bleach for at least 30 seconds[9] - have yet to be adopted widely.

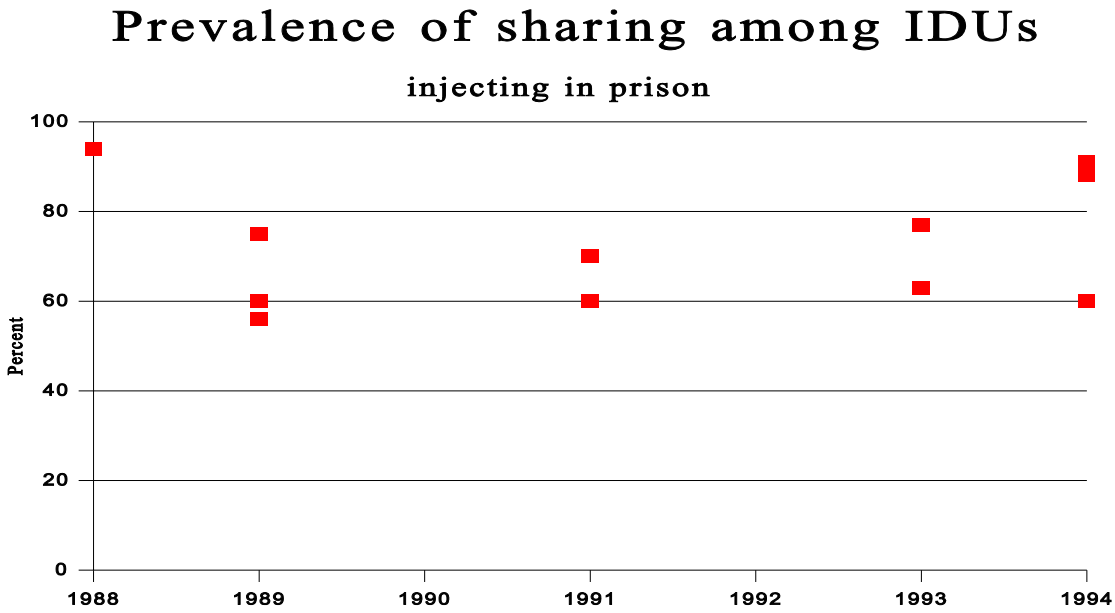
## Risk behaviour in prison

There has been considerably less research undertaken into risk behaviour in prison than in the community. Only eleven studies have measured the prevalence of injecting in Australian prisons in the last ten years. The usual methodology has been to interview IDUs in the community about risk behaviour during past imprisonments. Approximately half of the IDUs surveyed reported injecting in prison as shown in Graph 3.



Graph 3

Ten studies have examined the level of sharing by IDUs who reported injecting in prison. Very high levels of sharing - at least fifty percent - have been recorded in all ten studies with no reduction over time. The ten studies appear in Graph 4.



Graph 4

Disinfectants were first distributed to prisoners in NSW in January 1990 in the form of Milton Tablets ™ which are generally used in the sterilisation of babies' bottles. Liquid bleach was introduced in NSW prisons in October 1992 with the intention of completely replacing disinfecting tablets because tablets were being used to contaminate urine specimens so as to interfered with urinalysis for drug detection. Disinfectants were available from prison medical staff, prison officers and other inmates on request and at no charge.

As previously noted, the use of bleach can reduce the risks of infection if injecting equipment is adequately cleaned but obviously the same shortcomings with the use of bleach existing in the prison setting. Only six studies have examined the use of bleach by IDUs in prison and these appear in Graph 5.

Graph 5

There has been a general trend of increased bleach usage among prisoners, with three of the most recent studies finding over half of the IDUs using bleach to clean syringes. However, the methods used for syringe cleaning[9] vary greatly as can be seen in Table 1.

**Table 1**
**Techniques for cleaning injecting equipment**

| Cleaning technique | In Prison % (n=31) |
|---|---|
| 15 minute soak | 10 |
| Filled with Milton | 13 |
| 3x2x3x2x3x2 | 7 |
| Rinsed with bleach | 7 |
| 3x3x3 | 23 |
| 2x2x2 | 32 |
| Hot then cold water | 10 |

Only the first two cleaning techniques in the above table could be considered to comply with the new syringe cleaning guidelines. While there is consistent evidence of the level of risk behaviour occurring in prison, there is less evidence about the number of IDUs in prison.

The number of IDUs in prison can be estimated by the following method. By using the prevalence of infections, such as HIV and hepatitis, among prisoners and among IDUs in the community it is possible to calculate the proportion of drug injectors in prison.

The following table shows the prevalence of three infections in prisoners and in IDUs in the community and the estimated percent of prisoners who are injectors.

**Table 2**
**Proportion of prisoners who are injectors**

| | Infection in prisoners % | Infection in IDUs in community % | % Prisoner IDU |
|---|---|---|---|
| HIV | 1[11] | 2[13] | 50 |
| HBV | 31[12] | 50[14] | 62 |
| HCV | 38[12] | 64[14] | 59 |

On the basis of the mean of these three estimates, approximately half (57%) of all of prison entrants are calculated to be IDUs. With approximately 6,000 inmates in NSW prisons at any time, there will be 3,420 inmates with a history of injecting. However these estimates rely on the following assumptions: 1) all infected prison entrants are IDUs and 2) infected IDUs and uninfected IDUs have the same probability of imprisonment. While these figures will need adjusting they do give an indication that over half of all prisoners in NSW have a history of injecting drug use.

A study of hepatitis among prison entrants in Victoria found a very high incidence of hepatitis B (12%) and hepatitis C (18%) among prisoners with multiple entries within the study period. However, it was not possible to determine whether the infections were acquired in or out of prison[14].

## Prevention

Australia has been very successful by international standards in preventing the transmission of HIV infection among IDUs in the community. The current prevalence of HIV among IDUs in the community is approximately two percent. Compelling evidence for the success of syringe exchange in preventing HIV infection was calculated as part of the evaluation of the National HIV Strategy[6]. Researchers measured the cost effectiveness of syringe exchange and found that in the best case scenario, 10,300 cases of HIV infection have been averted at a cost of $50 per life year. The worst case scenario was that 300 cases had been averted at a cost of $7,000 per life year. It was estimated that the true figures were probably closer to 3,000 averted cases at a cost of $350 per life years[6]. It is very impressive that there has only been a total of 1,000 cases of HIV infection among IDUs (homosexual and heterosexual) in Australia[15].

An international survey of methadone maintenance treatment (MMT) in prison[16] found very few countries provide MMT, and when treatment is provided it is severely limited. The five countries with prison methadone maintenance programs appear in Table 3.

**Table 3**
**International survey of MMT in prison**

| Country | no. treated daily census | daily prison population | mean dose mgs | HIV+ prison % |
|---|---|---|---|---|
| USA-NYC[17] | 400 | 14,500 | 35 | 19[18] |
| Australia, NSW[19] | 550 | 6,400 | 80 | 0.5[11] |
| Spain Catalunya[20] | 100 | 2,000 | 60 | 45 |
| Switzerland[21] Basel | 180 | 3,550* | ? | 10 |
| Denmark[22] | 160 | 3,510 | ? | ? |

*excluding remandees

The highest proportion of prisoners receiving methadone treatment was only eight percent in NSW. Given about 50% of prisoners have a history of injecting there is a serious gap in methadone provision in prison. Research in the community has found that in order for MMT to be effective, patients need to receive at least 60 mgs and for some time[23]. No figures were available on dose levels in Switzerland or Denmark but the dose level in USA was below the recommended dosage.

There is some evidence that MMT reduces the frequency of injecting among inmates in NSW. In one study, IDUs in MMT in prison reported significantly fewer injections per week (means = 0.16, 0.35; Mann Whitney z=-2.13, p=0.03) than IDUs not in MMT but only when methadone doses exceeded 60 mgs and was provided for the entire duration of imprisonment[24].

Another HIV prevention measure is syringe exchange. An exploratory study found that if strict guidelines were followed then a syringe exchange scheme is feasible in prison[25]. Evidence from Switzerland shows that syringe exchange programs can be introduced in prison without presenting security [26].

## Conclusions

There are two research priorities. Firstly, the incidence of HIV and hepatitis B and C needs to be measured. A mathematical model by Professor Ed Chaplain has estimated that at least 38 inmates in NSW are infected with HIV by sharing syringes every year[27]. Until there is clear evidence of the scale of transmission in prison there will be insufficient attention. There are a number of indications from here[28,29] and overseas that the level of transmission of HIV in prison has been seriously underestimated[30]. Secondly, HIV prevention measures need to be evaluated. In particular, the NSW prison methadone program needs to be subjected to a rigorous evaluation[31]. Given that methadone treatment for prisoners is so severely limited in the world such an evaluation will have international significance.

There are two policy changes that need considering. There needs to be a broad harm reduction policy in prison around drug use. Inmates who smoke marijuana receive the same punishment as those who inject drugs as detected by urinalysis. As marijuana can be detected for longer periods, this may influence people to inject drugs rather than smoke so as to minimise their chance of being detected[32]. The second policy change that has occurred in NSW and needs to be duplicated in others States is the provision of hepatitis B vaccinations for all inmates on entry, and as they enter with such regularity they will receive the three doses necessary. Also it is possible to hasten the schedule of vaccinations with virtually no loss of coverage.

## Acknowledgments

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# RESEARCH DRIVEN DRUG TREATMENT STRATEGIES FOR PRISONERS-THE NSW EXPERIENCE

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## Introduction

Prisoners are identified as a priority population in the overall approach of the National Drug Strategy. Specific strategies make reference to illicit drug use and related practices by prisoners. Drug & Alcohol Services, NSW Department of Corrective Services feels that the National Drug Strategy needs a broader perspective concerning alcohol in terms of identified:

(i) Priority populations;
(ii) Range of objectives and indicators; and
(iii) Agencies responsible for strategies.

This recommendation has particular relevance for the draft National Alcohol Action Plan. Findings from data collection studies in NSW show that alcohol is the primary problem drug for men who come to prison in terms of prevalence and level of use[1,2]. Additional data will be presented to further substantiate this finding.

As a group, imprisoned people are generally in transition. They have come from the community and they are returning to the community within a relatively short space of time. About half of the population have relatively short sentences of 6 months or less. More than 4000 prisoners are discharged from NSW prisons to the community each year.

Empirical findings have shown that prisoners in NSW are a very high risk population in terms of prevalence and severity of drug use[i] and the ensuing harm both to themselves and to the community[1-6]. In view of this, it can be argued that the prison system can be seen as the largest treatment organisation for drug problems in the country. In addition, treatment providers in the prison system have greater access to a client group whom it may be difficult to attract into treatment in the community.

## Research program to date

The Drug & Alcohol Services has been conducting drug and alcohol dedicated research for more than three years. The research program has had a strong data collection emphasis and has been lacking in the area of program evaluation. This failure is due to a number of factors, including:

(i) Until recently prison-based treatment providers worked fairly autonomously and for

the most part carried out one to one counselling. The work being done did not have the standardisation, structure or documentation required for evaluation;

(ii) There are existing systemic factors which prevent prisoners from completing programs and therefore hinder evaluation. These factors include - the inability to gain access to the treatment site, transfers to other prisons, security re-classification, and also the opportunity to undertake other programs, like employment programs which offer much sought after wages.

However, there are now in place a number of structured core programs which are suited to evaluation. Further, to some extent, the confounding systemic factors can be controlled by targeting evaluation towards intensive programs, offered to minimum security prisoners nearing the completion of their sentence.

## Research findings

Notwithstanding the foregoing, the data collection focus to date has proved to be useful as findings arising from the studies have provided a knowledge base to assist in needs-based planning. In order to be able to identify needs and set priorities we need to know the population.

What do we know about the population? What services are being utilised by the population? What are some of the prison context themes which impact on drug and alcohol service delivery?

Following are some of the research findings which have been addressed in service planning and delivery.

## Men -

Studies have shown that more than half the prison population in NSW report that their crime is drug-related[1,2].

Source-selected findings from a survey of a discharge sample[2]:

· For male prisoners alcohol is the primary problem drug, however those with problems tend not to self-identify and not to seek treatment when compared to those with other drug problems;

· Of those whose most serious offence was assault, about 80% either were under the influence of alcohol at the time of their offence or identified alcohol as their main problem drug;

· Overall 32% of male prisoners received treatment from the Drug & Alcohol Services at some stage during their sentence.

Source - Alcohol and Other Drug Screen (AODS) including the WHO AUDIT piloted 1994/1995 - (preliminary, unpublished findings):

· 47% of a male sample of 293 receptions were classified as alcohol dependent;

- 31% stated that they had injured either themselves or someone else in the previous 12 months as a result of their drinking;
- 47% reported drinking 10 or more standard drinks on a typical drinking day;
- 28% stated that they had used needles without sharing in the 12 months prior to imprisonment and an additional 10% stated that they had shared needles;
- When asked an open-ended question on drug-related health problems, 13% of men stated that they were hepatitis C positive[ii].

Given the serious and far reaching consequences of violent behaviour and the apparent association with alcohol intoxication there appears to be a real need in prison-based program development for specific alcohol-related strategies.

## Women -

Source - findings from a survey of women completing a sentence[5]:

- For female prisoners on reception to prison, heroin was the primary problem drug with one third using heroin on a daily basis prior to imprisonment;
- Almost half of those intoxicated by drugs at the time of their most serious offence had consumed more than one drug;
- When compared with men, women (42%) appeared to be more likely to seek drug-related treatment in prison.

Source - Alcohol & Other Drug Screen (AODS) piloted 1994/1995- preliminary, unpublished findings:

- 27% of women reported drinking 10 or more standard drinks on a typical drinking day;
- Over half the sample of women (54%) reported using needles without sharing in the 12 months prior to imprisonment and an additional 16% of the total sample reported sharing needles;
- When asked an open-ended question on drug-related health problems, 38% of women stated that they were hepatitis C positive[iii].

Given the reported prevalence of needle use by women (70%) prior to imprisonment, any prison-based research and intervention initiatives on HIV and other blood-borne infectious diseases needs to address the female prison population by way of over-sampling in the research methodology and through the targeting of peer programs.

## Aboriginals -

Source - Alcohol & Other Drug Screen (AODS) piloted 1994/1995 - preliminary, unpublished findings and recidivism database[7]:

- The prevalence of drug-related crime is similar for Aboriginal and non-Aboriginal samples, however there are differences in offence and drug types;

- Aboriginal men show a higher prevalence of imprisonment for assault convictions. About 42% of those under the age of 21 with an assault offence were Aboriginal;

- 76% of Aboriginal men were classified as being alcohol dependent compared with 42% of non-Aboriginal men;

- 35% of Aboriginal men stated that they were under the influence of both alcohol and drugs at the time of offence compared with 16% of non-Aboriginal men;

- There were more similarities than differences between Aboriginal and non-Aboriginal women. However, numbers were small which hinders meaningful comparison.

Aboriginals are over-represented in the prison population and Aboriginal men show a high prevalence of alcohol-related problems. Future research initiatives need to include over-sampling of Aboriginals in the research methodology and also dedicated research on the Aboriginal prison population, particularly in relation to young men imprisoned for assault convictions.

## Recidivism -

It is essential for prison-based treatment providers to address recidivism as the experience of imprisonment can be a severe drug-related harm for those with drug-related crime. In addition, the economic benefits of reduced recidivism include reductions in expenditure for police, courts, prisons, probation and parole services and victim losses. In terms of recidivism trends (defined as return to prison with a sentence within 2 years of discharge) a preliminary follow-up of prisoners released in 1992[7] showed the following:

- On average about one-third of all prisoners released reoffended and about one-quarter of first time offenders reoffended;

- There were variations across age groups and offence groups on recidivism rates;

- Younger prisoners showed higher recidivism with recidivism decreasing with age;

- Property and assault offenders showed higher rates of recidivism than other offender categories;

- Prior regular heroin use in the community was associated with recidivism within the two year time-frame.

## Prison context factors -

Some prison context factors which impact on the provision of treatment have been examined. However additional work is required in this area. The role of prison officers would be one of the most important factors because officers are in a key position concerning the behaviour and welfare of prisoners.

Staff knowledge & attitudes:

- Anecdotal reports from both professional workers and prisoners showed that some prison officers had been unco-operative and also had been inclined to negatively reinforce attendance at programs. It was recognised that for Drug & Alcohol Workers to be able to run treatment programs, commitment and co-operation was required from prison officers. A subsequent drug and alcohol training needs analysis[8] showed that prison officers require specialised drug and alcohol training with an emphasis on attitude and value clarification in program content. It was also shown that officers require more information on the principles of harm minimisation and the rationale and content of programs, such as the Corrections Methadone Program and the Drug & Alcohol Services.

Prison movements -> transfers to other prisons:

- Of those males who used the Drug & Alcohol Services, 29% reported that their treatment program had been interrupted by a transfer to another prison[2].

The above findings point to the need for increased examination of prison context factors particularly in relation to the formal structure of the organisation and also informal social structures. Such information would have implications for the efficient delivery of treatment programs and the identification of issues pertaining to relapse prevention and drug coping skills for prisoners.

## Evaluations from other jurisdictions -

Most evaluations have emanated from federally funded pilot programs conducted in United States prisons. Andrews, et al[9] used meta-analysis to examine the effectiveness of prison-based interventions. Effectiveness was defined in terms of reduced recidivism. Following are general principles of effective correctional intervention as identified by Andrews and colleagues:

- Target high risk prisoners[iv] - (e.g., serious recidivists who are also heavily involved in drug/alcohol use, injecting drug users) and offer high risk prisoners more intensive programs and more hours of treatment, such as a separate residential unit;

- Program content to address 'criminogenic need'. Criminogenic need is defined as risk factors, such as antisocial attitudes and peer associations. Intervention strategies may include role modelling and reinforcing of positive alternatives and prosocial behaviours;

- Use of styles and modes of treatment (social learning principles focussing on interpersonal influence, skill enhancement and cognitive change) that are matched with client need and learning styles (The Interpersonal Maturity Level System - I Level or Conceptual Level Systems are instruments which have been used in other jurisdictions to match clients to style of program);

- Specific skill development - relapse prevention, problem solving and self-efficacy;

- Pre-release programs, transitional programs and after-care follow-up.

In addition, Wexler, Blackmore and Lipton[13] in their review of literature on corrections-based drug treatment identified additional principles associated with successful outcomes. These principles included: separating program participants from the general population; developing clear unambiguous rules and consequences for breaking rules; and employing ex-offender/ex-addict staff to serve as role models.

## Directions - treatment strategies

Drug & Alcohol Services is required to not only address health harm minimisation goals, but also the goals of the Department of Corrective Services which are primarily concerned with safe and secure custodial management and a long term goal of reduced recidivism.

The foregoing research findings have in part determined the following priorities, strategies and program content being adopted by the Drug & Alcohol Services:

- A ***holistic*** treatment continuum is provided whereby supplementary services, such as vocational training are viewed as essential components of effective service delivery and best managed through a multi-disciplinary team approach.

- A *systematic* and *standardised* approach to treatment whereby screening and assessment are to be used to accurately identify the client group based on level of risk and to determine whether a priority assessment is required. Due to the lack of self-identification by males in relation to alcohol problems[2], screening for males includes a discrete alcohol component measuring frequency and level of alcohol consumption and related problems. The screening protocol also includes brief education in relation to safe practices concerning HIV and other blood-borne infectious diseases.

- Targeting of *high risk* groups: serious recidivists who are also heavily involved in drugs would be specifically targeted for more intensive treatment. For example, recidivist property and assault offenders whose crimes are identified as related to their use of drugs would be appropriate target groups.

- Drug & Alcohol Services does not have control over prisoners' housing, employment, etc., once they are released. However, an attempt can be made to get right, those things over which there is some control, such as:

  (a) Structuring programs with a *skill development focus*, such as relapse prevention and self-efficacy;

  (b) The provision of ***pre-release*** and *transitional* programs. Recent initiatives follow -

    (i) Prisoners with a minimum security classification can now receive community-based treatment with the Western Sydney Area Health Service on a day-release arrangement. It is envisaged that this option will be extended to other geographical regions.

    (ii) The establishment of a therapeutic community for male prisoners. Stage 1 will be completed in prison just prior to release and on release prisoners enter Stage Two in a community-based therapeutic community.

- Provision of special strategies and special programs for prisoners who fall into the following population groups: (a) Aboriginal or Torres Strait Islander descent; (b) women; (c) NESB; (d) young adults; and (e) those with developmental disabilities.

- Training up prison officers is a prison context factor over which the Drug & Alcohol Services has some control. A specialised drug training program for officers with a strong attitudinal component has been developed and implemented.

- The development of a *corrections-based alcohol strategy* - it is envisaged that this would be an intersectoral approach including the Drug & Alcohol Services, Corrections Health Service, Probation Service, Health Department and the Civil Rehabilitation Committee (CRC) of NSW.

## Directions - prison-based research

## Increased examination of the social context of imprisonment

The aim would be to identify ways in which social structures impact on program delivery and to identify issues for prisoners concerning relapse prevention and drug coping skills in prison. This would involve collecting data on power structures and processes, economic structures, interpersonal relationships and patterns of drug use using a variety of methodologies.

## Over-sampling of minority groups

Women, Aboriginals and NESB would be over-sampled so as meaningful interpretations of findings could be drawn.

## Evaluation of programs

Locally based: Recently developed core programs, such as drink-driving, relapse prevention and peer education have small scale outcome measures built into the program, such as pre and post test knowledge, attitudinal, situational confidence and readiness to change measures.

Comprehensive: It is planned that the more intensive programs, such as the proposed therapeutic unit and the alcohol and violence core program would be evaluated more rigorously.

## Post-release follow up

An examination of the type of pre-release strategies which are associated with post-release enrolment in treatment and other indicators of adjustment into community life.

## High risk groups

Dedicated exploratory research on those groups who show over-representation in terms of risk or harm to themselves or the community, such as: those imprisoned for violent offences (e.g., young men); injecting drug users; high recidivist groups; and those who deliberately self-harm or attempt suicide while in prison.

## Risk behaviour measures (injecting drug users)

Recent research on risk behaviours in prisons in the United Kingdom[10] has found that prisoners may differ in their understanding of what constitutes injecting sharing behaviour. The findings of Turnbull et al, highlighted the importance of collecting data on how prisoners themselves are defining sharing behaviour. It was found that prisoners were making a distinction between sharing injecting equipment (needles and syringes) in close proximity to others and using injecting equipment that had been used by someone else at a different point in time. The authors also collected data on sharing equipment in other forms, such as the reuse of filters and spoons and back loading and front loading techniques. Collecting data using these additional measures would provide a more accurate picture on the type and level of sharing behaviour in prison and assist in identifying appropriate prevention and education strategies for the population.

In conclusion, endeavouring to apply clinically relevant and theoretically and empirically informed principles in program development will be the mandate of future prison-based drug treatment programming. The major challenge will be to achieve this standard within the constraints of a custodial setting. This paper has outlined early steps in this direction currently being adopted by the Drug & Alcohol Services of the NSW Department of Corrective Services.

## Endnotes

i. The term drug use is used generically to define both alcohol and other drug use. Alcohol use is referred to specifically where relevant.

ii. The self-reported data is an under-representation of the actual prevalence of hepatitis C in the male prison population. Butler et al[11] in a clinical study, found the prevalence rate in male prisoners on reception to be 37%. The under-representation in the screen pilot may be due to the following: (a) the open-ended structure of the question; and/or (b) lack of personal awareness of hepatitis C status.

iii. Unlike the case for male prisoners, no actual prevalence data was available for purposes of comparison on female prison receptions in NSW.

iv. Antonowicz & Ross[12] in a subsequent review have questioned the efficacy of targeting high risk prisoners as an essential strategy of successful programs.

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# THE NATIONAL CAMPAIGN AGAINST DRUG ABUSE : A LAW ENFORCEMENT PERSPECTIVE

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## Introduction

I intend to discuss the relationship between the police and the health sector both prior to, and following the introduction of, the National Campaign Against Drug Abuse in 1985. I should point out that this is a personal perspective and based almost exclusively on the situation as I saw it from New South Wales. Having said that however, I feel reasonably confident that there would be general consensus for my views by police across other jurisdictions.

**By way of setting the scene the Drug Squad was established in New South Wales around 1927 with two officers. Their principle task was to counter the diversion of drugs, mainly cocaine, from the intended legitimate use to the black market. Doctors and pharmacists were the main culprits, and the police function therefore was that of auditors of drug registers and other accountable records. This situation continued until the early 50s when the Squad was increased to 4 officers. The late sixties and early seventies saw the squad grow as the main response to the increasing prevalence of illicit drugs within the community. Interestingly a former colleague of mine who was somewhat displeased with his transfer to the Drug Squad in about 1971, used to reflect on the fact that an Assistant Commissioner at the time consoled him by saying that all this carry on about drugs would pass, drug taking itself was just a passing fad and that my colleague would shortly get back to real police work when this happened.**

**In 1979 I was transferred to the Drug Squad during another increase in strength. In those days the police had simply no contact with the health sector or any other agency outside law enforcement for that matter. I believe it would be fair to say that in respect to illicit drugs the Drug Squad and the Service as a whole was focused entirely on traditional operational policing activities based on the adherence to a strict policing regime without any perceived need to consult externally or to embrace a collaborative strategic planning process with any non police agency. By the same token the health sector was not exactly banging down the door to make contact either. Both police and health sectors did their own things in isolation.**

**Whilst I was not involved in the licensing area I understand a similar situation existed in regard to alcohol. A centralised licensing model operated which regulated licensed premises through the prosecution of, often minor, breaches of relevant legislation. It**

**was a narrowly focussed approach which failed to take into account the correlation between alcohol use, licensed premises and anti social behaviour. Again there was no relationship between the health and police sectors.**

**Then in the early 1980s a Police Service representative was invited onto a new committee established by the Drug and Alcohol Authority to introduce community based drug and alcohol prevention activities. I was the nominated officer. Other than formal, or more commonly ad hoc representation by senior police on a limited number of committees, this was possibly one of the first opportunities a junior operational police officer had to interact with agencies outside the Service.**

**It is a matter of history that the National Campaign Against Drug Abuse was mounted following a Special Premiers Conference on Drugs in April 1985. Whilst the campaign was seen to emphasise the need for collaboration between health and law enforcement sectors, and the Ministerial Council on Drug Strategy was structured accordingly with representation by both health and police/law enforcement ministers, it is clear that the Standing Committee of Officials which serviced that council was run by health officers. In the years immediately after 1985 police often expressed the view that health had hijacked the campaign for their own benefit but there is no doubt that complacency and lack of a sophisticated input by police was equally, if not more, to blame.**

**But certainly there were two valid points put by the police including the fact that:**

- **no specific funding was dedicated to policing activities from the NCADA budget (police were invited to apply for funding on a project by project basis but the decision lay entirely in the hands of health); and**

- **although police and health were notionally equal partners, the health representative was the leader of delegation at the meetings of the Standing Committee of Officials (even papers/agendas were sent to health, and police had to rely on them being forwarded).**

**My involvement with meetings of the Standing Committee of Officials began in 1988 and with the exception of very limited other police representation, most jurisdictions were not represented at these forums or, for that matter, by a police/law enforcement minister at MCDS. There was simply nothing to attract individual Police Service participation and ultimately no inducement for relevant police/law enforcement Ministers themselves to participate. Only the Justice Minister (Commonwealth) and the NSW Police Minister regularly attended. It is interesting to note that MCDS and the officers' meetings coincided with national health Ministers meetings making it far from convenient for police Ministers to attend.**

**At the same time I am pleased to report the relationship between the police and health officers in New South Wales was, and still is excellent. This has also been the case in other jurisdictions however I am aware of one instance where the health people simply did not inform the police of an impending officers meeting and on another occasion the health representative of a jurisdiction told me that police participation in NCADA should really be discouraged as their role was irrelevant. Not all blame should lay, however, at the feet of some health officials, there have been a number of occasions in the past when the nominated police representative was not entirely the most appropriate person.**

**It could be said then as a general comment that police felt a bit like the poor relation in the arrangement, and had considerable difficulty in supporting a campaign from which they derived absolutely no financial or other tangible benefit.**
**The first evaluation of NCADA was conducted in 1988 and whilst law enforcement was consulted during the process they did not have a representative on the team and the report did little to address their concerns or further their interests.**

**The second Evaluation Task Force, three years later, saw two police representatives. I was one of those police officers. The report 'No Quick Fix' specifically identified some of the issues raised here and sought to provide an appropriate remedy. The report certainly provided the catalyst, I believe, for enhancing both the profile of the law enforcement sector within NCADA and the relationship between health and law enforcement at the local and national level.**

**The development of national and state strategic plans, as recommended, saw the formal recognition of the role of law enforcement, particularly as a complement to health sector activities, and recognised the legitimacy of their contribution to the objectives of those plans.**

**Certainly, in so far as New South Wales is concerned, the development of our State Drug Strategy has directly influenced the Police Service Corporate Plan and formally embraced the philosophy of harm minimisation within the operational policing environment. Drug and Alcohol Related Crime is one of Seven Key Result Areas within the Corporate Plan along with Personal Safety, Road Safety, Safety in Custody and others. To quote part of the introduction of this Key Result Area gives a flavour for the objectives and activities which follow.**

- **"The plan sets out the Police Service commitment to the prevention and reduction of alcohol and drug related harm in the State."**

- **"The plan adopts the 'harm minimisation' approach to drug use and drug related problems. Harm minimisation is an approach which aims to reduce the adverse health, social and economic consequences of drug use by minimising or limiting the harms and hazards of the drug use for both the community and the individual."**

- **"The traditional police response to alcohol and drug related crime focussed on controlling supply. Whilst maintaining our basic duty to apply the law, our efforts extend far beyond the simple detection and prosecution of offences. Our efforts to date, and future police initiatives have balanced our traditional approach on reducing the demand for drugs through strategies which deter drug use and reduce the harmful effects of alcohol misuse."**

**The KRA recognises the direct risks that the users of alcohol and other drugs are susceptible to and the inherent risks their actions have on others. To this end considerable effort is being maintained by police in NSW and, I believe across all other jurisdictions, to ensure the success of initiatives such as the needle and syringe exchange and methadone programs as well as intervention strategies in licensed premises designed to reduce the negative effects of alcohol use.**

**The importance of NCADA in providing the conduit for positive change in policing**

**strategies and operational practices cannot be under estimated. It has achieved this by creating an environment in which the police and health sectors can develop strategic planning at both the national and local levels. In doing so it provides a formal and informal mechanism for the exchange of ideas, development of networks of key players and the enhancement professional relationships so as to ensure a high level of mutual respect and understanding is maintained within the partnership.**

# LAW ENFORCEMENT AND THE NATIONAL DRUG STRATEGY

**Deputy Commissioner Richard McCreadie**

Deputy Commissioner of Police
Tasmania

My task this afternoon involves, to some extent, some crystal ball gazing.

As I understand it, I am required to present a view of what the law enforcement involvement in the National Drug Strategy might look like over the next five years or so.

I should preface my remarks by saying that nothing I say is intended to suggest a lack of commitment or a level of incompetence on the part of law enforcement. Nor should my comments be seen as an argument for the abandonment of some of the traditional methods of policing in the drug enforcement area. Rather my comments should be viewed as a proposal for strengthening some aspects and changing others as part of a whole raft of reforms that will be necessary if we are to develop a more meaningful approach to the management of drug use and abuse.

In introducing this paper I want to make it clear that my presentation is not intended as any form of academic exercise. My position and views have not been developed from any particular specialised drug related experience or knowledge. What I have tried to offer is a very pragmatic manager's view of the future.

At this time I would like to be in a position to assert confidently that the law enforcement approach to the management of illicit drugs and harm minimisation presents a rational system but clearly that is not the case. The most recent studies by Sutton and James *"Evaluation of Australian Anti Drug Trafficking Law Enforcement*", November 1995 and Don Weatherburn *"Drug Law Enforcement and its effect on the Heroin Market"*, August 1995, reaffirm this point very strongly. By 'rational' Sutton and James "intend a set of actions based on best knowledge of the problems confronted, and where impacts of activities are monitored continuously to ensure on-going effectiveness and to minimise unintended harm" and I accept their intention for the purpose of this presentation.

I would like to be able to confidently assert that law enforcement has become a truly effective partner in the management of drugs. I have a view, however, that this is not the case. Whilst recognising that very significant progress has been made over the past 3-4 years, we in law enforcement have only succeeded in establishing ourselves as a credible potential partner. At this stage we have added much value to the process but in an overall sense our activities still fall short of an appropriate model for an optimal working relationship.

Having said that I believe there is much cause for optimism. I have a view that the future does not necessarily call for radical deviations from that which is already happening.
The thrust of my paper is to suggest that the very great majority of critical elements that are required to carry us forward to a better way of doing business are present. The real

challenge is to integrate those elements and make them functional within a consistent policy framework. Having said that law enforcement has fallen short of a truly effective working partnership, I feel a need to explore some of the reasons why I believe this to be so. Whilst not seeking to justify the position I am satisfied that there are some fairly obvious explanations.

As a general statement, law enforcement has in many ways been preoccupied with the process of reforming many aspects of its service delivery which were considered to be core functions. For a long time I do not believe that we had come to the conclusion that a national approach to the management of drug problems had a lot to do with the police service.

As Frank pointed out in his presentation, I believe that at an earlier time we felt very much like the poor relation particularly in view of the lack of dedicated funding to engage in meaningful activities. I believe that this situation made it fairly easy for law enforcement to be somewhat dismissive of the need to reform our approach or indeed to be part of a reform process. There were, of course, other factors which tended to influence our approach.

I guess I am preaching to the converted when I note that Australia's approach to drug issues has been predicated by a balanced approach. Since the beginning of the National Campaign Against Drug Abuse and now the National Drug Strategy, clearly there has been a notion of partnership between health, education and law enforcement sectors and a balance between the two apparently competing philosophies of demand reduction and supply controls.

Law enforcement had, in the main, failed to recognise the potential and indeed responsibility that existed to make a much more meaningful contribution to demand reduction strategies and harm minimisation programs. I believe that there would be few in this room who would argue that the single most effective harm minimisation strategy over the last 10-15 years has been the introduction of random breath testing. Clearly then we have demonstrated a strong capacity to contribute in a meaningful way. Despite this capacity I believe random testing was simply seen by law enforcement as a road safety measure rather than anything that was contributing to harm reduction in the broader sense of government and community.

Any reasonable examination of past activities in terms of NCADA and NDS reveals a definite bias towards health issues . The cause of this bias is not easy to define. I have a view, however, that it has arisen through a combination of factors.

Clearly, the abuse of alcohol and tobacco which has traditionally been regarded as the exclusive domain of the health sector has caused significantly more harm and indeed more cost to the Australian community than illicit drugs which have traditionally been regarded as a major law enforcement responsibility.

Attempts to reduce tobacco consumption have focused strongly on reducing its availability by limiting sales to the people over 16 years and by reducing its public attractiveness by restrictions on advertising and point of sale controls. The effectiveness of some of these measures rests very much with law enforcement. Optimal outcomes will not be achieved unless action is taken to enforce requirements. Despite the need for active participation in reduction efforts, little if anything is being done to socialise and educate police away from the thought that harm caused from cigarette and alcohol consumption is a matter for health and not really too much to do with police.
Again, until quite recently, opportunities have been missed in drug education strategies offered by law enforcement to include a wider focus on cigarettes and alcohol and the social

competencies required to assist young people to make appropriate decisions about practices they adopt. It was seen very much as a problem that health should tackle.

On an more positive note, the law enforcement community has, I believe, taken a leading role in efforts to reduce the harm caused by alcohol abuse. I have already mentioned random testing.

In addition, the law enforcement sector has worked closely with the Liquor Licensing Authority and Hospitality Industry to assist in the development of concepts like responsible serving practices, and guidelines for the management of licensed premises have been developed with significant input from the law enforcement sector.

I use these examples to demonstrate the extent to which law enforcement can influence the overall direction of action in those areas regarded as typically the responsibility of the health sector.

The past three or so years have seen much stronger commitment on the part of law enforcement to become part of a meaningful partnership in the arrangement. There are, however, still at least two very significant challenges facing us. It is my belief there is still a tremendous lack of understanding amongst the very great majority of law enforcement rank and file about the need to be involved. In addition, law enforcement still lacks a truly strategic approach to the problem.

Having said that I personally have considerable optimism for the future. I am confident in asserting that the recent past has seen a number of activities and the production of a number of key documents which provide the basis for a very sound strategic approach. I am confident that we do have the majority of critical elements. What I will attempt to do in the remainder of this presentation is explain my thoughts in this area in the hope that you may come to a similar conclusion.

To a large extent 1992 was really a watershed. The so called Manly Conference was the first meaningful effort to develop a truly intersectoral and collaborative approach to the management of drug abuse nationally on the part of the police services.

That conference came about because a group of senior law enforcement officers, including myself as the subsequent Chairperson, saw a need for law enforcement to either get into a meaningful partnership or to recommend to our Commissioners that law enforcement consider getting out of NCADA completely.

Five key changes came about as a result of Manly Conference:

- Creation of the National Drug Crime Prevention Fund
- Ten percent of cost shared funding to law enforcement
- Chair of National Drug Strategy Committee to rotate biannually between health and law enforcement.
- Clearly defined role for law enforcement in National Drug Strategy Plan 1993-97.
- Identification of key focus areas to be pursued by law enforcement.

I intend to return to a number of key changes and address them in some detail. However, in

order to establish some sort of chronology I intend to discuss a document which I consider to be integral to opportunities to make meaningful changes to the way we in law enforcement are doing our business. I refer you to "*Directions in Australasian Policing"* July 1994 - June 1996. This is in my view the first meaningful effort on the part of Police Services to articulate the future.

At first glance the plan only provides a somewhat oblique reference to the opportunity to enhance police involvement in the National Drug Strategy. That reference appears under the implementation guidelines in relation to Strategic Relationships.

The document was sponsored by the Ministerial Council on the Administration of Justice. The purpose of the strategy is to present a shared vision, a framework for cooperation and a basis for strategic directions to the year 2000 for policing services in Australia and New Zealand. The strategy marks a clear intention by Australasian Police Services to explore fully their role in supporting the well-being of the community and in so doing to accept responsibility for a broader concept of service to the community.

Despite having only one reference to the National Drug Strategy the document sets the strategic directions for developments in policing generally based on a need to foster leadership and partnerships, professionalism and accountability, cooperation in operations and resources, and policy development and criminal justice reform. It also reflects on the need to be able to measure and evaluate police performance in a much more meaningful way.

Whilst not originally directed in any significant way to the National Drug Strategy, I am enormously confident that the document provides detailed guidance as to what must be done by law enforcement in order to become an efficient and effective partner within the strategy.

The National Drug Strategic Plan 1993-97 offers similar guidance and opportunities to refine and indeed reform police activity. Again, I will attempt to remind you, albeit briefly, of some of these aspects.

*In terms of key national policy objectives they recognise, among other things, the need to:*

- increase law enforcement members' professional skills in the area of drug-related offences *including investigation, detection, prosecution and referral to treatment or diversion program;*

- increase knowledge and professional skills among health and law enforcement professionals of a broad range of harm reduction approaches *including appropriate interventions with illicit drug user;*.

- conduct and disseminate relevant law enforcement research *such as drug market analysis;*

- widen the scope of the Australian Bureau Of Criminal Intelligence major illicit drugs report *to include indicators of impact of drug law enforcement strategies;*

- maintain an environment in which policing activities and health activities *such as methadone and needle exchange programs are complementary.*

Again it can be seen then that there are many identifiable benefits and some increased

responsibilities for law enforcement within the plan, all of which sit comfortably with the Strategic Directions document, the activities of COAG in pursuing more meaningful performance indicators and performance measures for law enforcement and now the research recommendations made by Sutton and James.

Fortunately the two documents do not simply exist or sit in isolation. Each of the jurisdictions have accepted the documents and have committed to using them in their respective corporate planning activities. Clearly then, the thrust, import and opportunities offered are generally widely available within law enforcement. There is still, however a fundamental flaw.

As a general statement, police have accepted the challenge to provide broad based educational strategies to "at risk" and interested groups within the community. Sadly however, we have generally neglected the need for internal education particularly as it relates to the harm minimisation strategies. There are some 44,000 sworn law enforcement officers throughout the nation and the vast majority of them, if asked, would probably offer the view that harm minimisation is some sort of capitulation in terms of responsibilities. It is often viewed as a soft approach and in some way as offering the green light to those at risk. Again, such a view is well supported in the most recent study by Sutton and James. Clearly, it will take a very strong commitment to not only educate but to challenge and ultimately change the cultural attitudes that currently dominate.

In many ways analogies can be drawn between the concept of harm minimisation and community policing. The community policing approach is now a major platform in police activities but the level of acceptance and commitment on the part of middle managers and front-line troops is indeed questionable. Marketing of both of these concepts has not been nearly as strong or effective as it might have been and we need to learn from this experience and indeed build on it.
You will recall that I alluded to the five key changes arising from the Manly Conference. It is now my intention to offer you some views on a number of those aspects and offer some comment on how we might be better positioned to achieve far more meaningful outcomes in the future.

As the first Chairperson of the National Drug Strategy Committee from law enforcement I have often commented that if I cannot, in the term of my office, introduce a number of significant reforms to the way business is being done and indeed create a much more meaningful input from police then law enforcement could and should reasonably be seen as something of a "pretender to the throne".

In order to ensure that we don't become pretenders I have endeavoured to drive a number of reforms. The first has just been completed and that involved a review of the way the National Drug Strategy Committee is actually carrying out its business. A sub-committee has now recommended significant reforms in relation to the positioning of meetings relevant to MCDS, and advocated a much stronger sub-committee infra-structure with the committee acting more as a board of directors to ratify the work of sub-committees. The aspect of how sub-committee activities might be funded in a meaningful way is still to be determined.

The next challenge is to achieve a far more meaningful input into agenda matters by law enforcement representatives. At this time, it is fair to say that the agenda is, to a large extent, controlled by the Commonwealth, essentially by default. It is only when law enforcement accepts this challenge that we can move closer to becoming true partners. And only in this

way will we create sufficient matters of importance to attract Police Ministers to MCDS as was originally intended.

In terms of dedicated funding for police initiatives considerable progress has been made. The cumulative effect of the National Drug Crime Prevention Fund and the ten percent cost shared funding arrangement, if the status quo is maintained, amounts to somewhere in the order of $20 million over the next five years.

I believe that it is fair to say that law enforcement, ably assisted by others, has been effective in developing protocols and guidelines for the National Drug Crime Prevention Fund. Some useful jurisdictional models have also been established to provide management and accountability for cost shared funding.

The National Drug Crime Prevention Fund has recently been critically reviewed after its first two years of operation and its practices and procedures modified to reflect more contemporary needs.

There are, however, a number of fundamental problems in this area which I believe are in need of urgent redress. Police have still not shown themselves to be particularly adept in identifying appropriate opportunities and in preparing funding bids of a suitably high standard. Whilst some work has been attempted to redress this situation, clearly much remains to be done.

In addition, I believe that law enforcement efforts to attract funding from the National Drug Crime Prevention Fund and indeed the ten percent cost shared funding have been to a large extent piecemeal and again lacking in strategic focus. Whilst not denying that quite a few innovative programs have been initiated and many opportunities have been captured to improve the various components of our approach a strong central focus is still missing. In many ways such a view should not be surprising. The very nature of the Federal arrangements has contributed to the situation but nevertheless it is a situation that must be redressed. Again, there is some light at the end of the tunnel. There are, in my view, at least two significant opportunities to rectify the situation. I am satisfied there is much merit in the recommendation made by Sutton and James that the development of the infra-structure to produce a more rational model for law enforcement, should be a central focus for the expenditure of National Drug Crime Prevention Fund monies. I am not, however, advocating that there ought to be any exclusivity in this approach. I believe that there are still significant opportunities to re-visit other key funding priorities.

The final aspect I would like to address is that of the role of research.

It is no secret that in the past law enforcement has often been dismissive of researchers and their activities. It was not hard to detect an attitude that the funding captured by the so called "academics" should have gone to law enforcement. It is difficult to argue that this has not been the case in some instances but it is a question of where the fault lies.

Again, if there is any actual blame to be apportioned, I believe that law enforcement must accept a large measure of responsibility. As a body I believe that we have been slow to pick up on opportunities to commission strategic and focused research activities.

I am glad to report, however, that the opportunity to reform this has presented on two fronts. The Sutton and James study was directed by Commissioners from throughout Australia in

order to critically review existing practices and to provide recommendations to establish an appropriate model for the future. In many ways this can be seen as the first collective effort on the part of Commissioners to evaluate the current state of play and to direct attention to the future. Again, I have no doubt that the recommendations made sit very comfortably with the intentions of the Directions in Australasian Policing document and the National Drug Strategic Plan 1993-97.

The second opportunity to drive the reform process lays in the upcoming Future Direction Conference for the National Drug Crime Prevention Fund to be held in Sydney. I believe that the recommendations articulated by Sutton and James will provide significant opportunity to think much more strategically about the distribution of future funding. The forum, if well directed, should produce some very fertile insight in relation to other key focus areas for funding.

By way of conclusion then I have attempted to present a view that much work has already been done in order to provide a very sound basis for reforming present and future activities. Clearly, the majority of critical elements have been established. We currently have a strong commitment from all Commissioners of Police to review and reform current police practices. We are about to receive the Sutton and James report and that document clearly provides an opportunity to develop a consistent rational model for law enforcement service delivery options. In *Directions in Australasian Policing July 1994 - June 1996* and the *National Drug Strategic Plan 1993-97* we have two documents that are complementary and articulate what must be done to capture the moment. We have a strong commitment to the activities espoused in those documents from relevant Ministers and Commissioners. We have clearly become more focused in our research activities. We have achieved dedicated funding. We now have some informed recommendations (Sutton and James) as to how the allocation funding grants can become more strategic. We have an opportunity to revisit other key funding priorities. In addition, shortcomings in educational strategies and the means to deal with them have been identified in the National Police Community Drug Education Guidelines

The challenge is, therefore, not to be radically different, but rather to integrate all of the elements into a consistent policy framework and then to pursue a plan of action designed to create meaningful ownership and commitment to a much more efficient and effective way of doing business in the future on the part of key stakeholders.

# LESSONS FROM CONDUCTING RESEARCH INTO BRIEF INTERVENTIONS FOR SMOKERS AND EXCESSIVE DRINKERS IN GENERAL PRACTICE

**Associate Professor Robyn Richmond**

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**National Drug and Alcohol Research Centre, and**
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**University of New South Wales**

## Introduction

**Over the past 15 years many researchers in Australia, UK, USA and Canada have been involved in conducting studies in general practice. The purpose of this paper is to present the lessons learnt from conducting studies for smokers and excessive drinkers. Why general practice is an important context for delivery of brief interventions is examined[1]. Methodological and conceptual problems and practical difficulties are presented. How representative are the results of clinical trials is explored[2], and the ways brief interventions have been disseminated is described[3]. Because so many people have contributed to this area of research it is not possible to refer to all contributors.**

## Role of the general practitioner in brief intervention

**The general practitioner (GP) has an important role to play in improving public health including assisting patients to stop smoking and reduce excessive alcohol consumption. The GP has a high rate of contact with the community as over 80% of the adult population aged 16 to 65 years of age visit their GP at least once a year[4]. There are many reasons why GPs should help patients to modify at-risk lifestyle habits. They often find themselves in the teachable moment when they can present patients with objective evidence of organ damage at a time when the patient is likely to be receptive to the message[5-7]. Smokers and excessive drinkers have more ill health than others and visit the doctor more frequently[8]. As the GP gives ongoing care to patients, the opportunity to engage in brief interventions for a range of preventable health problems is possible[1,9,10]. This is important as most smokers make three or four serious attempts to stop smoking before they eventually succeed, so the doctor is able to treat the problem of smoking or excessive drinking as part of routine medical practice.**

**In general, the doctor and patient have established a rapport over many years and the GP is regarded as a trusted confident[11], respected for his/her knowledge of health matters[1]. Patients consider the doctor as the relevant person to take an interest in counselling and prevention[7,12-14]. Similarly, a majority of doctors believe it is important to help patients modify smoking and excessive drinking[7,15,16]. Doctors are very powerful**

**sources of influence if they practice the principles they espouse. They are appropriate role models for providing advice on lifestyle problems as few of them smoke (6%)[17].**

**These factors when added to the doctors' high rate of contact with the community, clearly indicate that general practice is a vehicle of enormous potential for inducing change[18].**

## Types of research in general practice

**There are three different types of research of brief interventions conducted in general practice for smokers and excessive alcohol consumers. The types of research relate to three basic research questions designed to investigate efficacy, effectiveness, and dissemination[2,19,20]. The questions are:**

1. **does the brief intervention work in general practice under optimum conditions?**
2. **does the brief intervention work widely in general practice?**
3. **what is the most effective way of disseminating brief interventions in general practice?**

**According to Richmond and Anderson[2], the first trial is an efficacy study in which we want to know whether the intervention will work in general practice under the best conditions possible. A small select group of GPs who are interested in research and who are prepared to maintain the study protocols is more advantageous in giving information about whether interventions actually work than is a large group of GPs who express no interest[18]. The next study is an effectiveness trial which is concerned with whether the intervention works widely and is used by many GPs. The difference between these two studies is that the results of an efficacy trial will be more likely to reflect internal validity as a closer control can be kept on how the research protocols are maintained and whether the brief intervention is delivered as it should[20]. The effectiveness study has higher external validity as the results are more generalisable to general practice.**

**The third type of research question is related to dissemination in which consideration is given to uptake and continued use of brief interventions in routine medical practice. To answer this question requires a dissemination study. The question is whether an intervention will be adopted by a wide range of GPs and whether it will continue to be used in routine general practice. Figure 1 presents the three types of research questions.**

**In the first part of this paper the lessons from conducting efficacy and effectiveness studies in general practice for smokers and excessive drinkers are reviewed. In the second part, the third type of study in general practice, dissemination, is discussed.**

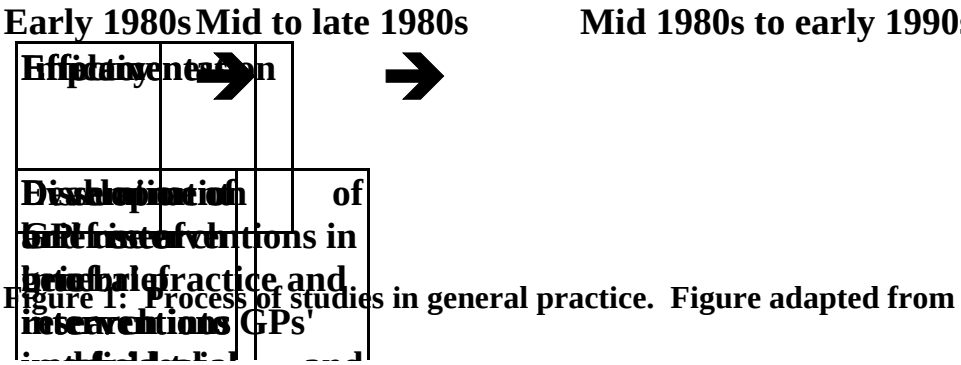


**Figure 1: Process of studies in general practice. Figure adapted from Richmond[20].**

## What brief interventions work in general practice?

**The first trial of a brief intervention in general practice was conducted by Russell and his colleagues, who showed that GPs can be successful in persuading smoking patients to stop[21]. From his seminal work were spawned numerous clinical trials conducted in general practice in which the efficacy and effectiveness of brief interventions for smokers[15,22-35] and excessive drinkers [36-41] were carried out. The first 10 years of clinical trials in general practice were efficacy and effectiveness studies which focussed on outcomes, and they found that GPs' brief advice was better than no intervention and other control conditions[21,37,41], although this was not always the case[23,24,27,29,32]. One of the lessons learnt from these studies was that a greater investment of the GPs' time and a greater intensity of the intervention and counselling resulted in higher abstinence rates among smokers[22,42-51]. Very brief GP advice produced one year smoking quit rates of between 5 and 10%[21,24,35,46,47], reduction of alcohol consumption in the range of 25 to 35% [37,38], and reduction in the proportions of excessive drinkers of around 45%[37]. In general, researchers report a greater treatment effect for reducing excessive alcohol consumption among men compared to women, as women in the control groups changed as much as those in the treatment groups[39,41]. Overall, interventions which are of longer duration, are more involved and have follow up booster sessions, yield higher success rates of between 20 and 36% for smokers[22,27,46-49], and up to around 60 to 70% for proportions of excessive drinkers[1,37].**

## Effect of additional components

*Additional advice*

**When the GP provides advice with others such as a smokers' clinic[29], health visitor[52], practice nurse[34,53] and health facilitators**[54-58], then smokers efforts to change their tobacco use and excessive alcohol consumption can be increased[1]. Facilitator support increased by four times the increase in recording of smoking status in medical records compared to those without a facilitator[57]. A meta analysis of 39 controlled smoking cessation trials of 108 interventions in medical practice[51] found that cessation rates at 6 months were associated with advice delivered by doctors with other health professionals in an individualised face-to-face situation. Encouraging results have been reported when brief intervention by GPs with the support of a smokers' clinic (8%) enhanced outcome results achieved by GP brief advice or the GPs' usual care (5%, 5%)[29].

*Follow up booster sessions*

Higher smoking abstinence rates and increased reduction in the proportions of excessive drinkers are strongly associated with the number of follow up visits attended by smokers[22,25,27,31,59] and excessive drinkers[37]. This effect may be due to the combination of greater motivation among those patients who self-select to return for booster sessions with

the GP[1,31,53]. Those who attend the follow up booster sessions with the GP were significantly more likely to be abstinent at 6 and 12 months than partial attenders[31,53].

*Nicotine replacement therapies*
Patients are more likely to be successful if they use nicotine gum and are offered supportive follow up[15,24,26,33, 60-62]. The Quality Assurance Project of the National Drug and Alcohol Research Centre reported that in general practice when the correct procedure for using nicotine gum is followed, greater abstinence rates after an average of 12.5 months were found in eight clinical trials[44]. We found in our study that nicotine gum enhanced GP advice for the first three months, but disappeared after this time[31].

A number of placebo controlled trials have found that the transdermal nicotine patch when used as an adjunct to GP advice was superior to placebo one year following intervention[35, 63-68]. In the UK studies, the active patch was found to increase success among heavy dependent smokers[35,65] and those who are well motivated[35]. Because the patch does not require a great deal of explaining, it appears to be more effective in general practice when compared to the gum.

*Personalising the health effects*
When the health effects of smoking were explained using the patient's tests results for carbon monoxide[26] and cotinine and lung function[27] patients appeared to respond by quitting. Minimal use was made of feedback of gamma-glutamyl transpeptidase (GGT) levels by GPs in the Drinking Reasonably and Moderately with Self-Control (DRAMS) study[36].

## Difficulties in comparing studies

*Recruitment of the sample of patients*
One difficulty is reaching sufficient sample sizes to provide adequate power in order to detect relative small effects. A major reason for failure to detect differences between control and advice groups is an insufficient sample size as participants have dropped out of the study. GP recruitment rate of patients varies considerably, with some doctors enlisting many patients, while others lose interest and recruit only a few[18, 31, 36]. Several centres of the WHO study abandoned general practice or diversified into other settings, because of poor motivation and interest of the general practice staff, and difficulties in recruiting numbers of patients[41]. Maintaining the recruitment rate of eligible patients can be a major problem for clinical trials in general practice. Some of us have found that recruitment of smokers and excessive drinkers to our study "plateaud" after about three months during which saturation of new, eligible patients who visit the GP is reached[24, 40]. We attempted to overcome this problem by allocating a research assistant to three or four general practices that were visited almost every day.

Great efforts are expended in collecting study samples[14, 37-40]. For example, in the Oxford study, Anderson and Scott[38, 39] received 20 004 completed questionnaires from patients, and the number of people who were eligible and invited to join the study was 771. The study sample of 226 patients was actually 1.1% of the total questionnaires returned and 25% of those who were eligible for the study. Similarly, in the Medical Research Council's study[37], 62 153 questionnaires were completed, giving 909 patients who entered the study. This represented 1.5% of the total questionnaires returned and 21.6% of those who were eligible for the study. In our Alcoholscreen study conducted in Sydney[40], 13 515 health and fitness questionnaires were completed by patients in the doctors' waiting rooms, and this yielded 918 (6.8%) patients who met the alcohol consumption level for excessive drinking; a total of 400

(2.9%) were eligible, agreed, and joined the study.

What do these studies say about the representativeness of the results when only a fraction of the eligible population, 1 in 4-5 eligible people, agree to join the study? We should be cautious in extrapolating our results to entire populations of general practice patients, which has been a common conclusion of many studies conducted in general practice over the past 10 years. At a bare minimum we should explore the characteristics of those eligible patients who do not agree to join studies. The recruitment rate of eligible smokers appears generally higher than that of excessive drinkers. One public health approach that ensures the representativeness of trial results is to use the doctor's practice as the unit of randomisation, and not the patient. All patients in the practice are followed and included in the denominator when cessation rates are calculated, even though some of the patients do not receive any brief intervention[15, 69]. These are studies of effectiveness of intervention in terms of their penetration rate among entire patient populations of the participating general practices.

Studies exhibit variability in pre-treatment characteristics of patients who enter trials, after inclusion and exclusion criteria have been applied. The usual exclusion criteria are related to age and other characteristics, unavailability for follow up as moving, contraindication in use of nicotine gum[1], and if they had received advice during the previous year to cut down drinking[37, 38-40, 70], or had evidence of alcohol dependenc[37, 70].

There is variability in the methods of deriving study samples. Some patients are recruited opportunistically as they present with medical complaints and during the visit the GP asks them to join the study[27, 35] or invites them to participate based on their answers to a screening questionnaire that has been completed in the waiting room[14, 21, 24, 26, 29, 36, 38-40]. Another method is to ask patients of the practice to identify themselves and actively seek help from the GP after receiving a letter, postcard or questionnaire sent through the post[14, 33, 34]. Opportunistic recruitment is more representative of typical, day-to-day general practice[18]. Other methods rely on highly motivated patients to respond, and therefore are limited in their practical applicability.

*Patients' compliance in attending the booster sessions*

Patients' compliance with the number of required visits of the interventions is variable. We found that less than one-third of patients attended all required visits with the general practitioner[27, 40], a finding reported by others for the GP[18, 36, 37], the smokers' clinic[29] and the practice nurse[53]. Lack of compliance may be related to patient's belief that the maximum benefit of the intervention has been achieved, or lack of motivation to change lifestyle.

*General practitioners' choice and compliance with brief interventions*

There is variation in the GPs' choice of delivering brief interventions. In most studies, GPs deliver all intervention and control conditions using a form of randomisation. An exception is the third trial of Russell et al[29] in which GPs selected the brief intervention they wished to deliver. Whilst recognising that allowing doctors to choose the intervention may introduce selection bias, at a more practical level, it may also reduce doctors' non-compliance with maintaining the methodological procedures of the various interventions, with those keen to administer the more involved interventions perhaps being more committed[1]. GP commitment to programs is an important factor in the uptake and continued use of interventions in medical practice. The GP may lose commitment to intervene with patients if efforts do not appear to produce successful outcomes[71].

*Follow points*

During the 1980s there were different follow up intervals used in trials of smoking cessation which made comparisons difficult[1]. Follow up has now become standardised at 12 months. With 40% relapse occurring after one year of non smoking[72], longer follow up than one year should be considered. We report results 3 years after participation in a smoking cessation program[27], however, there are a number of difficulties in undertaking long- term follow up studies. These include: the costs involved, the need for large sample sizes to detect significant differences, the time taken to recruit large samples and the loss of participants due to long term follow up[1].

*Variation in criteria for evaluating success*
The criteria for reporting efficacy in smoking cessation trials vary greatly[68]. Three alternative outcome measures are used to evaluate efficacy: point prevalence, which is the percentage of people not smoking at a particular point in time; continuous abstinence, which is the percentage of people who have not smoked at all since commencement of the intervention; and prolonged or sustained abstinence, the percentage who have been continuously abstinent for a prolonged period preceding assessment (6 months), but not necessarily since the beginning of the intervention[68]. With excessive drinkers, studies usually present outcome in terms of mean reduction in consumption of alcohol in the 7 days before intervention and/or reduction to recommended safe levels according to the national health guidelines. Standardisation of outcome measurement points is an important point that needs consideration.

*Verification of self reports*
Validation of self-reports of abstinence using biochemical measures is a golden rule of trials for smokers in general practice. Deception rates at follow-up have been shown to vary from 0 - 58%[11]. All biochemical assays used are sensitive and specific to tobacco smoking[73] and verification can be made using urinary cotinine[23, 29, 32], salivary nicotine or cotinine (the major metabolite of nicotine)[15, 21, 27, 34], expired carbon monoxide[24, 25, 30, 31, 34, 35], salivary thiocyanate[15] and collaterals[31]. Caution should be made in interpreting the outcomes of those studies that do not attempt to verify self-reports[22, 23, 28, 47]. In studies in general practice with drinkers, change in gamma-glutamyl transpeptidase (GGT) level has been used as measure of reduction[36-40], as has collaterals[36]. However, GGT does not have sufficient sensitivity and specificity to be used as an adequate measure of reduction in excessive alcohol consumption.

## Methods for disseminating brief interventions in general practice

*Methods of delivery to the GP*
Dissemination refers to the initial uptake of interventions as well as their adoption and continued use. When studies were conducted in this area over a decade ago, the focus was on the initial use of programs by GPs. However, effectiveness of a brief intervention should also include the continued use in general practice.

When GPs are sent a smoking cessation booklet through the mail to distribute to smokers, GPs had limited recall of the booklets contents: about half remembered receiving it, a quarter had read it, and only 9% could write down any of the three essential activities of smoking cessation promoted in the booklet[74]. The face to face recruitment strategy in collaboration with a "managed-care organization" was about ten times more effective than a direct mail strategy in encouraging doctors' participation in an intervention trial (59:6%)[75]. In a study investigating the dissemination of patient booklets for reducing excessive alcohol consumption, only 23% remembered receiving them through the post, compared to 60% who received the booklets by personal delivery[76].

This finding was also reported in an Australian study[77] which compared three approaches for marketing a smoking cessation intervention kit to GPs in Melbourne. Doctors receiving the educational facilitator approach face to face were significantly more likely to use the kit compared to those who received the kit from a courier or by post. However, the investigators conclude that the postal delivery of the kit was a more cost effective strategy for distribution brief interventions for smokers as the cost of the educational facilitator was 24 times that of the mailed approach and the courier was twice the cost.

Although these researchers measured the outcome in terms of cost-effectiveness, another consideration would need to be that of cost benefit to the community, and a cost saving analysis which relates to improved health following smoking cessation should also be carried out. Even though it is less costly to receive kits by mail, the question should be asked whether this mode of delivery would encourage GPs to adopt or to continue to use brief interventions without supportive contact and reinforcement[3].

*Training of GPs in workshops*

Doctors who have training were more likely to use brief interventions for smoking cessation, make more follow-up appointments with patients, and have higher patient abstinence rates after one year that those who did not receive training[15, 78]. Training time ranges from two hours to two days and includes: a description of findings from previous studies, role playing, use of video tapes, use of nicotine replacement, relapse prevention techniques, surgery reminders systems, and self-help booklets[11].

Training of GPs usually ignores reinforcement contact following the workshop. Provision of stop smoking advice deteriorates soon after training, but is maintained if they receive corrective feedback[79]. In our randomised trial of 168 GPs, half or whom were followed up after the training workshop (a visit three weeks later and two telephone calls), we found that ongoing support and reinforcement feedback produced greater GP utilisation rates of the *Smokescreen* program at six months when compared with no contact after training (84:52%)[45].

*Teaching in medical schools*

A study at the University of New South Wales found that students in the latter years of their medical course were significantly more positive about their current knowledge in counselling smokers than were students in their first year (89:34%)[80]. However, a UK study found that final year students held more negative attitudes towards working with drinkers, compared to those at the beginning of their medical course[81]. Another UK study found a low rate of teaching about alcohol and drugs[82], and this may explain the attitudes towards drinkers. Glass recommended that education begin at the undergraduate level and lead to specialist training[83]. Ockene developed a training program for resident doctors in the US which enabled smoking cessation skills to be carried over into their practice of medicine[48].

## Public health impact of GP brief interventions

There is a view that if all GPs spend just a few minutes providing brief advice against smoking or excessive drinking, then this would have a greater impact on public health than more comprehensive interventions[3]. The proposition is that the minimal nature of an intervention makes it more appealing to a greater number of GPs and more practical to use with a greater number of patients than a more intensive program[47].

While this view sounds plausible at face value, is it practical and realistic? Will GPs in fact adopt and continue to use brief interventions which result in rates of change among patients below 10%? A low success rate and repeated failures have been reported as the main reasons affecting GPs' confidence and motivation[49, 84] to continue to use interventions for smokers. Many believe that if GPs do not observe successful outcomes resulting from their time and efforts, then they may abandon health promotion activities[10, 85].

The question has been asked: how encouraged will GPs be in continuing to use a minimal program when it achieves rates of cessation/reduction of between 5-10%?[3]. After two decades of conducting four clinical trials of smoking cessation delivered by GPs[21, 24, 29, 35], Russell and his colleagues have concluded that "brief intervention given without the support and back up of the local smokers' clinic had no detectable advantage over practitioners' usual care" (p 1244)[29]. However, they modified this view following their fourth study[35] in which they recommended the use of the nicotine transdermal patch with brief advice and six follow-up visits for heavy smokers who were well motivated to stop, and brief advice and support for light smokers. We need to take cognisance of the considerable experience of Russell and his group working in general practice and appreciate that brief intervention on its own, notwithstanding its theoretical population effects over time, may not continue to be used by the very target group for which it was designed[3]. A practising GP has stated that "an intervention with a modest success rate is unlikely to inspire widespread confidence in GPs"[85]. The Quality Assurance Project Team from the National Drug and Alcohol Research Centre has said that: "seeing positive results with patients from an intervention is an important element in determining whether it is delivered"[44].

More efforts should be put into encouraging more GPs to apply interventions with the greatest success rates which are still brief (less than 20 minutes duration ), but are more comprehensive than minimal advice. Russell *et al* claim that ".....it is obviously desirable that a procedure of proven efficacy should as far as possible be incorporated into the daily routine care of patients on a continuous basis" (page 111)[52]. As a majority of adults visit their family doctor during the year[4], an effective intervention used regularly and continuously would reach most of the smokers over a period of years. Used on this basis, an intervention would have a cumulative effect and result in a gradual decline in smoking prevalence within the general practice population in association with other tobacco control strategies[52].

In summary, there are two sets of questions that need answers through research: first, how do we encourage GPs to use brief interventions? and second, how do we ensure that they continue to apply them in daily medical practice in order to bring about cumulative decreased in smoking prevalence and excessive alcohol consumption among their patient populations? The Quality Assurance Project Team[44] have recommended a stepped approach: some GPs may prefer to use a briefer package in the first instance and, after observing some successes in patients, they may proceed to use more involved interventions, and refer to specialist smoking cessation clinics.

## Future research priorities

There are a number of directions for future research in general practice. There is a need to match patients to specific treatments according to the Stages of Change Model[86]. The practical technique of motivational interviewing can also be used by the GP to promote behaviour change. A future project should evaluate the relative efficacy of various approaches in general practice (e.g. skills-based, patient education and motivational interviewing) according to the stage of readiness for change of smokers and excessive

drinkers.

Three brief intervention programs that have been substantially revised and expanded based on research in the 1980s and include the Stages of Change model are DRAMS II in Scotland, and the Drinking Detective program in Sydney for excessive drinkers, and *Smokescreen for the 1990s* in Sydney for smokers. Dissemination studies are currently in progress for each of these programs.

Adjuncts to GP advice and counselling have shown promise. Collaboration of a smokers' clinic with GP brief intervention is an area requiring further development and research. As practice nurses have an important preventive function in New Zealand, their effectiveness as an adjunct to the GP should be explored.

## Conclusion

After more than a decade of research in general practice for smokers and excessive drinkers, we have gained a great deal of information about what works. The more the GP invest his/her time and energy in providing brief interventions for smokers and excessive drinkers, the greater likelihood there is for long-term behaviour change in patients. Brief interventions delivered by GPs include: giving advice, counselling and physical assessment; personalising the health effects; condensed cognitive-behavioural therapy; advising use of nicotine replacement therapies; suggesting follow up booster sessions; offering self-help reading materials; and monitoring of smoking and drinking status over time. The GP give patients continuity of care during which a range of preventive services can be offered. However, there continues to be an underutilisation of the GP in changing lifestyle behaviours[45]. Most doctors believe that they should help patients to stop smoking[1, 7, 50] and reduce excessive alcohol intake[16], yet only around a half of them routinely offer advice to their patients[50, 87]. GPs' assistance is one of the most cost-effective services that can be provided. "Helping one in 20 patients to quit is at least five times more effective in terms of lives saved, than dealing with other coronary risk factors" ( p.619)[59] such as the treatment of moderate hypertension[88]. Therefore, more energy should be invested in encouraging more GPs to use and adopt in routine practice those interventions that have been shown to be most effective.

There are a number of ways that interventions are delivered to doctors. These range from postal delivery to training workshops and teaching in the undergraduate and postgraduate years of medical school. The most effective methods of delivery are those based on personal contact with follow-up support[3]. "The amount of energy expended in the production of interventions must be at least equalled in marketing and dissemination"[74]. As we approach the twenty-first century, research efforts should be focussed in this direction.

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# EARLY INTERVENTION FOR HAZARDOUS ALCOHOL USE: THE FIRST TEN YEARS AND BEYOND

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## Introduction

The misuse of alcohol accounts for approximately 6,500 deaths in Australia each year[1], and the annual economic cost has been estimated at $6 billion[2]. The development of early and brief intervention strategies to identify persons with hazardous alcohol intake and provide them with therapy to reduce their intake was one of the first priorities of the National Campaign Against Drug Abuse (NCADA, now the National Drug Strategy). In this paper we shall describe some of the work we have undertaken over the past 10 years in devising techniques to screen for hazardous drinking, in developing brief interventions to reduce hazardous intake, and in implementing these techniques in primary health care.

The rationale for early and brief intervention is well known, but may be briefly summarised thus. By the time persons with alcohol problems seek treatment, dependence is usually well established. The prognosis at this stage is not good: 15-30% die within 10 years, and a further 30-40% continue with their dependence[3]. The effectiveness of rehabilitation treatments has been called into question. Some controlled trials have shown that highly structured programs for alcohol dependent persons result in a better outcome than loosely structured ones[4], but the evidence is inconsistent and the costs are considerable[5]. This has made them vulnerable to government and health insurance company policies that are strongly influenced by issues of costing. In addition, epidemiological studies have demonstrated that most harm occurs not in persons with an established dependence, but in the much larger proportion of individuals who have hazardous or harmful use[6]. Such individuals rarely access treatment services. Given the size of the population (for example, 20% of men and 8% of women in Australia are hazardous or harmful alcohol users), a preventive or early intervention approach is more realistic than attempting to provide individualised treatment.

In the early 1980s a World Health Organization expert committee came to the conclusion that there needed to be much greater emphasis on early detection and intervention. In 1983 a WHO collaborative study was instituted which had the aim of developing simple screening procedures and subsequently intervention strategies for hazardous alcohol use. Our Centre has been closely involved with this programme of work, and is now the coordinating centre for the third phase, which is aiming to devise effective strategies for disseminating early

intervention throughout primary health care. The three phases of this work have been supported successively by the Research Into Drug Abuse Program (RIDAP), which was established as one of the four main arms of NCADA.

## Phase I: Early detection of harmful alcohol consumption

Although a variety of techniques had been introduced over the years for the early detection of problem drinking, they were relatively insensitive. Questionnaires were developed which could identify people with alcohol dependence, but typically they missed the majority of hazardous drinkers[7,8]. Physical examination findings are also usually not apparent in the early stage. Laboratory tests, such as gamma glutamyl-transferase (GGT), may become elevated before there are physical complications of alcohol use, but it usually takes many years of regular heavy drinking to produce an abnormal result[9]. In addition, laboratory markers are not specific, so that up to 50% of elevated results in healthy people are caused by factors other than alcohol. The most sensitive and specific laboratory test at present is the carbohydrate-deficient transferrin (CDT), but it remains expensive.

The WHO collaborative project on early detection had the aim of devising a simple screening test for hazardous alcohol consumption that would be applicable in a variety of health care settings and in different cultures. It was to be simple enough to encourage its use by health professionals, and be useful for the purposes of intervention. The project involved administering a structured interview schedule to 1,888 subjects recruited from primary health care settings in six countries (Australia, Bulgaria, Kenya, Mexico, Norway and USA). From 150 questions in the schedule, ten were selected on the basis of (1) their correlation with reported alcohol intake, (2) their representativeness for the major conceptual domains (e.g. dependence on alcohol, adverse psychological reactions to drinking, physical and social complications of drinking, (3) their ability to discriminate between hazardous and harmful use and non-hazardous use, and (4) the clinical relevance of an individual item and its value in guiding counselling. The screening instrument developed, the Alcohol Use Disorders Identification Test ("AUDIT") has three questions on alcohol intake, three on drinking behaviour and dependence, and four on complications of drinking. Responses are scored from 0 to 4, giving a range of scores for the complete instrument of 0-40[10].

Using ROC analysis, a cut-off point of 8 was determined as the most appropriate one to identify hazardous or harmful drinkers. Using this cut-off point, AUDIT detected 92% of persons drinking at hazardous and harmful levels in this sample and had a specificity of 94%[11]. Those who scored 8 or more have a six-fold greater risk of alcohol-related social problems and a 2-4-fold greater risk of medical sequelae over the next three years than those with scores of 7 or less[9].

## Phase II: Early Intervention for harmful alcohol consumption

A second collaborative project was initiated in 1985 to develop and evaluate brief interventions to reduce hazardous drinking[12-14]. Our Centre recruited hazardous drinkers attending three different primary health care settings (general practice, hospital clinics, and a health screening programme). The inclusion criteria were : (1) an average weekly alcohol consumption of 300 g or more (men) or 180 g or more (women); (2) two or more episodes of intoxication per month, intoxication being defined for men as consumption of ten standard drinks (100 g alcohol) in a single session, and for women consumption of six standard drinks (60 g alcohol); and (3) experience of alcohol-related harm in the previous six months and continued drinking.

Subjects were randomly assigned to one of four intervention conditions: (1) no treatment; (2) simple advice over five minutes; (3) advice and counselling for 20 minutes; and (4) advice and extended counselling, amounting to 40 minutes over 2-3 sessions. Those who drew the control condition were thanked for participating, asked to complete some research questionnaires, and invited to be re-interviewed in six months' time. They were given no advice about alcohol consumption or any other health information. In the simple advice condition the therapist informed individuals of their average weekly alcohol consumption, compared their intake with that of the general population for their age and sex, and pointed out any physical or social problems which were related to drinking. They described a "standard drink" and recommended that they keep below 16 standard drinks per week (men) or nine standard drinks (women). Patients left with a simple information leaflet that covered all the main points mentioned by the therapist. In the advice and counselling condition, the therapist gave the same five minutes' advice, together with an additional 15 minutes of counselling in problem solving strategies. Patients were asked to identify situations which would put them at high risk of heavy drinking and, with the therapist's help, to devise means by which they would deal with these situations without recourse to heavy drinking. They were asked to enlist a support person, and alternative activities to drinking were explored. Any alcoholic drinks taken were recorded on diary cards, together with details of where drinking took place. Patients who drew the extended counselling condition had the same advice and counselling, and were then asked to return for counselling on two occasions. On their return, results of biochemical tests were relayed to them, the therapist reviewed their drink diary cards, reiterated the advice to keep drinking below the target levels, and encouraged them to apply the problem solving strategies.

Among those who drew the simple advice, advice and brief counselling, and extended counselling conditions, there were statistically significant reductions in alcohol intake of 28%, 29% and 38% respectively, whereas among control subjects alcohol intake was unchanged (Table 1). There was a significant intervention effect in the samples from all three sites - hospital clinics, general practice and the health screening programme, with the general practice patients showing the greatest effect and the hospital patients the least. There was also a significant effect on frequency of intoxication, with reductions of 27%, 29% and 28% in the simple advice, advice and counselling, and extended counselling group respectively compared with 16% in the control group. Serum AST and ALT activities declined by 14-20% in those who received advice or extended counselling, whereas there was no change in the control group.

## Phase III: Dissemination of early intervention in primary health care

The finding that five minutes of advice was effective in enabling subjects to reduce their consumption and frequency of intoxication is particularly important for the implementation of early intervention techniques throughout the health care system. Intervention which required prolonged counselling, multiple sessions, or where feedback of laboratory results is an essential component would not be feasible nor likely to be cost-effective. By the early 1990's the essential elements of a successful early intervention strategy were in place. A simple screening instrument was available, and a five minute intervention had been shown to be effective. However, the history of health care is full of examples of interventions which have been shown to result in positive outcomes in randomised controlled trials, but which have taken years to be incorporated into routine practice. Recognised barriers include lack of relevant knowledge and skills[15-18], negative attitudes towards people with alcohol problems[19], poor outcome expectations, often based on the stereotyped image of the advanced

alcoholic[20,21], time constraints[22] and lack of professional or financial incentive[23].

In 1991 we commenced work on strategies to implement early intervention within general practice. This work, which was funded by the Research Into Drug Abuse Program of the National Drug Strategy, was the model for the third phase of the WHO collaborative study.

General practice potentially has a key role in prevention and early intervention[24]. General practitioners are the most accessible primary health care providers. In Australia, at least 80% of the population visits a general practitioner annually or more frequently. There is comparatively little waiting time. Patients have an expectation that their doctor may ask questions on alcohol, and indeed regard it as a medical responsibility. An influential survey commissioned by NCADA showed that general practitioners are the preferred source of advice and help on alcohol and other drug-related matters[25]. Seeing the family doctor is a routine occurrence in everyday life, and no special significance or stigma is attached to it. general practitioners can also offer care over long periods of time, and can access a variety of other health care workers.

However, general practice presents its own challenges. In many parts of Australia it is a competitive industry, which is strongly influenced by market forces. In Sydney 40% of general practitioners are in solo practice. General practice is geared to provide acute episodic care, with the consultation being initiated almost always by the patient. The fee system rewards efficient diagnosis and treatment of acute illness. There are financial and administrative disincentives to provide counselling and repeated care for chronic disorders. General practitioners are inundated by promotional material from pharmaceutical and other companies, such that most mail is discarded. Many do not participate in continuing medical education programs, and rely for new information on pharmaceutical company representatives[26].

To address this problem our Centre has developed social marketing strategies to promote early intervention within general practice, and methods of training and supporting general practitioners to provide early intervention[27]. Social marketing provides a useful conceptual framework for understanding the dissemination of ideas or products[28,29]. An important concept in social marketing is the need for "the right product backed by the right promotion and put into the right place at the right price"[30]. In relation to the dissemination of an intervention to general practitioners it is essential that the intervention is perceived to be clinically efficacious, and well presented ("product"), the benefits associated with the use of the package outweigh the associated costs such as time, effort and emotional energy ("price"), the product is easily obtainable ("place"), and the product is promoted in an acceptable manner that maximises their interest in the product. It is also imperative that a large number of general practitioners are reached by the promotional strategy ("promotion").

Three strategies to promote the uptake of an early intervention approach ("Drinkless", which employs AUDIT to screen and is based on the five-minute intervention and associated materials used in the WHO early intervention trial) have been evaluated. They are direct mail, telephone marketing and personal marketing strategies[27]. Each strategy emphasises the benefits (for general practitioners and patients) of engaging in early intervention, promotes endorsements of the program by the major national and local medical authorities and addresses a range of known barriers, for example, time constraints and opportunity costs. In the direct mail condition, a promotional brochure and personalised letter was mailed to general practitioners. In the tele-marketing condition a sales script was used to promote the intervention package to general practitioners over the phone. In the personal marketing

condition, the consultant visited the GP to demonstrate the program materials. As for the tele-marketing condition a sales script was used to promote the program.

Six hundred and twenty-eight general practitioners were randomly assigned to one of the three marketing conditions. The major outcome measure was the uptake rate, that is the number of general practitioners requesting the intervention package expressed as a function of those offered the package. Preliminary results indicate very high uptake rates, of approximately 80%, for the tele-marketing and personal marketing conditions. Although cost effectiveness analyses have not been completed, the tele-marketing strategy appears to be the cheapest one to implement and hence is likely to be the most cost effective.

We have also examined the effectiveness of various training and support strategies for enhancing the long term use of the program with patients. One hundred and fifty four general practitioners who requested the intervention package during the marketing phase and agreed to be involved in a three month evaluation of the program were matched into one of four training and support conditions - control, no support, minimal support and maximal support. The conditions differed in terms of the intensity of support provided to general practitioners and their receptionists. General practitioners in the control condition did not receive any training in the use of the early intervention package over the three month period of the trial. Those in the no support condition received initial training in the use of the package but were not provided with any support thereafter. In the minimal support condition general practitioners and receptionists received initial training. Additionally, they were phoned three to seven days following training to ensure data collection procedures were followed accurately. Thereafter, receptionists received data collection reminders through the phone once every two weeks. No further contact was made with the general practitioner until study completion. General practitioners and receptionists in the maximal support condition received the same assistance as those in the minimal support condition. Additionally, they received ongoing advice and support through alternate telephone contact and visits every two weeks.

Preliminary results suggest that there is a dose-response effect between the amount of support provided to general practitioners and receptionists, and the proportion of patients that are screened for hazardous and harmful alcohol consumption. Up to 60% of general practitioners in some of the uptake strategies have screened at least some of their patients, and the mean percentage of the practice population which has been screened has approached 30%. To date, approximately 19% (of some 24,000 patients) have had AUDIT scores in the hazardous intake range, and a further 3% have scores which indicate dependence. The proportion of hazardous drinkers whom general practitioners counsel is higher in the maximal support condition than the less intensive conditions. Analyses to determine the cost effectiveness of the four support strategies are presently being conducted.

## Conclusions

Over the past 12 years we have demonstrated that a simple 10-item questionnaire can detect hazardous and harmful alcohol use, with a sensitivity of over 90%, that five minutes' intervention results in a reduction in hazardous alcohol consumption of approximately 30%, and that general practitioners can incorporate screening and early intervention into their working day. At the present time we are developing a national strategy to promote the uptake and utilisation of early intervention techniques in general practice throughout Australia.

## Acknowledgments

This work has taken place almost exactly contemporaneously with the National Campaign Against Drug Abuse and its successor, the National Drug Strategy. We gratefully acknowledge the support we have received from the Research Into Drug Abuse Program (now the Drug and Alcohol Research and Education Program) of the Drugs of Dependence Branch, Commonwealth Department of Health and Family Services. Support for specific projects within this program of work has also been received from the National Health and Medical research Council, the Drug and Alcohol Directorate, NSW Health Department, and the Roads and Traffic Authority.

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## Phase I: Early Detection of Harmful Alcohol Consumption

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## Phase II: Early Intervention for Harmful Alcohol Consumption

A second collaborative project was initiated in 1985 to develop and evaluate brief interventions to reduce hazardous drinking[12-14]. Our Centre recruited hazardous drinkers attending three different primary health care settings (general practice, hospital clinics, and a health screening programme). The inclusion criteria were : (1) an average weekly alcohol consumption of 300 g or more (men) or 180 g or more (women); (2) two or more episodes of intoxication per month, intoxication being defined for men as consumption of ten standard drinks (100 g alcohol) in a single session, and for women consumption of six standard drinks (60 g alcohol); and (3) experience of alcohol-related harm in the previous six months and continued drinking, even if this were below the thresholds described above.

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simple advice over five minutes; (3) advice and counselling for 20 minutes; and (4) advice and extended counselling, amounting to 40 minutes over 2-3 sessions. Those who drew the control condition were thanked for participating, asked to complete some research questionnaires, and invited to be re-interviewed in six months' time. They were given no advice about alcohol consumption or any other health information. In the simple advice condition the therapist informed individuals of their average weekly alcohol consumption, compared their intake with that of the general population for their age and sex, and pointed out any physical or social problems which were related to drinking. They described a "standard drink" and recommended that they keep below 16 standard drinks per week (men) or nine standard drinks (women). Patients left with a simple information leaflet that covered all the main points mentioned by the therapist.

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**Table 1**
**Adjusted average weekly alcohol intake at recruitment and follow-up**

| Condition | Intake at recruitment (g) | Intake at follow-up (g) | % reduction |
|---|---|---|---|
| Control | 402 | 402 | 0 |
| Simple advice | 424 | 307 | 27.5 |
| Advice and counselling | 480 | 341 | 29.0 |
| Extended counselling | 460 | 285 | 38.0 |

Intake adjusted for age, group, sex, site of recruitment, and mean alcohol intake at recruitment and follow-up.

## Phase III: Dissemination of early intervention in primary health care

The finding that five minutes of advice was effective in enabling subjects to reduce their consumption and frequency of intoxication is particularly important for the implementation of early intervention techniques throughout the health care system. Intervention which required prolonged counselling, multiple sessions, or where feedback of laboratory results is an essential component would not be feasible nor likely to be cost-effective. By the early 1990's the essential elements of a successful early intervention strategy were in place. A simple screening instrument was available, and a five minute intervention had been shown to be effective. However, the history of health care is full of examples of interventions which have been shown to result in positive outcomes in randomised controlled trials, but which have taken years to be incorporated into routine practice. Recognised barriers include lack of relevant knowledge and skills[15-18], negative attitudes towards people with alcohol problems[19], poor outcome expectations, often based on the stereotyped image of the advanced alcoholic[20,21], time constraints[22] and lack of professional or financial incentive[23].

In 1991 we commenced work on strategies to implement early intervention within general practice. This work, which was funded by the Research Into Drug Abuse Program of the National Drug Strategy, was the model for the third phase of the WHO collaborative study.

General practice potentially has a key role in prevention and early intervention[24]. General practitioners are the most accessible primary health care providers. In Australia, at least 80% of the population visits a general practitioner annually or more frequently. There is comparatively little waiting time. Patients have an expectation that their doctor may ask questions on alcohol, and indeed regard it as a medical responsibility. An influential survey commissioned by NCADA showed that general practitioners are the preferred source of advice and help on alcohol and other drug-related matters[25]. Seeing the family doctor is a routine occurrence in everyday life, and no special significance or stigma is attached to it. General practitioners can also offer care over long periods of time, and can access a variety of other health care workers.

However, general practice presents its own challenges. In many parts of Australia it is a competitive industry, which is strongly influenced by market forces. In Sydney 40% of general practitioners are in solo practice. General practice is geared to provide acute episodic care, with the consultation being initiated almost always by the patient. The fee system rewards efficient diagnosis and treatment of acute illness. There are financial and administrative disincentives to provide counselling and repeated care for chronic disorders. Furthermore, general practitioners are inundated by promotional material from pharmaceutical and other companies, such that most mail is discarded. Many do not participate in continuing medical education programs, and rely for new information on pharmaceutical company representatives[26].

To address this problem our Centre has developed social marketing strategies to promote early intervention within general practice, and methods of training and supporting general practitioners to provide early intervention[27]. Social marketing provides a useful conceptual framework for understanding the dissemination of ideas or products[28,29]. An important concept in social marketing is the need for "the right product backed by the right promotion and put into the right place at the right price"[30]. In relation to the dissemination of an intervention to general practitioners it is essential that the intervention is perceived to be clinically efficacious, and well presented ("product"), the benefits associated with the use of the package outweigh the associated costs such as time, effort and emotional energy

("price"), the product is easily obtainable ("place"), and the product is promoted in an acceptable manner that maximises their interest in the product. It is also imperative that a large number of general practitioners are reached by the promotional strategy ("promotion").

Three strategies to promote the uptake of an early intervention approach ("Drinkless", which employs AUDIT to screen and is based on the five-minute intervention and associated materials used in the WHO early intervention trial) have been evaluated. They are direct mail, telephone marketing and personal marketing strategies[27]. Each strategy emphasises the benefits (for general practitioners and patients) of engaging in early intervention, promotes endorsements of the program by the major national and local medical authorities and addresses a range of known barriers, for example, time constraints and opportunity costs. In the direct mail condition, a promotional brochure and personalised letter was mailed to general practitioners. In the tele-marketing condition a sales script was used to promote the intervention package to general practitioners over the phone. In the personal marketing condition, the consultant visited the GP to demonstrate the program materials. As for the tele-marketing condition a sales script was used to promote the program.

Six hundred and twenty-eight general practitioners were randomly assigned to one of the three marketing conditions. The major outcome measure was the uptake rate, that is the number of general practitioners requesting the intervention package expressed as a function of those offered the package. Preliminary results indicate very high uptake rates, of approximately 80%, for the tele-marketing and personal marketing conditions. Although cost effectiveness analyses have not been completed, the tele-marketing strategy appears to be the cheapest one to implement and hence is likely to be the most cost effective.

We have also examined the effectiveness of various training and support strategies for enhancing the long term use of the program with patients. One hundred and fifty four general practitioners who requested the intervention package during the marketing phase and agreed to be involved in a three month evaluation of the program were matched into one of four training and support conditions - control, no support, minimal support and maximal support. The conditions differed in terms of the intensity of support provided to general practitioners and their receptionists. General practitioners in the control condition did not receive any training in the use of the early intervention package over the three month period of the trial. Those in the no support condition received initial training in the use of the package but were not provided with any support thereafter. In the minimal support condition general practitioners and receptionists received initial training. Additionally, they were phoned three to seven days following training to ensure data collection procedures were followed accurately. Thereafter, receptionists received data collection reminders through the phone once every two weeks. No further contact was made with the general practitioner until study completion. General practitioners and receptionists in the maximal support condition received the same assistance as those in the minimal support condition. Additionally, they received ongoing advice and support through alternate telephone contact and visits every two weeks.

Preliminary results suggest that there is a dose-response effect between the amount of support provided to general practitioners and receptionists, and the proportion of patients that are screened for hazardous and harmful alcohol consumption. Up to 60% of general practitioners in some of the uptake strategies have screened at least some of their patients, and the mean percentage of the practice population which has been screened has approached 30%. To date, approximately 19% (of some 24,000 patients) have had AUDIT scores in the hazardous intake range, and a further 3% have scores which indicate dependence. The proportion of

hazardous drinkers whom general practitioners counsel is higher in the maximal support condition than the less intensive conditions. Analyses to determine the cost effectiveness of the four support strategies are presently being conducted.

## Conclusions

Over the past 12 years we have demonstrated that a simple 10-item questionnaire can detect hazardous and harmful alcohol use, with a sensitivity of over 90%, that five minutes' intervention results in a reduction in hazardous alcohol consumption of approximately 30%, and that general practitioners can incorporate screening and early intervention into their working day. At the present time we are developing a national strategy to promote the uptake and utilisation of early intervention techniques in general practice throughout Australia.

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