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Drink Driving Rehabilitation: The Present Context

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DRINK DRIVING REHABILITATION: THE PRESENT CONTEXT

PART OF THE EVALUATION OF THE 'UNDER THE LIMIT'
DRINK DRIVING REHABILITATION PROGRAM

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Abstract

This report examines the current literature concerned with the intervention of drink driving. I presents a review of the characteristics of drink driving offenders that place some individuals a risk of offending. It discusses the social context of drink driving and the general and specific intervention strategies that are implemented within the social context to control the drink driving problem. Particular focus is placed on drink driving rehabilitation programs and the role they play in reducing drink driving recidivism. A discussion of the methodologica problems that plague evaluations of drink driving rehabilitation programs is presented al with a review of the impact these programs can have on health, lifestyle and traffic-related outcomes. The research findings presented in this report were used to guide the development, implementation and evaluation of the "Under the Limit" drink driving rehabilitation program. A brief outline of the way in which the "Under the Limit" program fits within these research findings is presented.

Keywords

Drink driving, social context, drink driving interventions, RBT, ignition interlock devices, licence suspension, rehabilitation programs, Under the Limit

Acknowledgments

This literature review was begun in the early nineties and encompasses the work that was used to inform the development of the Under the Limit drink driving rehabilitation program and the literature that has been published since that time. Just as the literature review documents material collected over an extended period of time the acknowledgments also cover the wide range of people who have been involved with the project during that period. In the initial stages of the program the team examining the literature for implications for rehabilitation of offenders included Bob Bleakley from Qld Corrective Services Commission, Doug Woodbury from Qld Transport and Laurie Lumsden and Adrian Reynolds from Qld Health. Vic Siskind who was then at the University of Queensland assisted in this early phase and continued his involvement as a member of the Centre.

Cynthia Schonfeld and Jeremy Davey took key roles in the development and critica assessment of the literature for application to the design and implementation of the program.

The final work developing this monograph has been undertaken by staff from the Centre for Accident Research and Road Safety (QLD). Megan Ferguson has identified the ke materials, reviewed the current research literature on drink driving and taken responsibility for writing this report. In this she has been assisted by Anna Johnson who took a major role in locating and retrieving relevant material and Cynthia Schonfel who read and edited the drafts of the document.

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Mary Sheehan
CARRS-Q
16.9.99

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Executive Summary

Introduction

Alcohol abuse and alcohol-related problems remain a major public health issue. Drink driving is one alcohol-related problem that has gained much attention over recent years. The magnitude of the drink driving problem is often shown using crash data. Approximately one-third of all fatal road crashes, where the driver had been tested for alcohol, were associated with blood alcohol concentrations above the legal limit.

Road trauma, unlicensed driving and recidivist offending place additional financial and legal burdens on communities and reinforce the need to establish effective drink driving interventions.

Defining the Drink Driver

Drink driving has consistently been shown to be associated with a range of risk factors.

- Male, young age, low socio-economic background
- Problems with alcohol consumption and high levels of alcohol use
- Poor knowledge and deviant attitudes toward drink driving
- Extensive histories of criminal and traffic convictions

Drink Driving and the Social Context

The essential social determinant of drink driving is alcohol consumption. Drinking behaviours are often learned through family influences and therefore become ingrained lifestyle behaviours.

The social network of offenders can often influence drink driving behaviours through the affective nature of these relationships. Drink driving offenders are likely to be involved with peers who hold similar values toward drinking and drink driving and these relationships are likely to have a negative influence on drink driving behaviours. On the other hand, more supportive relationships in the offenders' social network may help t reduce the incidence of drink driving through the possibility of disapproval from family and friends.

Differences between urban and rural areas can impact on the prevention and enforcemen of drink driving. Enforcement in rural regions is more costly and harder to implement due to a lack of resources. Consequently, the probability of detection is much lower in these regions.

Licensing and liquor outlet legislation has also been shown to impact on drink driving. Three alcohol-related policies that are seen to be important in reducing drink driving are: raising the drinking age, increasing alcohol taxes and increasing enforcement of drink driving laws.

Countermeasures for Drink Driving

Intervention strategies designed to control the drink driving problem have been numerous. These strategies are generally divided into two groups depending on the primary target: general interventions and specific interventions.

General intervention strategies target the community in which the socially unacceptable behaviour is occurring. These strategies aim to deter or educate the general community as a way of reducing drink driving. Strategies of this kind include random breath testing and media campaigns and evaluations of these strategies as drink driving countermeasures have generally been positive.

Specific intervention strategies target the convicted offender with the aim of reducing their potential to re-offend. Strategies of this kind include licence sanctions and alcoho ignition interlock devices. Evaluations of these measures have shown significan reductions in traffic-related outcomes, at least for the period the intervention was administered.

Research into the effectiveness of drink driving interventions has mainly been carried ou in US jurisdictions. However, differences in drink driving laws and enforcemen procedures between the US and Australia can result in problems when applying the research findings to the Australian case.

Drink Driving Rehabilitation/Treatment Programs

Drink driving rehabilitation programs are specific intervention strategies that arose out of the need for alternatives to expensive and counterproductive jail terms. The importance of these programs in controlling the drink driving problem needs to be established to settle the debate over whether drink driving should be treated as a health problem (eg through rehabilitation programs) or as a crime to be punished (eg through licence sanctions).

Due to the nature of the drink driving offence (ie an offence that involves both a traffic and health-related outcome), an intersectoral approach to the treatment of the drink driving problem should be used. Drink driving has particular relevance to Transpor Department policies, however Health Department initiatives may be better able to influence problem drinking. Health Department policies for the treatment of alcohol-related problems are grounded in the harm minimisation approach.

Drink driving rehabilitation programs in Australia are often implemented within the Australian judicial system. While coerced attendance of offenders onto rehabilitation programs through the court system ensures that all offenders are exposed to the program, there is more ethical support for some voluntary interest on the part of the offender.

There are many different types of rehabilitation programs. Education-based programs assume that it is a lack of knowledge that led to the drink driving offence and these programs attempt to assist the drink driver in separating future episodes of drinking fro driving. Psychotherapy/counselling-based programs aim to assist the drink

driver in reducing their harmful alcohol consumption to a more reasonable level. However, there is more support for combination programs that include both educational and counselling components.

Screening and assessment techniques are often used in conjunction with drink driving rehabilitation programs to assist in better matching strategies to the needs of the individua offender. Two essential criteria for the effective use of screening techniques are firstly, that the techniques can predict potential risk (eg risk of recidivism) and secondly, that the techniques can identify appropriate cut points to define risk groups.

Evaluations of drink driving rehabilitation programs have been plagued with methodological problems. These include: selection biases such as the self-selection o offenders onto programs; lack of randomised case-controlled studies; and limitations in the evaluation measures used.

Evaluations of drink driving rehabilitation programs have generally been positive.

- Meta-analytic evidence suggests that rehabilitation programs can have a 7-9% reduction in recidivism in addition to the benefits shown by licence sanctions.
- Rehabilitation programs can impact on alcohol-related crashes and drink driving recidivism, but unlike licence sanctions do not appear to impact on non alcohol-related crashes. However, the benefits shown by rehabilitation programs appear to be longer lasting than those shown by licence suspensions.
- Drink driving rehabilitation programs can impact on knowledge and attitudes toward drink driving, lifestyle characteristics and psychosocial functioning.
- Multi-modal rehabilitation programs (ie programs which include counselling, education, probation, licence suspension, or a combination of these elements) are more likely to result in a positive outcome than single or 2-mode interventions.

Rehabilitation programs are more likely to be successful if they target high-risk offenders, target the needs and attitudes that are associated with drink driving behaviours, are based within the community and have a directive approach to treatment.

Summary of Literature Findings

Drink driving rehabilitation programs are important countermeasures in the control o drink driving. The most effective use of these measures, however, is by combining the with punitive sanctions (eg licence suspension) to provide a more holistic approach to treatment.

'Under the Limit' in the Current Research Context

'Under the Limit' (UTL) is a drink driving rehabilitation program that has been implemented in the Central Queensland region since 1993.

Initial design of the UTL program recognised the growing belief that drink driving was an indicator of alcohol dependency and incorporated elements of best practice models o treatment for alcohol dependency in its design.

Initial development of the program was also guided by the research findings described above.

- Development and implementation of the program was based on an intersectoral approach to treatment.
- The UTL program is a community based program involving many key stakeholders in drink driving rehabilitation.
- The program takes into consideration individual differences between offenders, including differences in learning styles and literacy levels.
- The program focuses on educating offenders about alcohol and drink driving issues. I also covers issues relating to alcohol use during times of stress and coping strategies to deal with negative emotions that result in alcohol use.
- The program forms part of a more complete intervention strategy that involves probation and licence suspension.

1 Introduction

Throughout the western industrialised world alcohol abuse is a major public healt issue. Alcohol is one of the most common drugs legally available in society and most people will have had some form of contact with alcohol, whether they consume it or not, during their lifetime (Single & Rohl, 1997). The cost of alcohol on society, while difficult to quantify in either human or financial terms was estimated in 1991 to be approximately $6.03 billion a year in Australia (Collins & Lapsley, 1991, cited in National Drug Strategy Committee, 1993). This includes "the cost of health care, loss of productivity, and direct law enforcement costs associated with alcohol-related road crashes" (National Drug Strategy Committee, 1993, p. 2).

Problems resulting from the consumption of alcohol are numerous and have widespread effects. One alcohol-related problem that has gained much attention in recent years is drink driving. The magnitude of the drink driving problem is often illustrated using alcohol-related crash statistics. Trauma resulting from road crashes is one of the most common causes of alcohol-related deaths (Grant & Ritson, 1990). Approximately 30% of all fatal road crashes in Australia where the driver/rider had been tested for alcohol were associated with blood alcohol concentrations (BACs) above the legal limit (0.05gm/100ml or more), with approximately 70% of those drivers having a BAC more than three times the legal limit (Single & Rohl, 1997). The level of alcohol involvement in road crashes is considerably more common for male drivers than female drivers. It has been suggested that alcohol intoxication of the driver is a major contributing factor in approximately 37% of fatal crashes caused by male drivers, but only 16% for femal drivers (Ginpil & Attewell, 1994). This difference is most marked in the 25-29 year age group (Ginpil & Attewell, 1994).

Whilst road crashes associated with alcohol consumption are a highly salient measure of the cost of drink driving in society, some measures are less readily apparent. A career of disqualified or unlicensed driving that occurs as a consequence of conviction for a drink driving offence places further legal, physical and economic burdens on society over and above the costs initially imposed by the drink driving offence. Unlicensed driving is common in society, and it has been estimated that 30% of third drink driving offenders are unlicensed at the time of their third offence (Sheehan, 1993). Further, Bailey (1993, cited in Bakker, Ward, Cryer, & Hudson, 1997) suggested that approximately 90% of disqualified drivers who are convicted of driving without a licence were initially disqualified as a result of a drink driving offence.

In summary, combining alcohol with driving is a major health and economic problem for industrialised countries. The associated proximal and distal outcomes of road trauma, unlicensed driving and recidivist offending place unnecessary burdens on any one community and are persuasive arguments that interventions need to be established to reduce these burdens.

This report examines the current literature concerned with drink driving and drink driving interventions. It presents a review of the characteristics of drink driving offenders that place some individuals at risk of offending. It discusses the socia context of drink driving and outlines the interventions employed to reduce the drink driving problem. Particular focus is placed on the effectiveness of drink driving

rehabilitation/treatment programs and the role they play in this process. The report also presents a summary of the research findings that guided the design and implementation of the "Under the Limit" (UTL) drink driving rehabilitation program (Sheehan, 1994; Sheehan, Schonfeld, & Davey, 1995).

2 Defining the Drink Driver

Drink driving offenders can be divided into two categories – first time offenders and the recidivist drink driver. Some first time offenders are social drinkers who have made a judgment error in the decision to drive after drinking (Howard & McCaughrin, 1996). For these individuals, being detected is an 'unlucky' event and disapproval or socia pressure from family and friends may be enough to lead them to separate future situations of drinking and driving (Macdonald & Dooley, 1993). However, given the low probability of being detected (Aberg, 1993), many first time offenders may in fac be persistent drinkers and drink drivers and therefore display the same characteristics as convicted recidivist offenders.

Research aimed at defining or profiling drink drivers has mainly focused on the recidivist drink driver, with greatest effort being given to the predictors of recidivism. Studies over many years have consistently indicated that these factors include:

- Male
- 18-24 years
- Low socio-economic background
- Single or divorced
- Blue collar occupation
- Low education/literacy leve
- Low self-estee

(Hedlund, 1995; Macdonald & Dooley, 1993; Nickel, 1990; Peck, 1991; Peck Arstein-Kerslake, & Helander, 1994; Sheehan, 1993).

Lifestyle factors such as problems with alcohol, levels of alcohol usage, and drug use are also defining characteristics of drink driving recidivism (Hedlund, 1995; Holubowycz, Kloeden, & McLean, 1994; Macdonald & Dooley, 1993; Peck, 1991; Peck et al., 1994). This is clearly expressed by the following:

> *A significant proportion of convicted drink-drivers are at serious risk o developing, or have already developed, alcohol-related health and other problems. This is particularly so with recurrent offenders . . . for whom a drink-driving conviction is more often an inevitable outcome of well-established drinking habits, rather than an isolated, 'unlucky' event. (Victorian Social Development Committee, 1988, p. xii)*

Convicted drink drivers are more likely to have deviant attitudes toward drink driving behaviours (Hedlund, 1995; Holubowycz et al., 1994) and lower levels of knowledge o safe drinking levels than are members of the general population (Macdonald & Dooley, 1993). Deviant attitudes and behaviours may include the experience and acceptance o being a passenger of a drink driver (Macdonald & Dooley, 1993), which is indicative o the social acceptance of drink driving among the friends of a convicted offender. The are more likely to have driven in the past year while under the influence of alcohol, to

have a stronger belief that some people drive better after drinking, and are less likely to believe that there is no excuse for drink driving (Macdonald & Dooley, 1993). Drink drivers tend to show more hostile and aggressive behaviours (Hedlund, 1995; Isaac, 1995), and have more problems coping with a range of negative emotions such as frustration, stress, anger, and depression (Donovan et al, 1983, cited in Bakker et al., 1997; Holubowycz et al., 1994).

Drink drivers also tend to have more extensive criminal histories including prior drink driving convictions, prior reckless driving convictions, more single vehicle and more alcohol-related crashes, more non-moving traffic convictions, and more malicious behaviour convictions (Macdonald & Dooley, 1993; Peck, 1991; Peck et al., 1994). Although BAC at the time of the original arrest has previously been considered a predictor of future drink driving events, more recent evidence suggests that this ma not in fact be the case (Gijsbers et al., 1996; Nochajski, Miller, Wieczorek, & Whitney, 1993; Sheehan, 1994; Yu & Williford, 1995). The idea of BAC as a predictor of drink driving recidivism comes from the belief that high BAC is an indicator of dependent and problem drinking and that this group is more likely to re-offend (Yu & Williford, 1995). However, more recent work on patterns of binge drinking by various groups has indicated that high alcohol consumption levels are not only found in frequent or daily drinkers but also binge drinkers who may drink less often (Davey, Obst, & Sheehan, Under Review). High BAC levels, therefore, are not only likely to be found am frequent drinkers, but are also likely to be found within the population of binge drinkers who are not necessarily frequent drinkers.

Research has also attempted to examine the factors involved in the decision to drink and drive, and identified a set of variables that differentiate the potential drink driver fro the general driving population. Thurman, Jackson and Zhao (1993) found that for the general population the degree of behavioural impairment (eg slurred speech), the available alternatives to drink driving (eg ride with a friend), and the weather conditions at the time of the decision, were more likely to influence a person's decision to drink and drive than factors such as distance from home, familiarity with roads, number o police roadblocks functioning, and the legal consequences of drink driving.

In a later analysis, Thurman et al. (1993) treated those individuals who had admitted t driving while under the influence of alcohol as a separate sample, and found that this group of likely drink drivers were more influenced by the legal consequences of drink driving, the number of active roadblocks, and the amount of fine they could receive, and less fearful of the community reaction, than was the general population sample. The authors concluded that "opinions which constrain the general (and mostly law-abiding) population from drunk driving … fail to do so effectively among the subsample of likel offenders for whom this behaviour might be considered more normative" (p. 261). Although the work of Thurman et al. (1993) was based in the US, the results of their study may provide a basis for understanding drink driving behaviours within the Australian context. That is, it is not only individual characteristics that distinguish drink drivers from the "normal" non-offender, but the context of their experiences also differs significantly.

While the research discussed so far has suggested that drink drivers differ to the genera population on a range of demographic and lifestyle characteristics, it should also be noted that the drink driving population is not a homogeneous population (Foon, 1988; Ryan, Ferrante, Loh, & Cercarelli, 1996). Within this group of individuals, differences

exist on a range of demographic, attitudinal, personality and behavioural variables that ensure the experience of drink driving and the risk of repeat offending are not the same for all drink driving offenders. Donovan and Marlatt (1982) suggested that drink driving offenders can be divided into five distinct groups based on variables such as those mentioned above. They found that those offenders who had a high level of hostility and who drank heavily on any given occasion represent a group of individual with a high risk driving style – that is, a driving style that is more likely to lead to traffic offences (eg drink driving) and crashes. The lowest driving risk was associated with offenders who were older, had higher social status and whose alcohol consumption was at a more reasonable level.

In summary, drink driving (and recidivist drink driving) can be defined by a range o demographic, lifestyle and criminal characteristics that predispose some individuals to the risk of drink driving. Although many of these factors serve to differentiate drink driving offenders from the general population, they can also be used to describe differences that exist within the population of drink driving offenders. Individua differences in the risk of drink driving are important to consider when designing programs and interventions to control drink driving.

Drink drivers, however, do not exist in social isolation and many governing laws and social norms influence the level of drink driving in society. These influences can be both positive and negative and therefore have the power to reduce or perpetuate the drink driving problem. The following section will examine these social influences and more especially the social context of drink driving.

3 Drink Driving and the Social Context

The essential and ubiquitous social determinant of drink driving is alcohol consumption. Drinking is a social behaviour embedded in societal norms and arguably is the major feature of Australian cultural life (Sheehan, 1994). Research suggests that drinking behaviours are learned through family influences, especially those of the father (Yu & Williford, 1992). As a result, drinking and drink driving are part of the extended individual's personal history and become ingrained lifestyle behaviours (Assailly, 1995; Williams, 1994). Whether a cause or an effect of alcohol, many problem drinkers and drink drivers have multiple social and personal problems (Hedlund, 1995; Isaac, 1995; Victorian Social Development Committee, 1988) that place the individual at a disadvantage within society.

Drink driving offenders are more likely to belong to a 'subculture' that accepts drinking and driving (Macdonald & Dooley, 1993). Peers of drink drivers may be less condemning and more supportive of the offender since the peers themselves are more likely to hold similar values toward drinking and drink driving (Thurman et al., 1993). Subcultural norms that have been created within society are then maintained and perpetuated within this 'at risk' sample of the general population (Macdonald & Dooley, 1993).

Drinking habits are also connected to social relationships with family and friends, whereby problems in relationships appear to reflect adjustment problems in a variety of

social settings (Nickel, 1990). Research shows that drink drivers with marital problems re-offend more often than unmarried or divorced drink drivers (Nickel, 1990). I follows then that supportive relationships with family and friends, where there is a possibility of monitoring both drinking and drink driving behaviours, may reduce the potential of a drink driver to re-offend. In some cases it may even prevent an individua from driving after drinking in the first instance, due to the perceived possibility o disapproval from family and friends (Macdonald & Dooley, 1993). It appears then tha for the convicted drink driver, alcohol has important and immediate consequences on psychosocial functioning, and family and friends may be better able to assist i rehabilitation (or prevention) given the affective relationship with the offender (Assailly, 1995).

The wider social context (ie the context outside that of the immediate social network of a drink driver) can also play an important role in establishing and maintaining drink driving behaviours. Differences between rural and urban areas can have differentia effects on both the prevention of drink driving and the enforcement of drink driving laws (Harrison, 1996). There are many factors that ensure the experience of drink driving is different in rural areas compared to urban regions. These include:

- The experience of a low probability of detection. A low level of detection ma result from the ability of rural communities to quickly spread knowledge of drink driving enforcement locations.
- Differences between aspects of rural and urban communities. Rural communities tend to be smaller, close knit communities where the police officer may even be a drinking mate. Further, the availability of alternatives to drink driving (eg public transport, taxis) in rural regions is limited.
- Differences in the level of enforcement. Rural regions tend to have fewer enforcement staff and environmental supports at their disposal often making it difficult to set up regular and timely enforcement procedures.
- The cost of enforcement. Traffic law enforcement can be expensive on low traffic volume roads.
- Differences in travel distances and routes. Rural drivers generally travel greater distances to drinking establishments and often there are limited routes that can be travelled to reach these establishments.

(Elliott & Shanahan, 1983; Harrison, 1996; Staysafe, 1992; Travelsafe, 1999)

The wider social context also includes political agendas and policy-makers' decisions regarding alcohol and drink driving. Alcohol is regulated through licensing and liquor outlet legislation and research has suggested that such legislation impacts on drink driving and other traffic safety outcomes (Moskowitz, 1989). Sheehan (1994), in a discussion on the access and availability of alcohol, highlighted the negative effects o lowering the drinking age and increasing trading hours for liquor outlets on traffi safety. Moskowitz's (1989) paper examining the effects of policy decisions on reducing drink driving supported three alcohol-related policies as ways of reducing road and other trauma resulting from alcohol. These policies were: raising the minimum legal drinking age to 21 years; increasing alcohol excise taxes; and increasing the enforcement of drink driving laws. While these three policy options have been shown to be effective in reducing drink driving and alcohol-related road trauma, Sheehan (1994) suggested that producing corresponding legislation change may be difficult. "Alcohol production is important to the economy of some regions and States of

Australia and politicians representing these areas are likely to be particularly sensitive to the needs and demands of the alcohol production industry" (Sheehan, 1994, p. 105). In summary, there are many social norms and political agendas that influence drink driving in society. These influences can be both positive and negative and are therefore important in determining the social context of drink driving. However, by introducing changes to social norms and policies it is possible to change the social context, and ultimately the behaviours of the individual drink driver (Brown, 1995).

Numerous individual treatments and community interventions designed to control the drink driving problem have been implemented within the social context. Studies examining the benefits of these strategies have been considerable (Sheehan, 1994), and the following section briefly outlines the types of interventions available and their effectiveness in changing knowledge, attitudes and drink driving behaviours.

4 Counter Measures for Drink Driving

Counter measures for drink driving can be divided into two groups: genera deterrence/intervention measures and specific deterrence/intervention measures. Classification of drink driving intervention strategies as general or specific is made on the basis of the primary target. General intervention measures are aimed at the genera driving public, while specific intervention efforts target those individuals who have been convicted of a drink driving offence (Morse & Elliott, 1992; Nichols, 1990). The following section examines these two types of intervention strategies in turn. The discussion is not intended to be an exhaustive review of findings, but rather a brief overview of current directions in the control of drink driving.

4.1 General Intervention Measures

General drink driving intervention strategies are interventions whose primary target is the community in which the socially unacceptable behaviour is occurring. The interventions are aimed at the community as a whole, even though the majority of individuals are not responsible for the behaviour occurring (Institute of Medicine, 1990). General intervention strategies act as deterrents "by exposing drivers to the threat of detection, without necessarily apprehending and punishing them" (Watson e al., 1996). These strategies are important in the deterrence of drink driving behaviours as many people drink and drive, but only a few are caught, charged and subsequently convicted (Nichols, 1990).

General interventions aim to change social knowledge, attitudes, and behaviours toward drink driving. Drink driving intervention strategies that come under the 'general' labe include changes to government laws and regulations, mass media campaigns, and roadside random breath testing. Much of the research into the effectiveness of genera intervention strategies has focused on media campaigns and random breath testing (RBT). The following sections, therefore, will discuss the effectiveness of these two general intervention measures and the role they play in reducing drink driving and drink driving recidivism.

4.1.1 Random Breath Testing

RBT was first introduced in Australia in 1976 with Queensland's first RBT strateg being introduced in 1988. The primary policy focus for RBT was prevention rather than detection in the control of drink driving (Moloney, 1994). That is, the introduction of RBT was intended to be as a deterrence measure and contrasted sharply with the earlier and traditional enforcement approach emphasising apprehension and punishmen (Homel, 1993). The aim was to produce a highly visible and broadly based enforcemen procedure that would deter the community, and more specifically the potential offender, from driving after drinking, based on the possibility of being caught (Homel, 1993). Research evidence supports the concept of deterrence in that individuals who have had recent exposure to RBT, and believe there is a high probability of being caught, are less likely to decide to drink and drive (Harrison, 1996; Sheehan, 1994; Turrisi & Jaccard, 1992).

Evaluations of the effectiveness of RBT as a deterrence strategy have been encouraging. Crash data from New South Wales over a 4 year period after the introduction of RBT showed a 36% decrease in alcohol-related fatalities and serious injuries compared to pre-RBT levels (Homel, 1990). A 22% reduction was also observed for total fatal crashes (Homel, 1990). The Queensland experience with RBT showed similar results. Alcohol-related fatalities fell by 29% and non alcohol-related fatalities fell by 11% during the 5 years after the introduction of RBT (Watson, Fraine, & Mitchell, 1995). However, there is some indication that RBT is less effective in rura regions because of the nature of the social context in which it is implemented (Elliott & Shanahan, 1983; Staysafe, 1992).

Research suggests that maintaining a successful RBT enforcement strategy that fully acts as a deterrence measure is extremely difficult (Homel, 1993). A successful RBT campaign relies heavily on its ability to be highly visible and threatening to the genera community. RBT must be unpredictable, difficult to evade, rigorously enforced, have certain and severe consequences, and be coordinated with supporting mass media campaigns (Cavallo & Drummond, 1994; Moloney, 1992).

While the initial introduction of RBT showed significant reductions in drink driving, alcohol-related crashes and non alcohol-related crashes, the ability of RBT to act as a deterrence measure appears to be decreasing. Key stakeholders involved in the drink driving area indicate that there is a perception that the probability of detection is lower today than it used to be (Sheehan, 1994). There is also a perception that police do no have the resources to maintain RBT at a sufficiently visible level (Sheehan, 1994). These are two of the key criteria in maintaining a successful RBT campaign and the results suggest the need to revisit and possibly relaunch RBT as an intervention strategy.

4.1.2 Mass Media Campaigns

Public education and information campaigns are used widely within communities to inform society members on a wide range of topics, thereby increasing knowledge within

the community. Public education campaigns are based on the premise that they w effect an attitudinal and behavioural change within the community as a result of the educational message. Evidence suggests that education campaigns can have a positive impact on outcome measures such as knowledge, attitudes, and behaviours. Meta-analytic results indicate that the average gain in these outcome measures is approximately 6% compared to pre-campaign levels (Elliott, 1993).

However, some public education campaigns have little, if any, effect on attitudes and behaviours (Williams, 1994). The advertising of road safety and alcohol control issues is very different from product advertising (Span & Saffron, 1995), and the failure of these programs to effect a measurable attitude or behaviour change is quite logical. "Drinking, and drinking and driving, are lifestyle behaviours that are influenced and shaped by many societal factors and are not easy to affect through interventions consisting, for the most part, of brief one-time programs" (Williams, 1994, p. 199). The benefits of any drink driving public education campaign are likely to be negated b the constant social forces that form the core of society, and by the continual and diverse range of alcohol advertising that normalises and legitimises alcohol's existence within society (Grube & Wallack, 1994; Isaac, 1995; Madden & Grube, 1994).

Research suggests that those individuals who contribute most to the drink driving problem such as the problem drinker and the recidivist drink driver are least susceptible to public education campaigns (Isaac, 1995; Williams, 1994). Characteristics such as antisocial tendencies, risk-taking and a sense of invulnerability may impact on the effectiveness of safety-based strategies (Isaac, 1995). Interestingly, it is these individuals whom we would most like to influence and to produce behaviour change through drink driving interventions. As a result the development of "interventions tha effectively target detected DUIs may become models for more broadly based prevention programs for undetected high risk drinking drivers" (Wells-Parker & Popkin, 1994, p. 71).

Public education campaigns have the potential to play an important role within society, and more especially, they can play an essential role in increasing knowledge of alcoho and drink driving. Media campaigns can create or change public agendas that will give drink driving high priority in policy decisions (Holder, 1994). Further, many drink driving education campaigns have the ability to convey information to the public about new enforcement rules and procedures and changes in corresponding laws and regulations (Elliott, 1993; Transportation Research Board, 1995; Williams, 1994). They also have the potential to alter incorrect perceptions within the community tha may indirectly impact on drink driving (Williams, 1994). For example, media campaigns targeting drinking levels may alter misperceptions within the community as to safe drinking levels for driving. Evidence suggests that lack of knowledge about the link between consumption levels and BAC may partially contribute to the incidence of drink driving (Macdonald & Dooley, 1993).

Elliott (1993) suggested that the effectiveness of mass media campaigns in influencing drink driving behaviours can be enhanced when the following factors are considered:

- Media campaigns should include a television component
- Emotional campaigns are more effective than education based campaigns
- Persuasive campaigns are more effective than informative campaigns
- Campaigns should have a theoretical basis; and

- Campaigns are more effective when they require a behaviour change.

The most important finding to come from the Elliott (1993) research, however, is tha mass media campaigns are least effective when they are stand alone campaigns. Campaigns which complement an enforcement procedure result in an 8.5% increase in outcome measures compared to a 1.3% increase for campaigns that do not complemen enforcement. These findings support other research which suggests that mass media campaigns should form part of a more complete intervention strategy that complements more appropriate behaviour change methodologies (Cameron & Newstead, 1994; Holder, 1994; Isaac, 1995; Span & Saffron, 1995).

4.2 Specific Intervention Measures

Specific intervention measures for the control of drink driving are directed at the convicted drink driver (Morse & Elliott, 1992; Nichols, 1990), and are often tailored to the individual needs of the offender to minimise his/her potential to re-offend. Specific intervention strategies act as deterrents to re-offending through the apprehension and punishment process (Watson et al., 1996). They rely heavily on the assumption tha intervention will result in a behavioural change in convicted individuals (Jones, Lacey, & Byrne, 1995, cited in Weinrath, 1997). Specific intervention strategies to reduce drink driving and drink driving recidivism include punitive sanctions (eg licence suspension), treatment or rehabilitation programs, vehicle control measures (eg ignition interlock devices), and offender monitoring (eg probation or electronic monitoring) (Weinrath, 1997). These countermeasures are often used in combination and are tailored to the individual needs and circumstances of the offender (Weinrath, 1997).

The most established and commonly researched specific interventions are licence sanctions and the use of rehabilitation/treatment programs. More recently, vehicle control measures have become the focus of considerable attention. The role o rehabilitation/treatment programs in reducing drink driving is the main focus of this report and will therefore be examined in a later section. This section will outline the effectiveness of licence sanctions and vehicle control measures as alternative intervention strategies in the control of drink driving.

4.2.1 Licence Sanctions

Licence disqualification is the most common sanction used in the punishment of drink driving offenders in Australia. It has been suggested that an efficient system for imposing and enforcing licence sanctions requires: (a) prompt and certain suspension o licence; (b) improvements in traffic records to provide magistrates with a more complete offender history prior to sentencing; (c) recognition and promotion of driving-while-disqualified as a serious offence; and (d) the use of treatment in addition to licence sanctions (Transportation Research Board, 1990). These requirements were outlined in recognition of the fact that a large number of individuals will continue to drive, although more cautiously, after licence loss due to a drink driving offence (Hingson, 1996; Institute of Medicine, 1990; Yu & Williford, 1993; Peck, Wilson, & Sutton, 1995).

Unlicensed or disqualified driving is a major problem in most jurisdictions and is difficult to monitor and control. Offenders learn through disqualified driving tha holding a drivers licence is not essential in the transport system so long as care is taken with the amount of driving, nature of driving and location (Ross, 1991). Consequently, disqualified driving has the potential to undermine any benefits that may be gained through the use of licence sanctions as a drink driving countermeasure. It fails to fully prevent an offender from driving as a result of their drink driving offence and this limits the ability of licence sanctions to act as a specific deterrent.

In spite of this limitation, research into the effectiveness of licence sanctions as a drink driving countermeasure has been positive. Evidence suggests that licence suspension can have a positive impact on moving violations and non alcohol-related accidents during the suspension period (Green, French, Haberman, & Holland, 1991; Mann, Vingilis, Gavin, Adlaf, & Anglin, 1991; Wells-Parker, Bangert-Drowns, McMillen, & Williams, 1995). More recent evidence suggests that licence disqualification can also impact on alcohol-related incidences. A study conducted in Queensland indicated tha the use of licence suspension was associated with a two-thirds reduction in both crashes and drink driving recidivism (Siskind, 1996).

However, controversy exists over the optimal length of licence suspension for maximum changes in traffic safety outcomes. Hingson (1996) suggested that suspension lengths of 12 to 18 months were optimal, while Sadler, Perrine and Peck (1991) argued that lengths of around three years were needed to produce traffic safety benefits. Siskind (1996) examined the effects of licence disqualification on crash and recidivism rates for disqualification periods of up to 18 months and found that for males, crash and recidivism rates decreased considerably after the first 6 months o disqualification. Although results for females were not reported, Siskind (1996) indicated that females showed a similar trend with the most notable decrease in crashes and recidivism occurring after the first year of disqualification. Combined, these studies indicate that more severe licence sanctions are more effective than less severe licence suspensions (eg suspension periods of less than 3-6 months; Hingson, 1996; Sadler e al., 1991; Siskind, 1996; Wells-Parker et al., 1995). These results provide encouraging evidence for the use of licence sanctions in reducing drink driving recidivism.

4.2.2 Vehicle Control Interventions

Vehicle control interventions, as a countermeasure for drink driving, work on the premise that these measures are able to restrict or prevent a driver from driving a unsafe BAC levels. The most common vehicle control measures are vehicle impoundment, restriction or loss of licence plates, and the introduction of an ignition interlock device (Ross, Stewart, & Stein, 1995, cited in Weinrath, 1997). Some vehicle control measures, for example vehicle impoundment, are problematic due to legal issues with confiscation, storage problems (eg costs), and cars being shared with persons other than the offender (Stewart, 1995; Weinrath, 1997).

On the other hand, ignition interlock devices are less invasive, enabling a person to have a relatively normal life with few restrictions. These devices are primarily aimed at preventing a driver from driving after drinking by requiring a breath specimen to be given before the car will start (Weinrath, 1997). Essentially these devices allow a driver

to drive at currently accepted safe BAC levels. Installation of an ignition interlock device assists drivers in changing poor drinking and driving habits and provides immediate feedback to the driver on inappropriate alcohol levels (Weinrath, 1997).

Research into the effectiveness of ignition interlock devices has been fairly positive. Studies in Ohio and California have found that offenders who were put on an ignition interlock program were less likely to re-offend within the period of the study than offenders who were given a licence suspension only (EMT group, 1990, cited in Weinrath, 1997; Morse & Elliott, 1992). However, methodological flaws in these studies prevent conclusive interpretation of the results (Morse & Elliott, 1992; Weinrath, 1997). Weinrath (1997) suggested that current evaluations of ignition interlock programs have been limited by the use of quasi-experimental designs (as opposed to random case-controlled designs) and methodological problems resulting i selection biases.

In an attempt to rectify the methodological problems that plagued earlier evaluations, Beck, Rauch and Baker (1997) conducted a randomised case-controlled study of the Maryland ignition interlock program for multiple offenders. After undergoing an initia physical and mental examination, those drivers deemed fit to have their licence re-instated were randomly assigned to either the ignition interlock group or a contro group (who were required to undertake the normal relicensing procedure for Maryland). Ignition interlock devices were installed for a period of one year during which driving records were examined for both the interlock and control groups. Results of the first year of ignition interlock installation indicate that the risk o committing a drink driving offence decreased by about 65% for the interlock group. This is a substantial decrease and is similar to findings of other ignition interlock program evaluations (eg Tippetts, 1997; Weinrath, 1997).

In a similar study, Weinrath (1997) evaluated the Alberta ignition interlock program using a retrospective study technique. He examined the impact of the interlock program on several measures of driving outcome in addition to drink driving recidivism. Results suggest that the interlock program had a positive effect on recidivism for alcohol impaired driving, high-risk driving, and injury collisions. For the progra group, drink driving recidivism at 24 months post-licence reinstatement was lower (ie a 91% survival rate for the interlock group compared to an 81% survival rate for the licence suspension group). When the authors examined the survival rate after the ignition interlock was removed, they found the difference dropped from 10% to 5%, however, this difference was still significant. Other studies examining the effects o ignition interlock devices on recidivism, after the devices have been removed, have not been as positive (eg Tippetts, 1997).

Weinrath (1997) attributes the more positive results in his study to the differences in program components between the Alberta program and other programs. The Alberta program had an individualised intervention component to the ignition interlock program that allowed greater monitoring of the program offenders during the period the interlock was installed (Weinrath , 1997). Increased monitoring of the program group may be a confounding variable in this study. However, the results of this study and previous studies show encouraging results for the use of vehicle ignition interlock devices, at least for the period in which the interlock is installed.

4.3 Some Caveats

In the previous sections, intervention strategies designed to reduce the drink driving problem were separated into two groups: general interventions and specific interventions. Distinction between these two types of interventions is made on the basi of who the primary target group is. It is important to note, however, that while specific intervention strategies primarily target the individual, their effects may be seen more widely among friends and family of the convicted drink driver. Well publicised, specific interventions may also function as general deterrents if perceived as likely outcomes of the behaviour. For example, loss of licence may mean that the offender's family has to alter their daily routine to accommodate for this. In such a case the negative effects o licence loss may act as a general deterrent for potential drink drivers in the offender's family and friendship network. Further, while general intervention strategies primarily target the community as a whole, they can sometimes have a residual impact on the individual (Institute of Medicine, 1990). For example, mass media campaigns tha project messages about safe drinking levels to the community may result in some individual behaviour change.

In addition, it should also be noted that much of the work in the area of drink driving has been conducted in the US. In many instances the results of these studies are used as a basis for the development and evaluation of Australian drink driving countermeasures. However, the American legal climate governing drink driving and its punishment differs from the Australian perspective, and more especially the Queensland perspective. In most US states the legal BAC is 0.10gm/100ml (Simpson and Mayhew, 1993), compared with the legal BAC of 0.05gm/100ml in Queensland. The use of a higher legal BAC in America, compared to Australia, may reflect differences in drinking culture and acceptance of drink driving behaviours.

Further, in the US, police require probable cause before they can stop a driver and carr out a breath test. Breath testing is usually conducted at roadblocks or sobriet checkpoints where again probable cause is needed before a breath test can be conducted (Homel, 1990). As such, American roadblocks differ substantially from Australian RBT sites at which all drivers (or the majority of drivers) are tested. Consequently, the detection and deterrence abilities of roadblocks and RBT sites will be different and w therefore have a differential impact on the American and Australian driving communities.

In conclusion, differences exist between the United States and Australia in their laws and treatment of the drink driving problem. Differences between jurisdictions can result in problems when applying research results across jurisdictions and caution should be used when interpreting findings.

4.4 Summary

As can be seen from the previous sections, there are many countermeasures available for the control of drink driving. These measures can be classified as either general or specific intervention strategies that aim to immobilise, deter, or rehabilitate the convicted drink driver. While evaluations of these strategies are plagued with methodological problems, the results provide encouraging evidence for the use of these

intervention strategies in the control of drink driving. This is particularly so when intervention strategies are used in a complementary manner.

One specific intervention strategy not discussed above is the use of drink driving rehabilitation/treatment programs in the control of drink driving. Research into the effectiveness of these programs has been extensive due to the legal and polic implications involved in implementing them. The following section will discuss the implementation of drink driving rehabilitation programs, particularly within the Australian context, and their effectiveness as a drink driving countermeasure.

5 Drink Driving Rehabilitation/Treatment Programs

Drink driving rehabilitation is a broad term used to describe a variety of offender programs which aim to reduce recidivism. Most of these programs target the individua offender rather than the community, with the goal of reducing the individual's potentia to re-offend. Rehabilitation programs, like many of the more recent measures for drink driving intervention (eg electronic monitoring; Lilly, Ball, Curry, & McMullen, 1993), arose out of a need for alternatives to what appeared to be expensive and counterproductive jail terms (Hingson, 1996) for persons who were primarily alcohol dependent. However, the debate over whether drink driving should be targeted as a health problem (ie through rehabilitation programs) or as a criminal offence (ie through punitive sanctions) is an issue of concern (McKnight, 1995; Thurman et al., 1993; Weisner, 1990). Determining the effectiveness of drink driving rehabilitation programs will establish the importance of these programs in the control of drink driving and therefore help to settle this debate.

In the following sections, the effectiveness of rehabilitation programs as a countermeasure for drink driving will be examined. A range of topic areas are covered including:

1. A framework for designing drink driving rehabilitation programs in Australia
2. The governing judicial system for implementation of drink driving programs in Australia
3. The types of drink driving programs available
4. The problems faced by evaluators when conducting research into the effectiveness of drink driving rehabilitation programs; and
5. The benefits of using a rehabilitation program in the control of drink driving based on current evaluation results.

5.1 A Framework for Designing Drink Driving Interventions

In earlier years, drink driving programs were developed with the aim of reducing drink driving behaviours and were limited in their ability to treat the associated drinking problem as separate from the drink driving problem. More recently, Australia has taken up a relatively high profile "Campaign against Drug Abuse" (National Drug Strategy Committee, 1993), which has implications for all alcohol related programs including those targeting drink driving. Australia's current policy on the intervention and rehabilitation of alcohol abuse and related problems is based on the harm reduction

model. This policy is a health policy which has been adopted at both the State and Federal levels, and aims to "minimise the harmful effects of drugs and drug use in Australian Society" (National Drug Strategy Committee, 1993, p. 6). The har reduction or harm minimisation approach assumes that it is the misuse of alcohol, rather than the substance itself that leads to alcohol-related problems (Hanson, 1996). The desired outcome of harm reduction is to limit the harm caused by alcohol on both the community and the individual and thereby reduce the associated health, social and economic consequences of its use (National Drug Strategy Committee, 1993). The model traditionally did not espouse abstinence, but rather its philosophy was centred around controlled or responsible drinking (Monheit, Brooks, & Compston, 1996; National Drug Strategy Committee, 1993). However, a more recent view of har minimisation has seen the harm reduction model expanded to include abstinence in the intervention of alcohol problems (National Drug Strategy Committee, 1993).

Whilst government policy initiatives on problem drinking have been grounded in Healt Department areas of influence, drink driving crosses many departmental lines of interes and has particular relevance to Transport Department policies. Prevention and rehabilitation of alcohol-related problems has stimulated an intersectoral approach to treatment (Institute of Medicine, 1990; National Drug Strategy Committee, 1993). An intersectoral approach to the management of alcohol-related problems involves identifying key players responsible for the management, impact and control of the problem in its social context (National Drug Strategy Committee, 1993; Sheehan, 1994). Collaboration between the relevant key players (eg government departments, private industry etc.) is essential to ensure consistency in the approach to, and development of, treatment (National Drug Strategy Committee, 1993).

Given that drink driving is not just a driving violation, but also involves 'harmful' alcohol use, it is arguable that any health-based strategy employed to prevent or treat the drink driving problem should be based on the harm reduction model. An intersectoral approach to rehabilitation should also be employed as a consequence o the many government departments who are stakeholders in the drink driving problem.

5.2 Drink Driving Rehabilitation Programs and the Australian Judicial System

In most Australian states where drink driving offenders are placed on rehabilitation programs, referral to the program is at the discretion of the sentencing judicial agen (Sanson-Fisher, Redman, Homel, & Key, 1990). In Queensland, under Section 16C of the Queensland Traffic Act (Traffic Act, 1949), magistrates may place a person who has been charged with a drink driving offence on an approved training course in addition to any penalty they may wish to impose.

Placing offenders on drink driving programs in this manner is often referred to as lega coercion and evidence suggests that the most widely used form of treatment under coercion in the USA is the diversion of drink driving offenders into treatment or rehabilitation programs (Weisner, 1990). This may be due in part to the minimal degree of disruption and inconvenience involved in drink driving programs (compared with an alcohol abuse program in which in-patient treatment may be required; Hall, 1997). Coerced attendance also ensures that coerced offenders are at least exposed to the drink driving intervention (Sanson-Fisher et al., 1990), and consequently the educational information that is believed to facilitate change.

In the literature, there is more evidence and more ethical support for the use of coerced treatment that requires some voluntary interest on the part of the offender (Gerstein and Harwood, 1990, cited in Hall, 1997). Denial is likely to be more prominent in court-mandated offenders, which may have a detrimental effect on the outcome o rehabilitation programs (Nichols, 1990). However, 'voluntary interest' in attending a drink driving program, as part of sentencing carried out by a judge or magistrate, ma also affect the outcome of rehabilitation programs. That is, offenders who are more amenable to change may be more likely to self-select to participate in the drink driving program.

Evidence also suggests that the speed with which the judicial system can process drink driving convictions will influence the effectiveness of drink driving sanctions (eg rehabilitation programs) in reducing recidivism (Mann et al., 1991; Yu & Williford, 1995). Yu and Williford (1995) found that those drivers whose drink driving case had not been processed within 6 months of the drink driving offence were more likely to re-offend than those drivers whose case had been heard. Further, for those drivers whose case had been heard, offenders who received a recorded conviction were less likely to re-offend than those offenders who did not receive a recorded conviction. Yu and Williford (1995) concluded that the speed of the judicial system in imposing sanctions can influence drink driving recidivism. However, the results of Yu and Williford (1995) also suggest that the certainty of conviction (or punishment) may also play a role in influencing drink driving recidivism. That is, those offenders whose case had been heard (speed of conviction) and who received a recorded conviction (certainty o punishment) were less likely to re-offend overall.

5.3 Types of Rehabilitation Programs

There are many different types and varying components of drink driving rehabilitation programs. Offenders are usually required to attend a program as part of a more complete intervention strategy that involves additional punitive sanctions (DeYoung, 1997). Many of these programs espouse separating drinking from driving (Wells-Parker et al., 1995) and most commonly include an education or psychotherapy/counselling component (Popkin, 1994; Wells-Parker et al., 1995). The following section examines the benefits of education-based programs and psychotherapy-based programs as a way of rehabilitating the drink driving offender.

5.3.1 Education-Based Programs

In Australia in 1985, approximately 80% of programs for drink drivers were based on the health-education model, or some variant of that model (Sanson-Fisher et al., 1990). It is important to recognise that health-education programs are not treatment programs. The theoretical basis on which education programs are developed assumes tha individuals drink and drive due to a lack of knowledge that results in poor decisions being made (Popkin, 1994). Traditional education programs focus mainly on providing information about alcohol, the associated risks and its effects as they relate to driving (Popkin, 1994; Sanson-Fisher et al., 1990). This information is usually presented in an attempt to assist the drink driver in avoiding future drink driving arrests (Popkin, 1994). That is, "educational material is presented with the aim of breaking the connection

between drinking and driving rather than treating offenders' drinking problems" (Hall, 1997, p. 109).

Education is an important part of drink driving rehabilitation because many convicted drink drivers fail to see that they might have a drinking problem and therefore do no have the knowledge (or the power) to change their drinking habits (Macdonald & Dooley, 1993). Further, recognising the symptoms of alcohol impairment at the lower levels of alcohol consumption can be difficult (Macdonald & Dooley, 1993), resulting in many drivers not being able to discriminate when they are over the limit. Evidence suggests that drivers need to become more aware of alcohol and its influence on driving (Thurman et al., 1993; Turrisi & Jaccard, 1992). They also need to be shown alternatives to drink driving (Turrisi & Jaccard, 1992).

5.3.2 Psychotherapy / Counselling-Based Programs

Most psychotherapy or counselling-based programs are treatment programs that targe an offender's 'drinking problems' (Popkin, 1994). These programs assume that a drink driving conviction results from a drinking problem that pervades most areas of the individual's life (Sadler et al., 1991). Primarily, psychotherapy programs incorporat individual face-to-face contact in which effectiveness is measured by changes in alcoho consumption (Monheit et al., 1996; Popkin, 1994). More specifically, alcoho consumption at a safer and more responsible level is an indicator of program effectiveness (Monheit et al., 1996). However, it has been suggested that rehabilitation programs, such as psychotherapy, that fail to address the offender's driving problem are unrealistic (Popkin, 1994). Given the nature of the offence, that is, an offence tha involves both a drinking and a driving component, a bilateral approach to interventi must be sought (Popkin, 1994).

5.3.3 Combination Programs

Some programs combine both education and psychotherapy in their treatment approach. These programs often use group education sessions to increase knowledge about the harms of drink driving, while providing an offender with face-to-face psychotherapy/counselling to deal with the offender's drinking problem (DeYoung, 1997; Wells-Parker et al., 1995). In jurisdictions where several programs are offered, programs with lengthier and more involved subcomponents are more likely to be given to recidivist drink drivers (DeYoung, 1997; Green et al., 1991; Wells-Parker et al., 1995). The premise here is that prior drink driving convictions are a measure of an offender's risk severity and alcohol problems (DeYoung, 1997).

5.4 Screening and Assessment

Screening and assessment are sometimes considered to be important procedures in the control of drink driving. In many jurisdictions, screening and assessment often become a part of the drink driving control system because of the number and variety of drink driving rehabilitation programs available (Wells-Parker & Popkin, 1994). However, alcohol problems and drink driving are complex behaviours and any screening or

assessment procedure that is employed has to be able to reliably measure the complexity and multidimensionality of these behaviours (Institute of Medicine, 1990).

Screening and assessment performs two important functions in the rehabilitation of drink drivers. Firstly, it allows an offender to be assessed for potential recidivism risk and therefore distinguishes those offenders in need of more intensive, invasive, and expensive treatments from those who would benefit from a simple treatment program (Wells-Parker & Popkin, 1994). The use of screening devices is based on two assumptions: (a) that the devices are able to predict a criterion (eg., recidivism, accidents, severe alcohol problems, etc.) and (b) that the identification of appropriate cut points to define risk groups for decision making can be made (Wells-Parker & Popkin, 1994).

Secondly, assessment of drink driving offenders would allow treatment to be more closely matched to the individual needs of the offender (Institute of Medicine, 1990; Sadler et al., 1991; Wells-Parker & Popkin, 1994). Differences between offenders on a wide range of variables (eg attitudes, personality traits, family history, and drug use) are used to indicate that differences in treatment are required (Wells-Parker & Popkin, 1994). In classifying offender typology and risk potential in this manner, "it would be possible for different "types" to have similar risk potential (e.g., for recidivism) but to require different treatment strategies" (Wells-Parker & Popkin, 1994, p. 73).

Some research has found that rehabilitation program effectiveness is enhanced when clients are matched to the most appropriate treatment strategy for their individual needs (Institute of Medicine, 1990; Sadler et al., 1991). For example, initial evaluation of the American Alcohol Safety Action Program indicated that brief education programs are more effective for the drink driver who is a social drinker, whereas problem drinkers need more intensive programs when targeting their drinking and driving behaviours (Institute of Medicine, 1990).

In Australia, assessment procedures for detecting alcohol problems in drink driving offenders have been used in both New South Wales and South Australia. The New South Wales trial assessment procedure was designed for offenders with a high range BAC or for those offenders who refused a breath test (Staysafe, 1993). Offenders were required to attend a clinic and undergo blood and liver function tests and a psychological assessment. A positive assessment was required before the offender could reapply for their drivers licence (Staysafe, 1993).

The New South Wales assessment program was terminated in 1994 with a less than favourable outcome. Conigrave and Carseldine (1996) found that less than half o those offenders required to undertake assessment actually did so during the period the assessment was running. Those offenders who did attend an assessment prior to re-licensing tended to have lower BACs and shorter disqualification periods. Consequently, the large number of offenders (59%) who did not undergo assessment may have lead to an increase in unlicensed driving, especially among hard core offenders.

It is important to note that the New South Wales procedure was modelled on the South Australian assessment system, and there are three fundamental differences between the programs that Conigrave and Carseldine (1996) suggest may have contributed to the mostly negative evaluation of the New South Wales procedure. Firstly, the New South

Wales system failed to provide clear guidelines for distinguishing offenders with an alcohol problem from offenders without an alcohol problem. Consequently, assessors lacked the necessary information required to consistently pass or fail assessments. Secondly, the New South Wales assessment program was client funded. The added costs of paying for an assessment (and sometimes more than one assessment if the offender failed the first time), in addition to licence renewal fees, may have been considered excessive by some offenders. Lastly, New South Wales assessments were carried out after sentencing, but prior to re-licensing. Assessments of this nature were less likely to be viewed as part of the sentencing procedure and more likely to be seen as an unnecessary requirement in the re-licensing process.

5.5 Problems with Evaluations

Evaluations of drink driving programs have been extensive. In 1995, Wells-Parker e al. identified 215 discrete evaluation studies for use in a meta-analysis. As discussed previously, much of the work in the area of drink driving, including drink driving rehabilitation programs has been carried out in America. In most US states drink driving programs are offered instead of punitive sanctions in the rehabilitation of offenders (Victorian Social Development Committee, 1988). Australian policy, however, differs substantially from the American method in that drink driving programs are offered in conjunction with punitive sanctions. Differences between jurisdictions i the use of drink driving programs can often lead to difficulties in the application o evaluation results across jurisdictions. However, there are many problems in the evaluation of drink driving programs that are universal. These problems mean tha improvement subsequent to treatment may not be a result of the administered treatmen (Institute of Medicine, 1990). This section focuses on the problems associated with drink driving program evaluations that lead to confounding variables and sensitivity issues.

5.5.1 Selection Bias

Many drink driving rehabilitation programs are run within, or influenced in some wa by, a judicial system. Magistrates and judges are often the referring agent and referra practices may reflect their beliefs and enthusiasm in the benefits of drink driving rehabilitation (Sanson-Fisher et al., 1990). Further, ethics and equity policies dictat that programs should be available to all offenders (Gijsbers et al., 1996), and these constraints often make systematically controlled evaluations of rehabilitation programs difficult (Peck, 1994). Quite simply, how can we justify denying treatment to those who might need it most for the purpose of research

Consequently, evaluations of drink driving programs are plagued with problems of selection bias. Some research has found that offenders convicted of multiple offences are less likely to be placed on rehabilitation or treatment programs (McGuire, Broomfield, Robinson, & Rowson, 1995). Voluntary participation in drink driving rehabilitation also suggests that control groups used in evaluations will comprise those offenders who have chosen not to participate, “which severely compromises the comparability of study groups” (Weinrath, 1997, p. 44). Therefore, many evaluations

of drink driving rehabilitation programs fail to have a sound comparison or control group (Hall, 1997).

5.5.2 Experimental Design

One of the major problems in any evaluation research, where the target program is pre-existing, is the inability to use random assignment methodologies. In fact, selection bias (discussed above) and a lack of randomised experimental design are the most serious problems in developing sound program evaluation methodology in this area (Wells-Parker et al., 1995). As a result, many studies use quasi-experimental designs where potential threats to internal and external sources of validity exist (Peck, 1994).

In an attempt to improve the results obtained from evaluations where rando assignment designs have not been utilised, Peck (1994) suggested a set of conditions that, if satisfied, would result in "relatively valid estimates of treatment effects" (p. 211). These conditions, as taken from Peck (1994, p.211), are:

- *Some degree of active control in the assignment of subjects.*
- *Moderate or negligible self-selectivity in determining treatment group membership.*
- *A small degree of bias on the covariates.*
- *A treatment effect (differences in adjusted means) that is much larger than the bias.*
- *A covariate pool which reflects most of the important factors known to be related to outcome.*
- *No or small measurement error on the covariates.*
- *An unadjusted treatment effect which is statistically significant and opposite to the direction predicted by the observed bias.*

Results obtained from quasi-experimental (or less rigorous methodological designs) should not be taken at face value, nor should they be dismissed as inconsequential. Results from these evaluations should be assessed and interpreted in accordance with the limitations of the methodology used (Victorian Social Development Committee, 1988).

5.5.3 Limited Utility of Evaluation Measures

For the most part, evaluations of drink driving programs have concentrated on changes in drink driving recidivism as a measure of program effectiveness (Hall, 1997). While reducing recidivism is an important outcome of drink driving countermeasures, the limitations of this measure in determining program effectiveness should also be recognised. Recidivism is not only influenced by the individual offender, but also by a range of environmental factors such as the change in police enforcement activities over time (Foon, 1988). That is, fluctuations in police activity can determine the level o recidivism detected over the follow-up period. As Ryan et al. (1996) indicated, recidivism only provides "a measure of the 'detected' level of drink-driving in the community, not the 'true' level of such activity" (p. 28). To obtain a reasonable level o recidivism for statistical analysis, large samples and long follow-up periods are required

(Foon, 1988). This results from the relatively low probability of detecting drink driving offenders.

Furthermore, few evaluations have addressed the issue that drink driving is a socia problem that impacts on the psychological well-being of both the offender and their family. Offenders generally have many social and personal problems (Hedlund, 1995; Isaac, 1995; Victorian Social Development Committee, 1988) and measuring changes in lifestyle factors may, therefore, be a more sensitive and reliable measure of the effects o drink driving rehabilitation programs (Hall, 1997; Sheehan et al., 1995).

Lifestyle measures including measures of alcohol consumption and other alcohol-related problems are often examined through questionnaire and survey design methodologies (Popkin, 1994). Questionnaires and surveys are extremely subjective measures o lifestyle change and can be influenced to a large extent by denial and participants' inability to remember past events (Popkin, 1994). Success or failure of a drink driving program may also depend, in part, on the measure of lifestyle change used in the evaluation (Morse & Elliott, 1992).

Some studies have used hypothetical drink driving vignettes to determine the situational factors that influence an individual's decision to drink and drive (eg Thurman et al., 1993; Turrisi & Jaccard, 1992). Methodologies of this nature also are not withou their problems as there is some concern about how well decisions made from vignettes reflect the decisions that are made by an individual after drinking (Thurman et al., 1993).

Given the subjective nature of measures of lifestyle change, it has been suggested tha evaluations should include both lifestyle and traffic safety outcomes. Few studies have incorporated both types of measures in their evaluation methodology and have therefore failed to minimise the limitations of each outcome measure (Fitzpatrick, 1992; Foon, 1988; Victorian Social Development Committee, 1988). Evaluations of a more holistic nature can provide invaluable information about the process and benefits of treatmen that can guide the development of empirically-based models of drink driving rehabilitation (Fitzpatrick, 1992).

5.6 Effectiveness of Rehabilitation

In the past, policy makers have assumed that drink driving rehabilitation programs have limited effectiveness and may represent an unnecessary drain on a community's economic and physical resources. This accepted policy position arose largely as a result of some of the earlier work in drink driving rehabilitation (Mann, 1995). As the Victorian Social Development Committee (1988, p.91) wrote:

> *Despite their apparent success in gaining the confidence of magistrates, drink-driving education programs have been forced to operate at the margins of health and traffic safety policy, being unable to quantify their achievements in a way which would command a greater role and resources, and being undermined by the weight of negative assessments from overseas.*

More recent evidence suggests that drink driving treatment programs can be effective in offender rehabilitation (DeYoung, 1997; Wells-Parker et al., 1995) and the use of programs should not be excluded from policy decisions about future directions in the

intervention of drink driving. The following section is a summary of the effectiveness o rehabilitation programs in the control of drink driving and examines program benefits using measures of recidivism, drinking and lifestyle change.

5.6.1 Meta-analytic Evidence

A meta-analysis by Wells-Parker et al. (1995) provided ground breaking evidence on the effectiveness of drink driving rehabilitation programs. The meta-analysis identified and examined 215 discrete studies evaluating drink driving rehabilitation programs. The evaluation studies were rated on four scales of methodological soundness: 'Grouping Strategies', 'Measurement Equivalence', 'Measurement', and 'Intervention Integrity'. Of the four measures of methodological accuracy only the 'Grouping Strategies' scale, which measured the extent to which the study and comparison groups were equivalent and free of selection bias, had high inter-rater reliability. Consequently, 'Grouping Strategies' was the only measure of methodological accuracy used to distinguish high quality from poor quality studies.

Wells-Parker et al. (1995) found that studies with higher methodological qualit showed less variation in effect size, although the effect size was generally smaller for these studies. Shorter follow-up periods also resulted in greater variance in effect size, possibly due to the relatively small number of drink driving offences within any time period (Ginpil & Attewell, 1994; Sheehan et al., 1995; Wells-Parker et al., 1995). Neither duration nor number of hours in drink driving rehabilitation were predictors of intervention effectiveness (Wells-Parker et al., 1995).

The meta-analysis also found that rehabilitation programs resulted in a 7-9% reduction in drink driving recidivism over no rehabilitation (Wells-Parker et al., 1995). The Wells-Parker et al. (1995) results were based on average effect sizes, and there is some indication that effect sizes may be larger under certain circumstances (Mann, 1995). McGuire et al. (1995), in reviewing meta-analytic studies, identified seven factors tha can be used to distinguish more effective treatment programs from less effective treatment programs. The authors suggested that successful programs:

- target the high-risk offenders;
- target the offence behaviour and the needs and attitudes that are closely associated with it;
- are more likely to be based within the community and less likely to be based within a single institution;
- tend to have both a cognitive and behavioural focus;
- are more likely to be structured with clear objectives and content;
- are more likely to have a directive treatment approach or style (as opposed to a non-directive approach); and
- are more likely to have high intervention or treatment integrity. That is, programs whose treatment or intervention was delivered exactly as designed are more likely to be effective, than programs with problems in delivery.

5.6.2 Reduction in Crashes and Recidivism

Many studies have examined the benefits of drink driving rehabilitation programs on crash and recidivism rates. Evidence suggests that while licence suspensions can impac on both alcohol- and non alcohol-involved crashes and on recidivism (Green et al., 1991; Siskind, 1996), rehabilitation programs generally only have a positive effect on alcohol-related crashes and drink driving recidivism (DeYoung, 1997; Gijsbers et al., 1996; Green et al., 1991). It appears then that unlike licence suspension, drink driving rehabilitation programs do not impact on non alcohol-related crashes. However, the benefits shown by rehabilitation programs appear more long term than those shown by licence sanctions (McKnight & Voas, 1991; Peck, 1991).

The above results suggest that while the impact of drink driving programs is limited to certain types of crashes, the impact is longer lasting than that of licence suspensions and therefore provides benefits in addition to those obtained as an outcome of punitive measures such as licence suspensions or restrictions. This research supports the findings of the Wells-Parker et al. (1995) meta-analysis which showed that drink driving rehabilitation programs, when compared to licence sanctions, show an additional 7-9% decrease in recidivism and alcohol-related crashes as a result of program attendance. The additive effect of licence suspensions and rehabilitation programs should result in the greatest change in outcome measures in the treatment of convicted drink drivers.

Many research studies have examined the additive benefits of rehabilitation and licence suspension, and support the combined use of these measures in the treatment of drink driving (DeYoung, 1997; Green et al., 1991; Institute of Medicine, 1990; McKnight & Voas, 1991; Sadler et al., 1991). The most recent study was a Californian stud comparing licence sanctions to three different types of rehabilitation (DeYoung, 1997).

In California, offenders are placed on different programs depending on how many prior drink driving convictions they have. The positive effects of combining licence suspensions with rehabilitation programs were found for first offenders, second offenders, and offenders with three or more convictions (DeYoung, 1997). Recidivis was greatest for those offenders who either received licence suspension only, or who were sent to jail as part of their intervention strategy. For third offenders, who were placed on either an 18 month program or a 30 month program, DeYoung (1997) found no difference in recidivism indicating that program length may not be an importan factor in the rehabilitation of these individuals. However, both the 18 month and 30 month programs are long in duration and may exceed the necessary or optimal length for rehabilitation of recidivist drink drivers.

5.6.3 Changes in Lifestyle and Attitudinal Factors

Macdonald and Dooley (1993) have suggested that convicted drink drivers have poor knowledge and attitudes toward drink driving and interventions aimed at the drinking driver should focus on changing these characteristics in the process of reducing drink driving rearrests. Drink driving program evaluations that have focused on lifestyle measures have shown an overall positive effect on knowledge and attitudes toward drink driving behaviours (Wells-Parker et al., 1995). There is also some evidence for the effectiveness of drink driving rehabilitation programs in improving psychosocia

functioning among convicted drink drivers (Wells-Parker et al., 1995). However, the majority of studies focusing on lifestyle factors as an outcome measure are older studies. More recent evaluations have tended to focus on drink driving recidivism and crash rates as measures of program effectiveness, and have failed to examine the potential benefits of drink driving programs on lifestyle measures.

5.6.4 Effectiveness of Different Types of Rehabilitation Programs

Attendance at a drink driving rehabilitation program is often a requirement of a more complete approach to intervention where rehabilitation programs are given in addition to punitive sanctions (DeYoung, 1997). Evaluations of rehabilitation programs therefore examine the benefits of the intervention as a whole and rarely the effectiveness of the rehabilitation program in isolation. As a result, comparisons between program types are essentially comparisons between complete intervention strategies, of which the drink driving program is only one component.

Meta-analytic evidence indicates that a 3-mode intervention combination o psychotherapy/counselling, education, and probation is the most effective strategy for rehabilitation of drink driving offenders (Wells-Parker et al., 1995). More recen research has confirmed that 3-mode rehabilitation programs are more effective than single or 2-mode strategies (DeYoung, 1997). In this instance, a 3-mode intervention type was defined as a combination of a treatment program (which consisted of counselling *and* education) and licence suspension or restriction. DeYoung (1997) also found that intervention strategies that incorporated a jail sentence, regardless o whether they were single, 2- or 3-mode interventions, were least effective in reducing recidivism. These results were found for intervention strategies that were aimed at the first time offender, the second offender, and offenders with three or more offences.

There is also some evidence to suggest that treatment type and treatment goal are confounded with offender risk severity (Wells-Parker et al., 1995). Some jurisdictions offer different programs to offenders based on the number of prior drink driving convictions or the perceived level of alcohol problems (eg DeYoung, 1997; Green et al., 1991). That is, offenders who have more prior drink driving convictions and are therefore considered 'high-risk' are placed on rehabilitation programs where the goal is more likely to be abstinence. 'Low-risk' offenders are more likely to be placed on programs with much broader treatment goals (Wells-Parker et al., 1995). Under these conditions, it is assumed that offenders with more prior drink driving convictions need more intensive treatment because they have greater alcohol-related problems (DeYoung, 1997). More intensive treatments for the 'high-risk' offender generally are longer in duration. However, results suggest that the duration of programs and the number of hours spent in the program are not important predictors of program outcomes (Wells-Parker et al., 1995). More specifically, programs that are longer in duration do not appear to have any greater impact on the drink driving offender than do shorter duration programs (DeYoung, 1997). Typically, shorter duration programs are single modality programs (eg education only) of 5 weeks or 10 hours duration, whereas longer programs are generally multi-modal (eg counselling plus probation) of 32 weeks or 36 hours duration (Wells-Parker et al., 1995).

Results also suggest that those drink driving rehabilitation programs that have more court-mandated or legally coerced clients have a higher treatment failure than programs in which participation is wholly, or mostly, voluntary (Howard & McCaughrin, 1996). Clients who are legally coerced onto a drink driving program are more likely to be hard core offenders and therefore less likely to have the personal desire or motivation t rehabilitate. Further, these clients are more likely to experience denial about their drinking habits and as a result, be less amenable to change (Nichols, 1990).

5.7 Summary

Evaluations of drink driving rehabilitation programs are often marred by selection biases (or the self-selection of offenders into treatment) and an inability to use randomised study designs. In light of the limitations in implementing and evaluating drink driving rehabilitation programs, there is substantial evidence which supports the benefits o drink driving programs across a range of lifestyle and traffic safety outcomes. Findings from the evaluation of drink driving rehabilitation programs have been extensive and include:

- Rehabilitation programs can have a positive effect on crashes and recidivism. This effect is enhanced when rehabilitation programs are offered in conjunction with other complementary measures (eg licence disqualification).
- Rehabilitation programs can impact on lifestyle measures especially knowledge and attitudes toward drinking and drink driving behaviours.
- The duration of rehabilitation programs does not appear to affect program outcomes.
- The goals of rehabilitation are often confounded with offender risk severity. High-risk offenders are usually placed on treatment programs with abstinence as the goal.
- Program participants who are legally coerced onto rehabilitation programs are less likely to have the motivation to change their drink driving behaviours.

The most notable finding from drink driving evaluation research is the documented 7-9% reduction in recidivism in addition to the benefits of licence sanctions (Wells-Parker et al., 1995). This finding directly supports the use of rehabilitation and licence sanctions as complementary measures. The results indicate that drink driving can be considered as a crime to be punished (ie through licence sanctions) or as a health problem to be treated (ie through drink driving rehabilitation programs), but maximum benefits will be gained when drink driving intervention strategies cover both traffic safety and health-related outcomes.

6 Summary of Literature Findings

Drink driving and its associated outcomes of road trauma, unlicensed driving and recidivist offending remain a major health and economic problem for industrialised countries. Research has consistently shown that drink driving is associated with a range of risk factors including: male, young age, low socio-economic background and blue collar occupation. Drink drivers tend to have many social and personal problems and generally exhibit poor knowledge of and attitudes toward drink driving behaviours. They appear to have more extensive criminal histories and are less influenced by the

community reaction to drink driving than are members of the general population. However, drink driving offenders do not exist in isolation and many social norms and political agendas influence the amount of drink driving in society. For example, lowering the drinking age and increasing trading hours for liquor outlets had negative effects on traffic safety and alcohol-related crashes.

However, within the social context of drink driving, there are many interventions that have been implemented to help control the drink driving problem. These interventions can be divided into two groups: general intervention strategies and specific intervention strategies. General intervention strategies (eg RBT, media campaigns) are countermeasures whose primary target is the community in which the socially unacceptable behaviour is occurring. Specific intervention strategies (eg licence suspension, ignition interlock devices), on the other hand, target the convicted individual with the goal of reducing their potential to re-offend. Evaluations of these strategies have been fairly positive and provide encouraging results for their continued use in drink driving interventions.

One specific intervention strategy that has gained considerable attention over the years is drink driving rehabilitation/treatment programs. The use of drink driving rehabilitation programs in the control of drink driving arose from the need to develop effective alternatives to jail terms. Rehabilitation programs can take on a variety o forms and generally aim to assist offenders in separating future episodes of drinking from driving. Some programs also aim to reduce alcohol consumption to a safer and more responsible level given the incidence of alcohol-related problems seen among drink driving offenders. However, given the nature of the offence – that is, an offence that includes both a traffic and health-related problem – rehabilitation programs which incorporate both an educational and psychotherapy/counselling component are often shown to be more effective.

Evaluations of drink driving rehabilitation programs, while being plagued with methodological problems such as selection bias and lack of randomised experimenta design, have been positive. The most positive evaluation results are likely to come fro programs that target high-risk offenders, address the needs and attitudes that are associated with the behaviour, are based within the community, and are structured and directive in their treatment approach. The most effective programs are also those programs that are multi-modal in nature (ie programs that incorporate an educationa component, a counselling component, licence suspension, probation, or a combinati of these elements).

Positive outcomes from evaluations of drink driving rehabilitation programs have been seen in a range of traffic and health-related measures. Changes in alcohol consumption profiles and other lifestyle characteristics have been seen as a result of attendance at a rehabilitation program. Drink driving rehabilitation programs have also been shown to impact on alcohol-related crashes and drink driving recidivism. The effects o rehabilitation programs on these outcome measures appear to be longer lasting than the effects seen from punitive sanctions such as licence suspensions. More importantly, rehabilitation programs have been shown to result in a 7-9% reduction in drink driving recidivism over and above the benefits shown by licence sanctions. The results sugges that the most effective method of controlling the drink driving problem is through the combination of rehabilitation programs with punitive sanctions (eg licence suspension), rather than through the use of these intervention strategies in isolation.

In summary, drink driving rehabilitation programs are important countermeasures in the control of drink driving. These programs work best when used in conjunction wit other intervention strategies, so that a more holistic approach to the treatment o offenders is undertaken. However, when designing drink driving rehabilitation programs, development should be based on current research findings that ensure the use of empirically-based or best practice models of rehabilitation. The following section outlines the development, implementation and evaluation of a drink driving rehabilitation program, "Under the Limit" (Sheehan et al., 1995), and describes the research that influenced its development.

7 'Under the Limit' in the Current Research Context

The 'Under the Limit' (UTL) drink driving rehabilitation program is a 12-week program aimed at helping drink driving offenders separate future episodes of drinking from driving. The program was originally implemented in Central Queensland in 1993 and since this time has been expanded to cover the whole state. The UTL progra tried to encompass the emerging recognition that drink driving was a strong indicator o alcohol dependency. Because of the divided ownership of the problem of drink driving by Transport and Health departments there had always been some separation and overlap in the approaches to the issue. At the time of the design of the program there was movement by transport authorities to use alcohol dependency to exclude offenders from the licensing system. By the 80's there were trials of alcohol dependenc screening as a requirement for re-licensing in NSW (Henderson, 1992) and New Zealand (Frith, 1992). The Victorian model which had for many years regulated return of licence by magistrates on evidence of successful completion of a drink driving treatment program was also working within this paradigm (Victorian Socia Development Committee, 1988).

As part of the development and focus of UTL as a program targeted to the needs of the rural community in Australia, it was recognised that any screening model for alcoho dependency would be impossible to implement with any degree of equity. There were very few dedicated alcohol treatment programs or trained professionals with an interes in working in this area in rural Queensland. At the time of the program design the only possible treatment facility was located in the regional hospital and had an extended waiting list. It was therefore decided that the UTL program would need to research and where possible include elements of current best practice in the area of treatment for alcohol dependency in its design. At the time this led to an exploration of the work of Azrin and associates who were reporting soundly evaluated successful treatmen outcomes (eg Azrin, 1976; Hunt & Azrin, 1973). These researchers proposed a community-reinforcement approach to the treatment of alcoholics, where the socia environment of an alcoholic is changed such that more positive activities with reinforcing qualities compete with drinking behaviours. "The client then is motivated to reject alcohol as a reinforcer because of the resulting loss of so many other reinforcers" (Azrin, 1976, p. 347).

The community-reinforcement method had shown significant positive change in alcoho consumption (Azrin, 1976; Hunt & Azrin, 1973) and appeared to work effectively

whether the goal was to teach controlled drinking or to encourage abstinence fro drinking (Azrin, 1976). This model, which linked family and community suppor services explicitly to the person involved in the treatment program, was also consistent with the developing work in the area of alcohol prevention which focused on the need for community change and community controls and contingencies. An example of this application that was trialed in the community change component of the UTL implementation was the use of strategies such as increasing awareness of "server liability" and availability of breathalysers in liquor outlets (Sheehan, 1994).

While the work of Azrin and colleagues was important in ensuring the UTL progra was based on best practice models for the treatment of alcohol dependency, emerging research from the drink driving arena provided further evidence to guide the development and implementation of drink driving rehabilitation programs. This research, which has been described in previous sections of this report, was also used in the development of the UTL program. The following section will highlight the research that influenced the development, implementation and evaluation of the UTL program and discuss the ways in which the UTL program fits into this research.

Research finding: Research into methods of controlling drink driving in society has indicated that an intersectoral approach to rehabilitation is needed due to the nature o the offence (ie an offence that involves both a health and traffic related problem; Institute of Medicine, 1990; National Drug Strategy Committee, 1993).
UTL program: The development and implementation of the UTL program involved key stakeholders from a range of government departments including Health Department Transport Department, Community Corrections, Queensland Police Service, and TAFE (Sheehan et al., 1995). The model used in the development of the UTL progra recognised that drink driving is more broadly based within a social context (Sheehan, 1994; Sheehan et al., 1995).

Research finding: Research suggests that rehabilitation programs work best if they are based within the community, rather than within a single institution (Azrin, 1976; McGuire et al., 1995).
UTL program: The program was designed in consultation with local stakeholders, and many of the video resources were produced locally so that they were directly applicable to the local rural environment. Further, offenders who choose to undertake the UTL program are placed on the program through the court system and are then monitored through probation with Community Corrections. The program itself is run by loca TAFE colleges and the program is monitored and evaluated by the research team at the Queensland University of Technology. This process allows the community to take greater ownership of both the drink driving problem and the intervention employed to reduce the problem (Sheehan et al., 1995).

Research finding: Research indicates that drink driving offenders are not a homogenous group and that differences in the potential to re-offend along with differences in lifestyle characteristics should be taken into account when designing interventions (Foon, 1988; Ryan et al., 1996).
UTL program: The UTL program was designed for three levels of offender: firs offenders with a BAC of less than .15; first offenders with a BAC of .15 or more; and second or multiple offenders (Sheehan et al., 1995).

Research finding: Offenders generally have many social and personal problem (Hedlund, 1995; Isaac, 1995; Victorian Social Development Committee, 1988) and these need to be addressed in drink driving rehabilitation programs.
UTL program: The UTL program incorporates a range of different activities to take into consideration individual differences in learning styles and literacy levels (eg group activities, video containing scenarios etc). The program was designed to draw on the personal experiences and lifestyle situations in which offenders find themselves (Sheehan et al., 1995).

Research finding: While coerced attendance of offenders onto rehabilitation programs ensures that offenders are exposed to the educational message that is believed to facilitate change (Sanson-Fisher et al., 1990), some voluntary interest on the part of the offender is also seen as important (Gerstein and Harwood, 1990, cited in Hall, 1997).
UTL program: Magistrates offer the program to offenders as part of their rehabilitation at the time of their court appearance. Offenders can also request to undertake the UTL program as part of their sentencing. Offenders who do undertake the UTL program usually have their fine waived or reduced in lieu of the course fees they have to pay.

Research finding: Education is an important component of drink driving rehabilitation programs because many offenders fail to understand the effect alcohol has on their bod and safe consumption levels for driving (Macdonald & Dooley, 1993; Thurman et al., 1993; Turrisi & Jaccard, 1992). Rehabilitation programs should also educate drink driving offenders about the alternatives to drink driving (Turrisi & Jaccard, 1992).
UTL program: The UTL program provides offenders with knowledge on a range o drinking and drink driving issues including: standard drinks; safe consumption levels for driving; the impact of alcohol on the body; and the three major alternatives to drink driving (ie don't drink if driving, don't drive if drinking, and stay under the limit if driving) (Sheehan et al., 1995).

Research finding: Programs that incorporate both an educational and psychotherapy/counselling component are likely to be more effective given the health and traffic implications of a drink driving offence (Popkin, 1994). Successful drink driving rehabilitation programs target the offence behaviour and the needs and attitudes that are closely associated with it (McGuire et al., 1995).
UTL program: The content of the UTL program covers not only the range o educational topics described above, but also addresses the reasons for drinking such as stress or boredom. The program introduces coping strategies to deal with the negative feelings that result in alcohol use, and alternative ways to deal with these feelings (Sheehan et al., 1995).

Research finding: Multi-modal programs are more effective than single or even 2-mode strategies (DeYoung, 1997; Transportation Research Board, 1995; Wells-Parker et al., 1995).
UTL program: Offenders who undertake the UTL program (which involves both educational and coping components) also have their licence suspended and are placed on probation for monitoring through Community Corrections (Sheehan et al., 1995).

Research finding: Many drink drivers fail to see they have an alcohol problem and therefore lack the knowledge and power to change (Macdonald & Dooley, 1993).
UTL program: The UTL program incorporates a drinking diary similar to the diar contained within 'The Self-help Plan Brief Intervention Program' (1986). The diary

aims to help offenders keep track of their alcohol consumption levels each week. Early evaluations of the UTL program by the program facilitators indicate that offenders become more aware of their drinking problem as the program progresses (Sheehan e al., 1995).

Research finding: Research suggests that evaluations of drink driving rehabilitation programs have been limited due to a failure to incorporate measures of recidivis *and* lifestyle change in the evaluation methodology (Fitzpatrick, 1992; Foon, 1988; Victorian Social Development Committee, 1988). Evaluations of a more holistic nature can provide information to guide the development of empirically-based models of drink driving rehabilitation/intervention (Fitzpatrick, 1992).
UTL program: Systematic evaluation of the UTL program was conducted on three levels: an evaluation of community change within the region the UTL program had been implemented compared with a control region (Sheehan, Schonfeld, Siskind, & Baum, In Press); an evaluation of drink driving recidivism (Siskind, Sheehan, Schonfeld, & Ferguson, In Press); and an evaluation of change in alcohol consumption patterns and lifestyle characteristics of offenders who undertook the UTL program (Ferguson, Schonfeld, Sheehan, Siskind, In Press).

Research finding: Research suggests that drink driving recidivism rates are influenced by a range of environmental factors including police enforcement activities (Foon, 1988). Fluctuations in police activity can influence the level of drink driving detected in society.
UTL program: During the evaluation of the UTL drink driving rehabilitation program, information was collated on police enforcement activities and other campaigns run within the study region.

In summary, the design of the UTL program was based on best practice models of drink driving rehabilitation that existed at the time of the initial development of the program. The design of the program incorporated many of the factors that appeared to increase the effectiveness of drink driving rehabilitation, including: basing the program within the community rather than a single institution; recognising differences in lifestyle characteristics and potential to re-offend among offenders; incorporating both education and counselling components; and being multi-modal in nature. In addition, the UTL rehabilitation program incorporated elements of current best practice models in the area of treatment for alcohol dependency in recognition of the growing belief that drink driving is a sign of alcohol dependency. The design of the UTL rehabilitation program therefore, is an example of a drink driving program whose development and implementation processes were empirically-derived.

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