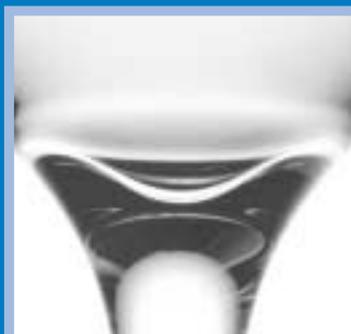


Alcohol in Australia

Issues and Strategies



endorsed by the

Ministerial Council on Drug Strategy

July 2001

Alcohol in Australia: Issues and Strategies

A background paper to the
*National Alcohol Strategy:
A Plan for Action 2001 to 2003/04*

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Introduction

Alcohol in Australia: *Issues and Strategies* has been prepared under the *National Drug Strategic Framework 1998-99 to 2002-03* as a background paper to the *National Alcohol Strategy 2001 to 2003-04*. It provides detailed information to support the key strategy areas identified in the *National Alcohol Strategy* and provides a resource document for those interested in developing strategies to reduce the negative consequences of alcohol consumption in Australia. These groups include all levels of government, community organisations, concerned individuals, and the alcohol beverages and hospitality industry.

Misuse of alcohol is recognised by the *National Drug Strategic Framework* as one of the most significant causes of drug-related harm in Australia. It is second only to tobacco as a preventable cause of death and hospitalisation in Australia. This report examines the extent of alcohol-related harm within Australia and provides information on strategies for reducing that harm. It focuses on the concepts of harm minimisation and shared responsibility, which have been hallmarks of Australian government alcohol policy since the National Campaign Against Drug Abuse in 1985.

Alcohol in Australia: Issues and Strategies has been prepared under the direction of the National Expert Advisory Committee on Alcohol (NEACA), which comprises experts in health, law enforcement, community-based service provision, education, research, government, and the alcohol beverages and hospitality industry. NEACA was convened by the Australian Government in 1998 to provide a range of expert, evidence-based advice and direction on initiatives to minimise alcohol-related harm. The priority of the committee is to reduce the level of alcohol-related harm in Australia.

This report addresses alcohol-related issues which affect the entire population as well as particular target groups

or populations. However, in some cases the needs of individuals and communities will be outside the scope of national priorities. This does not reflect on the legitimacy of those needs. Jurisdictions, communities and individuals are all encouraged to contribute to the prevention, recognition, and treatment of alcohol-related harm in our society.

Alcohol in Australia: Issues and Strategies should be used in conjunction with its companion volume, the *National Alcohol Strategy 2001 to 2003-04*, and with the 2001 National Health and Medical Research Council Australian Drinking Guidelines, which are designed to provide advice to Australians on low risk drinking behaviours. This suite of documents seeks to minimise the negative consequences of alcohol consumption while recognising the positive contribution of alcohol consumption to health and society.

The report is divided into three chapters. Chapter 1 sets the context for alcohol policy at the beginning of the 21st century in Australia. It provides information on the patterns of alcohol use in Australia, its social and economic impact, associated harms, and potential benefits. It also provides an overview of alcohol and drug strategies implemented in Australia since the mid-1980s and a comparative analysis of alcohol policy in other OECD countries.

Chapter 2 identifies a number of key strategy areas important in reducing alcohol-related harm. These key strategy areas also form the basis for the *National Alcohol Strategy 2001 to 2003-04*. Each key strategy area is discussed in depth.

Chapter 3 provides an in-depth analysis of issues relating to the evaluation and monitoring of interventions to reduce alcohol-related harm in Australia.

Setting the context

The history of alcohol use in Australia

From the early colonisation of Australia to the late 19th century, spirits were the most widely consumed alcoholic beverages in this country. Early conservative estimates indicate that in the 1830s in New South Wales, 13.6 litres of pure alcohol in the form of spirits were consumed each year by each inhabitant, predominantly males. Consumption rates over the next few decades fluctuated with periods of economic prosperity and downfall. In the 1890s in New South Wales, the post gold-rush era, consumption of spirits reached an all time annual low of 2 litres per head. During this time, annual beer consumption increased to approximately 3 litres per head in New South Wales and Victoria.

Fluctuations in alcohol consumption continued to be evident throughout the 1900s, with consumption declining during both the world wars and the Depression, followed by a rise in consumption during the post-Depression era. Over the past century Australia has been depicted as a predominantly male beer drinking culture. Advances in refrigeration and brewing have led to the development of large scale commercial brewing of beer and a shift away from the consumption of spirits.

Economic pressures have not been the only influences on drinking patterns since the 19th century. The moral and social changes boosted by the temperance, women's, and labour movements have all played a role in the changes to the Australian drinking culture. There has been a move towards social integration of drinking, with women no longer banned from frequenting

drinking establishments, and there have been changes in the availability of alcohol. Mass media events have accentuated the positive framing of alcohol, with alcohol developing an identity with high profile sporting and cultural events.

Early attempts at alcohol control during the 1800s included the development of totally abstinent societies and the attempt to prohibit alcohol totally on the Victorian Goldfields in 1852. Prior to the 1950s, alcohol problems were defined according to public drunkenness. The introduction during the middle of the 20th century of the highly visible restriction requiring all liquor establishments to close at six p.m. did not achieve the aim of harm minimisation. Contrary to expectations, the early closing time created a single hour of frantic drinking which was described as the "six o'clock swill".

In relation to Aboriginal and Torres Strait Islander peoples, there is evidence that prior to European settlement in Australia some Aboriginal populations produced fermented beverages from natural flora and obtained alcohol from visiting Macassan fishermen (Brady 1998: 4). As Australia became colonised many Aborigines employed by non-Indigenous people became involved in the lifestyle of binge drinking. In 1837 State legislation was passed which prohibited Aboriginal access to alcohol. Despite this, alcohol was often purchased illegally and there was a trend of rapid consumption of high alcohol content beverages. This style of consumption perpetuated the binge drinking cycle. Aborigines were over-represented in arrests for drunkenness during this period and continue to be over-represented today. Aboriginal people were given the right to drink alcohol in the various States and Territories between 1957 and 1975, a right which, for many Aborigines, became a symbol of equality, citizenship and status.

Current patterns of alcohol consumption in Australia

Annual alcohol consumption in Australia reached a peak of 9.8 litres per capita in 1982, after which there was a decrease to 7.5 litres between 1988 and 1993. In 1996 Australia was ranked as 20th in the world in terms of per capita alcohol consumption, with Australians consuming 7.5 litres of absolute alcohol per capita per year (World Drink Trends 1998). In 1997 Australians consumed 94.7 litres of beer (10th in the world), 18.4 litres of wine (17th in the world) and 1.36 litres of spirits (31st in the world) per capita (World Drink Trends 1998). In 1998 Australians consumed 7.6 litres of absolute alcohol per capita per year (AIHW 1999).

Over the last decade there has been an increasing focus on patterns of drinking as well as levels of consumption and an increasing appreciation of the contribution of alcohol to acute health problems as well as long-term harm. Patterns of drinking refer to aspects of drinking behaviour other than the level of drinking, including when and where drinking takes place, the number and characteristics of heavy drinking occasions, activities associated with drinking, personal characteristics of the drinker and drinking companions, the types of drinks consumed, and the drinking norms and behaviours that comprise a “drinking culture”.

Since 1985 the National Drug Strategy has monitored patterns of alcohol and other drug use in the Australian population through regular national household surveys. In 1998 the National Drug Strategy Household Survey found that 49% of the population aged over 14 years were recent regular (at least once a week) drinkers and that 32% considered themselves current occasional (less than weekly) drinkers. More men (84%) than women (77%) were current drinkers (regular and occasional). Non-drinkers were more likely to be women and older respondents (AIHW 1999). A smaller proportion of Aboriginal and Torres Strait Islander peoples (62%) are current drinkers, with 33% being regular (weekly) drinkers and 29% occasional drinkers (AIHW 1995).

Of those who currently drink alcohol, men drink more frequently than do women. The 1998 National Drug Strategy Household Survey indicates that 15% of current male drinkers drink at least every day (compared to 6% of women), 70% (51% of women) at least weekly and 87% (74% of women) at least every

month (AIHW 1999). Frequency of consumption by current drinkers among urban Aboriginal and Torres Strait Islander populations shows a similar pattern to the general urban population. The 1994 National Drug Strategy Household Survey Urban Aboriginal and Torres Strait Islander Peoples Supplement found that 8% of current drinkers do so daily, 49% at least weekly and 78% at least once a month (AIHW 1995).

High risk alcohol consumption

From an analysis of 1998 National Drug Strategy Household Survey data, the National Alcohol Indicators Project estimated that 5.7% of current drinkers consume alcohol at medium risk levels for chronic harm and 3.1% of current drinkers consume alcohol at high risk levels for chronic harm. Chronic harm results mainly from long-term excessive consumption. Low risk of chronic harm may be defined as up to 14 drinks per week for females and up to 28 drinks per week for males (NHMRC 1992, 2001), medium risk of chronic harm as 15 to 28 drinks per week for women and 29 to 42 drinks per week for males, and high risk of chronic harm, as intake above these levels (Heale et al 2000).

The National Alcohol Indicators Project also estimated that 46% of male current drinkers and 32.5% of female current drinkers had consumed alcohol at levels considered high risk for acute harm at least once a month in the past year (ie more than 6 drinks on a single occasion for males, more than 4 drinks for females), with the highest proportion evident amongst 18-24 year olds (Heale et al 2000).

Gender differences in patterns of consumption

There are clear gender differences in the age of initiation and patterns of alcohol consumption. Throughout this document statistics for men and women are presented separately to enable clear identification of the gender differences in patterns of alcohol consumption and alcohol-related harm.

Men usually begin drinking at an earlier age compared to women (16 years compared to 18 years of age). In general, women of all ages consume less alcohol than men and are also more likely to be non-drinkers. There are also clear gender preferences for types of alcoholic beverages. Women prefer to drink wine (57%) or spirits (38%) and men overwhelmingly prefer regular beer (53%) or bottled wine (41%) (AIHW 1999).

Over the past decade awareness has grown of the specific areas of acute health need of men. Australian statistics have shown that men have a shorter life expectancy than women, due to higher rates of alcohol misuse, suicide, injury and certain diseases. Widespread problems in the areas of alcohol misuse and violence have been identified as major health policy issues for men (Connell et al 1998).

Women are more vulnerable to both the acute and chronic effects of alcohol misuse than men are (Frezza et al 1990; Wechsler et al 1995; Bradley et al 1998; Mcleod and Stockwell 1999; Mumenthaler et al 1999). Higher blood alcohol concentrations (BACs) have been reported for women consuming a similar quantity of alcohol in the same time frame as men, even when size has been taken into account (Frezza et al 1990; Mcleod and Stockwell 1999; Mumenthaler et al 1999). The gender differences are particularly noticeable at higher levels of alcohol consumption, where women consuming four drinks in a row were found to experience the same level of harm as men consuming five drinks in a row (Wechsler et al 1995).

A number of gender differences contribute to this effect. Alcohol is dispersed in body water and women have proportionately more body fat and less water than do men (Frezza et al 1990; Bradley 1998). Women metabolise alcohol more slowly than men (Frezza et al 1990; Bradley 1998; Mcleod and Stockwell 1999) and in women who are alcohol dependent, gastric metabolism of alcohol is almost abolished (Frezza et al 1990). An increased risk of alcohol dependence has been reported for women who regularly consume more than two drinks per day or five or more drinks on one occasion (Bradley 1998). Women consuming alcohol at these levels were less likely than men to view themselves as being heavy or problem drinkers (Wechsler et al 1995).

Age differences in patterns of consumption

Alcohol plays a significant role in adolescent culture and is very much a group activity for younger age groups. According to the 1998 National Drug Strategy Household Survey more than 66% of those aged 14 – 19 years are recent drinkers (consumed alcohol in the past 12 months), and around 30% drink regularly (at least weekly) (AIHW 1999). This group does not necessarily see drunkenness as harmful. There is some evidence to support the hypothesis that many underage drinkers set out to get drunk and get drunk quickly (Shanahan and Hewitt 1999). Of those who were

recent drinkers, 23% of 14-19 year olds consumed seven or more standard drinks at least once a week compared with 10% of adults (NDSHS 1998 unpublished data).

Binge drinking, or deliberate drinking to intoxication, is most common among young people. Some authors have attempted to define binge drinking in terms of a particular number of drinks consumed on a single occasion. Makkai and McAllister (1998) have defined binge drinking as drinking more than seven drinks for males or more than five drinks for females. However, concepts of binge drinking vary between age groups and from community to community. Approximately 94% of males and 78% females aged 14-19 years who had consumed 12 or more standard drinks (males) or eight or more standard drinks (females) reported the intention of drinking to intoxication. Binge drinking has also been identified as a problem in the 20-34 year age group, with males (76%) and females (66%) consuming alcohol in this fashion (NDSHS 1998 unpublished data).

There are clear age preferences for types of alcoholic beverages. Spirits are the drinks of choice for most young people aged 14-19 years (62%), with consumption inversely related to age (53% of 20-34 year olds and 30% of those aged over 35 usually consume spirits). The reverse pattern is true for wine and low alcohol beer, with older groups more likely to consume these beverages (AIHW 1999).

In general the current generation of older people tend to drink less alcohol than people in their younger and middle years. Some 45% of people aged over 60 years regularly drink alcohol and 23% occasionally drink alcohol (AIHW 1999). Some surveys suggest that a person's drinking pattern remains relatively stable with age. However data on the effects of drinking on older people are scarce, as studies tend to exclude people over 65 years. Since Australia's population is ageing, alcohol-related problems are likely to become increasingly important in the older age groups.

Consumption of alcohol among Aboriginal and Torres Strait Islander peoples

Misuse of alcohol is a particular concern for Aboriginal and Torres Strait Islander peoples. Although the proportion of urban Aboriginal and Torres Strait Islander people who drink alcohol (62%) is smaller than in the general population (72%), those who do drink tend to consume alcohol in higher quantities. Among

Aboriginal people who drink, 68% consume alcohol at harmful levels, compared to 11% of drinkers in the general population. Aboriginal men tend to have more hazardous drinking patterns than women. Hazardous drinking is most common amongst 25-34 year olds in Aboriginal communities, whereas in the general population hazardous drinking is most common in the 14-24 year age group. In 1994 the most frequently consumed alcoholic drink by Aboriginal and Torres Strait Islander people was beer, followed by spirits (AIHW 1995).

Some 95% of the urban Aboriginal and Torres Strait Islander population regard misuse of alcohol as a serious problem, and 63% regard either alcohol abuse or alcohol-related violence as the most serious issue facing Aboriginal and Torres Strait Islander communities. Two thirds (66%) believe it is the leading cause of drug-related deaths across these communities, and 55% cite it as the drug of most concern (AIHW 1995).

Nevertheless, consuming alcohol can be a pleasurable and sociable activity for Aboriginal and Torres Strait Islander people, as it is for all Australians. The social context of alcohol consumption in Aboriginal and Torres Strait Islander communities is complicated by a history of prohibition and by negative stereotypes. In this respect, their experiences are quite different to those of the majority of Australians.

Until quite recently Aboriginal and Torres Strait Islander peoples were compelled to drink surreptitiously, and were marked out by their race in pubs and taverns. Those who supplied them illicitly could be fined or gaoled. These factors have had far-reaching influences on the way people in these communities drink, on their attitudes towards alcohol, and on the approaches taken to managing its effects.

Aborigines and Torres Strait Islander peoples may no longer be discriminated against in licensed outlets. They consume alcohol at home, in the bush, in pubs and sporting clubs, in licensed outlets on communities – in any number of contexts. Availability of alcohol varies between groups, with some having unconstrained access to all kinds of alcoholic beverage while others have restrictions on beer. Some Aborigines and Torres Strait Islander people live in a community that neither sells nor allows imported alcohol. Others may be consuming rationed portions of alcohol; or they may be dependent on the generosity of others to share their supplies.

Regional differences in drinking patterns

Regional differences have been demonstrated in alcohol consumption, alcohol-related harm, and the death rate caused wholly by alcohol. A greater proportion of men living outside the capital cities in Australia report consuming hazardous or harmful levels of alcohol. In rural and remote regions, the consumption of high levels of alcohol by men is inversely proportional to the size of the population, ranging from 5% of men in a large rural centre to 8% in remote areas with less than 5,000 people. The consumption of high levels of alcohol by women does not follow the same linear pattern seen for men, with increased levels of high alcohol consumption by women seen only for small rural centres and in remote areas with less than 5,000 people. These areas show a doubling of the proportion of women consuming high levels of alcohol (2.4% and 2.1% respectively) compared to capital cities (1.2%) (Strong et al 1998).

Reported alcohol consumption by both rural and metropolitan youth (14-24 years of age) has increased between 1993-98. In 1998, rural youth 14-19 years of age were more likely to have consumed alcohol than youth in urban areas (82% compared to 71.5%) and to have consumed at hazardous and harmful levels (68.6% compared to 65.7%). This pattern was also found for persons aged 20-24 years of age (Williams 1999).

In rural areas, over the period 1993-98, there has been an increase in the number and type of licensed outlets, and this has been accompanied by increased utilisation of electronic methods of payment. These two factors are thought to have combined to enhance the ability to purchase alcohol, thereby facilitating increased consumption of alcohol (Williams 2000).

Consumption of alcohol in culturally and linguistically diverse communities

Australia today is populated by a diversity of people from non-English speaking backgrounds. It is estimated that 16% of the population (2.5 million people) speak a language other than English at home, encompassing around 200 different languages which include 48 Aboriginal and Torres Strait Islander languages. The five main community languages are Italian, Greek, Cantonese, Arabic/Lebanese and Vietnamese, with each of these language communities having more than 100,000 speakers (ABS 1996b).

Attitudes towards alcohol, patterns of drinking, and knowledge of safe drinking levels vary both between and within culturally and linguistically diverse communities (SuccessWorks 1998). There is a lack of comprehensive data on alcohol consumption within these communities in Australia.

Some of the patterns of alcohol use among culturally and linguistically diverse communities follow the trends seen in the general community. In the general community males consistently consume alcohol on a more regular basis than females, 61% compared with 49%. This pattern is maintained in the culturally and linguistically diverse communities studied, with proportions ranging from 38% for males and 13% for females in the Chinese community to 60% compared to 34% (respectively) in the Greek population (Everingham et al 1994; Everingham and Flaherty 1995; Jukic et al 1996, 1997).

The data suggest that some non-English speaking groups are more likely to have higher proportions of abstainers than English speaking groups (DHS 1994; Everingham and Flaherty 1995; Jukic et al 1996). In the general population it has been estimated that 94% of people have “ever tried” alcohol compared with 56% of Vietnamese-speaking people, 82% of Spanish-speaking people, and 80% of Greek-speaking people (DHS 1994). The misuse of alcohol is widely considered to be a characteristic of locally born rather than overseas-born Australians (KeysYoung 1994).

Perceptions of alcohol use vary both between and within linguistic groups, but attitudes towards alcohol and patterns of consumption generally reflect attitudes in their homeland, at least for the first generation migrant group. This pattern changes in subsequent generations and moves closer to patterns of consumption in the general Australian population. Alcohol use is considered to be a socially accepted part of everyday life by Greek-speaking and Italian-speaking people, but the majority, both men and women, consume alcohol within the NHMRC guidelines (Everingham et al 1994; Jukic et al 1997). While the Arabic-speaking community has a lower prevalence of and risk from drinking compared to the general community, within this community regular use is reported to be twice as prevalent among Christians compared to Muslims, reflecting religious attitudes and beliefs (Jukic et al 1996). In some cultures the misuse of alcohol is associated with denial, shame and stigma and is believed to be a family issue (Spathopoulos and Bertram 1991; Everingham and Flaherty 1995; SuccessWorks 1998).

In the case of recent migrants, factors relating to their migration may also impact on attitudes and patterns of use. Factors relating to migration include the effects of war in the homeland, trauma, dislocation, settlement experiences, uncertain personal identity, poor literacy skills, unemployment and inadequate family support (EYIN 1998; SuccessWorks 1998).

Criminal offenders and alcohol consumption

Research, both in Australia and overseas, has demonstrated a high level of alcohol use and misuse by prisoners (Indermaur and Upton 1988; Stathis et al 1991; Wright 1993; Putnins 1995; Doyle et al 1996; Bushnell and Bakker 1997; Koski-Jannes 1997; Mason et al 1997; Walsh 1997). Surveys of prisoners and offenders prior to their incarceration have shown higher levels of alcohol consumption than the general population, with between 32% and 50% of offenders classified as alcohol dependent or heavy alcohol users (Indermaur and Upton 1988; Bushnell and Bakker 1997; Mason et al 1997; Mills et al 1998). In New South Wales, 46% of a sample of prisoners reported using alcohol in the 24 hours prior to the most serious offence, with one quarter attributing their imprisonment to alcohol (Stathis et al 1991).

A high correlation has been reported between violent crime and excessive alcohol consumption, with reviews of the literature estimating that between 41% and 70% of violent crimes are committed under the influence of alcohol (Wright 1993; Koski-Jannes 1997; Walsh 1997). In New South Wales, alcohol was found to be prevalent in 42% of homicide incidents. However the exact role of alcohol is under debate, with many regarding it as a facilitator of homicide rather than the direct cause (Wallace 1986). Currently survey data on the extent of alcohol and other drug-related problems amongst male prisoners is being collected by the Australian Institute of Criminology and results are expected to be available by mid 2001.

Alcohol use by offenders varies with different subgroups of the population. Women are less likely to use alcohol and report alcohol-related problems than are men, instead reporting a higher use of illicit drugs (Maher 1994). Aboriginal and Torres Strait Islander inmates are significantly more likely than non-Indigenous inmates to report using alcohol prior to offending and to perceive that alcohol was a factor in their imprisonment (Stathis et al 1991). Young offenders are reported to be more likely to use or misuse alcohol than youth in the wider community, with 63%

reporting binge drinking (the consumption of at least five drinks in a row) in the two weeks prior to arrest (Hando et al 1997).

Alcohol and other drug use

The interactions between other drugs (tobacco, illicit and prescription) and alcohol are complex. They vary according to many factors including the type of drug, quantity used, levels of tolerance, the number of drugs involved and the willingness or capacity of the drug taker to respond to advice or warnings. Combining alcohol with other drugs may enhance or decrease the effect of the alcohol or the other drugs, or may produce a different effect as a result of the interaction. Usually concurrent drug use with alcohol is intentional and aimed at achieving a particular effect. However, in some circumstances, there may be a lack of awareness of the potential for interaction, particularly among older people who take prescription medications.

Research has shown that there is a high co-morbidity between alcohol misuse and the misuse of other drugs, with a consistent pattern in the uptake of polydrug use being reported: alcohol, followed by marijuana, then other drugs. A Sydney study of long-term cannabis users found that alcohol was almost universally used on a regular basis, with more than half of those studied consuming alcohol at hazardous or harmful levels (Swift et al 1998).

Frequent abuse of other drugs is often seen in people being treated for alcohol problems, including adolescents, complicating the issue of treatment and resulting in a higher risk of relapse to alcohol or substitution of another drug for alcohol (Martin et al 1993; Miller and Bennett 1996). Adolescents have reported that alcohol removes their inhibitions and alters their judgement, increasing the likelihood of their experimenting with drugs (Shanahan and Hewitt 1999).

The social context of alcohol use in Australia

Alcohol is frequently associated with celebrations in Australia. It is consumed in religious and cultural

ceremonies, social and business functions, and also in conjunction with recreational activities. For many Australians “having a drink” is synonymous with relaxation, socialising, and good times. Alcohol use is accepted as an integral part of Australian life and culture and most adults drink alcohol to some degree. Many historical and social factors contribute to the way in which alcohol is used today.

Historically pubs and clubs have served as community meeting places, particularly in rural and remote locations. Consumption of alcohol is viewed as an integral part of a rural lifestyle and is symbolically associated with values such as “self-reliance”, “hardiness”, and “mateship” (Dunn 1998). In many rural areas local hotels and clubs are the primary source of entertainment and provide the main venue for community and sporting groups. In many cases these “watering holes” contribute to community cohesion and identity. They act as an informal setting for airing local concerns and facilitating social interaction. Compared to thirty years ago, alcohol is now more widely available in settings such as cultural and sporting events, and restaurants.

Regular alcohol consumption is considered to be acceptable by the majority (61%) of Australians. Although the Australian population still perceives the drug problems of society to be primarily a result of illicit drug use, there is some recognition of the adverse impact of the harmful use of alcohol on people’s lives in Australia. However recognition of the widespread harms associated with alcohol misuse is limited, generally focused on harms related to acute intoxication, and in many localities there is a perception that illicit drug use is the main problem within the community (Reilly and Griffiths 1998).

In 1998, 14% of Australians surveyed named alcohol as the drug they thought of when people talked about a drug “problem” (AIHW 1999). A survey of 15-17 year olds found that alcohol was considered the third greatest problem faced by youth in this age group, a finding replicated in concurrent surveys of parents of teenagers and young adults aged 18-24 years. Social problems including alcohol-related violence and crime, family disruption, vandalism and destruction of property were identified as increasingly salient and public features of the misuse of alcohol (Shanahan and Hewitt 1999).

Alcohol-related adverse health consequences

Excessive alcohol consumption is associated with a variety of adverse health consequences, including liver cirrhosis, mental illness, several types of cancer, pancreatitis, and fetal growth retardation. Adverse social effects related to alcohol use include aggressive behaviour, family disruption, and reduced productivity.

In general, higher overall levels of consumption in a population are associated with higher levels of alcohol-related problems. Overall population levels of alcohol consumption have been related to total mortality and to specific causes of death and disease including liver cirrhosis, traffic accidents, suicide and criminal violence (Edwards et al 1995). However, the relationship between population consumption levels and ensuing harms is complex and must be interpreted with care. Analysis of national survey data demonstrates the significance of patterns of drinking, including the number of heavy drinking occasions (Stockwell et al 1996), for alcohol-related harm. Particularly high rates of alcohol-related harms have been found among low and moderate level drinkers on the occasions they drink to intoxication.

Mortality related to alcohol consumption

The misuse of alcohol is one of the leading causes of preventable death in Australia. It is estimated that during 1997 that 3,290 Australians died from injury and disease caused by high risk drinking and that there were 72,302 hospitalisations (Chikritzhs et al 1999).

English et al attribute 7% of all male deaths and 4% of female deaths to alcohol. Physical injury (for example, road traffic and fall injuries) and other acute conditions contribute to about half of these deaths. Alcoholic liver cirrhosis (23%) and road crash injuries (17%) were the top two causes of death attributable to alcohol among males, followed by stroke, suicide and fall injuries. Among females, stroke (35%) and fall injuries (15%) were the top two causes of alcohol-related deaths, followed by alcoholic liver cirrhosis, road crash injury and breast cancer (English et al 1995; Levi et al 1996; Bowlin et al 1997; Swanson et al 1997).

The level of alcohol consumption associated with mortality is lower for women than for men (Holman et

al 1996; Bradley 1998). When compared with abstainers, women consuming 0-0.9 drinks per day decrease their risk of death by 12% while for men, the lowest risk of death is associated with the consumption of 1-1.9 standard drinks per day. The relative risk of death increases, for women, by 13% with two drinks per day rising to 58% with six standard drinks per day; and for men, by 6% with four standard drinks per day rising to 37% with six standard drinks per day (Holman et al 1996).

In almost all of the States and Territories, rates of deaths that can be wholly attributed to excessive use of alcohol were higher in non-metropolitan areas than in metropolitan (capital city) areas (Chikritzhs et al 1999). The rates in non-metropolitan versus metropolitan areas were: in the Northern Territory, 3.99 compared to 3.69 per 10,000 deaths, in Western Australia, 1.6 compared to 1.19; and in South Australia, 1.66 compared to 1.33. For women, comparing non-metropolitan and metropolitan areas, were: Northern Territory, 2.34 compared to 1.42 rates per 10,000 deaths; and Western Australia, 0.65 compared to 0.4. Only in Tasmania were death rates in non-metropolitan areas lower than in metropolitan areas (Chikritzhs et al 2000). This broad grouping of data and comparison of capital city residents with all other Australians may mask the extent of the impact of alcohol misuse on mortality in rural and remote communities (Mathers 1994).

Long-term alcohol misuse can lead to chronic diseases, which usually develop slowly and generally affect older people (such as alcoholic liver cirrhosis). However deaths among people aged less than 30 years accounted for 18% of all deaths caused by alcohol misuse in males, and 10% of all deaths caused by alcohol misuse in females (English et al 1995).

Utilising the methods of English et al (1995), Arnold-Reed et al (1998) calculated that eliminating unsafe alcohol consumption would add 5.9 more years of life expectancy to Aboriginal males and 3.4 more years to Aboriginal females. This should be seen in the context of a life expectancy for Aboriginal males and females in Western Australia that is 16.6 and 15.8 years less, respectively, than for the general population.

Mathers et al (1999) estimated that the harm associated with alcohol consumption accounted for 4.9% of the total burden of disease and injury in Australia in 1996, comprising 6.6% in males and 3.1% in females. They found road traffic accidents and liver cirrhosis to be the leading causes of death contributing to this alcohol-

related mortality burden. They also estimated that the protective effect of low to moderate consumption averted 2.8% of the total burden (2.4% in males and 3.2% in females). These averted deaths are almost entirely in older age groups, whereas a substantial proportion of deaths caused by alcohol are in young people.

The benefits in preventing heart disease have been demonstrated in people of middle age onwards. It is not yet known whether low risk drinking in younger adulthood helps to prevent the onset of cardiovascular disease in later life.

Person years life lost

For many years, measures of potential years of life (PYLL) lost due to premature mortality have been used to measure the mortality burden of various causes of death. PYLLs measure the gap in years between age at death and some arbitrary standard age before which death is considered premature.

Deaths caused by alcohol contribute substantially to PYLL in Australia, as many of these are premature deaths in young people, the result of the acute effects of alcohol. In Australia in 1992 the misuse of alcohol resulted in 55,450 PYLL, equivalent to 7.39% of the total number of person years of life lost due to all causes.

The two major contributors of the alcohol-related PYLL in males were road injury (37%) and alcoholic liver cirrhosis (16%), followed by suicide, assault and alcohol dependence. For females, road injury (31%) and alcoholic liver cirrhosis (15%) were the top two causes of PYLL, followed by assault, stroke and suicide (English 1995). It is of significant community concern that 67% of all PYLLs are estimated to be the result of single episodes of intoxication (Stockwell and Single 1999).

Morbidity related to alcohol consumption

The most accessible measure of the impact of misuse of alcohol on morbidity is the contribution it makes to hospital admissions. In hospital statistics, the diagnosis of a condition requiring admission is formally recorded at the time of discharge and hence referred to as a hospital separation. In 1997 it is estimated that 72,302 hospitalisations were attributable to high risk drinking (Chikritzhs et al 1999). Alcohol caused hospitalisations were most commonly the result of falls, alcohol dependence, assaults and road injuries. The estimated

direct health care cost resulting from alcohol-related harm was \$145 million in Australia in 1992 (Collins and Lapsley 1996).

A one day national census of the clients of drug treatment agencies in March 1995 showed that 49.3% were receiving treatment for alcohol problems, twice that for any other drug. Alcohol was also the reason that 55.6% of secondary clients (relatives or friends of a drug user) were attending drug treatment agencies on this day (Torres et al 1995).

Other causes of disease and death which may be related to the misuse of alcohol include alcoholic gastritis, pancreatitis, supraventricular cardiac dysrhythmias, spontaneous abortion, low birth weight and epilepsy (English et al 1995).

Chronic disease attributable to alcohol

The main chronic diseases attributable to alcohol misuse are liver cirrhosis, cancer, cardiovascular disease, fetal alcohol syndrome and mental disorders.

Population attributable risk is an effective measure for summarising the contribution of alcohol to ill health. The methodology for defining the proportion of disease attributed to alcohol is sophisticated and somewhat complex but major researchers in the field endorse its validity. The basis of the method is to compare either abstinence or low risk drinking with harmful and hazardous levels of consumption. The complex methodology precludes description in this report. Those interested in the basis for the conclusions that are drawn here are referred to the work of Bruzzi et al (1985), English et al (1995) and Tseng et al (1999). The National Drug Strategy 1995 report *The Quantification of Drug Caused Morbidity and Mortality in Australia* involved meta-analyses of some 2700 scientific studies (English et al 1995).

Alcohol and cirrhosis of the liver

There is a clear relationship between alcohol consumption (particularly long-term heavy drinking) and liver cirrhosis. The risk of liver cirrhosis increases with increasing levels of alcohol consumption. An Australian review of the relative risks of alcohol consumption concludes that 54% of unspecified liver

cirrhosis in males and 43% of such cases in females could be attributed to alcohol (English et al 1995).

Alcohol and cancer

Excessive alcohol consumption is a significant risk factor for cancers of the oral cavity, pharynx, larynx, oesophagus and liver. There is no adequate evidence to associate alcohol misuse with the risk of other types of cancer. Although it has been claimed that the incidence of some cancers is lowered by alcohol consumption, the actual evidence is weak and inconsistent.

The Australian review by English et al concluded that alcohol is responsible for 21% of male deaths and 8% of female deaths from oropharyngeal cancer, 14% of male deaths and 6% of female deaths from cancer of the oesophagus, and 18% of liver cancer deaths, both male and female (English et al 1995). It should be noted that this review was based on conservative estimates of the proportion of cancer that can be attributed to alcohol consumption.

There is some evidence which suggests women may be at increased risk of breast cancer from even moderate doses of alcohol. A meta-analysis and review of 38 case-control studies in 1994 found evidence of a modest dose-response relationship between alcohol and breast cancer. One alcoholic drink per day was associated with an 11% increase in the risk of breast cancer compared with non-drinkers (Longnecker 1994). A correlation between breast cancer incidence and alcohol intake has continued to be supported by recent pooled analyses (Smith-Warner et al 1998). Estimates of the proportion of breast cancer attributed to alcohol consumption vary between populations from 3% in Australia (English et al 1995) to 10.7% in Italy (Mezzetti et al 1998) and across sub-populations 2.1% to 7.4% in two different groups in the USA (Tseng et al 1999).

Alcohol and cardiovascular disease

The relationship between alcohol and cardiovascular disease is complex. Alcohol misuse is associated with cardiomyopathy and is a causal factor in high blood pressure, haemorrhagic stroke and heart failure. English et al (1995) calculated that 11% of male and 6% of female hypertension can be attributed to excessive consumption of alcohol. On the other hand, there is evidence to suggest that, for people from middle age onwards, drinking alcohol at low risk levels is clearly associated with reduced risk of coronary heart disease

and possibly also with a reduced risk of ischaemic stroke.

This protection afforded against coronary heart disease is responsible for what is often described as the “J” shaped curve that characterises alcohol-related mortality, whereby, on a population basis, both abstainers and heavy drinkers are at higher risk of premature mortality than people drinking at low risk levels (Stampfer et al 1988; Fuchs et al 1995). This protective effect has been demonstrated in a large number of studies over three decades (Ashley 1982, Beaglehole and Jackson 1992, Jackson 1994, English et al 1995, Holman et al 1996, Klatsky 1996, Svardsudd 1998, Doll 1998). Only relatively few studies fail to confirm it (English et al 1995, Hart et al 1999, Coate 1993, Maskarinec et al 1998, Murray and Lopez 1999).

Fetal alcohol syndrome and related conditions

The episodic consumption of large quantities of alcohol by pregnant women, particularly in the early months of pregnancy, may be associated with a variety of adverse consequences to the fetus. The most severe adverse consequences include gross congenital anomalies and a defined syndrome – the fetal alcohol syndrome. Fetal alcohol syndrome includes characteristic physical abnormalities, growth retardation and neurological dysfunction with developmental delay.

The available evidence suggests the birth prevalence of fetal alcohol syndrome is small in Australia (Abel 1995). However diagnosis of this syndrome can be difficult. In Western Australia between 1980-97 there were 77 reported cases giving a birth prevalence for fetal alcohol syndrome of 0.18/1,000 births. Recent linking of data from the Rural Paediatric Services has resulted in an increased ascertainment of fetal alcohol syndrome (Bower et al 2000).

Whilst there is clear evidence that alcohol consumption at high levels during pregnancy can lead to a range of adverse outcomes for the fetus, the evidence is inconclusive in regard to the impact of drinking during pregnancy at levels that are recognised as low risk for the general population. The most likely effects at these levels, if effects occur, are abnormalities in the developing embryo and subtle neuro-behavioural problems that are not associated with immediately recognisable physical abnormalities. Some authors report a significant relationship between alcohol and decreased psychomotor performance (Larroque et al

1995) and decreased academic achievement (Goldschmidt et al 1996). Establishing a lower threshold for risk has proved difficult and this difficulty supports the emerging evidence that the risk may differ for different effects.

Alcohol and mental health disorders

Among the most vulnerable people in society are those with a serious mental illness. It has been known for many years that people with mental health problems or mental illness are at particular risk of experiencing problems relating to alcohol misuse. Alcohol misuse is itself a causal factor in a number of mental health conditions including alcoholic psychosis, alcohol dependence syndrome and alcohol-related dementia.

The combination of mental illness with alcohol and other drug misuse is frequently reported in epidemiological studies (Mueser et al 1997; Teesson et al 1998). A review of 13 studies by Teesson et al reported that each of these studies found the rate of alcohol misuse or dependence to be higher among community mental health groups than among the general population. The prevalence of alcohol misuse or dependence in the community mental health groups ranged between 18.1% and 25.3%, compared with 11.8% from a general population household sample.

The 1997 ABS National Survey of Mental Health and Wellbeing (McLennan 1997) provided the first national Australian data on the prevalence and patterns of mental disorders among Australian men and women. Results of the survey show a considerable degree of co-morbidity in substance use disorders and other mental health disorders. Just under half of all females with a substance use disorder (46%) met criteria for an anxiety or affective disorder, and 18% met criteria for both an anxiety and an affective disorder. Alcohol use disorders were about three times as common as drug use disorders: 6.5% of Australian adults had an alcohol use disorder in the past 12 months; 9.4% of males and 3.7% of females.

This survey also included a study of low prevalence psychotic disorders. The survey found that people living with psychotic illness were four times more likely to abuse alcohol than the general population. Lifetime diagnoses of alcohol use disorders were found in 30% of the survey sample.

The Australian Burden of Disease Study (Mathers et al 1999) indicates that in Australia comorbidity is of particular concern for young adults aged 15-24 years.

The study found that nine out of the ten leading causes of burden in young males and eight out of ten leading causes in young females were substance use disorders or mental disorders.

Long-term heavy drinking is a major risk factor for depression and anxiety. Many studies have demonstrated co-morbidity of alcohol abuse or dependence with mood and anxiety disorders. In clinical groups, high rates of alcohol abuse or dependence have been reported for patients receiving treatment for mood and anxiety disorders, and conversely high rates of mood and anxiety disorders have been found in patients being treated for alcohol use disorders.

To account for this co-morbidity it has been postulated that:

- alcohol abuse may lead to higher levels of depression and anxiety by contributing to the inception, duration or recurrence of these disorders;
- depression and anxiety may lead to increased levels of alcohol consumption and the persistence of alcohol dependence as a form of self-medication; and
- there are common determinants, environmental or genetic, for alcohol abuse or dependence and other disorders.

The relationship of alcohol use and dependence with depression and anxiety differs across population sub-groups. Recent studies have shown U-shaped relationships in associations of depression and anxiety symptoms with alcohol use, such that both non-drinkers and heavy drinkers report more symptoms than those drinking at moderate levels (Rogers et al 2000).

There is robust evidence for significant comorbidity between substance abuse, especially alcohol use disorders, and schizophrenia. The Epidemiological Catchment Area Study reported a life time prevalence for substance abuse of 47% in schizophrenia and 34% for alcohol dependence (Regier et al 1990). Most studies have shown that alcohol use disorders in this group are mainly but not always secondary to the onset of schizophrenia (Sokya 2000). There is overwhelming evidence for the negative effect of alcohol misuse in these patients, including a high re-hospitalisation rate, non-compliance with treatment regimes and poor prognosis. Studies have shown that substance use in schizophrenia significantly increases the risk for violence and aggression (Rasanen et al 1998).

Many medications commonly used to treat mental illnesses can interact with alcohol, leading to increased risk of illness, injury, or death. It has been estimated that interactions between alcohol and medication may be a factor in at least 25% of all emergency room admissions. An unknown number of less serious interactions may go unrecognised or unrecorded (NIAAA 1995).

Alcoholism and depression are frequently associated, leading to a high potential for interactions between alcohol and antidepressant medications. Alcohol increases the sedative effect of tricyclic antidepressants such as amitriptyline, impairing mental skills required for driving. Acute alcohol consumption increases the availability of some tricyclics, potentially increasing their sedative effects; chronic alcohol consumption appears to increase the availability of some tricyclics and to decrease the availability of others. The significance of these interactions is unclear. These chronic effects persist in people recovering from alcohol dependence.

A chemical called tyramine, found in some beers and wine, interacts with some anti-depressants, such as monoamine oxidase inhibitors, to produce a dangerous rise in blood pressure. As little as one standard drink may create a risk that this interaction will occur.

Wernicke-Korsakov syndrome

The Wernicke-Korsakov syndrome, seen in some chronic heavy drinkers, is caused by thiamine deficiency. The condition is characterised by tiny brain haemorrhages. Some affected individuals become permanently disabled and require long-term institutional care. A study reported in the early 1980s found a prevalence rate of 2.8% in autopsies in Australia (Harper 1983). This was the highest recorded prevalence of Wernicke-Korsakov syndrome in the world.

In an attempt to prevent cases of Wernicke-Korsakov syndrome, thiamine supplementation of bread-making flour was introduced in 1990. Since this time, a 40% decrease in the incidence of Wernicke-Korsakov syndrome since 1991 (Ma and Truswell 1995) and a prevalence of 1.1% in 1997 (Harper et al 1998) have been reported. The most likely explanation for these lower figures is thiamine supplementation.

These findings are supported by national mortality data from the Australian Bureau of Statistics before and since thiamine supplementation, which show a 22%

reduction in deaths from “other thiamine deficiency”, “Korsakov’s alcoholic psychosis” and “alcoholic cardiomyopathy”. Thiamine supplementation of flour is an example of harm minimisation, as the damaging consequences of alcohol are reduced without decreasing alcohol consumption. Although the recent results are encouraging, Wernicke-Korsakov syndrome has not been eliminated.

The majority of present cases of Wernicke-Korsakov syndrome are believed to occur in chronic excessive beer drinkers. Beer absorbs the flavour of thiamine hydrochloride. The addition of thiamine to beer has been suggested as a viable and cost-effective method for thiamine nutrification (Drew and Truswell 1998). However, the technical difficulties associated with this are substantial and need to be overcome before such a strategy could be implemented.

Acute conditions attributable to alcohol

The misuse of alcohol is associated with a range of injuries that result in significant morbidity or death. In Australia 44% of fire injuries, 34% of falls and drowning, 30% of car accidents, 50% of assaults, 16% of child abuse, 12% of suicides and 10% of industrial machine accidents have been estimated to be associated with alcohol consumption (English et al 1995). Alcohol is an added risk factor for injury and death in the aquatic environment during activities such as swimming, diving, surfing, boating, water skiing and fishing. It is estimated that 32% of drownings in males aged 15-29 years in Australia are attributable to alcohol consumption (English et al 1995).

Alcohol-related road injury

Elevated blood alcohol levels are implicated in one third of all road accident deaths. It is estimated that 650-700 deaths each year occur in situations where the vehicle controller or pedestrian has a blood alcohol concentration (BAC) of 0.05 gm/ml or more.

A substantial reduction in alcohol-related road deaths occurred following a national campaign to reduce drink driving. From 1981 to 1992 alcohol-related road fatalities decreased from 44% to 29% of all road crash deaths. This equates to a reduction in the mortality rate due to alcohol-related motor vehicle crashes from

5.71 to 3.29 per 100,000 persons. The reduction was attributed to increased legislation, enforcement, public education and media advertising. In 1997, the proportion of road fatalities related to alcohol had fallen to 28% while the rate has decreased to 2.69 per 100,000 persons.

The BACs of fatally injured drivers and motor cycle riders tend to be extreme, with 19% having a BAC level of 0.150mg/100m or greater, and 9% with levels between 0.05 and 0.149 mg/100m.

Male motorists are more frequently involved in alcohol-related road fatalities. In 1992, 47% of male drivers in single vehicle fatalities and 12% in multiple vehicle fatalities were intoxicated, which is four and two and a half times more (respectively) than for females. Those men at particularly high risk include men under 25 years of age, particularly those living in country regions, blue collar or unemployed males, and middle-aged males with very high BAC.

Death rates for road vehicle accidents are much greater in all rural and remote areas for males, where rates are one-and-a-half to two times the capital city rate in rural categories and more than double in remote ones. Rates are also much greater for females in the outlying rural and remote areas, where they are (respectively) double and nearly triple the rates in capital cities).

Hospital separation rates due to road injury also show a strong association with rurality. Compared to capital cities, rates for females are significantly greater in localities away from large or small rural centres (about double in remote centres and other remote areas), and rates for males are greater in all types of rural and remote locations (more than double in remote centres and other remote areas).

Other groups of individuals at particular risk of alcohol-related fatalities include intoxicated pedestrians, alcohol dependent people, and motorists in regions with patterns of excessive drinking such as the Northern Territory. Patterns can be seen in the type of alcohol-related road crashes and the age of the driver. Fatal, single vehicle crashes frequently involve moderately intoxicated drivers aged less than 25 years through to 39 years. In contrast, highly intoxicated drivers and multiple vehicle fatalities more often involve drivers aged 25-59 years (FORS 1996).

The coronial documentation about fatal crashes in 1992 also demonstrated that drink driving was

associated with other risk-taking behaviour such as driving too fast, not wearing a seat belt, and riding a motor cycle without a helmet (FORS 1997c). Intoxicated drivers involved in fatal crashes were about three times as likely as sober drivers to be driving too fast or be unbelted, and intoxicated riders about twice as likely as sober riders. Over one-third of intoxicated drivers in rural areas were not wearing seat belts.

Research has suggested that Aboriginal and Torres Strait Islander peoples are over-represented in road crashes. In Western Australia, the death rate for Aboriginal people was 34.7 per 100,000 population compared with 13.6 per 100,000 population for non-Aboriginal people (Cercarelli 1999). While this report was not able to draw any conclusions about the involvement of alcohol in these incidents, earlier research from Western Australia found a significantly greater involvement of alcohol in crashes involving Aboriginal fatalities than for Caucasian (Maisey and Williams 1991).

Regional differences have been demonstrated, with the prevalence of drink driving higher among 20-29 year old males in Ballarat than in Melbourne (Peach et al 1998), while in Bunbury 17-19 year old youths were significantly less likely to report drink-driving than a comparison group in Perth (Dunsire and Baldwin 1999).

The relationship between geographical area, alcohol consumption and the rate of alcohol-related injury was estimated for five regions in Western Australia. Per capita alcohol consumption varied by region, from 39.4L of pure alcohol per year (8.5 standard drinks per day) drunk by males in the northern region, to 7.3L per year (1.5 standard drinks per day) drunk by females in the Perth metropolitan area. Consumption of alcohol was strongly associated with night-time assaults and hospital morbidity but was only weakly associated with night-time crashes (Midford et al 1998).

Pedestrians are another group at risk. Intoxication was implicated in 42% of deaths of adult and youth pedestrians in 1997 (FORS 1999). Pedestrians living in non-metropolitan areas who were killed were almost twice as likely to be intoxicated as those from metropolitan areas, and over half had blood alcohol concentrations over 0.15, roughly double the prevalence in metropolitan areas (FORS 1997a).

Social harms related to the consumption of alcohol

Alcohol misuse has been shown to be a major contributor to injury through interpersonal violence particularly assaults, domestic violence, and child abuse. It is also an important contributing factor in some cases of suicide. Studies of violent incidents have continued to show that alcohol misuse often precedes episodes of violence and that the amount of drinking is related to the severity of the subsequent violence.

The 1998 National Drug Strategy Household Survey found that “Australians are more than twice as likely to be victims of alcohol-related incidents than to be victims of incidents related to other drugs” (AIHW 1999). Among adult Australians surveyed who reported that they had been victims of alcohol-related anti-social behaviour in the last 12 months:

- 29% had experienced at least one instance of verbal abuse by someone affected by alcohol;
- 16% were in fear of abuse by someone affected by alcohol;
- 8% had property damaged by someone affected by alcohol;
- 6% had been physically abused by someone affected by alcohol;
- 4% had property stolen by someone affected by alcohol.

The excessive use of alcohol can play a number of roles in violence. It may foster an environment where violence occurs, it may be used to cope with a violent incident, or it may directly exacerbate the violent nature of an incident. Alcohol misuse is an important factor in homicide. In general the risk of adverse social consequences is directly proportional to the quantity of alcohol consumed.

Research conducted in New South Wales found that there was a significant and positive relationship between total alcohol sales and offensive behaviour, malicious damage to property, and assault. It has been estimated that reducing alcohol sales to the current Statewide mean in the fifty postcodes with the highest level of sales would result in a 22% reduction in offensive behaviour, a 9% reduction in malicious damage to

property and a 6% reduction in assault (Stevenson 1996). Douglas (1998) reported a decrease in domestic violence following a restriction on the hours of sale of alcohol in a small town in the Kimberley region of Western Australia. Norstrom’s (1998) Swedish study found that assault rate was related to consumption of beer and spirits in bars and restaurants, while the homicide rate was linked to the consumption of spirits in private places.

The 1996 Australian Bureau of Statistics Survey of Women’s Safety showed that where women had been physically or sexually assaulted in the previous 12 months, approximately 40% reported the involvement of alcohol. Furthermore, analysis of assault data from the past 20 years showed that alcohol was associated with 45% of all physical and sexual assaults to women aged 15 years and over.

Rural youth are more likely than urban youth to experience alcohol-related personal abuse. Abuse has been shown to occur most frequently in pubs and clubs, with increased levels of alcohol consumption increasing the risk of being either a victim or a perpetrator. Youth aged 14-24 years committed around three-quarters of the alcohol-related social disorders, with half of the incidents committed by just 6% of this age group (Williams 2000). Rates of malicious damage and offensive behaviour have been shown to increase in NSW in relation to increased total alcohol sales (Stevenson et al 1999).

Among urban Aboriginal and Torres Strait Islander people who responded to the 1994 National Drug Strategy National Household Survey, 49% reported that in the last 12 months they had had something stolen or damaged by someone affected by alcohol. Physical abuse had been experienced by 27% of respondents, and 35% reported that they had been verbally abused or threatened by someone affected by alcohol (AIHW 1995).

Alcohol and family life

Problem drinking has been shown to have a major impact on family, friends and the community. Women who have alcohol-related problems often also have marital problems (Blankfield and Maritz 1990) and are less confident about resolving marital disagreement (Kelly et al 2000) Women who are alcohol dependent report high rates of aggression in their spouses (Miller et al 1989). They tend to drink more than their male counterparts in response to marital conflict (Olenick and Chalmers 1991).

Alcohol misuse is often associated with problems of violence and conflict in families. In addition, expenditure on alcohol may place additional financial pressures on low-income families and this may, in turn, lead to conflict. Problem drinking may lead to inability to care adequately for children. The landmark study by English et al concluded that hazardous and harmful alcohol consumption is a cause of 16% of child abuse (English et al 1995).

Where a person has alcohol dependence or problem drinking, family members may be isolated with little understanding or support from others. Their needs are often neither recognised nor supported by the social and health care support systems.

Many inappropriate and harmful patterns of drinking are learned in the family (Barnes et al 1997; Sher et al 1997). Alcohol-related problems in succeeding generations of the one family are not uncommon, with younger family members acquiring particular patterns of consumption from older family members. While a genetic component may, in some instances, contribute to such problems, social learning may be the major determining factor. At the same time, families are a key resource in helping people with a drinking problem and preventing further problems.

Alcohol and domestic violence

Domestic violence has been recognised by governments in Australia as a serious social problem, affecting the social, emotional, physical and financial wellbeing of individuals and families. It is widely accepted that alcohol is a factor in domestic violence, but the exact association is not fully understood.

An analysis of incidents attended by New South Wales police in 1991 reported 40% of domestic violence incidents as alcohol-related (Ireland 1993). Research shows that violence against intimate partners is much more likely to involve alcohol than is violence against strangers. An analysis of national data on the prevalence of alcohol involvement in crime in the USA showed that of the 11.1 million victims of violent crime each year, almost one in four report that the offender had been drinking alcohol prior to committing the crime. However amongst violent crimes committed by current or former intimate partners of the victims, two out of three of the offenders had been drinking prior to the attack (Greenfeld 1998).

In their study of marital violence amongst newlyweds, Leonard and Quigley found that physically aggressive

episodes were four times as likely as verbally aggressive episodes to involve the husband's drinking (Leonard and Quigley 1999).

In Australia a higher proportion of young rural female victims reported verbal abuse in the home and in pubs and clubs than did their metropolitan counterparts (Williams 1999). Gaps between rural and metropolitan locations widened considerably in relation to:

- physical abuse in the home (43.8% in rural areas versus 30.4% in metropolitan areas);
- physical abuse in pubs and clubs (47.3% versus 32.6%); and
- being put in fear in the home (32.1% versus 20.0%).

Early onset of alcohol-related problems has been identified as one of the correlates that place individuals at risk of being a perpetrator of family violence (Bennett et al 1994). According to Holtzworth-Munroe and Stuart (1994), substance use is also related to severity of violence. They found that alcohol and drug use was highest among batterers categorised as “moderately violent” and “highly violent”. Rivera et al (1997) found alcohol abuse to be related to an increased risk of violent death in the home. Co-occurring mental health disorders such as depression, anxiety and personality disorders can further complicate and predispose individuals to family violence (Brookoff et al 1997).

A survey of community attitudes to violence against women in Australia commissioned by the Department of Prime Minister and Cabinet in 1995 showed that the community generally perceives alcohol to be a “cause” of domestic violence, with women more likely to cite alcohol as a “cause” of domestic violence than men. However 94 % of people surveyed perceived that alcohol is *not* an excuse for domestic violence, rather it is a “trigger” or context in which domestic violence occurs (ANOP 1995).

Aboriginal and Torres Strait Islander communities and family violence

The term “family violence” is preferred by many Indigenous communities, rather than “domestic violence” (Australian Law Reform Commission 1994). “Family” in Aboriginal and Torres Strait Islander communities covers a diverse range of reciprocal ties of obligation and mutual support, and family violence covers a broad range of family relationships. Perpetrators and victims of family violence can include,

for example, aunts, uncles, cousins and children of previous relationships (Cultural Perspectives 2000).

Family violence is highly prevalent in some Aboriginal and Torres Strait Islander communities including in the Kimberleys and in North Queensland. It is often associated with alcohol consumption, and it is disproportionately directed towards women (Lyon 1990, cited in d'Abbs 1993).

It has been suggested that the link between alcohol misuse and violence in Aboriginal and Torres Strait Islander communities is related to the concept of "allowing" violence to occur by providing a socially accepted excuse for it, rather than being a direct causal mechanism. An individual may try to explain away anti-social behaviour by using phrases such as: "I was drunk, I couldn't help it", or "I didn't know what I was doing", or even "I don't remember". Although some communities appeared to be less violent than others, Aboriginal and Torres Strait Islander women in all communities identified violence as one of their greatest worries, and for many of these women this violence was associated with alcohol consumption (Bolger 1991).

Alcohol and homelessness

Homelessness is a complex phenomenon and is influenced by the individual's life experiences, illness, poverty and economic and cultural factors. The nature of the relationship between alcohol misuse and homelessness is not well understood. The misuse of alcohol is considered to be a factor which precipitates homelessness and contributes to its perpetuation (Hodder et al 1998).

Research and reports from service providers working with homeless people indicate that people with alcohol misuse problems are over-represented in the homeless population when compared to the general Australian population (AIHW 2000).

A study by Hodder et al (1998) on the prevalence of mental disorders, disability and health service use among homeless people in inner Sydney found that 49% of males had an alcohol use disorder and of those, 42% were alcohol dependent. The percentage for women was much lower, with 15% having an alcohol use disorder and 13% being alcohol dependent.

Of those who received assistance through the Supported Accommodation Assistance Program funded services in 1996-97, approximately 14% received support for drug and alcohol problems. This is considered to be an underestimate because of both

the lack of tools and skills in services to assess properly client willingness and need for support (Bissett et al 1999).

Co-morbidity is also common, with many homeless people having both a mental illness and an alcohol use disorder. People with combined mental health and alcohol dependency problems are also more likely to have a long experience of homelessness. A dual diagnosis complicates solutions to housing problems and in turn the lack of adequate housing proves a major barrier to the management or treatment of their dependency and medical problems (O'Leary 1997; Andrews 1998).

Problematic alcohol use among people who are homeless also affects their physical health and many have at least one chronic physical condition, with liver problems and high blood pressure most commonly reported. While there is a high reported use of health care services, health outcomes are often poor because of a lack of follow up and maintenance support (Hodder et al 1998).

Alcohol and the workplace

The impact of alcohol in the workplace is a controversial and complex issue. Alcohol misuse is frequently implicated in impaired work performance and productivity, absenteeism, workplace injury, and premature retirement (OHSC 1992; MDSU 1993; FitzGerald 1996). It has been estimated that industrial costs related to the misuse of alcohol represent between 50-87% of the total cost of alcohol misuse to the economy, exceeding even the health-related costs (Crowley 1991). Collins and Lapsley (1996) estimated that total lost production arising from alcohol misuse was \$1.7 billion in 1992. This is likely to be a significant underestimate, since they were unable to include reduced individual productivity and voluntary absenteeism in this calculation.

Alcohol-related absence is more likely to occur with employees who get drunk frequently, drink at work, and have reported alcohol-related problems (Henderson et al 1996). Research has shown that absentee rates for high-risk drinkers were greater than that for the general population, with 14.7% of high-risk drinkers absent from work compared with 8.6% of low-risk drinkers (ABS National Health Survey 1989-90, cited in MDSU 1993). In Aboriginal and Torres Strait Islander communities, 9% of people reported taking time off for alcohol-related reasons in the last three months, with three days being the median time of absenteeism (AIHW 1995).

Knowledge of the exact role of alcohol misuse in occupational injuries is limited. Reviews of studies examining the contribution of inappropriate drinking patterns to workplace injuries and fatalities have reported alcohol to be a factor in between 3-11% of incidents (Stallones and Kraus 1993; Zwerling 1993; Webb et al 1994). The precision of the estimates is limited, however, due to methodological flaws in research design and variation of the prevalence of alcohol use/misuse between and within occupational settings (OHSC 1992; Zwerling 1993; Webb et al 1994). The degree to which alcohol has a causal relationship to workplace injuries has not been determined (Webb et al 1994). There is evidence that there may be a number of contributing factors involved in workplace accidents including human error, poor work practices, and environmental factors (Feyer and Williamson 1991).

The level and pattern of alcohol consumption varies between occupational groups and settings. Alcohol consumption can be influenced by risk factors found within the work environment (Trice and Sonnenstuhl 1990; OHSC 1992; Trice 1992; Grace 1996; Worksafe 2000). These factors have the potential to interact with biological, psychological, familial and social class risks to exacerbate or precipitate alcohol problems (Trice and Sonnenstuhl 1990). Workplace risk factors include alcohol availability, alienation and powerlessness, low job satisfaction, stress, inadequate training and supervision, prevailing workplace culture, poor working environment (for example, noisy/dirty) and isolation from family and friends (Trice and Sonnenstuhl 1990; Ames and Janes 1992; OHSC 1992; Trice 1992; Grace 1996; Worksafe 2000).

Health benefits of moderate alcohol consumption

A number of health benefits have been reported to be associated with alcohol consumption at low risk levels. Social drinking in Australia is associated with relaxation, used to celebrate significant events, helps to mark social boundaries and is used as a low cost signal of status (Heath 1998). For “light-moderate” and “moderate” drinkers, alcohol use has been shown to buffer the effect of both chronic strain and negative

life events compared with “abstainers” and both “light” and “heavy” drinkers (Lipton 1994).

There is research evidence that moderate alcohol consumption may protect against gallstones. (Leitzmann et al 1998) and may reduce the risk of non-insulin dependent diabetes (Rimm et al 1995) though further research is required to clarify or confirm these possible effects. The development of bone mineral density has been reported to be significantly and positively associated with social drinking (Holbrook and Barrettconnor 1993). It is also possible that cognitive decline in older people may be reduced by drinking up to two standard drinks a day (Chick 1999).

There is compelling evidence from an increasing body of research that suggest that light to moderate alcohol consumption in middle-aged or elderly populations is associated with decreased mortality from cardiovascular disease. Some studies have found that the consumption of small to moderate amounts of alcohol may reduce mortality from cardiovascular disease by between one third and one half. Most if not all the benefit is achieved with 1-2 standard drinks per day for men, and less than 1 standard drink per day for women (Corrao et al 2000). The benefits appear to be associated with all types of alcoholic drinks (Rimm et al 1996), contrary to the widely held view that such benefits accrue only to red wine drinkers.

This finding requires careful interpretation in the formulation of public health policy. Most evidence for a protective effect comes from epidemiological studies involving middle-aged or older people in stable social situations, and it cannot be assumed that the findings translate to other social groups or to younger drinkers. The research literature suggests that moderate alcohol consumption is unlikely to produce any significant reduction in total mortality in men under 40-45 years or women under 45-50 years. Furthermore, the acute risks associated with alcohol consumption – predominantly through violence and accidental injury – are considerably greater in younger age groups.

There is currently international debate as to whether abstainers should be encouraged to drink alcohol so as to benefit from a reduced risk of coronary heart disease. As discussed above, the evidence of mortality benefit comes from large population studies. At the individual level, however, people may choose not to drink for a range of valid medical and social reasons, and the public health concern is that encouraging these individuals to consume alcohol may result in an increase in other alcohol-related harms. At the same

time, individuals may reduce their risk of cardiovascular disease through a range of other strategies targeting diet, exercise, and smoking. The National Health and Medical Research Council Australian Drinking Guidelines 2001 recommend that “people who choose not to drink alcohol should not be urged to drink to gain any potential health benefit and should be supported in their decision not to drink.”

The economic significance of alcohol

Economic costs of alcohol misuse

Collins and Lapsley (1996) estimated that the economic cost of alcohol misuse to the Australian community in 1992 totalled \$4.7 billion, or 24% of the total cost of drug abuse (\$18.8 billion). This cost estimate includes factors such as premature death, treatment costs, loss of productivity in the workplace, and increased law enforcement. The costs of alcohol-related crime, violence and other anti-social behaviour are not included in this estimate.

The authors found alcohol to have the highest proportion of avoidable costs (84%) compared to other drugs (Collins and Lapsley 1996). The major avoidable tangible costs from alcohol misuse arose from paid production costs, unpaid production costs, road accidents and the costs of resources used in addictive consumption.

Measurement of the economic cost of alcohol misuse is complex and the methods used are subject to debate. While some have expressed the opinion that external costs may be overstated, it must be noted that a significant number of categories and their associated costs were excluded from the analysis. The work by Collins and Lapsley (1996) must therefore be taken as indicative rather than conclusive until further studies of this kind are carried out.

The alcohol beverages industry in Australia

The economic contribution of alcohol to the Australian economy is substantial. Annual retail sales of alcohol products alone is around \$13 billion. In 1993/94 it was estimated that Australian households spent on average \$908 per year on alcohol, representing 2.2%

of their total expenditure (ABS 1996a). Government revenue from indirect taxes on alcohol beverages is estimated to be in excess of \$4.3 billion. Commonwealth, State, Territory and local government revenue from alcohol currently contributes 2% of total government revenue (Stockwell and Gray 1998).

In addition, there are many industry sectors involved in the sale and supply of alcohol products, including primary producers, manufacturing and packaging companies, retailers, marketing and advertising, printing, commodity and component suppliers, transport, and many independent suppliers of trade services. A relatively small number of large Australian public and multi-national companies own the larger Australian alcohol beverage industry companies. Several of these companies have interests in other industries including non-alcoholic beverages, food, entertainment, primary production and other manufactured goods.

Alcohol policy in Australia – a focus on harm reduction

National drug strategies in Australia since 1985

Since the launch of the National Campaign against Drug Abuse in 1985, Australian policies on drugs have been based on a philosophy of harm minimisation. This philosophy recognises that direct efforts to reduce adverse health, social, and economic consequences from mood altering drugs can be very effective, even when reduction of consumption in individuals or communities has not been achieved.

In recent years, national strategies relating to drug use have been developed under the National Drug Strategy. The National Drug Strategy is a cooperative venture between the Commonwealth, State and Territory governments and the non-government sector. Its aim is to “minimise the harmful effects of drugs and drug use in Australian society”.

Forging effective inter-sectoral links has been one of the priorities of the National Drug Strategy. The development of shared objectives through partnerships between stakeholders is a crucial first step in obtaining consistent, appropriate and effective drug strategies.

Similarly, the concept of balance between demand reduction, supply reduction and harm reduction strategies is fundamental to the development of national drug strategies.

One of the great strengths of the National Drug Strategy is the Ministerial Council on Drug Strategy. Comprised of State/Territory and Commonwealth health and law enforcement Ministers, the Council is responsible for developing national policies aimed at minimising drug-related harm.

The Ministerial Council on Drug Strategy is supported by the Intergovernmental Committee on Drugs, which comprises senior health and law enforcement officers from each Australian jurisdiction; and the Australian National Council on Drugs (ANCD), which provides independent strategic advice from non-government organisations and individuals working in the drug field. Appointed by the Prime Minister, the Hon. John Howard, in March 1998, the ANCD has broad representation including volunteer and community organisations, law enforcement, education, health and social welfare sectors.

All Australian jurisdictions have developed strategies for addressing the harms caused by alcohol and other drugs. These strategies are highly regarded both nationally and internationally. The *National Alcohol Strategy 2001 to 2003-04* draws on existing Commonwealth, State and Territory action plans. The development of a National Alcohol Strategy aims to facilitate cooperation by establishing a coordinated national policy on alcohol, while respecting the particular roles of individual States and Territories as well as the alcohol beverages and hospitality industry.

Previous policy documents

The National Health Policy on Alcohol in Australia (1989)

In 1989 as part of the National Campaign against Drug Abuse a *National Health Policy on Alcohol in Australia*, was adopted by the Ministerial Council on Drug Strategy. A companion volume, *Examples of Strategies for Implementation of the National Health Policy in Australia*, was also endorsed.

This 1989 policy is prefaced with the understanding that there is a place in society for the moderate and responsible consumption of alcohol. It draws on a range of evidence (including from the National Health and Medical Research Council and the World Health Organization) to describe the harms associated with

the inappropriate use of alcohol and highlights the need for a comprehensive national approach to those harms.

It is important to include a population-based as well as a high-risk approach to reducing alcohol-related problems, since most alcohol-related problems occur in people who are classified as “social drinkers”. Particular issues of concern identified in the *National Health Policy on Alcohol in Australia* were underage drinking, binge drinking and drink driving.

In response to this policy, a range of initiatives at State, Territory, and Commonwealth levels were developed to target alcohol-related harm. For example, State and Territory action relating to random breath testing has been associated with a dramatic reduction in the number of alcohol-related road crashes. Hospitality industry training programs resulting from cooperation between the alcohol beverages and hospitality industry, government, and education sectors have had an impact on responsible serving practices.

The National Alcohol Action Plan 1995-1997

The breadth and diversity of initiatives targeting alcohol-related harm in Australia were outlined in a document entitled *National Alcohol Action Plan 1995-1997*. Developed for the Ministerial Council on Drug Strategy, this Plan outlined the major actions being undertaken in Australia to reduce the harm associated with the misuse of alcohol. It served as a valuable tool for identifying areas where there were gaps in coverage.

The Plan focused on activities in each of the States and Territories to minimise:

- the level of illness, disease, injury and premature death associated with the use of alcohol;
- the level and impact of alcohol-related crime, violence and anti-social behaviour within the community;
- the level of personal and social disruption, loss of quality of life, loss of productivity and other economic costs associated with the misuse of alcohol.

National Drug Strategic Framework 1998-1999 to 2002-2003

The *National Drug Strategic Framework 1998-1999 to 2002-2003* is an all-encompassing document relating to drug strategies in Australia. It highlights the contribution of drug use to illness and disease, accident and injury, violence and crime, family and social disruption, and workplace problems. Alcohol misuse contributes to harms in each of these areas.

The *National Drug Strategic Framework* presents a shared vision, a framework for cooperation and a basis for coordinated action to reduce harm caused by drugs in Australia. The Framework has as its mission “to improve health, social and economic outcomes by preventing the uptake of harmful drug use and reducing the harmful effects of licit and illicit drugs in Australian society”.

Under the Framework a series of action plans has been developed to address the harm caused by tobacco, alcohol and illicit drugs in Australia. The aim of the *National Alcohol Strategy 2001 to 2003-04* is to minimise alcohol-related harm to the individual and the community associated with the misuse of alcohol. The objectives of the Strategy are consistent with the mission and objectives of the National Drug Strategic Framework which are:

- to reduce drug-related harm for individuals, families and communities;
- to reduce the risks to the community of criminal drug offences and other drug-related crime, violence and anti-social behaviour;
- to reduce the personal and social disruption, loss of quality of life, loss of productivity and other economic costs associated with the harmful use of drugs;
- to increase access to a greater range of high-quality prevention and treatment services;
- to promote evidence-based practice through research and professional education and training.

National Alcohol Strategy Committee

The National Alcohol Strategy Committee was formed in 1997 to provide Ministers with expert advice on national alcohol issues. The principal objectives of this committee were to identify the nature and extent of alcohol-related harm in Australia and to identify interventions to reduce that harm.

National Expert Advisory Committee on Alcohol

In 1998 the Australian Health Ministers agreed to create a National Expert Advisory Committee on Alcohol (NEACA) which included members of the National Alcohol Strategy Committee as the basis of the new group. The committee’s terms of reference require that it provide advice to the Intergovernmental Committee on Drugs on the development of a National Alcohol Strategic Plan. The concepts underlying

NEACA’s discussions on alcohol issues are those of harm minimisation and shared responsibility.

NEACA recognises the importance of individuals and communities being able to make informed choices in relation to alcohol consumption. All members of a community (including health professionals, law enforcement officers, the alcohol beverages and hospitality industry, government and non-government sectors) have a joint responsibility to work together to minimise the level of alcohol-related harm in our society.

National Health and Medical Research Council Australian Drinking Guidelines

Since 1986 the National Health and Medical Research Council has set out clear guidelines to assist Australians to drink at levels that minimise the risk of harm. The 2001 NHMRC Australian Alcohol Guidelines: Health Risks and Benefits (in press) set out a framework for decision making based on the best available scientific evidence in regard to low risk patterns of alcohol consumption. Reflecting the current focus on patterns rather than levels of alcohol consumption, the guidelines aim to:

- enable Australians to make informed choices about their drinking
- enable health professionals to provide evidence-based advice on drinking and health; and
- promote individual and population health and minimise harm from alcohol.

International alcohol policy initiatives

World trends in alcohol consumption levels

The worldwide consumption of alcohol has remained relatively constant over the past two decades. However it has been noted that consumption in developing countries is increasing (Jernigan et al 2000). According to figures available to the World Health Organization there are close to three-quarters of a million alcohol-related deaths in the world per year (WHO 1996). It is estimated that alcohol-related diseases contribute to 3-4% of the global burden of disease (Murray and Lopez 1996).

Many developed countries have adopted a public health approach to alcohol policy. This includes measures to reduce consumption among heavy drinkers, reduce consumption overall, and reduce harm where irresponsible consumption cannot be prevented. Strategies to address alcohol-related problems are multi-faceted, with emphasis on education, reducing availability and demand, employing law enforcement strategies, and provision of treatment and care.

As in the Australian National Drug Strategy many policies, including the WHO European Charter and the United States and Canadian strategies, orient a national effort by establishing a framework for their communities and alcohol and drug control agencies, and encouraging its adoption. Some national strategies, such as those of the USA and Canada, attempt to include all drugs (including illicit drugs) and this may sometimes reduce the focus on alcohol. However, there are significant educational and program advantages in considering drugs from a generic point of view.

World Health Organization

The World Health Organization is committed to reducing the morbidity and mortality caused by misuse of alcohol, and strengthening global action in response to alcohol-related harm. In recognition that no one single solution is possible, the WHO advocates a comprehensive range of strategies to reduce the amount of alcohol-related harm. These include controls on price and availability; minimum purchase ages; legislation to restrict driving under the influence of alcohol; restricting promoting, marketing and advertising of alcohol; public education and awareness programs; and primary health care and community-based interventions (WHO 1996).

The *International Guide for Monitoring Alcohol Consumption and Related Harm* was published by WHO in 2000. It provides guidance to WHO Member States on epidemiological monitoring to inform and facilitate effective policy formulation and to improve the global and regional comparability of data on alcohol use and alcohol-related harm.

European Alcohol Action Plan

It is estimated that alcohol products are responsible for 9% of the total disease burden in the European region, costing 3-4% of Gross National Product (WHO 2000:2). It is also estimated that between 40% and 60% of all deaths in the European Region from intentional

and unintentional injury are attributable to alcohol consumption (Eurocare 2000).

The WHO Regional Committee for Europe endorsed the *European Alcohol Action Plan 2000-2005* in 1999. The aim of the Plan is to prevent and reduce the harm caused by misuse of alcohol within the European region. The EAAP acknowledges the potential health benefits associated with the moderate consumption of alcohol.

The Plan takes account of the differences in consumption levels across the European Union member states and stipulates ten strategies based on five ethical principles for the reduction of alcohol-related harm. These strategies form the basis of the European Charter on Alcohol, which provides a framework by which each country is encouraged to implement the actions that are most likely to reduce the alcohol-related harm in their country.

In 1998 WHO evaluated the implementation of the EAAP between 1992 and 1998. Of the countries that responded, the results showed that three countries, Italy, Poland and Spain, had achieved the European target of a 25% reduction in consumption under the HEALTH21 or “health for all” policy. The “health for all” policy of the WHO European region sets a target to significantly reduce the adverse health effects from the consumption of alcohol by 2015. Eleven countries had been successful in decreasing per capita consumption, whereas eleven countries experienced an increase (WHO 2000:4).

United Kingdom

The United Kingdom policies on alcohol are in line with those of the European Union. The UK Home Office White Paper *Time for Reform: Proposals for the Modernisation of our Licensing Laws* proposes that pubs stay open for 24 hours a day, if desired, in the hope of achieving staggered closing times. Stricter regulations regarding underage drinking are also included in the White Paper, whereby 16 and 17 year olds are able to drink wine or beer with pub meals under adult supervision, but otherwise, young people must be at least 18 years of age to be served alcohol.

An expert advisory group was commissioned by the Department of Health to prepare proposals for a national alcohol strategy in 1999. Its proposals included reducing the legal blood alcohol limit from 80mg/100ml to 50mg, and suggesting that 24-hour pub opening not be introduced. The Government has not yet responded to the proposals (Drummond 2000).

United States of America

The National Drug Control Strategy of the United States of America emphasises the development of quantitative measures to assess the performance and effectiveness of the strategy through a series of performance and impact targets. The information provided by the performance measures is used to inform policy and planning, staff training, technology investment, and resource allocation efforts, and to draw stakeholder attention to key factors that need to be addressed.

The *2000 National Drug Control Strategy* sets five strategic goals and a number of objectives. Goal one aims to educate and enable America's youth to reject illicit drugs as well as tobacco and alcohol, and sets nine objectives to achieve this goal including education, partnerships and research. The overall emphasis of the US National Drug Control Strategy is on abstinence rather than harm minimisation.

Canada

The *Canadian Drug Strategy 1998* focuses on prevention and considers drug-related harm in the context of a broad definition of health that incorporate mental, social and physical wellbeing. In the efforts to prevent and treat drug misuse, issues of marginalisation, disparate social and economic status, levels of education, employment status, and other underlying issues are addressed.

New Zealand

The *National Alcohol Strategy for New Zealand 2000-2003*, an extension of the National Drug Policy, aims to reduce the harm caused by alcohol to both individuals and society as a whole. The document acknowledges that no single approach or limited set of strategies can address the entire range of alcohol-related harms. Recent amendments to the 1989 Alcohol Act have reduced the legal limit for the purchase of alcohol to 18 years, removed restrictions on the sale of alcohol on a Sunday, and allowed beer to be sold in supermarkets.

The New Zealand strategic plan puts in place mechanisms for Maori views to be considered and incorporated into the provision of advice to all levels of the alcohol health sector. Maori participation is actively sought and enabled at all levels of policy, research, training, and service provision. There is an emphasis on improving the skills, knowledge, and profile of Maori service providers in programs.

International Centre for Alcohol Policies

The International Centre for Alcohol Policies (ICAP) was founded in 1995 with the goal of facilitating dialogue and cooperation between all parties with a role to play in the development of alcohol policies. Whilst ICAP is supported by leading drinks companies, it is not an advocacy body, nor does it represent the drinks industry or any other party involved in the process of policy formulation. As a not-for-profit organisation, ICAP seeks to promote partnerships between the alcohol beverages industry and the scientific and public health communities. Various initiatives have been adopted by ICAP. These include the *Dublin Principles of Cooperation* and the newly developed *Geneva Partnership on Alcohol*.

Dublin Principles of Cooperation

The *Dublin Principles of Cooperation* (National College of Industrial Relations 1997) were developed and adopted in May 1997 to assist collaboration between the beverages alcohol industry, governments, scientific researchers and the public health community. These principles include: the need for the community to be able to make informed choices in relation to alcohol consumption, shared responsibility between all parties for safe alcohol consumption, and acknowledgment that alcohol consumption has a complex set of beneficial and adverse consequences.

Geneva Partnership on Alcohol: towards a global charter

The *Geneva Partnership on Alcohol* was developed by the International Center for Alcohol Policies in 1999 following on from the Dublin Principles of Cooperation. A broad range of people including those working within governments, the public health field and the beverage alcohol industry contributed with comments to the preliminary draft of the document.

The document attempts to develop an agenda for partnership and calls for the development of a Global Charter on Alcohol. The document sets out strategies in a number of areas to reduce the harm associated with misuse of alcohol. These areas include: alcohol and society, public policies, access and availability, advertising and promotion, information and education, health care, responsible service, ensuring product quality and integrity, and research and dissemination of results.

A national strategy

Strategies to deal with public health problems

This chapter discusses in detail a range of public health strategies identified by the National Expert Advisory Committee on Alcohol as effective in helping to reduce alcohol-related harm. The strategies outlined are consistent with the key strategy areas identified in the *National Alcohol Strategy 2001 to 2003-04*.

Traditionally, efforts to identify and prevent alcohol-related problems has been directed at chronic long-term health problems such as cirrhosis of the liver and at people who experience problems related to long-term use of alcohol. In recent years, this approach has broadened to include a significant focus on reducing the more short-term or acute types of alcohol-related harm. These acute harms represent the majority of the harms resulting from the consumption of alcohol and are experienced by a greater percentage of the Australian population. Prevention strategies should therefore not only address problems of dependence and long-term drinking but should seek to target individuals who drink to intoxication, as intoxication is a major contributor to death, injury and illness in Australia.

The main strategies used in public health are education of the public, health professionals and those at risk, screening and case finding, early intervention, treatment and support programs, surveillance and monitoring, environmental modification and product development, regulation and legislation, evaluation, and policy change. These strategies have been developed and tested over many years. In most cases a combination of strategies is more successful than a

single strategy and it should be noted that not all available strategies are appropriate for every public health problem.

It is widely believed that to achieve a reduction in alcohol-related harm involves the use of strategies that encompass all levels and groups within the community. While the development and implementation of some strategies (for example, treatment initiatives, policing practice) may be contained within distinct sections of the community or jurisdictions, other strategies (such as mass media campaigns) involve a coordinated national or State/Territory approach in order to achieve their desired outcome.

Strategy selection

The National Expert Advisory Committee on Alcohol has identified a number of strategies as most likely to be effective in reducing alcohol-related harm in the current Australian context based on the following criteria:

- the extent to which the problem is already being addressed;
- evidence, ideally from peer-reviewed research and evaluation, that the strategy leads to a decrease in alcohol-related harm;
- for newer strategies (or where research evidence is not available), the strategy's potential, judged on the basis of current knowledge and experience, to reduce alcohol-related harm;
- the capacity of the strategy to attract sufficient community and political support to be adopted;
- the feasibility of the strategy and how likely it is to be implemented given existing systems and structures;

- the cost-effectiveness of the strategy at the broader economic, social and health levels; and
- the potential of the strategy to enhance and complement other alcohol harm-reduction strategies.

The Key Strategy Areas identified by the National Expert Advisory Committee on Alcohol are listed below. Each one is discussed in detail in the following pages.

1. Informing the community
2. Protecting those at higher risk
3. Preventing alcohol-related harm in young people
4. Improving the effectiveness of legislation and regulatory initiatives
5. Responsible marketing and provision of alcohol
6. Pricing and taxation
7. Promoting safer drinking environments
8. Drink driving and related issues
9. Intervention by health professionals
10. Workforce development
11. Research and evaluation

1: INFORMING THE COMMUNITY

Educational strategies relating to alcohol are aimed at increasing community knowledge of alcohol issues, promoting positive or healthy attitudes to alcohol use and promoting safe use of alcohol. Community education strategies in Australia involve public education programs or communication initiatives targeted at specific groups in the community. Some examples of education programs include national media campaigns; alcohol education programs in schools, tertiary institutions, workplace and professional settings; and education programs for licensees and hotel staff on the “responsible service of alcohol”.

Public education programs in Australia use mass media, printed materials or information networks (for example, health workers, law enforcement agencies, and the alcohol beverages and hospitality industry) to relay information on alcohol. Current initiatives by government, non-government, and the alcohol beverages and hospitality industry in Australia aim to:

- increase the community’s understanding of health issues related to alcohol;

- convey guidelines for responsible drinking practice;
- raise awareness of the social and legal implications of excessive alcohol consumption to the individual and the impact it has on other people;
- identify avenues for effecting changes regarding the sale or promotion of alcohol where these can be shown to have a negative impact on the health and wellbeing of individuals and/or populations

Some alcohol campaigns use graphic images to arouse fear in viewers about the impact of alcohol on health or social wellbeing. For example, one campaign highlighted the way that people were viewed by others after having consumed excessive quantities of alcohol. There is some debate about the efficacy of this type of campaign, with concern that extended exposure may de-sensitise viewers to the messages.

The potential effectiveness of social marketing campaigns can be maximised through the application of a planned process incorporating environmental and stakeholder analysis; audience segmentation and analysis; channel analysis; strategic planning and formulation of the social marketing mix (within the context of the *National Alcohol Strategy 2001 to 2003-04*); a thorough commitment to formative research in the development of communication concepts and materials; and careful process and summative evaluation of campaign impact (Carroll 1998).

The series of Australian national campaigns from the late 1980s to the mid-1990s targeting excessive teenage drinking achieved very high levels of awareness and effective communication with their teenage target audiences. Evaluation of these campaigns showed significant attitude change over periods of consistent campaign activity. While the evaluation methodology of repeated cross-sectional surveys could not allow change to be confidently attributed to campaigns, a reduction in the prevalence of excessive consumption was also noted over the period of consistent campaigns. However, later surveys indicated that without consistency of campaign reinforcement, drinking among newer teenage cohorts returned to earlier levels (Carroll 1998).

In light of the consistent level of alcohol marketing which promotes the benefits of drinking alcohol, there is a clear need to be consistently reminding new cohorts of teenagers of the potential negative consequences of excessive drinking.

The National Alcohol Campaign launched in February 2000 focused on young people's drinking and associated information and support for parents. The Campaign is designed to encourage teenagers to think about the choices they make about drinking and, particularly, the negative consequences that can arise when alcohol is consumed in excess. Campaign components include television commercials, brochures, magazine and newspaper advertisements and an internet site. The development of the National Alcohol Campaign was informed by qualitative research involving in-depth examination of the prevailing attitudes, understandings, perceptions and behaviours among the target groups, as well as quantitative research to provide baseline data on attitudes towards alcohol.

Mass media campaigns conducted within Australia to promote responsible drinking behaviour amongst adults have shown inconsistent results, on evaluation. However, evaluations have generally looked at the short-term effects, such as the recall of messages, rather than long-term changes to attitudes and behaviours in relation to excessive alcohol consumption.

There is a widely held opinion that teaching individuals to count the number of drinks they consume can be beneficial. In general, the community needs to be better educated about the concept of "standard drinks". Provision of important information on food and drink labels (particularly for products that may be harmful) is now a consumer expectation in Australia. Many health workers use information on drink labels to set goals with patients.

Community education initiatives can be effective in increasing knowledge about the risks associated with excessive consumption of alcohol. However, to influence community attitudes and behaviours towards a healthier pattern of drinking, these strategies should be used in conjunction with practical strategies to change behaviour, including legislation, policy, or community action. Education and communication strategies need to be specifically targeted at regional, rural and remote areas to take into account the different ways that people in regional, rural and remote locations obtain information.

Education programs in schools and tertiary institutions

A major part of community education is conducted in schools across Australia, where alcohol and drug education is a component of the curriculum. Schools provide an ideal setting for accessing young people in

order to encourage the development of healthy choices about alcohol. Alcohol and drug programs in schools also provide an opportunity for identifying those young people who experience problems with alcohol, and instigating early intervention.

Evaluation of a number of school-based programs has found harm minimisation to be an effective approach for educating children on alcohol-related issues. To maximise the success of school-based education on alcohol, it is recommended that;

- schools include both prevention and harm minimisation strategies in relation to alcohol;
- teachers be specially trained in the curriculum;
- the curriculum be reviewed annually; and
- regular assessments of the needs of students and the community be conducted.

Tertiary education settings, often associated with a hazardous drinking culture, are important venues for the provision of health promotion messages to inform students of alcohol-related harm. The high level of alcohol consumption by students, the promotion of alcohol use by student guilds, and the availability of low cost alcohol at tertiary institutions, are issues of concern for health professionals, academic staff, tertiary administrators, and law enforcement agencies. Interventions to reduce the impact of the misuse of alcohol by university students need to be sensitive to the autonomy of the target group and applied cautiously.

Drink driving campaigns

The most successful campaigns have been the drink driving campaigns which have been combined with law enforcement initiatives such as random breath testing. Mass media campaigns to influence community attitudes and behaviours towards healthier drinking patterns are likely to be more effective when combined with environmental or policy changes.

Responsible service of alcohol training programs

Education and training of hospitality and tourism workers in the responsible service of alcohol is a harm reduction strategy. This education program promotes the moderation of alcohol consumption and the reduction of alcohol-related problems without restricting drinking by the majority of patrons. Staff are trained to offer low alcohol and non-alcohol

substitutes, cease service to intoxicated patrons and see that patrons have a safe route home. Expanding responsible server training programs to include the non-serving of juveniles would help to address the issue of underage drinking.

Evaluations of responsible service at licensed premises have shown that these programs can increase the productivity of establishments through increased trade. However, there is low community awareness of the responsibilities of licensees to refrain from providing alcohol to intoxicated patrons. Community education campaigns about responsible service requirements help to reduce community resistance when responsible service methods are applied.

2. PROTECTING THOSE AT HIGHER RISK

The epidemiological evidence suggests that there are a number of groups in the Australian community who are at higher risk of harm as a result of their own or others' patterns of alcohol consumption. Risk group education encompasses programs that target groups or individuals who have been identified with a significant drinking problem or who are at risk of developing such a problem. Programs focus on reducing levels of alcohol consumption, reducing the negative social and health effects of misuse of alcohol or cessation of all alcohol consumption.

Groups at particular risk of alcohol-related harm include the following:

- Aboriginal and Torres Strait Islander peoples
- pregnant women
- prisoners
- people with a mental health disorder
- older people
- heavy drinkers
- young people (see Key Strategy Area 3: Preventing alcohol-related harm in young people).

Aboriginal and Torres Strait Islander Peoples

The misuse of alcohol among Aboriginal and Torres Strait Islander peoples is a major public health concern. While a large proportion of people in these communities do not consume alcohol, those who do

are more likely than non-Indigenous people to adopt high risk drinking patterns. Alcohol misuse and alcohol-related violence have been identified by Aboriginal and Torres Strait Islander peoples themselves as some of the most serious social issues currently facing these communities.

Aboriginal and Torres Strait Islander peoples need to be assisted and supported to develop culturally appropriate preventive educational, support and treatment programs for their communities to address alcohol-related problems.

Education programs that focus on Aboriginal and Torres Strait Islander groups attempt to change risk behaviours through the provision of information to enable healthy choices in relation to alcohol. However, many communities are in rural or remote communities, with restricted health services and opportunities for health education. Lack of cultural sensitivity in the provision of services can deter many Aboriginal and Torres Strait Island people from accessing services or participating in strategies such as brief interventions and other preventative initiatives.

Many Aboriginal and Torres Strait Islander organisations have been effective in sponsoring local awareness campaigns. Evidence shows that many Aboriginal and Torres Strait Islander women do not drink alcohol and so play an important role in attempting to reduce harmful alcohol consumption in their communities. There is a need for meaningful and culturally appropriate evaluation of education interventions in Aboriginal and Torres Strait Islander communities and, in particular, of the long-term impact of such programs on consumption patterns and alcohol-related harm.

Pregnant women

Episodic excessive alcohol consumption during pregnancy remains an important preventable risk factor for congenital abnormalities in Australia. Studies show that episodes of drinking to intoxication during pregnancy increase the risk of miscarriage, low birth weight, cognitive defects and congenital abnormalities. The risk is greatest in early pregnancy, often a time when a woman is unaware of the pregnancy.

Educational activities need to target adolescent girls and boys and women of childbearing age to inform them of the risks to the fetus of drinking to intoxication. Population-based programs aimed at reducing the incidence of binge drinking are likely to lower the

incidence of fetal alcohol syndrome. Obstetricians, midwives, general practitioners, and other health professionals involved in providing ante-natal care have the opportunity and should be encouraged to provide advice on low risk drinking during pregnancy.

Prisoners

Many prisoners have drinking problems that could benefit from intervention, however these problems are often not comprehensively addressed while the individuals are in prison. Identification of those with alcohol-related problems and the provision of treatment facilities remain inadequate. Screening of prisoners upon prison reception frequently underestimates the extent of alcohol use and of those identified as having alcohol-related problems, only a small proportion receive treatment (Mason et al 1997). Continuing alcohol use is strongly related to high rates of recidivism, highlighting the need for effective screening procedures and treatment programs to enable the offender to break the alcohol-crime cycle (Kevin 1998; CASA 1999; Koski-Jannes 1999).

Inmates require a composite approach to their alcohol-related problems, encompassing treatment (including medically supervised treatment for withdrawal), behavioural and education programs, literacy and vocational skills, medical care, psychiatric help, counselling and community aftercare (Maher 1994; Belenko and Peugh 1998; CASA 1999). Treatment design must be adjusted for the length of the prison sentence (Belenko and Peugh 1998; CASA 1999) and take into account the prevalence of poly-drug use in the prison population (Maher 1994). In the past, treatment programs have usually been designed to meet the requirements of men and, as such, may be unresponsive to the needs of women. It is generally considered that most women would benefit from the provision of specialist women's programs (Maher 1994).

Over the past decade the principle of therapeutic communities has been applied to the prison-based rehabilitation of people with alcohol and other drug addiction, with encouraging results. When combined with post-prison aftercare, such programs have been shown to be effective in reducing recidivism. A recent cost-benefit analysis of the Amity program in the United States estimated that the reduction in recidivism produced savings of more than \$1 million per year (Mullen et al 1996; Lipton 1998; Leon et al 2000). Supportive family and community ties have been shown to enhance an inmate's wellbeing and improve

the outcomes of prison-based treatment programs, with family-focussed strategies resulting in improvement in post-release outcomes (Lemieux 2000).

A large proportion of inmates report developing alcohol and other drug problems during the teenage years, underscoring the importance of early intervention and prevention strategies (Stathis et al 1991; Walsh 1997; CASA 1999). A combination of negative childhood experiences place children at high risk of future incarceration. Such experiences include physical, sexual and emotional abuse, parental alcohol abuse, childhood violence and antisocial behaviour; low educational level and poor mental health. Many of these risk factors are easily identified in children and may be amenable to early and consistent interventions (Walsh 1997). Prevention programs have the potential to be cost-effective and to interrupt the transmission across generations of risk in misuse of alcohol and illicit drugs (Homel et al 1999). The costs related to incarceration are enormous and highlight the need for prevention programs targeting populations at risk for substance abuse and criminal activity.

There is potential for programs targeted at prisoners to be cost-effective, as they have the potential to minimise alcohol-related harm at the same time as reducing recidivism in prisoners. The problems of alcohol and other drug misuse in prison are complicated by the high incidence of mental health problems and intellectual disability among prisoners.

Convicted drink drivers and others with community-based sentences for alcohol offences can be targeted with education and treatment. For a comprehensive approach, there needs to be coordination between justice, police and health services. To enhance the success of these programs it is important that the treatment regimes are well matched to the needs of offenders and are coordinated with legal sanctions.

People with a mental health disorder

There is a considerable degree of comorbidity involving substance use disorders and other mental health disorders, with alcohol use disorders about three times as common as other drug use disorders. Comorbid disorders are more likely to be chronic and disabling, and to result in greater service utilisation. In many cases current health care delivery structures do not cater for the complex needs of these clients. The treatment needs of people with comorbid alcohol use disorder and mental illness are complex, and require integrated services and professionals trained in the

management of both mental illness and substance abuse.

Most people with comorbid mental illness and substance abuse are seen by general practitioners. It is essential therefore that general practitioners are assisted to identify comorbidities and equipped to manage people with these conditions or, where appropriate, to refer them to relevant specialist services.

Even low levels of alcohol consumption have been shown to interact adversely with most of the medications commonly prescribed for the treatment of mental health problems. All health care providers and consumers need to have information about the possible adverse effects of alcohol with anti-depressants and anti-psychotic medications.

Older people

Surveys conducted in health care settings in the USA have found increasing prevalence of alcohol dependence amongst older people. Yet hospital staff are significantly less likely to identify alcohol-related problems in an older patient than in a younger patient. Questionnaires currently used to screen for alcohol dependence may be inappropriate for older people, who may not exhibit the social, legal and occupational consequences of alcohol misuse generally used to diagnose problem drinkers. In addition, alcohol dependence can be mistaken for medical or psychiatric conditions common among older people such as depression, insomnia, poor nutrition and frequent falls. Consequently, alcohol-related problems may go undiagnosed or be treated inappropriately in this age group. Health care workers should routinely discuss alcohol use with older patients (NIAAA 1998).

Four factors contribute to an increased susceptibility in older people to alcohol-related harm.

- As people age, their tolerance for alcohol tends to decrease. Since the total volume of body water decreases with age, a given amount of alcohol produces a higher blood concentration in older people. This effect is relevant for people aged over about 70 years, though the effect varies from individual to individual.
- Older people are the greatest consumers of prescription drugs in Australia. Prescription medications can interact with alcohol, causing unpleasant or dangerous side-effects, increasing the effect of the alcohol, and/or decreasing the effectiveness of the medication.

- Falls are an increasing risk with advancing age and this risk is also increased by intoxication. Falls are the most common cause of death and morbidity among older people, with hip fracture being the most significant clinical event. In 1995-96 in Australia the rates of hospital separations on account of injuries sustained through falls were: for people aged 65-74 years, 886 per 100,000 males and 1,456 per 100,000 females; and for people aged over 75 years, 3,059 per 100,000 males and 5,871 per 100,000 females.
- Falls carry high cost both to individuals and to society, and they result in heavy demands on both short-term and long-term care. Even if a fall does not result in injury, the older person may suffer anxiety and loss of confidence and subsequent curtailing of activities and increased dependence.

Balanced against this increased susceptibility to alcohol-related harm is the protective effect of alcohol against cardiovascular disease, achieved at low levels of consumption, which affects men from age 40-45 years onwards, and women from age 45-50 onwards (Single et al 1999).

It is essential that older people, their families, carers and health care providers are aware of the increased susceptibility to alcohol-related harm amongst older people.

Heavy drinkers

It is estimated that 727,820 Australians experience alcohol dependence or problem drinking (Mathers et al Vos 1999). Chronic heavy drinking increases the risk of developing a number of disorders including cirrhosis of the liver, stroke, cardiomyopathy, hypertension, cancers of the lips, mouth, throat, larynx and oesophagus, alcohol dependence and brain injury. The community needs to be better informed about the possible long-term health consequences of high risk drinking behaviours (see Key Strategy Area 1: Informing the community).

Education interventions for people with alcohol dependence focus on increasing their understanding of the health and social risks associated with heavy alcohol consumption. This type of education forms a vital part of the treatment process for alcohol dependent persons. Education interventions for this group include self-help manuals, simple advice, and brief counselling. The advantages of these initiatives are that they are low cost, easy to implement, and

require minimal involvement by professional health workers. However, education alone generally does not lead to major changes in the drinking behaviours of this group and other forms of intervention are required.

People with alcohol dependence or problem drinking need access to a range of high quality prevention and treatment services (see Key Strategy Area 9: Intervention by health professionals).

Long-term regular heavy drinkers are also at increased risk of nutritional inadequacies. Wernicke Korsakov Syndrome is due to a lack of thiamine in the diet and is characterised by impaired memory and decreased ability to function independently. Wernicke Korsakov syndrome is largely preventable through the addition of thiamine to the diet.

3. PREVENTION OF ALCOHOL-RELATED HARM IN YOUNG PEOPLE

Early childhood interventions

There has been increasing research over the past two decades attempting to identify and understand mechanisms or factors that increase or decrease the social and emotional wellbeing of children. Research has demonstrated an array of psychosocial and environmental factors that are linked to and influence the status of physical and mental health at the population level. At the individual level, these population-level determinants of health translate into individual risk and protective factors that influence physical and mental health and wellbeing (Rutter 1985).

Research into the area of social and emotional wellbeing has illuminated two critical issues that have guided a preventive response across government portfolios. Firstly, there is a high correlation between physical and mental illness and poor educational, social, and economic outcomes. Secondly, there is substantial evidence to highlight the significance of underlying causes and common risk factors that have a notable impact on issues of community and political concern. These problem outcomes include school failure, juvenile crime and delinquency, violence and abuse, alcohol and drug abuse, depression, and youth suicide (Hawkins et al 1992; Homel et al 1999).

In the past, research relating to risk factors has been more extensive than that conducted on protective

factors, although more recently there has been increased effort to identify factors that promote resilience and protect against risk factors. Risk and protective factors that precede early alcohol use and misuse have been divided into two broad categories:

- societal and cultural factors (laws, norms, availability, economic deprivation and neighbourhood disorganisation); and
- individual and interpersonal environments (families, school, and peers).

These risk factors have been shown to be stable over time, arise from several domains, be salient at different developmental periods, and be multiplicative (rather than simply additive) in their effect: relative risk is proportional to the number of risk factors present (Hawkins 1992).

The presence of risk factors does not guarantee that the individual will go on to display later problems or dysfunction (Sanders 2000). There is a dynamic interaction among risk and protective factors that changes throughout life, and it is thought that the patterns of interaction are interwoven and complex (Mrazek and Haggerty 1994). The finding that many health aspects initiated during adolescence continue into adulthood ultimately resulting in disability and mortality reinforces the importance of prevention and early intervention. (Patton 1999).

Research has identified many risk and protective factors for alcohol misuse and the impact of each varies depending upon the phase of development of the child (Homel et al 1999). Family life in early childhood is increasingly emerging as critical in building resilience to, and reducing risk of, a range of subsequent social and behavioural problems including problematic alcohol use. The family is therefore of central importance in primary prevention. The most influential risk factors appear to be those that affect early development in the family, including:

- chaotic home environments, particularly where parental substance abuse occurs;
- ineffective parenting;
- lack of support;
- inconsistent or harsh discipline; and
- lack of mutual attachments and nurturing (Barnes 1995; Conger 1994; Homel et al 1999).

Outside the family group, various school, peer and community factors also interact to place children at risk, while other factors provide a protective effect. The interaction or combination of risk factors may

ultimately be the critical determinant of the development of anti-social behaviour (Jessor et al 1995; Homel et al 1999). Children and young people are particularly vulnerable at transition periods in their lives, such as the commencement of school, advancement from primary to secondary school, and entering university or the workforce. The age of 12-13 years, the time of transition to high school, is a high risk period for the onset of alcohol use and misuse (Johnston 1996). Although progression from the illegal, early use of alcohol to the use of illegal drugs is not inevitable, the risk of progressing to illegal drugs is increased in these young people.

Interventions aimed at reducing alcohol-related harms in adolescents through modification of risk and protective factors are generally conducted during the last years of primary school or in the early years of high school. Interventions conducted earlier in life have not focussed on alcohol misuse as an outcome, but on other outcomes such as mental health, conduct disorders, delinquency and educational achievement. Parents need to take an active role in their children's lives, taking time to discuss the area of drugs and peer relationships with them. Resistance skills to enable refusal of drugs must be developed within family, school and community. Programs strengthening and developing bonds to school and community work to enforce anti-drug norms, positive peer relationships, and prosocial behaviour.

Over the past decade, research has identified reliable interventions that can modify risk and protective factors, in an attempt to improve social and personal health and wellbeing. However, Australian research identifying risk and protective factors and evaluating their impact and potential for modification is limited. Prevention programs in the area of child and adolescent mental health have the potential to be cost-effective and to interrupt the transmission across generations of risk in misuse of alcohol and illicit drugs (Homel et al 1999).

Preventing onset of high risk drinking patterns in adolescence

Research shows that, whilst per capita alcohol consumption has declined in Australia over the past two decades, more young people are drinking alcohol, drinking at an earlier age and increasingly adopting high risk drinking patterns. In addition to lacking experience of drinking and its effects and therefore having reduced capacity to assess or regulate their drinking behaviours, young people often indulge in a

range of risk-taking behaviours. This combination puts young people at greater risk of alcohol-related injuries and accidental death.

Young people should be assisted to develop understanding, attitudes and behaviour that enable them to minimise and avoid the harmful consequences associated with alcohol misuse. Helping young people to learn about drinking and the effects of alcohol within a safe and supportive environment can help them manage their drinking in ways that minimise risk to themselves and others. Parents need to be encouraged and supported to discuss alcohol misuse with their children.

Particular attention should be paid to the settings in which young people drink (see also Key Strategy Area 7: Promoting safer drinking environments). High risk drinking behaviours need to be separated from other activities such as driving and water sports that involve risk and/or require a high degree of skill.

Programs targeted at young people should:

- provide information through the mass media and other channels on a range of issues;
- involve the development of school-based policies and incorporate best practice;
- address behaviours associated with drink driving;
- facilitate the introduction of appropriate alcohol policies in sporting groups and recreation clubs; and
- be based on a harm reduction approach to minimise violence.

There is evidence to show that teenage drinking may be influenced by education initiatives. Peer pressure can induce young people to participate in potentially harmful behaviour, including alcohol misuse, on a regular basis. Successful youth education strategies ensure that students actively participate when learning harm minimisation skills. These skills include adhering to sensible patterns of alcohol consumption and resisting peer pressure to undertake high risk drinking.

Aboriginal and Torres Strait Islander issues

The social and emotional disadvantage experienced by Aboriginal and Torres Strait Islander peoples is enormous. Aboriginal and Torres Strait Islander peoples encounter multiple risk factors more frequently than other Australians, and factors that increase the risk of poor outcomes cover every aspect of life (Hunter 1995). The range of factors include a changing population structure, cultural change, family dysfunction

ction or breakdown, removal of children from their families, poverty, lack of educational opportunities, unemployment, alcohol and other drug misuse, social injustice and racism (Hunter 1995; Merritt 1999). In many Aboriginal and Torres Strait Islander communities these factors are experienced universally, combine to overburden the population with stress, and work to minimise both the development of protective factors and the influence of individual resilience (Hunter 1995, 1998).

Research into approaches to modifying risk and protective factors relating to mental health and substance abuse among Aboriginal and Torres Strait Islander peoples has, nevertheless, been limited, while research results, where they are available, have not been fully utilised. The limited literature addressing the issue of prevention and early intervention in these communities comes primarily from the area of mental health and portrays a pessimistic picture of the current situation (Hunter 1995, 1998; Merritt 1999). To date, there is little information available on risk and protective factors relating to alcohol use by Aboriginal and Torres Strait Islander adolescents. Recent work conducted in the Northern Territory has identified a number of culture-specific factors that are potentially modifiable and should be taken into consideration in designing strategies and programs directed at reducing alcohol-related harm in these young people (Jessen 1999). Factors include parental attitudes and modelling, community and social capital, and positive attitudes and opportunities relating to education and employment.

Parental attitudes and modelling were found to be significant factors influencing drinking among Aboriginal and Torres Strait Islander adolescents, with strictness and positive role modelling protecting against early and excessive alcohol use. Although an unstable family background increases the risk of excess drinking, relatives can counteract or reinforce parental attitudes and modelling. The influence of community and social capital on adolescents' consumption of alcohol was found to be of crucial significance. The most important community factor appeared to be strong leadership and cohesion, whether or not traditional culture was present, although where traditional culture was strong, adult and adolescent drinking problems were less widespread. Participation in non-traditional religious activities also afforded protection from early and excessive use of alcohol.

Insufficient employment opportunities and a lack of leisure time activities were both found to predict an increase in drinking throughout the community,

particularly in 15-17 year olds who have left school. As with non-Indigenous youth, positive attitudes to school and identified workforce goals are protective factors.

In spite of the growing body of knowledge that there is a common causal pathway leading to a number of negative social and emotional outcomes, a coordinated approach to reducing the risk factors and promoting protective factors has not been forthcoming in Australia. The evidence demonstrates the need for a shared response and shared responsibility to institute universal, selective and indicated prevention strategies across home, school, and community settings. There is a unique opportunity for different sectors of government and community organisations (for example, National Association for the Prevention of Cruelty and Neglect in Children) to join together in investing in programs that increase social and emotional wellbeing in children. These programs will aim to produce the separate outcomes desired by each of the departments of Health, Education, Justice, Community Welfare and Indigenous Affairs.

National programs targeting mental health promotion, alcohol and drug use, delinquency and youth suicide can effectively realign their prevention strategies to address known predisposing risk and protective factors early in the developmental lifespan, informed by the current research into risk and intervention.

4. IMPROVING THE EFFECTIVENESS OF LEGISLATION AND REGULATORY INITIATIVES

Reductions in alcohol-related harm can occur through the use of a number of strategies that provide controls over the availability of alcohol and the way it is used. Some examples of strategies currently used in Australia include:

- liquor licensing laws;
- restrictions on the sale of alcohol of service to intoxicated people and those who are under 18 years of age;
- local restrictions at the request of Aboriginal and Torres Strait Islander communities;
- police initiatives ;
- consumer information;
- mandatory school drug education in some States and Territories;
- legislation regulating alcohol advertising.

Liquor licensing laws

Local by-laws, enforcement of existing laws, and restrictions on extended trading of licensed premises can all contribute to a reduction in alcohol-related offences within a community. There is a great potential for liquor licensing laws to prevent alcohol-related crime, as licensed establishments are the venues where the heaviest consumption of alcohol occurs. In Australia it has been estimated that one third of all alcohol is consumed on licensed premises, and this consumption is associated with approximately two thirds of the problems of intoxication (Stockwell et al 1993).

Legislation can provide controls over physical access, economic availability, levels of customers' intoxication and risk factors related to alcohol such as the use of plastic drinking containers, serving beverages in cans rather than bottles, providing adequate levels of security staff and limits on crowding and parking.

However, enforcement of liquor licensing laws, particularly in regard to consistency and expertise, is an area that has attracted some criticism. It is therefore worth reviewing to ensure contemporary approaches meet standards of quality practice. Resource constraints, legislative complexities (for example, in defining intoxication), competing policing priorities and the hospitality industry's preference for self-regulation except in extreme circumstances (for example, impending or actual violence or property damage) all act to limit the effective enforcement of liquor licensing legislation (Rydon and Stockwell 1997). A 1992 study illustrated that poor management, lax police surveillance, and inappropriate bureaucratic controls and legislation help to perpetuate violence near licensed premises (Homel et al 1992).

There is some evidence that existing legislation could be better enforced, particularly in regard to the service of alcohol to minors. It is relatively easy for teenagers within a year or two of the legal drinking age to gain access to alcohol on licensed premises. This has potential implications for harm associated with the consumption of alcohol. In Australia there is very little support for raising the legal drinking age. However, there is strong support for restricting the access of minors to licensed premises. Effective strategies to support Liquor Act legislation prohibiting the sale or supply of alcohol to people under 18 years of age include thorough identity checking, the use of identity cards providing proof of age, and stricter penalties for infringements of the laws.

Server responsibility

Liquor Licensing Acts in Australia prohibit the service of liquor to an intoxicated person and the negligent service of alcohol, including service to underage consumers. Despite these laws, the evidence shows that licensed premises in Australia continue to provide alcohol to people who are underage or intoxicated. In Western Australia, 41% of patrons reported drinking more than six drinks (males) or four (females); and 23.3% had exceeded ten and six drinks respectively (Rydon et al 1993).

Breaches of liquor licensing laws may give rise to legal liability of the server if there are any negative consequences of the drinking behaviour. However, current laws regarding the service of alcohol to intoxicated patrons are rarely enforced in Australia, in part due to the difficulty proving the patron was intoxicated at the time of service. Research suggests that there is little support for licensed premises to be held responsible for patrons becoming intoxicated or staff being held liable for the subsequent actions of intoxicated patrons (Lang et al 1992).

Police initiatives

Policies on impaired driving and random breath testing initiatives have shown considerable success in reducing the numbers of accidents associated with drink driving. Random breath testing encourages responsible drinking, home consumption, or the nomination of a "Designated driver" who refrains from drinking alcoholic beverages.

As with many regulatory strategies, enforcement plays a significant role in enhancing the effectiveness of programs. The success of these initiatives is strongly related to the perceived risk of being apprehended and the understanding that once apprehended, penalties are inevitable and severe. Consequently, continued success relies on the laws being vigorously enforced and highly publicised. Effective evaluation of enforcement approaches and estimation of cost-effectiveness will identify successful harm minimisation strategies.

Consumer information

Labels on alcohol beverage containers offer an opportunity to provide consumers with information regarding safe levels of consumption. Compulsory standard drink labelling was introduced in Australia in December 1995. Labelling is based on the definition of a standard drink as one containing 10 grams of

alcohol. The following are approximately equal to one standard drink: a 285ml glass of regular strength beer; a 425ml glass of light beer; one 30ml nip of spirits; or a 100ml glass of wine.

In general heavier drinkers (those who consume 7 or more standard drinks on a drinking occasion) are more likely to provide an accurate description of a standard drink (Shanahan and Hewitt 1999). Even for those who are aware of the standard drink concept, variability in beverage container volumes often leads to confusion (Banwell 1999).

It has been suggested that the less-than-optimal level of community awareness and comprehension of standard drink information has resulted from the lack of any concerted campaign to promote such awareness. Others have argued that the size and placement of labels needs to be reviewed, given the assumption that consumers have a right to be properly informed.

Health warning labels are another labelling option adopted by some countries. Nine countries, not including Australia, have mandated health warnings on the labels of alcoholic beverages. Although there has been some evidence of consumer awareness of the message conveyed by the warning label, there is very little research evidence to suggest a change in alcohol consumption has occurred as a result of these warnings.

Community involvement

Local accords are one way in which communities can work with local alcohol retail establishments and law enforcement agencies to regulate the sale and supply of alcohol in particular areas. Accords are agreements forged between alcohol retailers and local groups comprising community members and/or police, about serving practices, availability, operating hours, and advertising.

Accords have been effective in addressing some of the harms associated with alcohol consumption in public environments (particularly violence and anti-social behaviour) and ensuring that alcohol beverage and hospitality industry voluntary codes of conduct are adhered to. However issues have arisen about the sustainability of accords and the degree to which voluntary agreements can withstand the pressure of potential short-term economic gain.

Restricting supply of alcohol in Aboriginal and Torres Strait Islander communities

Liquor licensing authorities have three main options available to address the issue of alcohol-related harm in Aboriginal and Torres Strait Islander communities: restricting the availability of alcohol; ensuring that licensees implement harm-minimisation principles; and responsible serving practices for both on- and off-premise sales (Aves 1997). Restrictions on the supply of alcohol are a valuable tool for reducing alcohol-related harm when used in combination with other measures as part of a broad public health strategy (d'Abbs and Togni 2000; Gray et al 2000b). Effective alcohol controls require popular community support (Room 2000), evidence of opportunistic rather than compulsive consumption, and situations where alternative sources of alcohol supply are limited (Aves 1997).

Supply reduction encompasses a number of strategies and, with the exception of “dry” or restricted areas, combinations of restrictions are generally enforced. Strategies include:

- “dry” or restricted areas;
- conditions on trading hours/days;
- type of alcohol provided, volume of take-away alcohol (for example, no wine casks containing more than 2 litres);
- type of containers used (for example, no glass);
- third party sales; and
- the provision of food with alcohol (Bourbon et al 1999; d'Abbs and Togni 2000; Gray et al 2000b; Gray et al 2000b).

Evaluations of liquor licensing restrictions implemented in regional and remote areas of Australia have demonstrated a reduction in alcohol-related harm (Brady and Martin 1998; Bourbon et al 1999; d'Abbs and Togni 2000; Gray et al 2000a; Gray et al 2000b). Total prohibition, available only in some States and Territories, has been evaluated in the Northern Territory (Gray et al 2000a). A review of the Northern Territory evaluation found an improvement in the quality of life in several but not all “dry” communities, but raised concern about the methods used in declaring and enforcing “dry” areas, some of which were found to be cumbersome, inefficient, heavy-handed, and not supporting responsible community control of alcohol use (Gray et al 2000a).

Widespread community support for the implementation of restrictions on the supply of alcohol

has not always meant an easy road for effecting changes. The process for implementation of restrictions has, in the past, involved lengthy legal action to obtain the support of the Licensing Authorities, such as occurred in Tennant Creek (Wright 1997). Over the past decade Liquor Licensing Acts in many States and Territories have been amended so that they include harm minimisation provisions Acts (Bourbon et al 1999), enabling a public health approach to be used when requesting alcohol supply to be restricted. Although all establishments supplying alcohol are required to abide by the conditions set out in the Liquor Licensing Acts, enforcement of the Acts is impeded by a number of factors. These include the complexity and cost of lodging an objection; the protracted nature of the process of objecting; a lack of information available to communities; concentration of police enforcement on patrons, not licensees; and complicated divisions of enforcement responsibilities between police, governments, licensing authorities and security personnel (Bourbon et al 1999).

5. RESPONSIBLE MARKETING AND PROVISION OF ALCOHOL

Responsible marketing strategies can contribute to the reduction of alcohol-related harm both directly and indirectly through their support of existing health promotion messages. However, there is considerable community concern that alcohol advertising and sponsorship might result in increased misuse of alcohol. Advertisements utilising animation, humour or rock music, or implying an association with illicit drugs, are particularly attractive to young people and raise concern regarding the potential of such advertisements to have a detrimental effect on drinking patterns. Research investigating this relationship is limited, the findings inconsistent, and there remain many gaps in our knowledge.

Voluntary Alcohol Beverages Advertising Code

The Australian Association of National Advertisers established a new system for advertising self-regulation in 1997. This system is managed by the Advertising Standards Bureau and allows specific industries with their own codes of advertising to be managed by the industry group. The Alcohol Beverages Advertising Code was established in 1998 by the four major alcohol beverages industry associations, which funds, manages and operates the code.

In brief, the code requires that advertisements for alcohol beverages must:

- present a mature, balanced and responsible approach to the consumption of alcohol beverages;
- not have a strong or evident appeal to children or adolescents;
- not suggest that the consumption or presence of alcohol beverages may create or contribute to a significant change in mood or environment;
- not depict any direct association between the consumption of alcohol beverages, other than low alcohol beverages, and the operation of a motor vehicle, boat or aircraft or the engagement in any sport (including swimming and water sports) or potentially hazardous activity.

A Complaints Adjudication Panel assesses any complaints about alcohol advertisements that have been referred to it by the Advertising Standards Bureau. The panel consists of five independent members who have no affiliation to either the alcohol industry or any other interest groups. The panel's decisions are communicated in writing to the Advertising Standards Bureau, which informs the complainant and other interested parties. A yearly report of decisions and recommendations made by the panel is provided to the Alcohol Beverages Advertising Code Management Committee, relevant State and Federal Ministers, and relevant advertising industry bodies such as the Australian Standards Bureau.

The complaints mechanism is, however, an inherently lengthy process and the sanctions available are limited. There is scope to enhance the operation of the current system through facilitating community involvement in the review of existing advertising marketing strategies and by promoting effective partnerships between the alcohol beverages and hospitality industry, government, and public health.

Alcohol availability

There is a long-standing debate over the relationship between the availability of alcohol and the incidence of alcohol-related problems. It is known that increased per capita consumption levels and increased numbers of individuals drinking to excess are associated with an increase in alcohol-related problems. It is also known that there is an association between liquor outlet density and the level of alcohol-related harm (Jewell and Brown

1995; Scribner et al 1999), but it is not clear whether the demand for alcohol is stimulated by or precedes the frequency of outlets.

The effect of alcohol availability on alcohol-related harm has been demonstrated in countries that have had dramatic changes in alcohol availability due to strikes of retail or beverage production workers, rationing strategies, and prohibition. In some instances, harm has been noted to decrease significantly. In other cases, there was little change as consumers substituted retail liquor with an increase in illicit alcohol production and unregulated sales of alcohol products (Edwards et al 1995). Therefore policies that seek suddenly to change the availability of alcohol should be approached with caution as they may result in both beneficial and harmful effects.

A number of Aboriginal and Torres Strait Islander communities have set strict rules about the sale and supply of alcohol in an effort to combat harmful drinking practices. The systems of control typically involve declaring a location as a “dry” area, amending licensing regulations, and making formal or informal agreements between Aboriginal and Torres Strait Islander groups and licensees restricting the hours of sale and/or amounts of liquor sold.

Central and northern Australian communities have become increasingly involved in the prohibition of alcohol. In particular, Tennant Creek, Halls Creek and Derby collectively show specific benefits of targeted restrictions on availability. In accordance with other harm minimisation strategies in Aboriginal and Torres Strait Islander communities (discussed later) prohibition is seen to be more effective and easier to control in remote communities than in towns or metropolitan locations. However, local communities, regardless of their location, should have the capacity to create restrictions when the local problems demand this approach.

Some Community Councils in remote or isolated Aboriginal and Torres Strait Islander communities can make significant profits from the sale of alcohol through community canteens (Martin 1998). Such revenue may be used to fund essential community services and to supplement income from other sources such as the Commonwealth Grants Commission or State and Territory governments. The same councils may, however, also have responsibility for making by-laws, leading to a “contradiction between the commercial imperatives of running a liquor outlet, and the responsibilities of the councils’ relation to welfare and

to law and order” (Martin 1998: 2). It is therefore important that Community Councils be supported to develop strategies to replace or eliminate dependence on canteen revenue and to develop more sophisticated controls over alcohol availability and consumption, independent of conflicting commercial imperatives associated with the sale of alcohol (Martin 1998).

6. PRICING AND TAXATION

The price of alcohol products has an impact on the rates of alcohol consumption in a community. The literature demonstrates that, when all other factors remain unchanged, an increase in the price of alcohol generally leads to a drop in consumption and, similarly, a reduction in the price of alcohol leads to a rise in consumption. Increasing the price of alcohol (or using price as a means of diverting consumer preferences to low alcohol varieties) has been shown repeatedly to be one of the most effective prevention strategies to minimise consumption of alcohol, which in turn can be associated with a reduction in alcohol-related harm.

Taxation regimes are one avenue through which price can be influenced. Taxation policy as it relates to alcohol is largely the responsibility of the Commonwealth Government and is the product of a range of factors, including historical precedent, government objectives in relation to health policy, and industry assistance and budgetary requirements. The retail cost of alcohol reflects these taxation arrangements but also incorporates costs associated with the cost of production and the quality of the product.

On 1 July 2000 the alcohol excise arrangements were altered as part of the Government’s “A New Tax System” (ANTS) reform package. In particular, the excise rates on beer and other beverages with less than 10% alcohol content were altered to offset the removal of the 37% wholesale sales tax. The new beer excise rates were set to ensure the Government’s ANTS price commitments were met – namely, that the price of a carton of full strength beer need only increase by 1.9% and the price of a carton of low alcohol beer need not increase, as a result of the tax changes. This measure should increase the price differential between full strength and low alcohol beer in favour of lower alcohol varieties. Beer and other alcoholic beverages (excluding wine) with less than 10% alcohol are now taxed according to alcohol content.

From a public health perspective these measures are helpful because pricing in this way creates an incentive for the consumer to choose lower strength alcohol products when purchasing alcohol.

7. PROMOTING SAFER DRINKING ENVIRONMENTS

Certain patterns of drinking can increase the risk of harm to the drinker and this harm can be further exacerbated by the hazardous nature of certain settings (for example, combining alcohol consumption with driving or use of machinery). Prevention strategies that target these high-risk patterns, particularly situations in which individuals drink to intoxication, have been successful in minimising the harm and cost of alcohol to the Australian community.

The environment in which drinking occurs also contributes to the likelihood of alcohol-related harms. The risk will vary depending on:

- where a person drinks – at home, in a licensed venue or at a large public event; with family, with friends or alone;
- how they drink – for example, having six drinks in a restaurant with a meal versus six drinks at party on an empty stomach;
- the rate of drinking – six drinks in an hour will produce a very different result from six drinks in six hours.

The safety of the surrounding area, including adequate lighting in the car park and access to public transport, can also affect the likelihood of alcohol-related harm (for example, car crash or assault).

Strategies used in Australia to regulate the environment in which alcohol is consumed include managing the geographical density of outlets, and the hours and days of sale; regulation of the responsible service of alcohol; host responsibility programs; promotion and availability of low-alcohol products; events management; and in some Aboriginal and Torres Strait Islander communities, prohibition.

Licensed premises

An accumulation of research over the past two decades demonstrates an association between various environmental factors and aggression and harm in licensed premises (Graham et al 1996). These risk

factors include overcrowding, a predominantly young male crowd, boring entertainment, loud music, little provision of food, cheap drinks, low standards of furnishing and upkeep, poor ventilation and high levels of intoxication combined with aggressive bouncers and confrontational staff (Graham et al 1996; Homel et al 1992).

Strategies to reduce the likelihood of conflict and frustration that may lead to public order incidents in and around licensed premises include: appropriate training of licensees and security staff, sensitive community policing, sufficient late-night public transport, management of the way people leave the premises to avoid sudden crowding on the streets (Marsh and Kibby 1992), providing non-alcoholic beverages and food, and providing adequate lighting and ventilation.

Responsible server programs aim to alter serving practices, particularly with underage customers and people showing obvious signs of intoxication. Training covers the effects of alcohol, applicable laws, how to refuse service to obviously intoxicated patrons, and how to help customers to obtain transport instead of driving. Responsible server programs are now mandatory in some states in the USA. An evaluation of Oregon's mandatory server-training policy found that it achieved a statistically significant reduction in traffic crashes in that state (Holder and Wagenaar 1994).

Low alcohol products and other products that reduce risk

The promotion of low alcohol beverages such as low alcohol beer offer potential health benefits and can reduce the alcohol intake of the drinker without reducing their overall volume of drinking. In the Australian context, low alcohol products have been shown to be a successful and accepted alternative for some consumers to full strength alcohol products.

A number of other products can minimise harms resulting from intoxication. These include air bags in motor vehicles, breathalysers for self-testing provided at licensed venues, and plastic containers rather than glass containers for supplying alcohol. However, evidence suggests that when new strategies are adopted, the public needs to be educated on their use. A recent analysis of breathalyser machines in South Australian Hotels and Clubs resulted in withdrawal of the machines due to inaccurate readings, lack of correct and sensible use of the breathalysers, and lack of financial viability.

Public events

Historically, planning for public events has been lacking both in Australia and overseas. To promote effective planning for a problem-free event, the Queensland Police Service, in collaboration with the Queensland Department of Tourism, Sport and Racing, published a booklet titled *A Planning Guide for Event Managers*. This document provides guidelines for the planning process and an event management plan that must be completed in order to obtain a permit. Queensland is the first Australian State to enshrine these requirements in the liquor licensing guidelines, which work in conjunction with the liquor licensing act.

Another strategy effective in reducing the problems associated with excessive alcohol consumption is to remove alcohol as the primary focus of public events. Public events can be planned either as alcohol-free, or as events where alcohol is not a primary focus and other activities provide the primary entertainment focus. Events of this type have been very successful with teenagers and also show promising results as a harm minimisation strategy for adults.

Private homes

Host responsibility programs

Host responsibility programs, implemented over the past decade, are an attempt to influence environments other than licensed premises. In these programs social hosts are provided with information and advice to reduce the likelihood of alcohol-related problems. Strategies covered by these programs include safe travel/ transport, provision of food, drink alternatives and safety issues. Host responsibility programs can be seen in a number of jurisdictions and local communities in Australia. Compliance by hosts to these programs is increasing, particularly in States, such as Western Australia, where a host can be held liable if a guest is injured or injures another person while intoxicated.

Domestic violence

Whilst it is widely accepted that alcohol is a factor in many domestic violence incidents, the exact association is not fully understood. A first step in improving understanding is to quantify its scope, and the following strategies could assist to improve data collections in this area:

- standard electronic recording of time of admission in hospital emergency settings across all States and Territories;

- hospital emergency settings to record whether subjects display obvious signs of intoxication (impaired coordination, balance and/or speech, smell of alcohol);
- hospital emergency settings to record whether either victim or perpetrator have consumed alcohol in the previous 6 hours;
- national coordination of data collection, with a national police recording system of calls to domestic violence incidents to record indicators of alcohol involvement, to allow for better comparisons across states and community regions.

There is some evidence from the US to suggest that, when substance abuse and domestic violence are addressed in an integrated way, better outcomes are achieved (Goldkamp et al 1996). A US evaluation study conducted by Easton et al (2000) found that a motivational enhancement intervention was feasible and effective in increasing readiness to change substance use among domestic violence offenders who were mandated by court to attend anger management classes. While there has been little evaluation of the long-term effectiveness of perpetrator programs in reducing domestic violence, the authors of this study conclude that the results of their study highlight the importance of assessing and treating substance use among offenders of domestic violence, as this may be an important indicator for higher dropout rates and reoffenses among this population.

Aboriginal and Torres Strait Islander communities

The Ministerial Council for Aboriginal and Torres Strait Islander Affairs endorsed a national strategy in 1999 to target family violence in Aboriginal and Torres Strait Islander communities. This was developed jointly by the Aboriginal and Torres Strait Islander Commission and the Commonwealth to focus on a number of areas, including alcohol misuse and the better targeting of existing resources in line with community-driven initiatives.

Alcohol in the workplace

Alcohol consumption that affects workers can occur in the workplace itself, in nearby locations, or through heavy consumption away from the workplace. The impact of alcohol misuse is not limited to the drinker, but also results in psychosocial damage to colleagues

and subordinates. While drinking rates vary between occupational groups, alcohol-related problems can occur in any workplace.

Drinking is associated with:

- the workplace culture and attitudes toward drinking;
- workplace alienation, especially where opportunities for the workers' effort to be meaningful and valued are limited;
- the availability of alcohol or access to it;
- the implementation of alcohol-specific policies in the workplace.

Thus the workplace can be both a location for alcohol consumption, alcohol-related injuries and other problems; and at the same time, workplace conditions can contribute to employees' harmful drinking. Similarly the workplace can be a location for alcohol-specific interventions, including education and prevention, early identification and intervention (including contributing to motivation to seek assistance), and treatment and support for rehabilitation of individual workers.

The complex interaction of personal and workplace factors in alcohol-related problems identifies the need to implement a multifaceted approach in the workplace to reducing these harms. Under the *Occupational Safety and Health Act* (1984), employers and employees both have an obligation to ensure safety within the workplace (Scotland 1996; Worksafe 2000). Strategies to reduce alcohol-related harm in the workplace must be incorporated within a company's overall health and safety policy and afforded the level of priority commensurate with the level of risk within that organisation (Trice 1992; Grace 1996; Worksafe 2000). A comprehensive, preventive approach targeting both the individual and the workplace environment and structure should be employed. Strategies should include education, health promotion, and prevention programs; organisational change including good work practices and job design; employee assistance programs including confidential counselling and/or referral to professional health; and alcohol control policies (Richmond et al 1992; Webb and Fresta 1994; Grace 1996; Scotland 1996; Worksafe 2000).

The role of workplace testing for alcohol is controversial, raising issues of confidentiality, interpretation of results, false positive results, high cost, possibility of improper or malicious use against employees, legal and ethical issues and damage to

labour relations (Grace 1996; Worksafe 2000 Webb and Fresta 1994). A review by Webb and Fresta (1994) found no evidence to support improved work outcomes through alcohol testing programs. Before considering implementation of workplace alcohol testing, there needs to be evidence that a problem from alcohol exists and that this problem has the potential to impact on safety. Any introduction of workplace alcohol testing should involve collaboration between employers, employees and their representatives and form part of a comprehensive alcohol policy and program (Webb and Fresta 1994; Grace 1996).

Policies and programs should be incorporated within an overall health and safety program. This includes articulation of the responsibilities that employers have in relation to work-linked social functions, host responsibilities and the provision of advice and support for those requiring individualised interventions. Such a policy might also address the issue of workplace testing for alcohol where this is appropriate in hazardous occupations. Specific employee assistance programs have been developed in some sectors and organisations over the past twenty years.

The strategies discussed above should not be viewed in isolation, nor should restrictions be imposed for the sake of restriction. Methods to reduce the impact of the environment on alcohol-related harm should be selected, applied and evaluated in a fashion appropriate to the workplace involved.

Alcohol and water safety

The consumption of alcohol is often associated with holidays, recreation and sporting activities. With increasing numbers of people taking advantage of water environments and recreation areas, it is important that the community is aware of the specific risks involved in consuming alcohol in and around water and the effects of alcohol on reaction time and judgement. In particular, strategies should aim at reducing binge drinking and irresponsible behaviour around water.

8. DRINK DRIVING AND RELATED ISSUES

Alcohol intoxication continues to be the number one cause of road deaths in Australia, being implicated in approximately one third of all road deaths. Further, it is estimated that 70-80% of single vehicle night-time

crashes involved prior consumption of alcohol. Data on fatal single vehicle crashes show that moderately intoxicated drivers involved are more commonly young (less than 25 years) or in early middle age (25-39 years) than are sober drivers, while highly intoxicated drivers are more commonly middle aged (25-59 years) (FORS 1999).

The legal blood alcohol concentration is uniform across Australia and is 0.05 g/100ml for general drivers. However, drivers with a learner's or provisional licence, those under 25 years of age who have held a licence for less than 3 years, and drivers in control of a bus, heavy vehicle or vehicle carrying dangerous goods are required to stay under 0.02 g/100ml.

There is a relationship between the blood alcohol level and the prevalence of fatalities. Of the alcohol-related fatalities that occurred in 1997, 19% had blood alcohol levels of 0.150 g/100ml or greater, and 9% were between 0.05 g/100ml and 0.149 g/100ml (FORS 1997b). A number of Australian States reduced the legal blood alcohol limit from 0.08 g/100ml to 0.05 g/100ml in the 1980s. This resulted in a decrease in the proportion of drivers killed due to alcohol in the States introducing the lower level, compared to no change in deaths in the States retaining the higher legal limit.

The evidence dictates the need to deter people from drinking and driving and traditionally the strategies used to achieve this have involved the use of legislation and penalties. However, current strategies also utilise community action to change social and cultural norms regarding drink driving behaviour. These methods include drink driving mass media advertising, local campaigns in Aboriginal and Torres Strait Islander communities, environmental injury prevention measures, road safety education and continuing road safety law enforcement.

A dramatic impact in drink driving related mortality and morbidity was achieved through the introduction of random breath testing, which had been introduced in every Australian State and Territory by 1989. This has been a very effective program that has significantly reduced alcohol-related harm. The program's deterrence value lies in the perceived high probability of being apprehended for driving while over the legal BAC limit and the understanding that, once apprehended, penalties are inevitable and severe. Factors that have contributed to the program's success include the high profile afforded to it by police, media and the community.

Measures to reduce alcohol-related road crash deaths and injury are most effective when designed to affect all drivers, not just recidivist drink drivers, and when a range of prevention, education, and enforcement strategies are employed. Pre-driver education about the effects of alcohol and drugs on a driver could be a valuable part of receiving and renewing drivers' licences. An effective strategy to reduce alcohol-related harm resulting from drink driving is the designated driver program. Generally, licensed premises encourage the nomination of a designated driver who is offered non-alcoholic products during the evening. However there is some evidence to indicate that an unexpected consequence of the designated driver program is that it provides a framework which legitimises binge drinking, particularly amongst younger males.

9. INTERVENTION BY HEALTH PROFESSIONALS

The early identification of people who have preliminary signs of alcohol problems is important so that they can be targeted to prevent their problems from progressing further. General practitioners can play a role in identifying those patients who are at risk of developing alcohol problems and can suggest strategies to help the person monitor and control their drinking. This approach is feasible with many groups, including Aboriginal and Torres Strait Islander peoples, in a variety of settings. Other health care and welfare workers can also play a role in primary intervention with clients who are drinking at hazardous or harmful levels.

A major concern of health professionals is the disparity between the number of people who are at risk of experiencing alcohol-related problems in comparison to the number of people who actively seek assistance for their drinking problems. Young men in particular are at high risk of alcohol-related problems, but they rarely access medical advice. Often individuals will only seek professional help following a major tragedy, such as a major road accident, or when they develop a serious ailment. People who seek treatment have often been misusing alcohol for a long period of time and therefore require more complex interventions.

The health care setting provides an ideal opportunity to identify people who are developing, or are at risk of developing, alcohol-related problems before these problems become more severe. However statistics show

that general practitioners screen fewer than half of their patients for alcohol problems. Patients may be treated for high blood pressure, depression, anxiety, and other health related problems without the practitioners addressing the underlying problems related to levels of alcohol use. It is therefore important for general practitioners to obtain and regularly update a drinking history for all adult patients.

Where appropriate, the pattern of consumption should be discussed with the patient in reference to the National Health and Medical Research Council Australian Drinking Guidelines. Similarly, all adult patients admitted to hospital should be screened, since heavy drinkers may require higher levels of anaesthetic, experience slower rates of post surgery recovery, and suffer withdrawal symptoms or experience other complications.

Traditionally the success of alcohol treatment programs was measured by abstinence. However today there is more emphasis on the patient's wellbeing, belief about drinking, readiness for change, alcohol-related expectancies, social functioning and social support, as being predictors of success. The current approach to treatment of alcohol-related problems in Australia suggests that there should be a continuum of treatment. Individuals with low level problems are better suited to brief and early interventions whereas individuals experiencing more severe problems need more specialised treatment.

If treatment is to make a significant impact on drinking problems it should be suited to the needs of the client and the presenting problems, and be widely available. Treatment and support services therefore need to address a wide range of drinking patterns. Even though heavy drinkers are more likely than moderate drinkers to experience problems related to their patterns of consumption, there are larger numbers of moderate drinkers in the community who also have treatment needs. The different levels and types of problems will require different types and intensities of interventions.

There are three main categories of interventions that target the problems associated with alcohol consumption:

1. Primary intervention: focuses on early diagnosis of problems and intervention at an early stage. Specific strategies include screening and brief interventions.
2. Secondary intervention: includes specialised treatment programs to treat the medical

complications of drinking and assists with the social and psychological rehabilitation of problematic users.

3. Tertiary intervention: includes long-term rehabilitation of problematic drinkers (for example the Alcoholics Anonymous twelve-step approach).

As a treatment approach for alcohol problems, inpatient rehabilitation treatment has a role in detoxification, the treatment of medical conditions and symptoms, and the assessment of underlying physiological or social problems. In-patient treatment for people who are alcohol dependent has been shown to be effective, however the benefit of this approach over less intensive treatment such as outpatient or day treatment is not apparent.

Despite the findings, there will remain a need for specialist inpatient treatment for individuals with severe alcohol problems, and alcohol treatment and detoxification services should be provided in all major public and private hospitals. It is important to ensure that general practitioners are able to provide effective services in the treatment of problem drinkers and those with alcohol dependence, particularly for those in rural and remote areas.

The treatment of alcohol dependence has made considerable progress in recent years. Changes to the American Psychiatric Association diagnostic manual (DSM-IV) in 1994 included substantial changes to the diagnostic criteria for alcohol dependence and alcohol misuse and there has been an increased emphasis on the patient's quality of life as an outcome measure of treatment.

The availability of new pharmacological agents for alcohol detoxification is an important development in the treatment field. Medications can be used for a range of functions including managing withdrawal symptoms, desensitising agents to deter drinking, and anti-craving agents.

Recent research has shown that minimal intervention may be as effective as intensive treatment in addressing alcohol-related problems. The early detection and treatment of harmful use patterns using brief intervention enables behaviour to be considered (and altered if appropriate) before a physical dependence develops. It has the advantage that it can be used in a health care setting rather than in specialised treatment facilities and requires fewer resources to maintain the programs. More research is needed to determine which

types of patients are more responsive and better suited to the brief intervention approach.

Most health professionals today support treatment that offers patients a choice between abstinence or safer drinking patterns. The emphasis should be on individualising treatment according to the nature of the patient, the severity of the dependence, the drinking history and the degree of liver damage. Generally it has been noted that the benefits of treatment services outweigh the costs when treatment is used to address alcohol-related problems.

The provision of treatment services is not the only contribution that general practitioners and other health professionals can make. Specialist medical colleges and other health professional associations also have the potential to play a major role as advocates for the development of alcohol-related harm minimisation policies.

To date, inadequate attention has been directed to the training and education of health and welfare professionals in relation to alcohol issues. It is important for health and welfare professionals, particularly those treating Aboriginal and Torres Strait Islander patients, to enhance their skills on an ongoing basis in order to provide their patients with the most up-to-date treatment and support, including in the fields of detoxification and pharmacotherapy.

Treatment and people with special needs

Some groups in the population have special needs in relation to treatment and support services. These include Aboriginal and Torres Strait Islander peoples, rural and remote communities, people of non-English speaking background, women, youth and prisoners. Additionally there is a growing need in the community to provide support services for families and significant others, as alcohol problems affect not only the problematic user but also those who are in contact with the user. Significant others may be involved in the user's treatment program or they may receive individual or group counselling sessions depending upon their needs.

Aboriginal and Torres Strait Islander issues

Existing approaches to Aboriginal alcohol misuse include primary prevention and tertiary treatment, but there is a dearth of secondary prevention activities. Evidence of the effectiveness of early and brief interventions is accumulating, but this type of intervention is relatively infrequent in the general

population and even more rare with Aboriginal clients. Currently, there is no controlled research formally evaluating the use of screening and brief interventions in Aboriginal and Torres Strait Islander primary care settings (Hunter et al 1999). When designing and implementing secondary prevention strategies to reduce alcohol-related harms in these communities, a number of factors relating specifically to Aboriginal and Torres Strait Islander peoples need to be taken into account.

The pattern of use of primary health care services by Aboriginal people varies from that of the wider population. The main health service contact occurs through visits to outpatient services and hospitalisations, which occur around three times more frequently than for other Australians. Aboriginal cultural and social factors need to be considered when developing or recommending methods to prevent alcohol-related harm. Important factors to consider are the notions of personal autonomy and relatedness, the need for a legitimating excuse, and socio-economic issues. These cultural factors place intense social pressure on the drinking patterns of the individual, and refusal of alcohol places the concept of relatedness in danger. The need for an outside influence to enable the individual to refuse alcohol provides a role for doctors to effect a change in drinking behaviour (Brady 1995).

Brief interventions need to take into consideration not only the cultural factors relating to Aboriginal and Torres Strait Islander peoples but also their levels of education and socio-economic factors. The high rates of unemployment, poverty, poor housing conditions, low levels of literacy and education will prevent direct translation of brief interventions designed for the general population (Brady 1995). Once the presenting problem is attended to, the aim should be to assist the patient in understanding the connection between alcohol and their problems and providing assistance to deal with the ultimate changes that will occur in lifestyle and routines from a change in drinking behaviour (Hunter et al 1999).

At the present time there is some dissension amongst health workers providing alcohol service delivery to Aboriginal and Torres Strait Islander peoples as to whether abstinence or responsible drinking should be promoted. The potential usefulness of brief interventions should not be constrained by arguments for encouraging one ideal over the other. Emphasis should instead be on allowing the individual to maintain their autonomy by choosing the path most suitable for them.

Rural and remote health care services

Marked differences are seen across Australia in relation to access and utilisation of health services and the health status of regional populations. In many parts of rural and remote Australia basic services for problem drinkers and people who are alcohol dependent do not meet the population need or demand (Reilly and Griffiths 1998; Webster et al 1998). There are a number of issues that impact on the provision of these specialist services in regional areas. An important issue is the dearth of research relating to alcohol-related harms and problems in rural and remote areas. The lack of regional data describing alcohol-related issues hinders the planning and development of intervention and prevention strategies and services to reduce these harms (Midford et al 1995; Crosbie 1998; Dunn 1998; Reilly 1998).

Rural and remote alcohol services are not resourced to the same degree as metropolitan services (Tasca 1997; Crosbie 1998; Webster et al 1998). The provision of specialist services in regional areas is more costly than provision of the same services in a city location, making it difficult for rural areas to generate economic efficiencies or to compete for tendered services. The distribution of government resources prioritised on a per capita basis has a negative impact on the number and accessibility of services available to rural and remote communities (Crosbie 1998). The extent to which rural alcohol services are provided depends upon the size of the population, geographic area, and the organisation of health services ranging from the provision of no services through to the provision of multidisciplinary teams (Webster 1998). Specialist services, frequently required in the treatment of alcohol-related problems, are often too costly for many small communities to provide and many communities are rarely able to access these services (Dunn 1998; Crosbie 1998).

Another major issue in the provision of specialist services in rural and remote areas is the difficulty in recruiting and retaining qualified and experienced health workers (Dunn 1998). As a result, many alcohol services employ staff without specific alcohol training and provide in-service training to enhance their skills. Experience is obtained on the job, in many cases without colleague support (Dwyer et al 1998). Many front-line health workers do not have an in-depth knowledge and understanding of the principle of harm minimisation and there is inadequate provision of early or brief intervention strategies (Reilly and Griffiths 1998). The issue of confidentiality is of concern to

people in rural areas due to the stigma associated with alcohol-related problems, and this may make people reluctant to use alcohol services (Crosbie 1998; Reilly and Griffiths 1998).

Many people in rural communities view general practitioners as their preferred source of information on issues relating to drinking patterns, in part due to the confidential nature of the consultation and the continuity of care (Richards et al 1998). There is an increasing awareness of the role general practitioners have in the management of alcohol-related problems and provision of early and brief interventions (Geddes and Richards 1997; Richards et al 1998). Interventions designed for general practitioners working in rural and remote regions have been successful in promoting increased interest, knowledge, and involvement in the management of alcohol-related problems, including brief interventions, treatment, and home withdrawal (Geddes and Richards 1997).

People from culturally and linguistically diverse backgrounds

Data on drinking patterns among people of culturally and linguistically diverse backgrounds is limited and available for only a small number of communities in Australia. It has been argued that rather than being informed only by inadequate data, policy and service provision should assume that accessible and equitable services must be available for every ethnic group (Morrisey 1993). The development of treatment models accessible to ethnic groups requires agencies to have knowledge of the needs and cultural experience of the community (SuccessWorks 1998). Services should be developed with community involvement in the organisation, planning, and implementation of services.

Utilisation of specialised assessment and treatment services by people of culturally and linguistically diverse backgrounds is well below that of people from an English-speaking background (SuccessWorks 1998). Outreach services are one of the best models of delivering culturally appropriate services (EYIN 1998; SuccessWorks 1998; WWH 1999) and have been identified as extremely important for reaching youth and young women in particular (EYIN 1998). As with all programs, there is a need for evaluation, followed by dissemination of the results, in order to inform other agencies and assist in the development of best practice models and guidelines.

Research has identified a need for culturally and linguistically appropriate information regarding alcohol-related harms and drug and alcohol services available within Australia (Everingham et al 1994; Everingham and Flaherty 1995; Jukic et al 1996, 1997; EYIN 1998; SuccessWorks 1998; WWH 1999). Changes within communities over recent years have rendered some of the available literature out-of-date (WWH 1999). The use of ethnic radio programs, print media, and written resources have been shown to be effective methods for accessing non-English speaking background communities (Sunjic 1993).

General practitioners have been identified as a key source of information on alcohol and a primary source of help for alcohol-related problems for people from culturally and linguistically diverse backgrounds (Everingham et al 1994; Everingham and Flaherty 1995; Jukic et al 1996, 1997; SuccessWorks 1998). Provision of training in case identification, brief interventions, and referral networks for bilingual general practitioners would help ensure adequate and timely advice and treatment. All general practitioners and health professionals should be provided with training and/or information regarding the needs of culturally diverse people and the availability of appropriate services.

A lack of fully-trained bilingual staff is reported to be a barrier for accessing treatment for some people from culturally and linguistically diverse backgrounds (Byrne and Couch 1997; Jukic et al 1997; Success Works 1998). There is a need for bilingual staff to be available to both generalist and specialist alcohol services, and employing bilingual staff is considered to be an effective strategy to overcome problems of access to services (Spathopoulos and Bertram 1991). However, communities are dynamic and the changing ethnic mix of communities raises problems in service provision and staffing of fully-trained bilingual alcohol and health care workers. An intersectoral approach integrating alcohol, tobacco, and illicit drug services, and incorporating sharing of bilingual staff, would result in a more efficient provision of services (Morrissey 1993). The use of health workers from the same community group as the client raises issues regarding anonymity and confidentiality, which must be addressed (Spathopoulos and Bertram 1991; Byrne and Couch 1997). Research has shown that some communities, such as the Chinese community, do not perceive a need for bilingual alcohol workers (Everingham and Flaherty 1995).

Treatment of comorbidity

The treatment needs of people with mental illness and alcohol misuse are complex and specialised services with highly trained professionals are required. Currently many of these people fail to access appropriate treatment services. Mental disorders complicated by alcohol and other drug use disorders and vice versa have been recognised as having a poorer prognosis than those without comorbid disorders. Comorbid disorders are more likely to be chronic and disabling and result in greater service utilisation (Kessler et al 1996).

Comorbidity has implications for treatment. For example, in people for whom alcohol dependence is a cause of depression, treatment of alcohol dependence may alleviate or eliminate depressive symptoms and, conversely, if alcohol dependence arises from self-medication for depression, then treatment of depression may reduce symptoms of alcohol dependence.

Over recent years there has been increasing recognition of the need for integrated treatment programs for comorbid alcohol use disorders and mental illness, where both disorders are treated simultaneously by the same clinicians. Integrated treatment is especially important for people with severe mental illness such as schizophrenia, who may often receive little or no treatment of their substance abuse disorder. Optimal treatment requires clinicians with skills in the management of both mental illness and substance abuse, as well as access to the full range of health care services applicable to the management of each disorder.

There has been a substantial growth in knowledge about environmental and genetic risk factors for mental and substance use disorders and a number of promising models for early intervention now exist. Primary prevention of first onset of a secondary disorder could substantially reduce the proportion of lifetime mental disorders or substance use disorders; for example, prevention of substance use disorders that are secondary disorders in people who self-medicate to manage a the fear generated by a phobia.

Most people with comorbidities are seen by general practitioners. The 1997 National Survey of Mental Health and Wellbeing showed that 95% of people with alcohol use disorder and comorbid anxiety or affective disorder had sought assistance from a general practitioner in last 12 months compared to 12% from a psychiatrist. It is essential therefore that general practitioners are assisted to identify comorbidities and

equipped to manage people with these conditions or refer them to relevant specialist services where appropriate.

10. WORKFORCE DEVELOPMENT

Opportunities to update or advance professional education and training on alcohol issues currently exist on a number of levels. These include undergraduate university education and postgraduate and in-service training where workers can receive more specific training in issues related to the use and misuse of alcohol. There is a need to provide professional education and training on alcohol for workers who play an important role in reducing the harm associated with alcohol, including law enforcement, hospitality, teaching and judiciary professions.

Conducting training-needs analysis with groups of professional educators can identify deficiencies in the workers' skills and knowledge that can then be targeted in training programs. Education and training programs require regular review and updates to address the needs of clients and workers, along with new developments in the field.

Recently in Australia more attention has been given to the training of hospitality and tourism workers in the responsible service of alcohol. Workers are trained to promote the moderate consumption of alcohol and the reduction of alcohol-related harm. Some examples of strategies which are used by servers include offering low alcohol or non-alcoholic substitute beverages, ceasing service to patrons before they become intoxicated, managing intoxicated patrons and providing safe transport options.

These type of approaches are supported by health professionals and the alcohol beverages and hospitality industry as they seek to reduce the problems associated with hazardous consumption without restricting drinking by the majority of drinkers or adversely affecting the profitability of licensed establishments.

11. RESEARCH AND EVALUATION

Research and evaluation are essential components of Australia's approach to the reduction of alcohol-related harm and improving the evidence base is a key objective of the current National Drug Strategy.

Research and evaluation activities encompass a range of information gathering activities that seek to increase the evidence base for policies and programs. The development of a national research agenda for alcohol research will allow national priorities for future alcohol research to be agreed. Mechanisms need to be put in place to ensure dissemination of research reports to interested parties.

Progress in the reduction of alcohol-related harm depends on the availability of high quality research into the factors that lead to high risk drinking patterns, and the evaluation of the effectiveness of various interventions to prevent and treat the adverse health and social consequences of alcohol misuse. In regard to alcohol, research and evaluation issues are particularly complex as they are grounded in knowledge from many different disciplines, including social science, epidemiology, bio-medicine, economics, psychology, social marketing, crime prevention and law enforcement.

For research to be translated into practice, the following elements are desirable: good information that stands up to critical scrutiny and can be presented in a practical way; good access to information through effective dissemination mechanisms; supportive environments where research is valued; and evidence-based implementation strategies that lead to knowledge uptake and behaviour change (NHMRC 2000).

In 1987 two national research centres were established to provide focal points for researchers, clinicians and practitioners in the drug and alcohol field: the National Drug and Alcohol Research Centre (NDARC) at the University of New South Wales and the National Drug Research Institute (NDRI), formerly known as the National Centre for Research into the Prevention of Drug Abuse, at Curtin University. These centres have achieved international acclaim for their research effort in the drug and alcohol field and have made a significant contribution to the level of research activity and output in Australia. The National Centre for Education and Training on Addiction was established at Flinders University of South Australia in 1991 to advance the capacity of the Australian workforce to respond to alcohol and other drug problems.

Under the National Drug Strategic Framework a National Drug Research Strategy Committee was established in 1998 to provide advice to the Intergovernmental Committee on Drugs on the development of a National Drug Research Strategy, including advice on:

- identifying research principles under the National Drug Strategy;
- determining a systematic process for identifying research gaps and priorities;
- assessing the appropriateness of information systems used for dissemination of research findings to those involved with the National Drug Strategy and to the wider community;
- improving the information systems and dissemination of findings;

- priorities for research resources, including the research workforce.

The draft National Drug Research Strategy acknowledges Australia's significant contribution in descriptive and epidemiological research in the health area, whilst highlighting the need for more attention to be paid to research in the law enforcement field, as well as evaluation research of strategies designed to reduce drug-related harm.

Monitoring and evaluation issues

Objectives

This chapter aims to provide policy makers and program planners with a strategic approach to reducing alcohol-related harm through the establishment of an efficient evaluation and monitoring system. The first section considers the major applications of systems that monitor alcohol consumption and related health consequences, and discusses a minimum set of data domains to monitor alcohol at the national level. The chapter concludes with an outline of other issues to consider in the monitoring of alcohol-related harm in the community.

Effective public health programs identify clear objectives and targets to improve the population's health. In order to address these objectives and targets, a number of strategic policies, programs and activities are selected, modified accordingly and applied. To determine the success of these strategies, the attainment of or progress towards the targets and objectives can be monitored and evaluated using measurable indicators.

Evaluation of the process of implementation of programs and strategies is a necessary part of monitoring their effectiveness. Quantitative and qualitative information is obtained on the degree to which implementation has occurred, the groups of people being served, and the extent that the program operates as expected. Process evaluation allows the assumptions that were made during the planning stages to be checked, evaluation of the effectiveness of the programs, and the opportunity to improve or modify the programs at an early stage of their implementation (Posavac and Carey 1989).

Applications of monitoring and evaluation

A strategic approach to reducing alcohol-related harm must be informed by evidence. Data on alcohol consumption patterns and measures of alcohol-related harm can be used to determine the magnitude of specific alcohol-related problems, identify trends, and track changes in these problems over time. Periodic cross-sectional surveys, repeated within the same population, provide valuable information about changing community behaviours and needs. Prevalence and trend estimates of alcohol misuse in different subgroups of the population can help to identify groups at particular risk of alcohol-related harm, enabling education and intervention programs to be effectively targeted.

Evaluation and monitoring systems can also be used to evaluate the effects of policy or other interventions. The systems provide feedback to policy makers, health specialists, administrators and those who are responsible for the implementation of policies and programs. This information may be used to develop, update or restructure policy and strategies and their components, as well as to assess the ways in which policy is implemented.

Through the provision of baseline measures of alcohol-related harm in a community, systems of evaluation can assist in measuring the impact and effectiveness of specific interventions and education initiatives. Ideally, measurement systems will provide extensive pre- and post-intervention data that can be used in the conduct of time series analysis. This analysis evaluates

whether changes in baseline data can be confidently linked with the timing of an intervention, or the accumulation of impact over an extended period.

To determine accurately the effectiveness of an intervention, confounding factors (such as changes in economic conditions, which can greatly influence levels and patterns of alcohol consumption) also need to be controlled. This should be done both by direct measurement of these where known and by comparison with data from matched areas not subject to intervention. In addition, it is often possible to control for confounding factors by employing measures of equivalent non-alcohol-related harm for the same area (for example, rates of hospital admissions for conditions known to be unrelated to alcohol), and by seeing no difference in other aspects of the two locations/times.

Types of data and data sources

Monitoring of alcohol consumption and related harms in Australia occurs through the evaluation of a number of sources of data including national surveys, alcohol beverage industry sales data, hospital morbidity and mortality data, and alcohol-related road fatalities and injuries data. Used in isolation, these indicators have the potential for a degree of error. However, the use of a variety of indicators from different sources allows for a degree of triangulation between measures to establish an overall trend, and this provides a more reliable measure.

National Alcohol Indicators Project

In view of this the Commonwealth Department of Health and Aged Care commissioned the National Drug Research Institute to establish a national minimum data set for monitoring alcohol consumption and related harms. The National Alcohol Indicators Project (NAIP) will enable the determination of estimates of the prevalence and incidence of specific alcohol-related harms and the monitoring of trends in these over time. The coordination of data from a number of sources provides the potential for evaluation of local, state and national policy or other interventions occurring within Australia.

A minimum data set to assist in the monitoring of alcohol-related harm has been established using key

indicators. Indicators are quantitative measures that are sensitive to variation across time and place. The indicators selected are not exhaustive, but represent the principle measures of concern, utilise existing data sets where possible, and are supportive of the World Health Organization International Guidelines on Alcohol Monitoring published in 2000.

The selected indicators include:

- estimated percentage of total alcohol consumption that is risky or high risk for adverse short-term or long-term consequences;
- hospital admissions attributable to risky or high risk alcohol consumption (as defined in the forthcoming NHMRC Australian Drinking Guidelines);
- deaths from conditions attributable to risky or high risk alcohol consumption;
- rates of serious night-time assaults;
- rates of serious night-time crashes and fatalities.

Government policies regulating the sale and consumption of alcohol, advertising, sponsorship, and the defining of penalties associated with the misuse of alcohol affect a large proportion of the community. Public perception of these regulations is important to ensure support for and compliance with them. Nationally, public support or opposition of specific alcohol-related policy is determined in regular National Drug Strategy Household Surveys. The design of future surveys should continue to include a mix of new questions about new policy options that reflect current policy debates and possibilities.

Options for more frequent surveys at a local or State level should be reviewed to ensure that comprehensive, region-specific information is available to policy officers at the local, State and Territory, and national levels. Monitoring and evaluation of policy implementation in each State and Territory would provide important data on the effectiveness of new policies and an estimate of the public response to changes. This would help to avoid costly duplication of inappropriate or ineffective policies while increasing the likelihood of national adoption of successful changes in alcohol policy and regulation.

Consumption data

Both the level and pattern of alcohol consumption have been found to be indicators of alcohol-related health and social problems (Rehm et al 1997). Generally,

research shows that average levels of alcohol consumption are related to total mortality and specific causes of death and disease, including cirrhosis, traffic crashes, and suicide. Both measures of total and risky or high risk consumption predict acute and chronic harms, though there is some evidence that acute health and social problems are more closely predicted by population measures of prevalence of high risk consumption (Stockwell et al 1996c).

Estimates of per capita consumption can provide policy makers with an indication of the likely magnitude of alcohol-related harms as well as changes in consumption patterns. Patterns of alcohol consumption in a community are important measures for monitoring alcohol-related harm and identifying the benefits of particular patterns of consumption.

Per capita consumption figures can be estimated indirectly from data on the sale, manufacture, trade, and taxation of alcoholic beverages and are considered a reliable indicator of the proportion of heavy drinkers in the community. This data also enable the monitoring of drinking patterns in terms of beverage type, an important feature since the level of alcohol-related harm varies with the type and strength of alcohol beverages.

There are, however, some minor limitations to per capita consumption figures. The data may not completely reflect actual consumption as beverages may not be consumed in the year of purchase (for example, quality wines and aged spirits), wholesalers may stockpile liquor and data on duty free purchases and home production of alcohol are usually not included in the estimation. In Australia, these sources of error are minor and unlikely to change greatly across time and so per capita consumption remains a key indicator of alcohol-related problems.

Wholesale alcohol sales data

Five Australian States and Territories have ceased collecting information on wholesale alcohol purchase data, which was once relied on for the collection of State liquor licensing fees. In August 1997 the Australian High Court ruled it illegal to charge such licensing fees, along with similar fees on tobacco and petrol. These data had previously been used to estimate local, regional and State and Territory per capita alcohol consumption, including consumption of alcohol beverages associated with high risk, such as cask wine and regular strength beer (Stockwell et al 1998).

Since the High Court ruling, three jurisdictions have continued to collect returns from alcohol wholesalers to maintain the opportunity of monitoring local, regional and State per capita consumption of alcohol. It is recommended that such data collection is continued in all jurisdictions, at least for beer, packaged wine and spirits, in order to assist with monitoring the implementation and application of harm minimisation strategies.

General population surveys such as the National Drug Strategy Household Survey (AIHW 1999) provide information on individual variations in patterns and levels of alcohol consumption. Estimates of high-risk consumption as well as details of drinking environments, socio-demographic variations and other correlates of drinking rates and patterns can be identified. The National Drug Strategy Household Survey is conducted every three years. Although surveys repeated with the same methodology at yearly intervals have the potential to monitor changes in drinking patterns, they are too costly to be conducted on an annual basis and may only identify minor or non-meaningful changes. Two to four yearly surveys are more likely to identify the cumulative effect of changes. Wholesale alcohol purchase data, on the other hand, overcome this problem by providing a significant amount of information more easily and cost-effectively, and they should be maintained in every State and Territory.

Indicators of alcohol-related harm

Indicators of alcohol-related harm monitor the relationship between alcohol consumption and various causes of disease, injury and death and quantify the amount and severity of consequences related to alcohol misuse. The indicators discussed below were selected for their public health significance, measurability, accessibility of the data, and the importance of alcohol as a contributory or determining factor of harm.

Mortality

National data on mortality are compiled by the Australian Bureau of Statistics using medical certificates of cause of death lodged with the Registrars of births, deaths and marriages in the Australian States

and Territories. The Australian Institute of Health and Welfare also maintains copies of Australian mortality data. Death certificate information generally includes date and time of death, a primary classification of cause, and place of death.

The current classification system in Australia comes from the International Classifications of Diseases (ICD) used by the World Health Organization. The ICD classification code can be used to identify mortality caused directly by alcohol (for example, alcoholic liver cirrhosis). Over 40 conditions have been found to be significantly caused, to some degree, by consumption of alcohol (English et al 1995).

Aetiologic fractions

Aetiologic fractions estimate the probability of a factor, in this case alcohol, contributing to a particular cause of death or disease (see English et al 1995 for a discussion of methods of quantification of drug-caused mortality and morbidity and the use of aetiological fractions). When alcohol attribution is high (for example, above 40%) and when a significant portion of cases of the illness result in death, estimated alcohol mortality rates may be a useful indicator for tracking trends of alcohol-related harm.

Composite measures of all alcohol-related conditions can be created, which have the advantage of reducing biases in trends for specific conditions and creating a more robust indicator of alcohol-related harm. Aetiological fractions can also be used to illustrate the reduction in mortality related to moderate alcohol consumption. Indeed, using aetiological fractions, English et al (1995) show an alcohol protective effect of moderate alcohol consumption for all cause morbidity in persons 35 years and older. However, many other studies suggest this protective effect is restricted to much older age groups with a high-risk cardiovascular profile.

The calculation of a population aetiologic fraction is primarily based on the relative risk of disease and the prevalence of high-risk alcohol consumption in the population under study. These two factors are in a constant state of flux, and aetiologic fractions will therefore vary over time and region. The calculation of year- and region-specific aetiologic fractions would allow the optimal monitoring of trends in alcohol-related morbidity and mortality over time and will be possible in Australia through the National Alcohol Indicators Project.

The accuracy of routinely collected morbidity and mortality data relies heavily on the reliability of the certification and coding procedures and the coexistence of multiple conditions or diseases. Reliability of the certification and coding procedure varies according to the sophistication and availability of medical care and the nature of the disease that is the underlying cause of death. Generally, certification and coding are most reliable for accidents and for histologically verifiable conditions. Where multiple conditions coexist, alcohol use may contribute to death or illness but not be judged as the major condition present. In this case there will be an underestimation of the involvement of alcohol in the reporting of mortality and morbidity.

There are differing opinions in the literature about how aetiologic fractions should be calculated for alcohol. Using no alcohol consumption as the baseline and comparing abstinence with any alcohol consumption provides an estimation of the benefits and social costs of all alcohol consumption (low risk as well as risky and high risk). A comparison of high risk consumption with low risk or moderate consumption provides an estimate of only the negative health effects. English et al (1995) chose the latter method in quantifying alcohol-caused morbidity and mortality, arguing that policy would be best served by assessing the harm attributable to unsafe drinking rather than all drinking. As the primary objective of the *National Alcohol Strategy* is the reduction of risky and high risk drinking and associated harm, the relevant baseline for this document is low-risk consumption of alcohol.

Hospital morbidity data

The treatment of conditions related to heavy alcohol consumption can be tracked through hospital discharge records coded with ICD diagnostic codes. Like mortality data, hospital admission or discharge records which contain ICD codes about primary (and in some cases secondary) diagnoses provide data which can be used to develop estimates of alcohol misuse. Data on acute morbidity may be more sensitive in the short-term to variations in levels of consumption than chronic morbidity and so are more likely to reflect the impact of policies that are targeted towards drinking to intoxication.

Morbidity data can be expressed not only in terms of numbers of admissions but also in hospital bed-days, which permits an estimate of the total health care costs of alcohol-related injury and illness. As discussed in relation to mortality, indicators to track levels of

alcohol-related harm across time and place can be constructed by creating composite measures of the rates of several alcohol-related conditions. This might, for example, involve all alcohol-related conditions, or those with a relatively high aetiologic fraction.

Night-time assaults

Evidence suggests that there is an association between alcohol use and crimes of violence. It has been estimated that 70-80% of night-time assaults involve prior consumption of alcohol and rates of night-time assaults are determined to be highly associated with local rates of alcohol sales (Ireland and Thommeny 1993).

Statistics on reported assaults are recorded by police officers in most jurisdictions and provide a measure of the level and nature of crime. Generally the location of the incident, the time of day and details of the victim(s) and perpetrator(s) are recorded. Further details on the nature and extent of crime can be found in surveys such as the series of National and State Crime Victim Surveys conducted by the Australian Bureau of Statistics.

There may be legislative and procedural differences in the way that data on assaults are recorded in each jurisdiction and these differences may give rise to variability in the outcome of the statistics. For example, fluctuations in the number of assaults recorded may be influenced by changes in community attitudes in reporting crime, changes in police procedures or changes in the assault reporting systems, rather than a change in the incidence of criminal behaviour.

Where data are being accessed from different jurisdictions it may be necessary to identify sources of bias and where possible provide guidelines on national standards and classifications to improve the comparability of data across jurisdictions.

Road crashes

Despite the intense effort to combat drink driving, alcohol intoxication continues to be the number one cause of Australian road deaths, being implicated in approximately one third of all road deaths (FORS 1996). Police records can be used to track the number of traffic accidents, and injuries and deaths arising from them, and to determine the involvement of alcohol in each of these. Information about the type of crash, time of the incident, and the involvement of alcohol is recorded.

Police data are used to monitor the involvement of alcohol in single vehicle, night-time crashes. It is estimated that 70-80% of single vehicle night-time crashes involve prior consumption of alcohol (Gruenewald et al 1997). The time of incident can therefore be used as a proxy measure or indicator where the blood alcohol concentration (BAC) is not available or is unlikely to be accurate (for example, in the case where there is a long delay between the incident and BAC testing). In addition, data on single vehicle night crashes have been used widely in evaluating drink driving initiatives (Holder unpublished 1998).

Since the introduction of random breath testing into every State and Territory, it has been possible to measure the effectiveness of drink driving education messages by monitoring the proportion of drivers who exceed prescribed BAC levels at random breath checks. Drivers are required by law to provide breath analysis to police officers and, in some States, may also be required to identify the last place of drinking. The data recorded includes blood alcohol levels, charges laid, location of testing and demographic details of the drivers.

Evaluation of interventions aimed at preventing or reducing alcohol-related harms

This domain of monitoring involves not only treatment but law enforcement and preventive programming interventions.

Treatment programs have the potential to influence the level of alcohol-related harm and should be monitored and assessed against evidence-based criteria for effectiveness. Monitoring systems for treatment services should consider descriptions of treatment systems, modes of treatment, funding levels, occupancy levels and the distribution of services in accordance with local need.

Law enforcement strategies with a proven effectiveness in the reduction of alcohol-related harm include highly visible and well-publicised enforcement of both drink driving and liquor licensing laws. Monitoring of the extent and adequacy of enforcement programs should include such measures as the proportion of randomly

breath-tested drivers who test positive (the fewer the better) and evidence of laws regarding serving underage and intoxicated customers on licensed premises being enforced.

The enforcement of liquor licensing laws needs to be supported both by media information campaigns and an adequate regulatory framework, which is driven primarily by the objective of harm minimisation. Each of these elements can be monitored nationally across all jurisdictions. School-based alcohol education initiatives should be evaluated against evidence-based criteria for effectiveness and also in terms of how comprehensively they are delivered across all sectors of the primary and secondary schooling systems (McBride et al 1998).

There is a continuing need for the conduct of a series of high quality demonstration projects, which are evaluated against the strictest of criteria to develop and refine standards of best practice to be implemented across the nation. These demonstration projects need to cover the areas of liquor law enforcement and regulation, school-based alcohol education, media campaigns and local action community-based programs to minimise alcohol-related harm.

Further considerations

Weighing up the contribution and cost of the indicator

The cost of alcohol misuse in Australia is considerable, estimated for 1992 to be \$4,494 million dollars. It is in the light of these enormous costs to the community that key harm indicators have been selected to enable continued and efficient monitoring of alcohol consumption and related harms. Every effort was made in the selection of the key indicators to ensure economic efficiency by utilising existing data sources.

The WHO *International Guide for Monitoring Alcohol Consumption and Related Harm* was adhered to when selecting key indicators for Australia. This enables future comparison of Australian and international levels of alcohol-related harm. Annually collected data on these key indicators have the potential to streamline the evaluation of public health, law enforcement, and education interventions to reduce alcohol-related harm, ultimately resulting in savings to the community.

The data will also enable governments to develop more alcohol policies that are research- and evidence-based.

Using national versus local data

For national data to be useful in guiding local policy, specific geographical localities and populations where problems may be acute need to be identified. Indicators need to be examined at appropriate geographic levels and within appropriate time frames for trends to be considered not only at national but also at State and Territory, regional and community levels. Traffic accidents for example, can be analysed at a community level because the police data are available with a remarkable degree of specificity and present a reasonable picture of the incident. However, in the case of alcohol-related crashes, lack of data on where the drinking took place can create problems with interpretation of data.

To overcome this, monitoring systems recording the last drinking place have been implemented in Western Australia and New Zealand. When establishing data sets, recording the finest level of detail available will assist in the examination of trends at community levels and the ability to perform sophisticated analyses when necessary.

Data collected at a local level can be misleading since the site of alcohol-related problems may not be the same as where people live or where they drink. Therefore, data connecting specific incidents of alcohol-related harm with consumption are likely to be robust at the regional level, but more strongly influenced by spatial lag and visitor effects at the local, smaller level. There are techniques for managing these problems and it is useful to note that their impact is usually small and manageable.

In some instances, many of the targets and indicators for national level policy may also apply at the local or regional level, as in the case of health status and social problems. However some aspects of alcohol policy, such as taxation, or restrictions on alcohol advertising and sponsorship, cannot be decided at a local or regional level.

Using data to provide comparison between jurisdictions

There is a need to establish monitoring systems that can be used to compare estimates of alcohol use, misuse and related problems between jurisdictions. To make comparison feasible, standards for measurement,

definitions and management are essential. These have been established for health, road crash and alcohol consumption data but not yet for police data on assaults. Greater caution needs to be exercised, therefore, in making jurisdictional comparisons employing such data. Fortunately hospital admission data identifying assault as the cause of an injury can be used for cross-reference purposes.

Acknowledging changes in reporting systems

Changes in legislation or procedures within a community may influence the way data are recorded, giving rise to variability in the outcome of the statistics. Fluctuations in the number of assaults recorded, for example, may be influenced by changes in community attitudes in reporting crime, in police procedures or police availability, or in the assault reporting system, rather than a change in the incidence of criminal behaviour.

When interpreting variations in the data, it is important to understand the context in which the data are recorded as well as changing circumstances. National data can only be interpreted to the extent that regional variations are understood. Again, the use of multiple sources of data to confirm or disconfirm trends is advised.

Ensuring reliability and validity

It is important that the indicators used in evaluation are accurate in their measurement so that any inferences made are valid and the performance of interventions in achieving objectives is accurately reflected. Indicators of alcohol-related harm do not have to record all relevant cases and are not intended to be comprehensive measures across all areas of possible harm, but must be sensitive to trends over time and place.

Routine monitoring, cross validation, and ensuring that samples are truly representative of the population, are some techniques to increase the reliability and validity of measures. Researchers may be able to identify possible sources of bias and estimate the likely direction and degree of bias. For example, bias could arise from hospital data where coroners may under-report alcohol as the cause of death and repeat users of hospital facilities may inflate the rates of discharge from hospitals. However, although identification of possible sources of bias increases awareness of areas of concern,

it does not override the potential problems resulting from bias.

In research, the use of a control group allows estimation of the natural level of factors and takes into account the effect of confounding factors occurring within the community or group under investigation. The use of appropriate control groups and data should also be routinely applied to the monitoring and evaluation of alcohol indicators wherever possible.

Including qualitative data

Evaluation of quantitative data is the main system for monitoring the extent of alcohol-related harm at the population level. Although quantitative indicator data do not present a complete picture of alcohol consumption and related harm within a community, the use of qualitative data in the context of national indicators would be expensive and of limited benefit. Qualitative data does, however, have the potential to provide relevant information to data collection agencies regarding changes in collection procedures and the potential these changes have to impact on indicator data. Qualitative research can be of benefit to investigate possible reasons for changes in funding or legislation, resulting in alterations in the levels of key indicators over time.

Hospital admissions are sensitive to changes in funding mechanisms in the public health system and new drink driving and liquor law enforcement strategies will alter the pattern and number of recorded offences. Data of this kind are most appropriately gathered at the local or community level and the use of key informant interviews are the most effective method of examining and monitoring these issues.

Cross validation of indicators

Each source of information used for monitoring reflects a different aspect of the effect of alcohol misuse. Reliance on only one source of information, such as hospital or police data, may give an incomplete or misleading picture when estimating overall levels of alcohol consumption and related problems. Interpretation of results can be given more confidently when data from a number of different independent key indicators are used.

When analysing and reporting results, it is important to relate the data to the population concerned, particularly if comparisons are being drawn across

large population groups. This often occurs in the form of age and/or sex standardisation. The demographic characteristics of a community population are available from the Australian Census Bureau and can be complemented with local survey data.

Reporting requirements

Outcomes of the evaluation and monitoring system should be made widely available to policy makers,

health specialists, law enforcement officials, and others concerned with alcohol issues. The information can then be used to develop, update or restructure policies and assess the ways in which they were implemented. Reports should comment on the shortcomings, inconsistencies and inherent difficulties with the data sets as well as their strengths and advantages. In this way, policy making at the local, State and Territory, and national levels can be guided in a transparent and informed manner.

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Glossary of terms used

Abstinence. Refraining from drug use.

Alcohol. A colourless volatile inflammable liquid forming the intoxicating element in wine, beer, and spirits. Any liquor containing this.

Alcohol-related. The relationship between problems or damage to individuals and the consumption of alcohol.

Australian National Council on Drugs. One of the advisory bodies supporting the Ministerial Council on Drug Strategy. The Australian National Council on Drugs consists of people with relevant expertise from the government, non-government and community sectors. The Council ensures that the voice of non-government organisations and individuals working in the drug field reaches all levels of government and influences policy development. It has broad representation from volunteer and community organisations and law enforcement, education, health and social welfare interests.

Blood alcohol concentration. The proportion of alcohol contained in a given volume of blood, expressed in grams per 100ml of blood.

Demand-reduction strategies. Strategies that seek to reduce the desire for and preparedness to obtain and use drugs. These strategies are designed to prevent the uptake of harmful drug use and include abstinence-oriented strategies. Their purpose is to prevent harmful drug use and drug-related harm.

Dependence. A phenomenon with biological, psychological and social elements, whereby use of a particular drug (for example, alcohol) is given priority over other behaviours that were once relatively very much more important to the person. Dependence is not an all-or-none phenomenon, but exists in degrees along a continuum.

Drug. A substance producing a psychoactive effect. Within the context of the National Drug Strategic Framework, “drug” is used generically to include tobacco, alcohol, pharmaceutical drugs and illicit drugs. The Framework also takes account of performance- and image-enhancing drugs and substances such as inhalants and kava.

Drug-related harm. Any adverse social, physical, psychological, legal or other consequence of drug use that is experienced by a person using drugs or by people living with or otherwise affected by the actions of a person using drugs.

Evidence-based practice. Evidence-based practice involves integrating the best available evidence with professional expertise to make decisions.

Fetal alcohol syndrome. A relatively uncommon cluster of mainly facial abnormalities and poor child development which has been observed in children born to women drinking heavily during pregnancy.

Harm-reduction strategies. Strategies designed to reduce the impacts of drug-related harm on individuals and communities. While governments do not condone illegal risk behaviours such as injecting drug use, they acknowledge that these behaviours occur and that they have a responsibility to develop and implement public health and law-enforcement measures designed to reduce the harm that such behaviours can cause.

Harm minimisation. The primary principle underpinning the National Drug Strategy. It refers to policies and programs aimed at reducing drug-related harm. Harm minimisation aims to improve health, social and economic outcomes for both the community and the individual, and encompasses a wide range of

approaches, including abstinence-oriented strategies. Both licit and illicit drugs are the focus of Australia's harm-minimisation strategy, which includes preventing anticipated harm and reducing actual harm. Harm minimisation is consistent with a comprehensive approach to drug-related harm, involving a balance between demand reduction, supply reduction and harm reduction.

Harmful drug use. A pattern of drug use that has adverse social, physical, legal or other consequences for a person using drugs or people living with or otherwise affected by the actions of a person using drugs. Hazardous drug use is any drug use that puts the person using drugs, or those living with or otherwise affected by the actions of a person using drugs, at risk of these harmful consequences.

Host responsibility. A broad set of strategies designed to create safer drinking environments. In the United States this concept is known as server intervention.

Indigenous. Persons who identify themselves to be of Aboriginal and/or Torres Strait Islander people

Intergovernmental Committee on Drugs. One of the advisory bodies supporting the Ministerial Council on Drug Strategy. The Intergovernmental Committee on Drugs is a Commonwealth-State-Territory government forum. It consists of senior officers representing health and law-enforcement agencies in each Australian jurisdiction (appointed by their respective health and law-enforcement Ministers) and other people with expertise in identified priority areas (for example, representatives of the Australian Customs Service and the Department of Education, Training and Youth Affairs).

Intoxication. There is no consistent or formally agreed definition of intoxication. However it is usually taken to refer to an elevated blood alcohol concentration such that a person cannot function within their normal range of physical/cognitive abilities.

Licit drug. A drug whose production, sale, or possession is not prohibited. "Legal drug" is an alternative term.

National Drug Strategy. Formerly the National Campaign against Drug Abuse, the National

Drug Strategy was initiated in 1985, following a Special Premiers Conference. The Strategy provides a comprehensive, integrated approach to the harmful use of licit and illicit drugs and other substances. The aim is to achieve a balance between harm-reduction, demand-reduction and supply-reduction measures to reduce the harmful effects of drugs in Australian society. The Strategy promotes partnerships between health, law-enforcement and education agencies, drug users, people affected by drug-related harm, community-based organisations and industry, to reduce drug-related harm in Australia.

National Expert Advisory Committee on Alcohol (NEACA). The National Expert Advisory Committee on Alcohol provides a range of advice to the Intergovernmental Committee on Drugs and the Australian National Council on Drugs. NEACA members are selected on the basis of their expertise in the areas of health, law enforcement, community-based organisations, education, research, government and industry.

Patterns of alcohol use. Refers to aspects of drinking behaviour other than level of drinking, including when and where drinking takes place, the number and characteristics of heavy drinking occasions, activities associated with drinking, personal characteristics of the drinker and drinking companions, the types of drinks consumed, and the drinking norms and behaviours that comprise a "drinking culture".

Polydrug use. The use of more than one psychoactive drug, simultaneously or at different times. The term "polydrug user" often used to distinguish a person with a varied pattern of drug use from someone who uses one kind of drug exclusively.

Risk. The probability of harmful consequences arising from a hazard.

Risk factor. An aspect of personal behaviour or lifestyle, an environmental exposure, or an inborn or inherited characteristic, that is associated with an increased risk of a person developing a disease.

Standard drink. A drink containing 10 gm of alcohol (equivalent to 12.5 millilitres of alcohol)