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PREVENTATIVE HEALTH TASKFORCE WORKING GROUP ONLY

A Window of Opportunity

Background paper on the prevention of alcohol misuse and related harm

Prepared for the National Preventative Health Taskforce

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This paper has been prepared for the Commonwealth Department of Health and Ageing on behalf of the National Preventative Health Taskforce.

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"There are four primary sources to the liquor problem based upon fundamental traits in human nature and social organization. These are first, the desire for stimulants and the appetite for intoxicating liquors; second, economic gain; third, social custom, and fourth, government sanction. ....All these operate to make it what it is today... The practical point is that each has an important bearing upon the final solution of the question, and all must be considered as important factors in dealing with it."

Warner, Harry S. (1909) 'Social Welfare and the Liquor Problem' The Intercollegiate Prohibition Association, Chicago, Ill. p. 27

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Executive Summary

This background paper on alcohol has been prepared for the National Preventative Health Taskforce to provide up-to-date and evidence-based information on policies and programs to prevent alcohol misuse and related harms in Australia. While the paper is intended as an overview of the most relevant and generally available evidence, in the interests of brevity and within the constraints of time for preparation, it covers many issues in summary only.

The paper attempts to answer three questions:

- What are the key trends in alcohol consumption and related harm in Australia?
- What are the most effective approaches to preventing and reducing alcohol related harm?
- What are the gaps and opportunities for preventative action in Australia?

The paper is informed by the most current and readily available information on alcohol consumption and related harm, and the scientific literature on approaches to preventing and reducing alcohol related harm. The paper draws upon evidence and examples of approaches from both within Australia and internationally. The paper summarises and acknowledges preventative work on alcohol misuse already underway in Australia, including some commentary on its effectiveness, and attempts to highlight gaps and opportunities for further preventative action.

The range of interventions that are reviewed in some detail in the paper include:

- Regulating physical availability.
- Taxation and pricing.
- Drink driving counter-measures.
- Treatment and early intervention.
- Altering the drinking context.
- Regulating promotion.
- Education and persuasion.

An emerging theme from the paper is that there is currently a unique window of opportunity in Australia for a significant expansion of activity in the prevention of alcohol misuse and related harm. In part, this opportunity grows from increased community and political concern about alcohol misuse (especially focussed on youth drinking) and a heightened willingness from all levels of government to take action in the area.

Furthermore, there is an increasingly solid base of evidence upon which policy decisions can be made – even from the brief review presented in this paper it is clear which of the various policies and programs hold the most promise of being effective, and those which offer the least.

It is also apparent that there are potential synergies with other public health efforts to address tobacco, obesity and a range of chronic diseases.

The priorities for preventative action that are suggested in this paper for further consideration and exploration include the following broad areas:

- Volumetric taxation and minimum pricing.
- Restricting the availability of alcohol on- and off-premises.
- Restricting and countering of alcohol promotions.
- Brief interventions in primary health care, workplaces, and with drink-drive offenders.
- Social marketing to support and complement a comprehensive preventative strategy.
- Engage with the community to inform and advocate for alcohol policy and programs.
- Explore untapped interest and expertise across various public and private sectors

A number of priorities for research are also put forward for consideration, including:

- Improving alcohol statistics.
- Studies of heavy drinking subcultures.
- Pre-allocated funding for policy impact evaluations.
- Studies of the organization and funding of the alcohol treatment system.
- Heavy drinking, stigma and marginalization.

1. Key trends in alcohol consumption and related harm

1.1 The historical and cultural place of alcohol in Australian society

Alcohol plays many roles in society – as a relaxant, as an accompaniment to socialising and celebration, as a source of employment and exports, and as a generator of tax revenue. From a public health perspective, it is alcohol's role as a *drug* bearing toxic effects and other intrinsic risks to health, such as intoxication and dependence that are of utmost concern. In Australia, concern in the general community about alcohol's adverse health and social effects is also prominent. A recent survey of Australians revealed that 84 per cent of people are concerned about the impact of alcohol on the community (ANCD 2008).

Beyond its impacts on the health and wellbeing of individuals and communities, alcohol misuse also impacts significantly across a range of other areas such as workforce productivity, healthcare services such as hospitals and ambulances, road accidents, law enforcement, property damage, and insurance administration. The annual cost to the Australian community from alcohol misuse and related harm is estimated to be more than $15 billion.

Many of the dangers of alcohol for Australians who misuse alcohol, and for those around them, are misunderstood, tolerated or ignored. This is particularly apparent with regards to intoxication. Today there is not a single drinking culture in Australia, but a great diversity, reflecting the varied and changing meanings that alcohol occupies in our lives. Common among many of these drinking cultures, however, is an unsafe approach to alcohol. Many Australians now partake in 'drunken' cultures rather than drinking cultures.

A reputation for heavy drinking has been part of white Australia's national myth from rum corps during initial British colonisation, to drunkenness in gold diggings, to the lasting traditions of bush workers' "shouts " and the end of week "work and burst " drunken blowouts (Room 1988). In the early days of white settlement in Australia alcohol performed many functions. Midford (2005: 891) recalls how 'both convicts and gaolers were in a harsh environment, far from home, so alcohol, in the form of rum, provided entertainment and escape'. He also notes that alcohol had a most devastating impact on Aboriginal people: 'during (early white) settlement alcohol was used to engage Aboriginal people, to exchange for sexual favours, as payment for labour and to incite fighting as street entertainment'. More than 200 years later symbolic stereotypes of drunken aborigines and real harms associated with the drinking of some are potent issues.

In the late 19th and early 20th centuries, a substantial temperance movement arose in reaction to Australia's heavy-drinking traditions. Drinking was no longer acceptable for a middle-class woman, and public drinking establishments became almost entirely male. After votes for six o'clock closing in several Australian states in the late 1910s, hotels (public houses) became tiled establishments oriented to crowds of after-work drinkers downing their beers as quickly as possible. The economic depression drove down per capita alcohol consumption levels even further, to a low of 2½ litres of per annum in 1932. However, a contrarian cultural tradition epitomised by those around the *Sydney Bulletin* kept up a resistance to the temperance wave (Room, 1988).

In the period from 1945 to 1975, consumption rose steadily to reach 9½ litres per annum in 1975. Beer lost some of its dominance, and increasing primary production, export and substantial consumption of wine emerged. A rise of a restaurant culture increased the number and variety of places for public drinking. Restrictions on drinking were gradually removed. It became acceptable for women to drink in public. Hours of sale were extended, initially to 9 or 10 at night, and more recently to 3 or 5 in the morning. In recent years, as in other developed societies, a "night-time economy" fuelled in considerable part by alcohol has become a feature of Australian cities and holiday locations. Meanwhile, after having been outlawed for aborigines earlier in the century, drinking became legal in the 1960s, at around the same time as the granting of full citizenship, and in this context took on a disastrous cultural connotation of freedom and autonomy. The commercial push to promote drinking in more and more circumstances was supported by an ideology of consumer sovereignty and favouring competition, in which alcohol was increasingly treated as just one more item of consumption. Particularly for young adults in their late teens or their twenties, drinking – and often intoxication – became more than ever a medium of sociability and of courtship.

A reaction to the long upward wave of consumption has emerged in recent years after peaking in 1975, falling a little, it has since been fairly level. In urban Australia, reconsideration of alcohol policy at the state level is beginning to halt or reverse the steady relaxation of sales controls of the recent decades. At the community level, many local communities are interested in establishing more control over alcohol sales, and "liquor bans" on drinking in public places are now widespread with the patterns of weekend intoxication, with the heavy burden of assault and injury entailed, increasingly a focus of public discussion. Efforts by remote Indigenous communities to stem the flow of alcohol were initially resisted by suppliers, but have more recently received state and territorial support The current national alcohol strategy (MCDS 2006) is a national expression of concern in Australia about harms from drinking, not only to the drinker but to others and to the broader community.

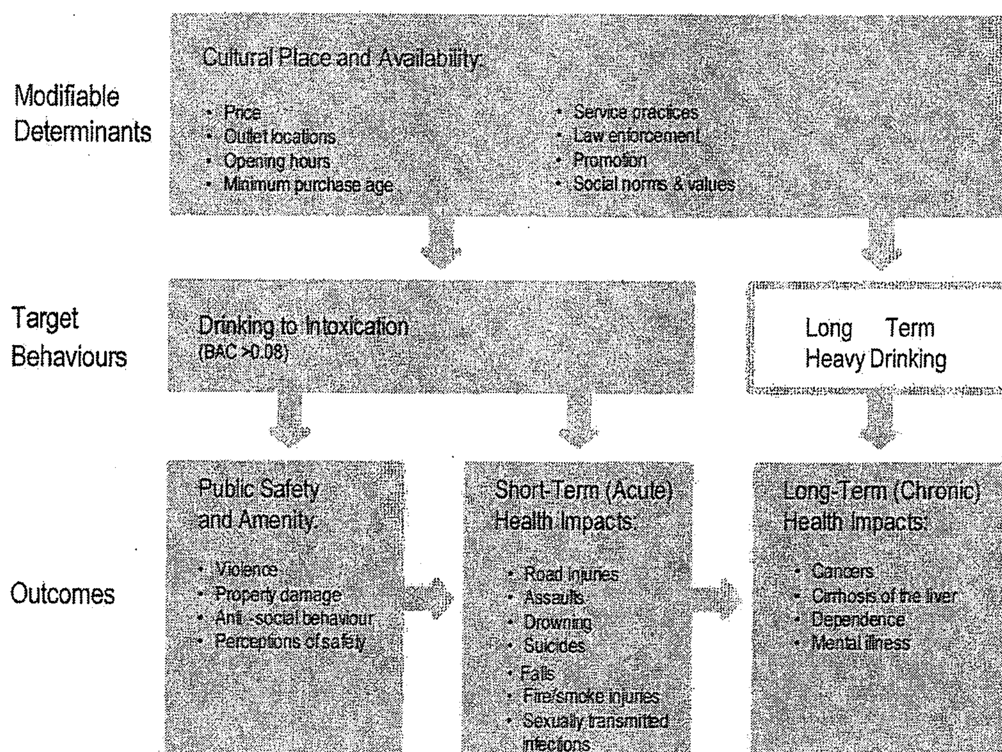
In parallel with the relatively liberal attitudes to alcohol consumption in our country, traditionally there has been considerable stigma associated with heavy drinking; especially those who have become alcohol dependent. This burden of stigma is usually greater for the poor heavy drinker. Patterns of drinking, and the social responses to them, contribute to social marginalization, which in turn adds to the very high burden of disease and other harm often found among poor heavy drinkers. In general, it is common for poorer people to be harmed more than richer people by a given amount of drinking. Thus Australian manual workers have consistently experienced liver cirrhosis mortality rates that are twice or more the rates of other workers (Najman *et al.* 2007). While the higher rates of harm may be a reflection of more heavy episodic drinking among poorer people, they also reflect the generally lower social and health status of the poor (less well insulated from risks of social and health harm). Measures to prevent alcohol-related harm in the population as a whole are thus likely to reduce health inequalities.

1.2 The range of determinants of alcohol misuse

History teaches that while the determinants of contemporary drinking patterns and beverage preferences can be complex, they can also be explained by a combination of influences, including the availability of local agricultural products for brewing, the presence or absence of religious injunctions, the level of economic development, and the expanding influence of the global alcohol producers who are increasingly targeting 'emerging markets' in the developing world with highly sophisticated western marketing techniques (Babor & Winstanley 2008).

The current national alcohol strategy (MCDS 2006) observes that Australia's drinking cultures are driven by a mix of powerful, intangible social forces - such as habits, customs, images and norms, and other interlocking and equally powerful, tangible forces relating to the social, economic and physical availability of alcohol - such as promotion and marketing, age restrictions, price, outlets, hours of access and service practices (MCDS 2006) (see Figure 1). Certainly there is no single factor that determines the why people drink or how they drink. Loxley et al (2004: 66) report that 'there is little research that elucidates the precise mechanisms by which social factors such as income, employment and education influence excessive alcohol and other drug use. Rather, health-damaging behaviours related to poor diet, inadequate exercise, cigarette smoking, excessive drinking and illicit drug use, appear to be embedded in a complex network of social determinants and risk and protective factors. These behaviours are also mediated by cultural influences'.

Figure 1. Alcohol-related harm: determinants, behaviours, and outcomes.



Source: *National Alcohol Strategy 2006-2009* (MCDS 2006)

Even from a broad scanning of the research literature on various alcohol policy interventions, as in this paper, provides us with a good sense of the main determinants of alcohol misuse. Among the most effective interventions, are those that change the economic availability (i.e. price) and the physical availability (i.e. access) of alcohol. With is in mind then, it is essential that consideration be given to the various factors that influence price and access to alcohol in contemporary Australia. Respectively, these factors are the current alcohol taxation system, which is a federal responsibility, and liquor licensing systems, which are the responsibility of states and territories.

Alcohol taxation is discussed in some detail in this paper, particularly given its national application, and likewise, the national purview of the preventative health taskforce. Liquor licensing is perhaps not as fully discussed in this paper as taxation, largely because of the complexities that arise when considering the issues in all 8 Australian jurisdictions. However, some broad comments are worth making. Although governments in most jurisdictions now embrace harm minimisation principles in their respective liquor acts, there remain a number of impediments to implementing of the harm minimisation objectives in practice (NDRI 2007). One of the major problems is with the acts themselves. With imprecise definitions of intoxication and inadequate scope, liquor legislation often lacks the legal 'teeth' to ensure systematic, ongoing and wide ranging application of harm minimisation principles. Police have also identified the enforcement of liquor legislation and regulation as a difficult task which is rarely pursued in earnest because of limited police resources and poor knowledge and understanding of liquor laws, and concern about protecting the commercial viability of licensed premises (NDRI 2007).

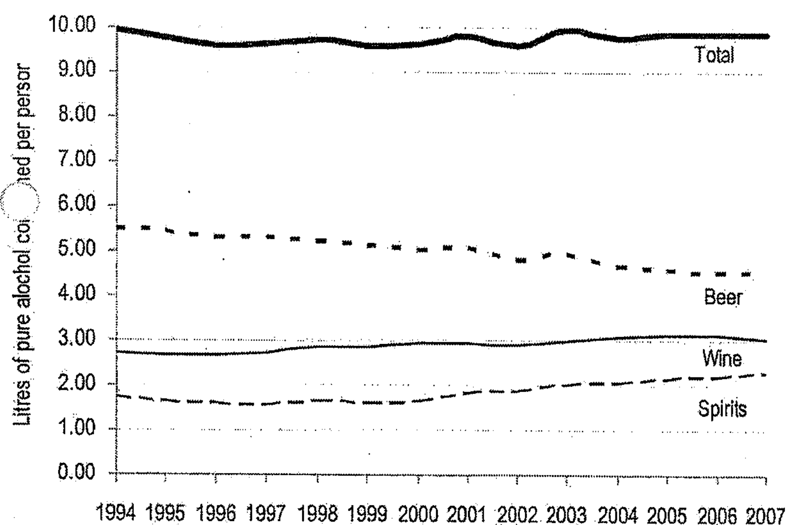
Perhaps most significantly, liquor licensing systems are currently undergoing review and change throughout Australia in response to National Competition Policy (NCP). The current enthusiasm for eliminating anti-competitive practices has created incompatibilities between federal and

state/territory policy and, despite the recognition in principle by states and territories that harm minimisation is an objective of liquor licensing systems, the effectiveness of such regulatory approaches is increasingly undermined by conflicting national policy.

1.3 Alcohol consumption in Australia and other countries

Information on levels and patterns of alcohol consumption is diverse and it can be difficult to identify the key features for purposes of monitoring trends in drinking and related harm and the possible opportunities for intervention. The review of interventions in the second section of this paper has generally framed the selection of information presented below. Unfortunately, in Australia at the current time, some of the most significant and valuable data is not readily available to the public health field. For example, alcohol sales data, while it is known to be collected and analysed by the alcohol beverage industry, is not available for the purposes of this paper, nor indeed is it easily accessed for public health research purposes in general. The authors note with some concern that continuation of the most accessible data sets on alcohol consumption levels in Australia, collected and compiled by the Australian Bureau of Statistics, is currently under review. Efforts are therefore urgently required to seek the continuation of this valuable data set.

Figure 2. Apparent Per Capita Consumption of Alcohol (litres of alcohol), Australian persons aged 15+ years, 1994 to 2007 (years ending 30 June).



Source: ABS unpublished data and ABS 2008.

Per capita consumption of alcohol is an important measure from a public health perspective because it is 'to a considerable extent, related to the prevalence of heavy use, which in turn is associated with negative effects' (Babor *et al.* 2003: 31). Total per capita consumption of alcohol in Australia alcohol grew rapidly in the 1970s and has not returned to low levels since then, estimated to be 9.88 litres of alcohol per capita in 2007 (see Figure 2).

Among the different alcoholic beverage categories, there have been significant changes in per capita consumption over the past 70 years. Since peaking at over 6.4 litres of alcohol per capita in the mid 1970s, per capita consumption of beer has steadily declined and is now at a level similar to that of the late 1950s. This reduction partly reflects changes in consumer tastes towards wine, and the increase in availability of relatively low-priced wine. Consumption of wine has increased almost fourfold since the late 1940s when intake was 0.77 litres of alcohol per capita. In 2005, wine consumption in Australia reached an all time record of 3.13 litres of alcohol per capita.

When interpreting the trend in per capita consumption in Australia, it should be noted that the data does not take account ageing of the population and that as people age, they generally consume less alcohol. Hence, as the Australian population continues to age over the coming decades, it is expected that per capita alcohol consumption will most likely decrease.

Per capita consumption of alcohol in Australia remains high by world standards. Australia is ranked within the top 30 highest alcohol consuming nations among 180. Table 1 shows Australia's level of per capita alcohol consumption and ranking compared to other selected countries.

Table 1. Per capita consumption of alcohol by country and rank (out of 180 countries), selected countries*.

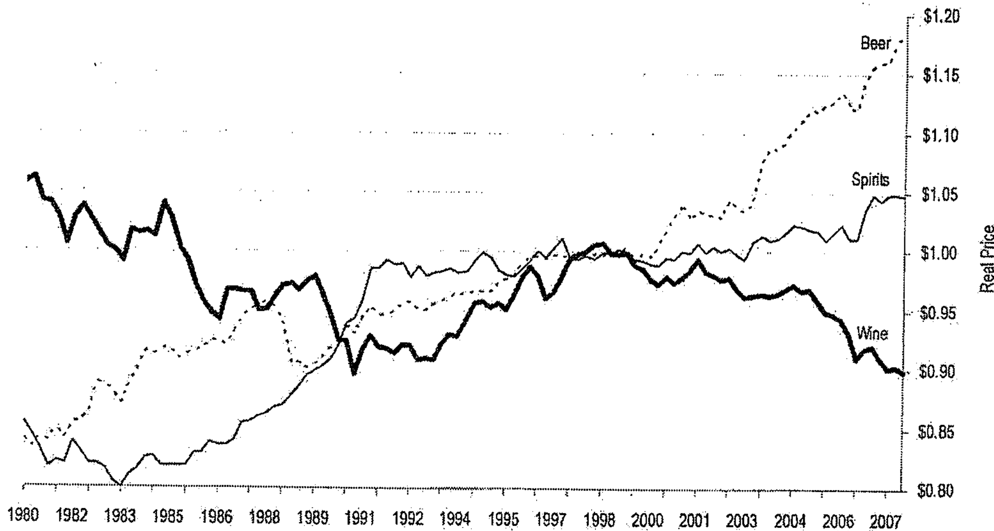
Rank	Country	Per capita consumption†
1	Luxembourg	15.56
2	Ireland	13.69
7	Germany	11.99
8	United Kingdom	11.75
10	Spain	11.68
14	France	11.43
20	Russian Federation	10.32
23	Netherlands	9.68
24	New Zealand	9.68
30	Australia	9.02

Rank	Country	Per capita consumption†
31	Greece	9.01
33	USA	8.61
37	Italy	8.02
42	Japan	7.59
52	South Africa	6.72
63	Sweden	5.96
70	Thailand	5.59
74	China	5.20
120	Papua New Guinea	1.62
168	Indonesia	0.09

* Values are for various years before and including 2003.
† Per capita alcohol consumption (litres of pure alcohol) among adults.
Source: WHO 2008.

1.4 Alcohol prices and consumer spending

Figure 3. Prices of alcoholic beverages relative to other consumption (June 1999 = 1.0), Australia, September 1980 to March 2008.



Source: ABS, various years.

The real price of alcohol in Australia has remained relatively low compared to other commodities, and dropped in some cases. For example, a glass of wine costing $1.00 in June 1999 has dropped in real terms, to $0.90 in March 2008 (see Figure 3).

The affordability of alcohol in Australia today is reflected in the fact that on average, Australian households are spending proportionately less on alcohol now compared to what they spent twenty years ago, despite total per capita consumption of alcohol changing little over the same period. The proportion of average weekly expenditure by Australian households on alcoholic beverages in 1984 was 3.4 per cent ($12.30), compared to 2.6 per cent ($23.32) in 2003-04 (ABS 2005).

1.5 Patterns of frequency and quantity of drinking among Australians

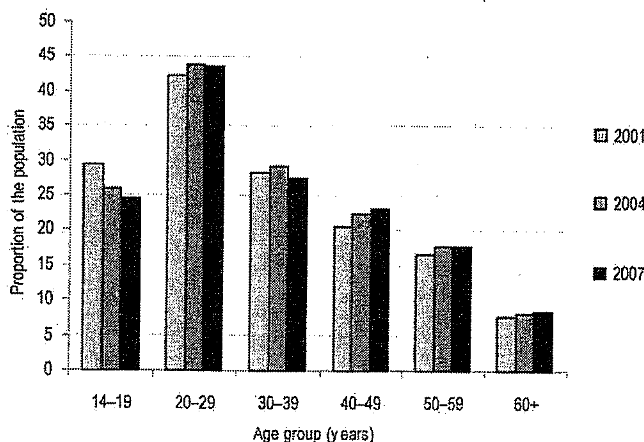
Table 2. Frequency of alcohol consumption, proportion of the population aged 14+ years, Australia, 1991 to 2007.

Frequency	1991	1993	1995	1998	2001	2004	2007
Daily	10.2	8.5	8.8	8.5	8.3	8.9	8.1
Weekly	41.0	39.9	35.2	40.1	39.5	41.2	41.3
Less	30.4	29.5	34.3	31.9	34.6	33.5	33.5
Ex-drinker	12.0	9.0	9.5	10.0	8.0	7.1	7.0
Never	6.5	13.0	12.2	9.4	9.6	9.3	10.1

Source: AIHW, various years

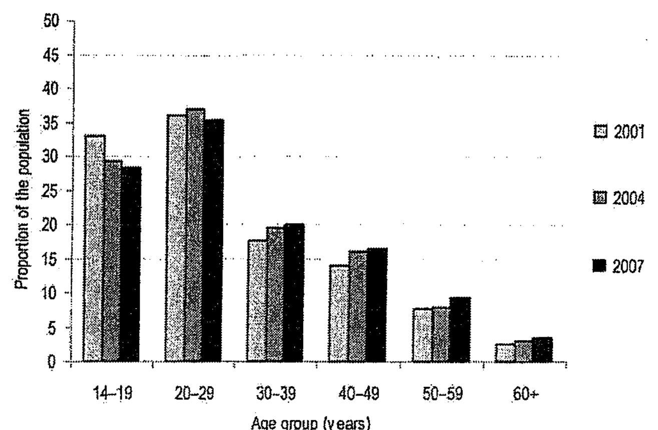
It is estimated that 83% of Australians are drinkers, and that 1.4 million Australians consume alcohol on a daily basis (AIHW 2008). In 2007, males (10.8%) were almost twice as likely as females (5.5%) to drink daily. Two in every five Australians drink on a weekly basis. However, there is a sizable proportion of the population (10.1% in 2007), who for various reasons, have never drunk alcohol at all (see Table 2).

Figure 4. Monthly drinking at risky/high risk of harm in the short-term* by age and year, proportion of the **male** pop aged 14+ years, 2001 to 2007.



Source: AIHW (2008a)

Figure 5. Monthly Drinking at risky/high risk of harm in the short-term* by age and year, proportion of the **female** pop aged 14+ years, 2001 to 2007.

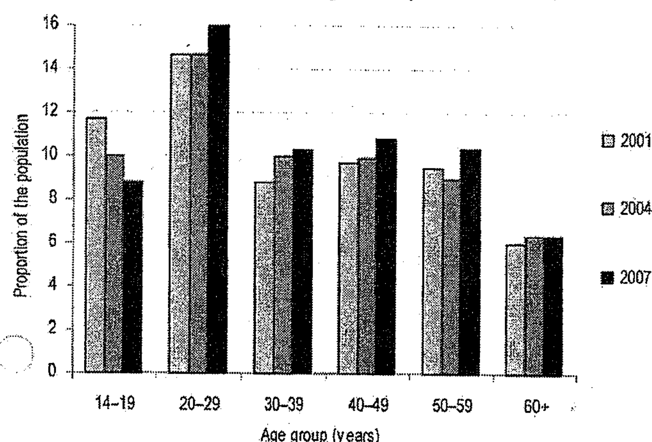


Source: AIHW (2008a)

*Risky/high risk drinking in the short term = 7 or more standard drinks on any one day for males; 5 or more standard drinks on any one day for females.

While almost half (48.3 per cent) of the Australian population drink at low risk levels, one in five Australians (20.4 per cent) drink at short-term risky/high-risk levels at least once a month. This pattern of drinking is the equivalent of consuming 7 or more standard drinks on any one day for males, and consuming 5 or more standard drinks on any one day for females. In short, this generally equates to drinking to the point of intoxication or what is also often termed as "binge" drinking. This sort of drinking is most prevalent among adults aged 20 to 29 years, one quarter (24.9 per cent) of who do so on at least a monthly basis. Overall, Australian males are more likely than females to drink at short-term risky/high-risk levels on regular (at least once a month) occasion (17.1 per cent of females compared to 23.6 per cent of males). However, among teenagers, females are more likely than males to regularly drink at levels of risky/high-risk of harm in the short-term (28.3 per cent of female teenagers compared to 24.5 per cent of male teenagers) (see Figures 4 and 5). Between 2001 and 2007, there have been only slight changes in the prevalence of drinking at risky/high risk of harm in the short-term across the age groups.

Figure 6. Drinking at risky/high risk of harm in the **long-term** by age and year, proportion of the population aged 14+ years, Australia, 2007.



Source: AIHW (2008a)

Almost three quarters (72.6%) of Australians drink below levels for long-term risk of harm. However, among young adults (aged 20-29 years), the prevalence of drinking at levels for long-term risk of harm is significantly higher (16.0 per cent) than among other age groups (see Figure 6). This pattern of drinking is the equivalent of consuming 29 or more standard drinks per week for males and 15 or more standard drinks per week for females. Among Australian teenagers in 2007, this drinking pattern is considerably higher among females (10.6 per cent) than among males (7.0 per cent).

1.6 Alcohol related harm

It is important to consider both the short-term and long-term health impacts of harmful consumption of alcohol, as both result in significant morbidity and mortality. The typical effects of moderate alcohol consumption are those upon the brain, such as feelings of relaxation, wellbeing and loss of inhibitions. However, as intake increases, pleasant effects are lessened by adverse effects such as drowsiness, loss of balance, nausea and vomiting, other more serious harmful effects such as aggressive behaviours, unconsciousness, kidney failure, and increased risks of accidents and injury (NHMRC 2007: 20). Overall, more people die from the acute effects of alcohol than the long term or chronic effects. In fact, more people die from alcohol caused road injury alone than from all alcohol related cancers, cardiovascular disease and alcohol dependence combined (NHMRC 2007: 23).

The effects of alcohol consumption go beyond diseases, accidents and injuries to a range of adverse social consequences, both for the drinker and for others in the community. These consequences include harm to family members (including children) and to friends and workmates, as well as to bystanders and strangers. Alcohol related disturbance and assault ranges from acts of vandalism, offensive behaviour, disturbance and disruption to more serious antisocial behaviour, which can result in violence or injury to others (NHMRC 2007: 23).

Alcohol consumption accounts for 3.2 per cent of the total burden of disease and injury in Australia: 4.9 per cent in males and 1.6 per cent in females (Begg *et al.* 2007). It should be noted that although this is lower than the contribution from tobacco smoking (7.8 per cent) and high body mass (7.5 per cent), there remains some debate over the method to calculate the disease burden attributable to alcohol because it takes into account estimates of some of the health benefits of consuming alcohol. This is reflected by the higher reported burden of disease from alcohol for New Zealand (10 per cent for men and 4 per cent for women) (Connor *et al.* 2005).

Table 3. Deaths and burden (DALYs) attributable to alcohol by specific cause, Australia, 2003.

Specific cause	Deaths		DALYs	
	Number	Proportion of total (%)	Number	Proportion of total (%)
Alcohol abuse	918	0.7%	34,116	1.3%
Suicides & self-inflicted injuries	553	0.4%	12,245	0.5%
Road traffic accidents	396	0.3%	11,121	0.4%
Oesophagus cancer	368	0.3%	4,594	0.2%
Breast cancer	184	0.1%	4,152	0.2%
Other	1,012	0.8%	19,207	0.7%
Total harm	3,430	2.6%	85,435	3.2%

Source: Begg *et al.* 2005

Alcohol has been causally linked to more than 60 different medical conditions (Rehm *et al.* 2003).

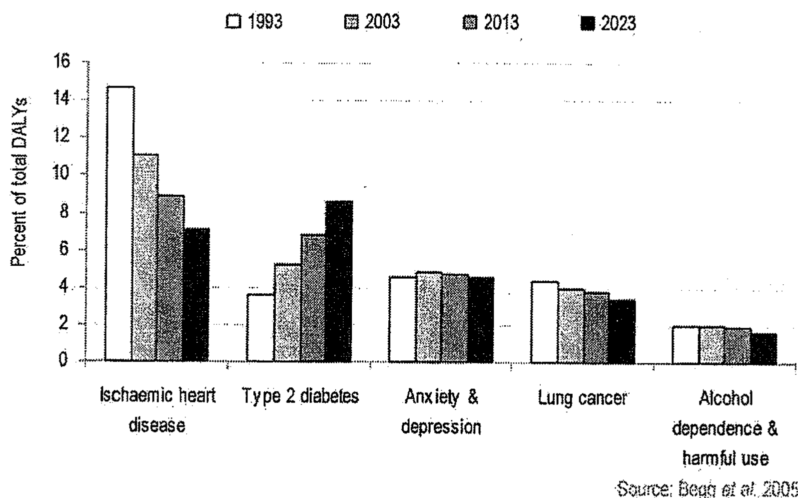
In Australia, alcohol was linked to 3,430 deaths per year and 85,435 disability-adjusted life years (DALYs) per year (see Table 3).

In the ten years between 1992 and 2001, over 31,000 Australians died from alcohol attributable injury and disease – a greater number died from acute (usually in context of acute intoxication) than chronic conditions (often related to longer term dependence on alcohol). The most common

cause of death due to intoxication was road crash injury and among the chronic conditions, alcohol-related liver cirrhosis accounted for the majority of deaths (Chikritzhs *et al.* 2003). Deaths from acute causes are most common among young people, particularly those aged between 15 and 29 years, while deaths from alcohol-attributable chronic diseases are more common among people aged over 45 years. More males than females died from both acute and chronic alcohol-attributable conditions (Chikritzhs *et al.* 2003).

Over half a million hospitalisations were caused by risky and high risk drinking in Australia in the eight years between 1993/94 and 2000/01 (Chikritzhs *et al.* 2003). The most numerous conditions among these were for alcohol dependence (87,186), injuries caused by assault (76,115), road crash injuries (47,167) and attempted suicide (20,374). As many as 10,094 hospitalisations were attributed to some form of 'alcoholic overdose' from very high blood alcohol levels, including alcohol poisoning and aspiration vomitus. Overall, the majority of hospitalisations were for acute conditions (67.8%) (Chikritzhs *et al.* 2003).

Figure 7. Leading causes of burden (DALYs) in males, Australia, 1993 to 2023.



Source: Begg *et al.* 2005

Future projections of the leading causes of disease burden predict that the proportion due to alcohol will remain stable and within the top 14 leading causes among Australian males by 2023 (see Figure 7). The proportion of disease burden caused by anxiety and depression is also expected to remain stable by 2023, while ischaemic heart disease and lung cancer are expected to decline. Type 2 diabetes is predicted to be the leading cause of disease burden among Australian males by 2023.

1.7 The financial costs of alcohol misuse and related harm

Table 4. Estimated social costs of alcohol abuse, Australia, 2004-05.

Type of cost	$m
Reduction in workforce and absenteeism	3,579
Labour in the household	1,571
Medical	541
Hospital	662
Nursing homes	401
Pharmaceuticals	298
Ambulances	75
Road accidents	2,202
Police	747
Criminal courts	86
Prisons	142
Property	67
Insurance administration	14
Productivity of prisoners	368
Resources used in abusive consumption	1,689
Loss of life	4,135
Pain and Suffering (road accidents)	354

Source: Collins & Lapsley 2008

The total social cost of alcohol abuse is estimated to be more $15 billion each year (Collins and Lapsley 2008). The major part of these costs are for tangible social costs such as crime ($1.6 billion), health ($1.9 billion), productivity in the workplace ($3.5 billion), productivity in the home ($1.5 billion), and road accidents ($2.2 billion) (see Table 4).

The Commonwealth government collects close to $6 billion each year from alcohol taxes.

1.8 Treatment for chronic alcohol problems

In 2005-06 there were a total of 145,000 drug treatment episodes recorded in Australia, of which 56,000 (or 39 per cent) were treated for alcohol problems (AIHW 2008b). While this figure is high, it is perhaps relatively low given the estimated 585,000 Australians who drink at levels considered to be high risk to health in the long-term, many whom might be considered the potential target group for treatment (AIHW 2008b). Females accounted for 31 per cent of alcohol treatment episodes 2005-06. Persons aged 20 to 29 years received 22 per cent of treatment episodes. For persons aged 10 to 19 years receiving treatment, the proportion that are treated for alcohol problems has increased from 15 per cent to 23 per cent between 2001-02 and 2005-06.

The interactions between other drugs (tobacco, illicit and prescription) and alcohol are complex. Australian studies reveal a close association between heroin overdose and alcohol consumption at harmful levels at the time of overdose. Australian research has also found that among

cannabis users, alcohol was almost universally used on a regular basis, with most users consuming alcohol at harmful levels. There are also parallels in aetiological research regarding the uptake of one psycho-active substance increasing the likelihood of use of others. There has also been some work done regarding parents' attitudes and behaviour as a factor in influencing tobacco, alcohol and other drug use. It is regarded as important for all of these substances that prevention efforts focus on delaying the up take of regular use. This paper does not attempt to deal with the obvious cross-over between mental health issues and alcohol misuse, and the increasing problem of poly-drug use, meaning that any preventive action does need to bear these factors in mind.

1.9 Assault, anti-social behaviour, and reduced perceptions of safety

In Australia, it is estimated that 47 percent of all perpetrators of assault and 43 percent of all victims of assault were intoxicated prior to the event (English *et al.* 1995), while it has been reported that 34 percent of homicide perpetrators and 31 percent of homicide victims were alcohol affected at the time of the homicide. In addition, it has been estimated that alcohol is an important factor in 50 percent of cases of domestic physical and sexual violence (SCRGSP 2005). In a single year (1998-99), there were 8,661 people admitted to Australian hospitals with injuries from alcohol-related assaults; 62,534 alcohol-related assaults were reported to police in the same year, and it is estimated that many more went unreported. Of the hospitalisations with injuries from alcohol-related assaults, 74 percent were male and two thirds were aged 15 to 34 years (Matthews *et al.* 2002).

An important factor in alcohol-related violence is the setting where drinking occurs. Australian studies have generally confirmed that alcohol-related violence most commonly occurs in and around inner-city hotels, in the early hours of Saturday and Sunday mornings, and usually among young adult males (Doherty & Roche 2003). Furthermore, it has been shown that the majority of alcohol-related incidents occur in a minority of high-risk licensed venues (Briscoe & Donnelly 2003).

It is not surprising that much of the time and resources of policing in Australia is related to incidents involving alcohol. One study reported that alcohol is involved in 62 percent of all police attendances, 73 percent of assaults, 77 percent of street offences, 40 percent domestic violence incidents, and 90 percent of late night calls (10 pm to 2 am) (Doherty & Roche 2003). A detailed study of policing in New South Wales, estimated that, in 2005, police spent on average 82% of their work time dealing with alcohol-related issues, at a cost of approximately $50 million (BOCSAR 2008).

While it is not a perfect description of the wider social impacts alcohol misuse, some commentators have coined the term 'passive drinking', akin to passive smoking, to refer to the impact of drunken behaviour on third parties. It is a reality that the most visible effects of drinking on others, including children, result from accidents and injury (including violence) during or after drinking occasions (NHMRC 2007: 23). When families have to deal with a relative's alcoholism, violence, injury or even death, these serious consequences can cause great suffering (NHMRC 2007: 30).

1.10 Geographic differences in consumption and harm

There are marked differences in the levels and patterns of alcohol consumption across Australia. It is estimated that per capita alcohol consumption varies significantly across Australian state and territory jurisdictions. In 2001–02, the Northern Territory (14.2 litres) and Western Australia (11.5 litres) had consumption levels which were 35 per cent and 19 per cent respectively higher than the national average (9.15 litres), while Tasmania and Victoria typically have per capita consumption levels lower than the national average (Chikritzhs *et al.* 2003).

Alcohol consumption levels (and alcohol attributable mortality and morbidity) are consistently found to be lower for people living within major cities when compared to outer regions. In 2004, it was estimated that the proportion of Australians who drank at risky/high risk levels for short term harm residing in outer regional (24%) and remote/very remote locations (28%) was between 20 per cent and 40 per cent greater than for residents of major cities. The proportion of the population residing in outer regional and remote/very remote locations who drank at risky/high risk levels for long term harm were 11 and 16 per cent respectively, compared to 9.5 per cent in major cities.

Not surprisingly, there are also geographic differences in the rates of alcohol related harm in Australia. The Northern Territory has the highest rate of alcohol-attributable deaths and hospitalisations in the country. While Western Australia and Queensland have the highest rates of alcohol-attributable hospitalisations.

1.11 High risk groups

Aboriginal and Torres Strait Islander Peoples

Indigenous Australians are about twice as likely to abstain from alcohol as non-Indigenous Australians, but those who do drink may be up to six times more likely to drink at high risk levels than non-Indigenous people (Chikritzhs & Brady 2006). It has been estimated that 38 per cent of Indigenous people aged 14 and over drank at risky/high risk levels for acute harm, compared to 20 per cent among non-Indigenous people; and that 23 per cent drank at risky/high risk levels for chronic harm, compared to about ten per cent of non-Indigenous people (AIHW 2005). However, a less recent, but better designed, Indigenous specific survey of substance misuse found that about 58 per cent of all Indigenous respondents drank at risky/high risk levels (NDRI 2007). Among Indigenous people who live in remote parts of Australia, levels of alcohol consumption are particularly high.

In 2002–03, the rate of hospital admission among Indigenous males for conditions related to high levels of alcohol use such as; acute alcohol intoxication, alcoholic liver disease, harmful use and alcohol dependence, was between two and seven times greater than for non-Indigenous males.

In addition, between 1999 and 2003, about 71 per cent of Indigenous homicides occurred in situations where both perpetrator and victim were drinking (as opposed to 19% of non-Indigenous homicides) (SCRGSP 2005). Other studies have shown that the rates of death from wholly alcohol-caused conditions among residents of Western Australia, South Australia and the Northern Territory are almost eight times greater for Indigenous males than for non-Indigenous males and 16 times greater for Indigenous females (Chikritzhs *et al.* 2000). The level of alcohol-attributable death among young Indigenous Australians (15–24 years) has also been shown to be almost three times greater than for their non-Indigenous counterparts – with the divergence between the two populations apparently increasing in recent years (Chikritzhs & Pascal 2004).

Young people

Rates of risky drinking in Australia peak amongst young people (AIHW 2008a), and alcohol-related harm is substantial for both adolescents and young adults. Drinking contributes to the three leading causes of death among adolescents - unintentional injuries, homicide and suicide, along with risk-taking behaviour, unsafe sex choices, sexual coercion and alcohol overdose (NHMRC 2007: 41). A recent study of self-reported harm found that drinkers under the age of 15 years are much more likely than older drinkers to experience risky or antisocial behaviour connected with their drinking, and the rates are also somewhat elevated among drinkers aged 15 - 17 years (Room & Livingston, in press). Furthermore, initiation of alcohol use at a young age may increase the likelihood of negative physical and mental health conditions, social problems and alcohol dependence. Regular drinking in adolescence is an important risk factor for the development of dependent and risky patterns of use in young adulthood. Childhood and adolescence are critical times for brain development and the brain is more sensitive to alcohol-induced damage during these times, while being less sensitive to cues that moderate alcohol intake.

Like adolescents, young adults continue to be greater risk takers than older adults, but still have poorly developed decision-making skills – factors that are reflected in the high levels of injuries sustained by this age group; and alcohol affects brain development in young people; thus, drinking, particularly "binge drinking", at any time before brain development is complete (which is not until around 25 years of age) may adversely affect later brain function. In addition, young adults are also the adult age group most likely to take mood-altering drugs (AIHW 2008a).

Trends in youth drinking are unclear, with neither school survey data (ASSADS) nor the NDSHS surveys demonstrating clear trends in drinking amongst adolescents or young adults in the last decade. A recent examination of Victorian data relating to young people aged between 12 and 24 found that, while the survey data found no clear trend in rates of risky drinking, the rates of hospitalisation and presentation at emergency departments have increased dramatically over recent years. The study suggests that the relationship between survey-derived estimates of alcohol consumption and rates of alcohol-related harms is not as clear-cut as expected, and raises concerns about the sensitivity of population surveys in detecting changes in harmful drinking patterns (Livingston, in press).

Other groups at risk

Drinking can lead to poorer outcomes for people who have a mental health condition, whether it is a high prevalence condition such as depression or a low prevalence condition such as schizophrenia.

There has been little analysis of the patterns of consumption and trends in alcohol related dysfunction or harm in older people in Australia. Older people are more vulnerable to the effects of alcohol due to changes in their body composition, decreased metabolic capacity, the presence of co-morbid conditions and the medications that regulate these conditions. Older people express concern about reduced perceptions of safety associated with public place drinking. Women in the baby boomer cohort, now aged in their 50-70's are more likely than their parents to be alcohol consumers and it might be anticipated that this will produce an increase in alcohol related morbidity in their older years, but this is yet to be documented.

Certain occupational groups are known to regularly drink at risky/high risk levels, especially tradespeople and unskilled workers, and the hospitality, agricultural, and mining industries.

1.12 Gaps and Limitations

Alcohol sales data

Until the mid 1990s, data on alcohol sales were collected by all Australian states at a premise level. Small area alcohol sales data, including information on product types would allow a range of crucial alcohol policy questions to be examined. For example, while recent Australian studies have shown that the number of alcohol outlets in an area are related to rates of violence and that there's a link between outlet density and risky consumption. Chikritzhs *et al.* (2008) have demonstrated that alcohol-related sales data are the best predictors of alcohol-related problems. In addition, data that allow estimates of the amount of alcohol sold at a local level will provide an opportunity to analyse what happens to total alcohol sales when new outlets are opened. Furthermore, these data would allow rigorous evaluation of changes to local alcohol policy in terms of their effects on alcohol consumption, for example the recently proposed lockouts in central Melbourne. Additionally, these data could help determine whether measures like these increase off-premise consumption at the expense of on-premise. At a broader level, sales data provide a more accurate picture of consumption than the current best data available (ABS measures of alcohol available for consumption) and could provide evidence on how national or state-level changes (e.g. the recent increase in tax on pre-mixed spirits) impact on consumption, including evidence around product substitution, changes in on- versus off-premise consumption. Finally, clearer links between alcohol consumption and harm could be determined from ecological data combining sales and health/social outcomes. In other words, is the volume and type of alcohol sold in a region predictive of problematic outcomes? This would provide evidence of whether particular beverage types (e.g. cask-wine, pre-mixed spirits) are disproportionately related to harm

Health benefits of alcohol

At low levels of consumption, alcohol may also have some benefits - various studies have found reductions in some kinds of heart disease (particularly in middle aged and older males) and ischaemic stroke (in older females), diabetes, gallstones and dementia. The extent and even the existence of such benefits remain controversial (e.g., Jackson *et al.*, 2005; Fillmore *et al.* 2006). In terms of population health, heart disease and stroke are the most important of these potential benefits. Nearly all the potential benefits are confined to males over the age of 45 and women past menopause, and can be gained with a drinking pattern of as little as one drink every second day. Since alternative means of preventing heart and vascular disease are available, the clinical consensus is that people need not take up or maintain drinking for health benefits.

Fetal Alcohol Syndrome

Rates of drinking during pregnancy are high, with recent Australian surveys reporting rates of 47 per cent. Between 19 and 44 per cent of Aboriginal women drink alcohol in pregnancy and between 10 and 19 per cent drink at harmful levels (NHMRC 2007). Maternal alcohol consumption can result in a spectrum of harms to the fetus. Although the risk of birth defects is greatest with high, frequent maternal alcohol intake during the first trimester, alcohol exposure throughout pregnancy (including before pregnancy is confirmed) can have consequences for development of the fetal brain. It is not clear whether the effects of alcohol are related to the dose of alcohol and whether there is a threshold above which adverse effects occur (RCOG 2006). This uncertainty is reflected in policy regarding alcohol use in pregnancy within Australia and overseas (O'Leary *et al.* 2007). Although the risks from low-level drinking (such as one or two drinks per week) during pregnancy are likely to be low, a 'no-effect' level has not been established, and limitations in the available evidence make it impossible to set a 'safe' or 'no-risk' drinking level for women to avoid harm to their unborn baby.

2. Approaches to preventing and reducing alcohol related harm

2.1 Alcohol policy and programs in Australia

There is considerable activity in this area in Australia currently; some funded by governments; much of it centred on 'top of mind' or readily observed phenomena such as young people's drinking and efforts to contain public nuisance, violence and disruption. There are extensive compendiums of activity emanating from governments describing how they are actively involved on many fronts in responding to alcohol issues: from summits, workshops and funding programs, to public education and persuasion and local area initiatives. Various benevolent, community service, non-government organisations, peak bodies and community-based groups, together with particular interest groups such as parents, schools and the powerful alcohol beverage and related industry groups including hospitality, tourism, entertainment, advertising, media, recreation including sporting, gambling and other industries variously cooperate and/or compete in a somewhat crowded space in relation to policy advocacy and program development. Much of the rhetoric is aimed at prevention and there is a mood to address the downside of alcohol use at the moment, but there is great difficulty in gaining coherent, cooperative, strategic, and effective action. This situation might be compared to the place of and responses to tobacco smoking in Australia in the 1960s.

Australians play a role in various international alcohol policy arenas including WHO Expert Working Group(s) and our research track record includes some outstanding contributions to public health framing and preventative work. At the same time, Australia's alcohol beverage industry has been active in the development and promotion of alcohol in a number of neighbouring Pacific (and other) countries, many of which are not well placed to respond to the harms associated with increases in alcohol use.

National initiatives

Reducing harms from alcohol misuse is a responsibility shared among all levels of government. The Commonwealth Government collects significant revenue from tax on alcohol and generally has responsibility for broad population preventative efforts including potential leadership in policy direction, taxation, and hence opportunity to influence price – perhaps the most potent preventative lever, research, and national social marketing campaigns. The Commonwealth and the States and Territories work together through the mechanisms of the Ministerial Council on Drug Strategy to implement initiatives as part of the *National Alcohol Strategy 2006-2009* (MCDS 2006). The Strategy is a plan for action developed collaboratively between governments, industry, and community partners.

Key action areas initially identified for the Strategy include:

- Monitoring and review of alcohol promotions (report completed to MCDS, meetings with alcohol advertising bodies and ongoing monitoring);
- Increase community awareness and understanding of the extent and impacts of intoxication (limited systematic or programmatic effort but with some jurisdictions making an effort to support and guide community concern);
- Improve enforcement of liquor licensing regulations (variable across jurisdictions; some interest in Queensland's civil liquor license inspectors);
- Support whole-of-community initiatives to reduce alcohol-related health problems (mixed responses; little clear support for local government role; patchy funding; overall limited systematic attention); and,
- Development and implementation of social marketing campaigns to reduce alcohol-related harms (comprehensive developmental research and planning done but awaiting approvals and roll out).

Comments in parenthesis are those of one of the principal author's observations on progress, merely as a guide to the state of play while evalua[illegible] of the overall National Drug Strategy, which includes consideration of the alcohol strategy, is currently underway (see Siggins Miller, in progress)

It is difficult to assess the application, impact or outcomes of the NAS given that there is considerable difficulty in ensuring integrated programme focus across all levels of government and all jurisdictions and few clear, agreed targets or monitoring of outcomes associated with the strategy. In addition some relevant reports (such as the report on the government's monitoring of alcohol advertising) are not publicly available.

State and Territory roles and responsibilities

Key alcohol related responsibilities of state and territory governments:

- liquor licensing regulation,
- provision of treatment services.

Also: law enforcement; health promotion; community programs; research; drug education in schools. All states and territories have strategic plans to address alcohol, which vary in scope and funding. Because they have a responsibility for laws, regulations, policy, and enforcement in relation to the physical availability of alcohol, they play a critical role in Australia in influencing many of the key determinants of alcohol misuse and related harm.

Local Government

Given the diverse range of adverse outcomes of drinking most often experienced in person at a local level, local government departments including environmental health officers, planning, rangers/park officers, community development, waste disposal and youth services are all involved in responding. The Capital Cities Lord Mayors and the National Local Government Drug and Alcohol Advisory Committee have identified preventing and responding to alcohol problems as central to the role of local government. A recent assessment in Western Australia found that local

governments believe that they can contribute to management of the physical availability of alcohol, the creation of safer drinking settings, and engage in environmental design and planning that contributes to and supports community wellbeing. There are examples of innovative, locally responsive measures in Australia, in part to respond to the modern phenomena of night time economies described in the recent book *Bar Wars* (Hadfield 2007).

In spite of the levels of concern and the plethora of activity, it might be said that each level of government and each organisation or business generally has stronger levers available to it than are utilised; in part reflecting the community's considerable ambiguity with regard to alcohol.

Community level action

Throughout Australia there is also a considerable amount of community based activity underway that is related to the issues of alcohol misuse and related harm, some of which is government funded and some led by charitable groups. In Australia, the contribution of community levels action to the prevention and reduction of alcohol related harm is significant and is integral to the effective implementation of federal, state and local polices and programs. While it is known that community participation can increase the effectiveness of initiatives, it also important that this be done well. Done poorly, participation may have negative health impacts. Communities may resist participating in local initiatives when their past experience of it has been negative – such as when expectations are too high and when too much reliance is placed on the ability of local structures to alleviate problems which actually require macro solutions, or when there has been unrealistic emphasis on the pursuit of consensus, thus stifling progress.

2.2 Some Recent Developments in Australia (January to June 2008)

National Binge Drinking Strategy

On 28 March 2008, the Prime Minister announced a new national strategy to address the binge drinking epidemic among young Australians. This national strategy will begin with three new practical measures to help reduce alcohol misuse and binge drinking among young Australians, including:
- $14.4 million to invest in community level initiatives to confront the culture of binge drinking, particularly in sporting organisations;
- $19.1 million to intervene earlier to assist young people and ensure that they assume personal responsibility for their binge drinking; and,
- $20 million to fund advertising that confronts young people with the costs and consequences of binge drinking.

The Prime Minister stated that the early intervention initiatives will focus not only on cultures and environments, but also a new emphasis on personal responsibility. It was also announced that the new strategy will link with the National Preventative Health Taskforce (Rudd 2008).

Council of Australian Governments (COAG) Binge Drinking Agreement

The Council of Australian Governments (COAG) recently agreed on the importance of tackling alcohol misuse and binge drinking among young people and asked the Ministerial Council on Drug Strategy to report to it in December 2008 on options to reduce binge drinking including in relation to closing hours, responsible service of alcohol, reckless secondary supply and the alcohol content in ready to drink beverages. The Australia New Zealand Food Regulation Ministerial Council to request Food Standards Australia New Zealand to consider mandatory health warnings on packaged alcohol (COAG 2008).

Ministerial Council on Drug Strategy (MCDS)

At its meeting on 23 May 2008, the Ministerial Council on Drug Strategy (MCDS) agreed to fast track the development of the federal government's $53.5 million National Binge Drinking Strategy, including community level initiatives. They expect to provide an interim report in July. Acknowledging the significant foundation work already being done by all governments and the contribution of police commissioners, this national approach aims to reduce the incidence of alcohol-related violence and the impact of alcohol abuse on individuals, the community, and the health system. . It includes a focus on assessment of late night lock-outs for licensed premises and development of a preferred framework to more effectively target police resources on binge drinking hot spots. It will also focus on:
- a national policy framework for Responsible Service of alcohol;
- a preferred regulatory model to address secondary supply of alcohol to minors;
- options for reducing alcohol content in products including those aimed at young people;
- possible standards and controls for alcohol advertising targeting young people; and,
- advice regarding the impact of health warnings on drinking (MCDS Press release, 2008).

Senate Inquiry into Alcohol Toll Reduction Bill 2007

On 14 February 2008, the Senate of Australian Parliament, on the recommendation of the Selection of Bills Committee, referred the *Alcohol Toll Reduction Bill 2007* to the Senate Community Affairs Committee for inquiry and report by 18 June 2008. The Bill's stated aim is to create a culture of responsible drinking, and to facilitate a reduction in the alcohol toll resulting from excessive alcohol consumption. To achieve this aim the Bill proposes to:
- Require health information labels on all alcohol products;
- Restrict TV and radio alcohol advertising to after 9pm and before 5am, to stop alcohol being marketed to young people;
- Require all alcohol ads to be pre-approved by a government body comprising an expert from the medical profession, alcohol and drug support sector, accident trauma support sector and the alcohol industry;
- Ban alcohol ads which are aimed at children or which link drinking to personal, business, social, sporting, sexual or other success.

95 wriiten submissions from interested parties were received by the Committee which is due to report in late June 2008 (Senate 2008a).

Senate Inquiry into Ready-to-Drink Alcohol Beverages

On 15 May 2008, the Senate referred to the Community Affairs Committee for inquiry and report by 24 June 2008:

- The effectiveness of the Government's proposed changes to the alcohol excise regime in reducing the claims of excessive consumption of ready-to-drink alcohol beverages;
- The consumption patterns of ready-to-drink alcohol beverages by sex and age group;
- The consumption patterns of all alcohol beverages by sex and age group;
- The impact of these changes on patterns of overall full strength spirit consumption, including any increased consumption of standard drinks of alcohol;
- The evidence underpinning the claims of significant public health benefit in the increase of excise on this category of alcohol;
- Applicability of incentives to encourage production and consumption of lower alcohol content beverages;
- The modelling underpinning the Government's revenue estimates of this measure;
- The effectiveness of excise increases as a tool in reducing the levels of alcohol related harm;
- The empirical evidence on which the government's decision to increase the excise on ready-to-drink alcohol beverages was based; and
- The effect of alternative means of limiting excessive alcohol consumption and levels of alcohol related harm among young people.

34 written submissions from interested parties were received by the Committee which is due to report in late June 2008 (Senate 2008b).

Northern Territory initiative and other ATSI specific initiatives

Perhaps the most radical experiments in responding to problems especially among aboriginal Australians have been carried out in the NT. The *Living with Alcohol* program which operated for many years has been subject to careful, independent evaluation and most recently the *NT Initiative* implemented by the then Minister for Aboriginal Affairs of the previous Australian government; that is just now to be reviewed after one year of implementation. This is a complex arena and this paper will not attempt to summarise interventions specific to indigenous Australians or presume to provide comprehensive information in this area. There are however some important points to note. For too long ATSI peoples have not had access to and often not been even encouraged to seek soundly evidence based responses to alcohol problems; instead they have been left to garner their own experience with little support or appropriate mentorship. Efforts to redress this have emerged and in recent times more analytic and systematic effort has been apparent in addressing issues specific to ATSI peoples; while borrowing and utilising the evidence of what works for many others from evaluation based texts and case studies of successful interventions (e.g. Strempel *et al.* 2003). Another important resource is the *Grog Book* (Brady 2005) which provides guidance for community based policy, programmes and specific action, as well as information about evidence based, individually focussed interventions and clinical guidelines specific to Aboriginal and Torres Strait Islander peoples. This resource is currently being updated.

In addition, groups such as the Aboriginal Medical Services Alliance Northern Territory (AMSANT) have produced policy documents including 'A Model for integrating alcohol and other drug, community mental health and primary health care in Aboriginal Medical Services in the Northern Territory' and 'Options for Alcohol Control in the Northern Territory' that, they suggest, "proposes a number of considered, evidenced-based alcohol policy measures relevant to the NT which were developed through a collaborative process with our member health services". This policy paper canvasses the spectrum of preventative interventions available. It must be remembered that the majority of Aboriginal and Torres Strait Islanders live in the major metropolitan cities of Australia; far removed geographically and often culturally from the environment that the NT initiative and related policies address. Some care is necessary in 'translation' and in recognising that there are many indigenous Australian cultures just as there are many different non-indigenous Australian cultures.

2.3 Evidence of best practice in prevention

As detailed above, a considerable amount of activity is in Australia in relation to the issues of alcohol misuse and related harms. The extent to which the considerable preventative desire and activity currently planned or underway is likely to be effective, and how well this activity reflects an evidence-based approach is considered in the next section of this paper.

In general, the measures that are most often called for by community members tend to be the least effective, while the most effective measures are the least popular, and are thus probably the most difficult for governments to introduce; usually requiring strong leadership and well planned implementation.

What is Prevention in this area?

The stated aim of Australia's current national drug Strategy is to prevent the uptake and minimise the harmful effects of drug use in Australian society'. Known as 'harm minimisation', this approach has been defined as encompassing:

- **Supply reduction** strategies designed to restrict the harmful supply of drugs;
- **Demand reduction** strategies designed to prevent the uptake of harmful drug use, and
- **Harm reduction** strategies to reduce drug-related harm for individuals and communities.

The approach of harm minimisation, while complex and requiring continuing support from public advocates, is based on scientific evidence and underpins the definition of prevention adopted for the review of alcohol related interventions in this paper. It can encompass universal as well as targeted interventions (both selective: particular high risk sub-populations; and indicated: those with emerging problems).

Though not explored in detail in this paper, the concept of the **prevention paradox** assists in understanding prevention approaches in the areas of public health and public safety. This approach suggests that more (net) harm may be prevented through universal interventions – focusing on the majority who are less seriously involved in harmful alcohol/drug use, rather than through interventions that target the smaller proportion of high-risk users. Considerable debate ensues in finding an appropriate mix of universal and targeted interventions and there is a tendency for people preferring to focus on other people's/groups' drinking.

What works in alcohol related prevention

The following discussion is informed by recent reviews of the available research evidence. This includes especially:

- the World Health Organisation's (WHO) international review of alcohol related research and public policy (Babor *et al.* 2003);
- a recent Australian research monograph on the prevention of substance use, risk and harm (Loxley *et al.* 2004); and.
- a recent update of the latter, with a focus on prevention interventions targeting adolescents (Toumbourou *et al.* 2007).

Other recent reviews have also been drawn upon, to a lessor extent, including Stockwell 2004, Loxley *et al.* 2005, and NDRI 2007.

The conclusions reached in the WHO report (Babor *et al.* 2003) with regards to the respective strengths and weaknesses of different types of interventions, according the available international research evidence, are summarised in Table 6. Included in this table are Australian-authored evaluations of the equivalent interventions provided by Loxley *et al.* (2004) and Toumbourou *et al.* (2007). The scales used to rate the interventions by the respective authors are summarised in Table 5 below.

Table 5. Key to the rating scales shown in Table 6.

Rating	Evidence of effectiveness[1]	Breadth of research support[1]	Test across cultures[1]	Australian evaluation[2]
0	Lack of effectiveness	No studies undertaken	Not tested	Limited investigation
★	Limited effectiveness	1 well designed study completed	Tested in 1 country	Evidence for implementation
★★	Moderate effectiveness	2 - 4 studies completed	Tested in 2 - 4 countries	Evidence for outcome effectiveness
★★★	High degree of effectiveness	5+ studies completed	Tested in 5+ countries	Evidence for effective dissemination
?	No evidence available			N/A
[illegible]				Warrants further research
[illegible]				Evidence is contra-indicative

1. This rating scale applies to the WHO's international review (Babor *et al.* 2003).
2. This rating scale applies to the Australian reviews (Loxley *et al.* 2004 and Toumbourou *et al.* 2007).

Of the 39 interventions listed in Table 6, approximately half (21) are universal (targeted at the whole population) and half (20) are targeted at high risk groups. The international review by Babor *et al.* concludes that interventions targeting the whole population generally have higher effectiveness ratings and are less costly to implement and maintain, on average, than those targeting high risk groups. In general, the types of interventions that are considered most effective according to the ratings are, in order:

1. Regulating physical availability.
2. Taxation and pricing.
3. Drink driving counter-measures.
4. Treatment and early intervention.

The types of interventions for which there is somewhat less evidence of effectiveness are, in order:

5. Altering the drinking context.
6. Regulating promotion.
7. Education and persuasion.

It should be noted, however, that there are differences in the ratings of some interventions between the international review (Babor *et al.* 2003) and the Australian review (Loxley *et al.* 2004) (e.g. alcohol problems treatment; mass media campaigns). Also, importantly, it should be recognised that although the effectiveness of some interventions do not rate highly, in some cases this may be due to the limited research evidence that is available to inform the rating (e.g. advertising content controls).

Table 6. Ratings of policy relevant strategies and interventions.

Strategy or intervention		Effectiveness	Breadth of research	Cross-cultural testing	Cost to implement	Target group	Australian evaluation
Regulating physical availability	Total ban on sales	★★★	★★★	★★	High	High risk	★★
	Minimum legal purchase age	★★★	★★★	★★	Low	High risk	
	Hours and days of sale restrictions	★★	★★	★★	Low	Whole-of-population	★★
	Restrictions on density of outlets	★★	★★★	★★	Low	Whole-of-population	⚐
	Staggered closing times for bars and clubs					Whole-of-population	✖
	Server liability	★★★	★	★	Low	High risk	★
	Different availability by alcohol strength	★★	★★	★	Low	Whole-of-population	
Taxation and pricing	Alcohol taxes	★★★	★★★	★★★	Low	Whole-of-population	★★
	Hypothecated tax to pay for treatment / prevention					Whole-of-population	★★★
	Setting floor prices / banning discounting					Whole-of-population	★★
Drink driving counter-measures	Sobriety check points	★★	★★★	★★★	Moderate	Whole-of-population	
	Random breath testing	★★★	★★	★	Moderate	Whole-of-population	★★★
	Lowered BAC limits	★★★	★★★	★★	Low	Whole-of-population	
	Administrative license suspension	★★	★★	★★	Moderate	High risk	
	Low BAC for young drivers	★★★	★★	★	Low	High risk	★
	Graduated licensing for novice drivers	★★	★★	★★	Low	High risk	
	Designated drivers and ride services	0	★	★	Moderate	High risk	★
	Ignition interlocks					High risk	★
Treatment and early intervention	Brief intervention in primary health settings	★★	★★★	★★★	Moderate	High risk & Whole-of-pop.	★★★
	Alcohol problems treatment	★	★★★	★★★	High	High risk	★★★
	Thiamine supplementation					High risk	★★
	Workplace interventions					High risk & Whole-of-pop.	⚐
	Mutual help/self-help attendance	★	★	★★	Low	High risk	
	Mandatory treatment of repeat drinking-drivers	★	★★	★	Moderate	High risk	
Altering the drinking context	Bans on serving intoxicated persons	★	★★★	★★	Moderate	High risk	
	Training staff to prevent intoxication / aggression	★	★	★	Moderate	High risk	★★ (✖ if not enforced)
	Voluntary codes of bar practice	0	★	★	Low	High risk	★★ (✖ if not enforced)
	Enforcement of on premises regulations and laws	★★	★	★★	High	High risk	
	Promoting alcohol-free events	0	★★	★	High	Whole-of-population	
	Community mobilisation	★★	★★	★	High	Whole-of-population	★★
	Plastic or tempered glass serving containers					Whole-of-population	★
	Food service					Whole-of-population	★
Regulating promotion	Advertising bans	★	★★	★★	Low	Whole-of-population	
	Advertising content controls	?	0	0	Moderate	Whole-of-population	⚐
Education and persuasion	Alcohol education in schools	0	★★★	★★	High	High risk	★
	College student education	0	★	★	High	High risk	
	Parent education					Whole-of-population	⚐
	Public service messages / Mass media campaigns	0	★★★	★★	Moderate	Whole-of-population	★
	Warning labels / National drinking guidelines	0	★	★	Low	Whole-of-population	★

Source: Adapted from Babor *et al.* (2003), Loxley *et al.* (2004), Toumbourou *et al.* (2007)

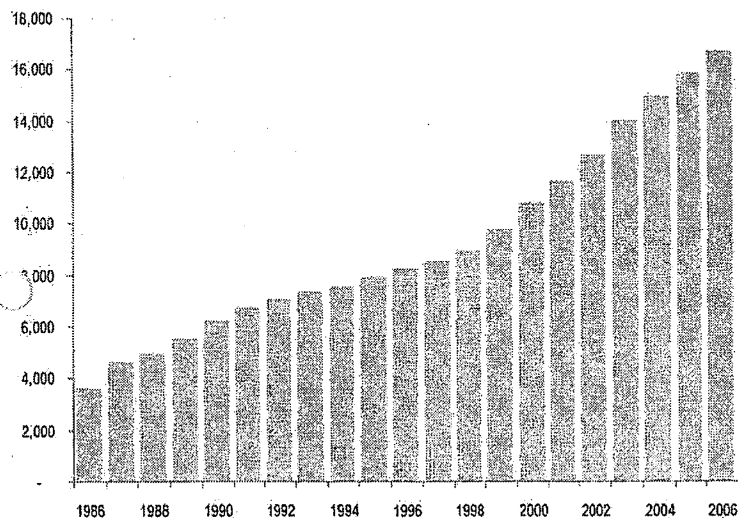
Regulating the Physical Availability of Alcohol

Regulating physical availability refers to the accessibility or convenience of the alcohol products, and relates to policies which aim to prevent alcohol related harm though controls on the condition of sale to the drinker as a retail customer (Babor *et al.* 2003). In Australia, there has been a recent review of the evidence for restricting the sale and supply of alcohol by the National Drug Research Institute (NDRI 2007). While regulation of the 'economic' availability of alcohol (i.e. the price of alcohol) is, currently, exclusively a federal responsibility in Australia, via measures such as taxation, the physical availability of alcohol is generally regulated by state and territory governments, along with local governments also to a limited extent.

Restricting the hours and days of sale of alcohol is a standard component of alcohol policy and regulation and there is a substantial body of international and Australian work which has examined the impact of changes to trading hours for licensed premises on levels of alcohol consumption and rates of related harms. Most Australian studies have shown that increased trading hours have been accompanied by significantly increased levels of alcohol consumption and/or harms (NDRI 2007). A recent Australian study by Chikritzhs and Stockwell (2006) found that small extensions of trading hours for licensed hotels in Perth, Western Australia significantly increased numbers of drink-driver road crashes. More specifically, this study demonstrated that the relationship between trading hours and increased drink driver road crashes was mediated by the quantity of alcohol purchases made by hotels. NDRI (2007) report that several studies have indicated that young males and regular heavy drinkers are especially likely to take advantage of longer trading hours.

Restrictions on density of outlets can be achieved by requiring minimum distances between outlets or limiting the number of outlets in a particular location. Liquor licensing systems or planning controls can potentially be used to limit the number of places where alcohol can be sold. In recent years in Australia there has been a significant liberalisation of licensing laws and a corresponding growth in outlets, both on- and off-premise. Recent research from three states (Chikritzhs *et al.* 2008, Donnelly *et al.* 2006, Livingston 2007; 2008) has demonstrated consistent links between the availability of alcohol in a region and the alcohol-related problems experienced there. In particular, these studies have linked rates of violence to density of alcohol outlets, with a longitudinal study in Melbourne highlighting that changes in the numbers of outlets in an area is directly related to changes in the rates of night-time assaults occurring there. The links between outlet density and other outcomes are less clear cut, although some international evidence suggests higher outlet density is related to higher rates of: risky alcohol consumption (e.g. Weitzman *et al.*. 2003), motor vehicle accidents (e.g. Gruenewald and Ponicki 1995), risky sexual behaviour (Cohen *et al.*. 2006), pedestrian injury (LaScala *et al.*. 2001), child maltreatment (Friesthler *et al.*. 2004) and neighbourhood amenity problems (Wechsler *et al.*. 2002). The results of this research are clear – liberalising alcohol availability is likely to increase alcohol-related problems. However the practical policy implications are less clear – most of these studies have treated all outlets of a particular type as equivalent, while there is good evidence that certain premises contribute disproportionately to problems (Briscoe and Donnelly 2001), highlighting the need to further examine the types of outlets that are related to assaults. Further data, such as alcohol sales, opening hours, capacity and venue style, could provide substantial insights into how different outlets contribute to the effect of outlet density on assault.

Figure 8. Number of liquor licences by year, Victoria, 1986 to 2006.



Source: Consumer Affairs Victoria, unpublished data

While not completely deregulated, liquor licensing laws and regulations in most jurisdictions have been significantly relaxed over the past decade generally coinciding with the required reviews under the National Competition Policy. One of the effects of this has been a proliferation in the number of new licensed premises in some jurisdictions (see Figure 8).

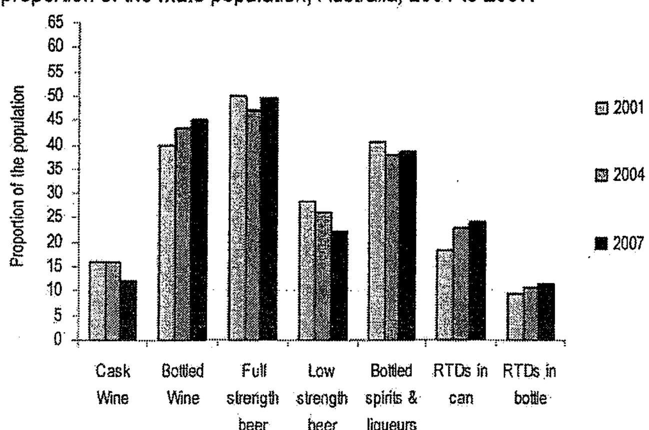
Along with an increase in the total number of licensed premises, there has been an increase in the numbers of premises extended trading hours, the numbers of licenses to sell packaged liquor (i.e. take away), and over time an increased concentration of licences held by just a few business.

Restricting **availability by alcohol strength** is known to be an effective intervention both internationally and in Australia. In Australia, it has been estimated that full strength beer makes the largest single contribution to all risky and high risk alcohol consumption (39 per cent) (Chikritzhs *et al.* 2003). NDRI (2007) report that studies which have examined the relationship between alcoholic beverage type and levels of alcohol-related harm have found increasing evidence that beer consumption is more commonly associated with drink-driving. NDRI also observe that while most studies identify wine as a comparatively low risk beverage, a study by Stockwell *et al.* (1998) found that certain types of wine which offer high alcohol content at a relatively low price were strongly associated with hospitalisations for alcohol-related road injuries, falls, assaults, and suicides. Some small regional or remote communities in Australian, with relatively large indigenous populations, have introduced **sales bans** on cask wine and cask fortified wine. According to NDRI (2007), evaluations of some of these bans show that such restrictions can result in reduced alcohol misuse and related harm in the communities where the bans exist.

The most preferred types of alcoholic beverages among Australian female drinkers, in descending order, are bottled wine, bottled spirits and liqueurs, RTDs in a bottle, and RTDs in a can. Over the 2001 to 2007 period, preference for bottled wine increased the most among females, growing from 57.3 per cent to 63.8 per cent. Among males, the most preferred types of alcoholic beverages, in descending order, are full strength

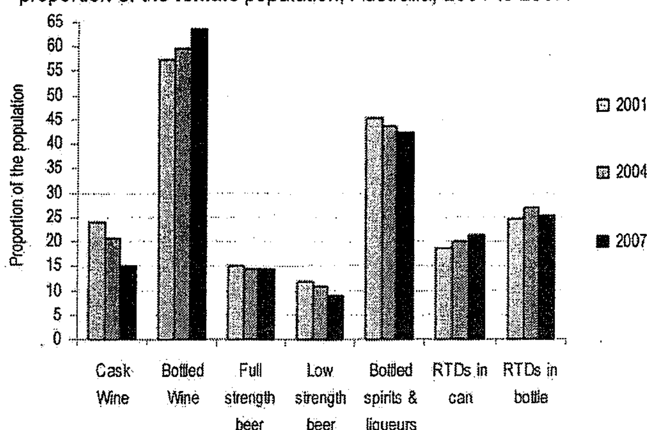
beer, bottled wine, bottled spirits and liqueurs, and RTDs in a can. Over the 2001 to 2007 period, preference for RTDs in a can increased the most among males, growing from 18.2 per cent to 24.3 per cent (see Figures 9 and 10).

Figure 9. Preference for selected alcoholic beverages by year, proportion of the **male** population, Australia, 2001 to 2007.



Source: AIHW (2008b)

Figure 10. Preference for selected alcoholic beverages by year, proportion of the **female** population, Australia, 2001 to 2007.

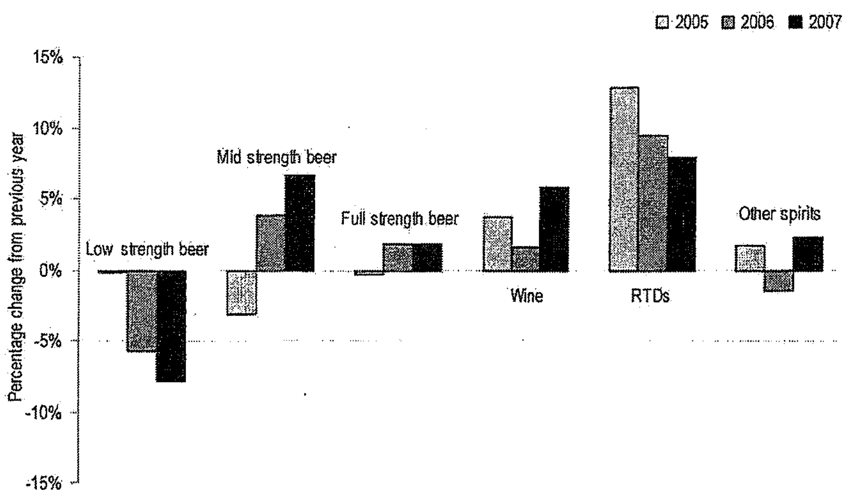


Source: AIHW (2008b)

With regards to which types of alcoholic beverages are most commonly involved in alcohol misuse, Stockwell (2008) has estimated that straight spirits (79.7%), alcoholic cider (78.9%), pre-mixed spirits (71.8%) and regular strength beer (72.6%) are the top four types of beverages consumed by Australian drinkers on days when they drank at risky/high-risk levels. Among 12 to 17 year olds, the top three are straight spirits (98.9%), regular beer (78.9%) and RTDs (76.7%). Spirit-based beverages held the highest market share, representing 62.7% of total alcohol consumption among this age group, with slightly more consumed as straight spirits than as RTDs.

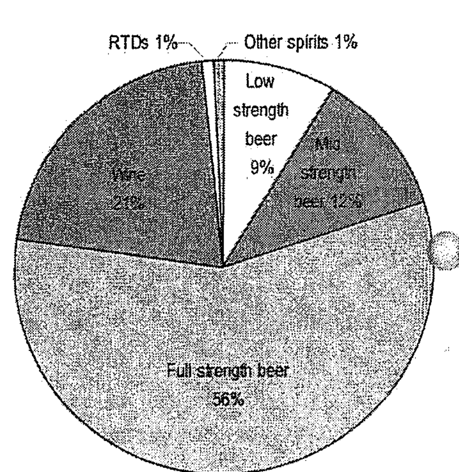
In recent years, there has been a gradual resurgence in overall per capita consumption of spirits in Australia, following several years of decline in the mid 1990s. The major part of this growth has come from increased consumption of RTD products, which now represent 48% of all per capita consumption of spirits in Australia (see Figures 11 and 12). Consumption of mid-strength beer and wine has also grown, while low strength beer has declined.

Figure 11. Annual change (%) in Alcohol Available for Consumption (litres of beverage) by Beverage Type, Australia, 2005 to 2007.



Source: ABS 2007 and 2008.

Figure 12. Alcohol Available for Consumption (litres of beverage) by Beverage Type, 2007.



Source: ABS 2008.

Recent Australian research has found the palatability of some RTDs is highly appealing to the taste preferences of young people (Copeland *et al.* 2005). This research found that 12 to 17 year-olds could not taste the difference between some RTDs and non-alcohol beverages (e.g. chocolate milk containing vodka and normal chocolate milk). The research also pointed to other studies that found RTDs are packaged in containers that are similar in appearance to highly popular soft drinks that appeal to young people (MacKintosh *et al.* 1997). An Australian study (Smith *et al.* 2005) has highlighted similar concerns regarding RTD packaging. It found that alcohol retail staff generally agreed that RTDs were designed for under age drinkers and often termed "kiddie drinks". Some Australian commentators have recently expressed concern about the increasing availability of high alcohol content RTDs and the potential appeal of such beverages to young people (Munro & de Wever 2008). Internationally there is also emerging evidence of the risks posed by RTDs that contain energy ingredients, which can mask some of the effects of alcohol and lead to increased risk of adverse events such as physical injuries, riding with drink drivers, and unwanted sexual contact (O'Brien *et al.* 2008).

The issue of the **server liability** for injuries to intoxicated people or third parties affected by the actions of a person affected by alcohol is a complex and controversial area of the law (DCPC 2006). In the United States, *Dram Shop* laws in many states allow people injured through the actions of an

intoxicated person to recover damages from a licensee or licensed premises owner. Such licensees are in most Dram Shop legislation also vicariously liable for their employees' actions in serving an (intoxicated) patron (DCPC 2006). Loxley *et al.* (2004) report that studies show Dram Shop laws have a modest deterrent effect and that the underlying rationale for discouraging service of intoxicated persons is sound and there is no likelihood of adverse consequences. A recent Australian review of the key aspects of law and implications of recent court decisions has reported that there is now a less onerous duty of care imposed upon licensees and their staff with regard to the consequences from the serving alcohol. [See also the discussion of responsible service of alcohol (RSA) interventions further below in this paper].

Minimum legal purchase age refers to the age at which alcohol can actually be purchased by a person. This is distinct from the age at which alcohol can be consumed, sometimes referred to as the legal drinking age. The distinction is important because while all state and territory laws in Australian prohibit a minor from purchasing alcohol, they do not necessarily prohibit consumption in certain circumstances. Babor *et al.* (2003) emphasise that consistent *enforcement* of laws regarding purchase age is critical if reduced alcohol consumption and related harm among young people is to be achieved. Although the minimum legal purchase age for alcohol in all Australian jurisdictions is 18 years, the average age at which Australians have their first full serve of alcohol is 17 years, and as detailed earlier in this paper, there is a high prevalence of underage drinking which has not changed significantly in the past twenty years. In the United States, where minimum legal purchase age for some time ranged between 18 and 21 years, several studies have found that increasing the age limit is an effective means of reducing road crash death and injury among teenagers and young adults. NDRI (2007) report that some studies have also found that higher legal minimum drinking age is associated with reductions in alcohol consumption among young people. There is, therefore, some evidence that raising the purchase age to 21 can reduce teenage drinking, as well as harms. Kypri's (2006) account of recent attempts to increase the minimum purchase age in New Zealand to 20 demonstrated that popular debate convinced a majority of the public that raising the age would be an appropriate way to reduce young people's harm from drinking. Toumbourou *et al.* (2005) here in Australia have recommended that a first step in this direction would be better monitoring of alcohol-related developmental harms using longitudinal and other developmental research.

It must be acknowledged that consumption of alcohol by children and adolescents in the home and in certain social settings is often sanctioned by parents, often in the belief that it is relatively harmless or might be helpful in educating young people about alcohol (Ward and Snow 2008). The majority of young Australians who report drinking at home also report parents as the primary suppliers of their alcohol (White and Hayman 2006). In New South Wales, it is now an offence to supply alcohol to minors in a private home without the direct approval of a parent or guardian. This has often been referred to as the NSW **secondary supply law**. Whilst the impact of this law upon youth drinking is not yet known, legislation of this kind has been welcomed by advocates against alcohol-related harm and there is currently considerable lobbying of government to support the introduction of similar laws in other Australian jurisdictions (Ward and Snow 2008)

Another example of restrictions on the physical availability of alcohol which is known to be effective in reducing alcohol misuse and related harm in some Australian indigenous communities, are referred to as **dry community declarations** (NDRI 2007). Some remote Indigenous communities in Western Australia, the Northern Territory and South Australia have declared themselves 'dry' using provisions of state/territory legislation. The key element of such dry area declarations is a combination of Indigenous community control and statutory authority, along with police enforcement for ensuring that dry community declarations reach their potential. Evidence suggests although there are short-comings (e.g. sly grogging) and associated costs to this approach, overall there are reductions in consumption and alcohol-related harm. It should be noted that dry community declarations are distinct from **local dry area alcohol bans**, as the latter relate to restrictions on drinking in designated public places and are usually imposed where there are high rates of alcohol-related public disorder (NDRI 2007). While local dry area bans have been found to decrease public order problems in designated areas, overall they do not reduce in public order offences, alcohol-related hospitalisations or police detentions of intoxicated persons. Often dry area restrictions simply displace drinkers to other areas where there are no, or fewer, restrictions and dry area declarations are often seen as inherently discriminatory because of the negative impacts upon Indigenous people already at risk of alcohol problems (NDRI 2007).

Currently receiving considerable attention in some Australian jurisdictions are measures related to restricting the hours of sale of alcohol known as **lockouts**. These do not restrict trading hours per se, however, because outlets are permitted to continue trading until their usual closing times. However, after a certain time, such as 2:00am or 3:00am, *new* patrons and those wishing to re-enter the premises are not permitted to do so. Lockouts aim to reduce the movement of people between clubs after a certain time since it is this movement of people between venues which police report as a major cause of alcohol related incidents late at night. There are examples of lockout programs in operation in locations throughout Australia, such as in Ballarat and Bendigo in Victoria, and across Queensland where 3.00am lockout now applies to all late night licensed premises. The Victoria government is also currently trialling a 2.00am lockout throughout four inner city municipalities of Melbourne. NDRI (2007) report that as yet, there is limited formal evidence of the effectiveness of lockout programs, in part because they often occur as one element within a range of programs aimed at reducing late night alcohol related problems (e.g. CCTV cameras, street lighting, public transport, police presence).

While they are not usually focused solely on issues that relate to the physical availability of alcohol, **community-based prevention** programs have become increasingly popular in recent years because of emerging understandings of how environmental and social conditions contribute to alcohol problems (Loxley *et al.* 2004). A detailed discussion on the range and scope effects of community based programs is not provided here, but can be obtained elsewhere (see Loxley *et al.* 2007: 166-167).

2.5 Taxation and Pricing

The price of alcohol clearly impacts on consumption patterns. There are more than 50 studies from around the world showing that when alcohol increases in price, consumption is reduced (WHO 2006; Kenkel & Manning 1996; NIAAA 1997; Babor *et al.* 2003; Osterberg 2006). The WHO is one of many international and national health organisations that strongly endorse the use of increased alcohol taxation (higher prices for alcohol products) as an effective preventative strategy to reduce alcohol related harm (WHO 2004). At the same time, it is important to recognise that there is a complex relationship between price and consumption (Gruenewald *et al.* 2006; Chaloupka *et al.* 2006). Patterns of alcohol consumption can vary considerably according to individual factors such as the age, sex, and income levels of the drinker. Other factors such as availability, the

cultural setting, the marketing and image of the product are also important. Studies consistently show that lower socio economic groups and people with limited disposable income (young people, indigenous groups, and heavy drinkers) are more directly impacted by the price of alcohol products. Higher income drinkers tend to drink more expensive alcohol, and while price may lead them to reduce their consumption marginally, they are also able to alter drinking preferences to cheaper alternatives (Kenkel & Manning 1996, Osterberg 2006). The nature of the alcohol product is also a key variable. An Australian study identified considerable variations in price elasticity (the amount price needs to change before it impacts on consumption) for different alcohol products. It concluded that spirits are twice as price sensitive as wine and beer (Econtech 2004).

Given the complexity of the relationship between alcohol price and consumption, increasing alcohol taxation does not necessarily lead to a linear reduction in the levels of alcohol related harm. It is important that the relationship between the price of individual alcohol products and consumption amongst particular groups of drinkers is carefully modelled against known price elasticity and existing consumption patterns. While increasing the price through taxation is likely to lead to a reduction in per capita consumption, increasing the price of individual products may not necessarily achieve this goal. In some cases, product based changes can create opportunities for new products and drinking patterns that increase levels of harm (DSICA 2008)

Australia's alcohol tax system can best be understood as a constantly changing reflection of the history of alcohol consumption in Australia, and the status of various alcohol products. It also reflects changing powers of taxation between State and Territory governments and the Federal government. As a consequence, different products – wine, spirits, beer, ciders, fortified wines, are all taxed differently. The excise duties arrangements can generally be described as a **volumetric tax system**, because the amount of excise duty depends on the volume of alcohol contained in the particular product. Wine equalization tax can be described as an ***ad valorem* tax system**, because the rate of tax depends on the value of the retail selling price of the particular product. Customs duties are a combination of both volumetric and ad valorem system. GST applies is set at a fixed rate of 10% of the product price, top on of all other taxes (see Table 7).

Table 7. Summary of the types of alcohol taxes applied by category of alcohol product

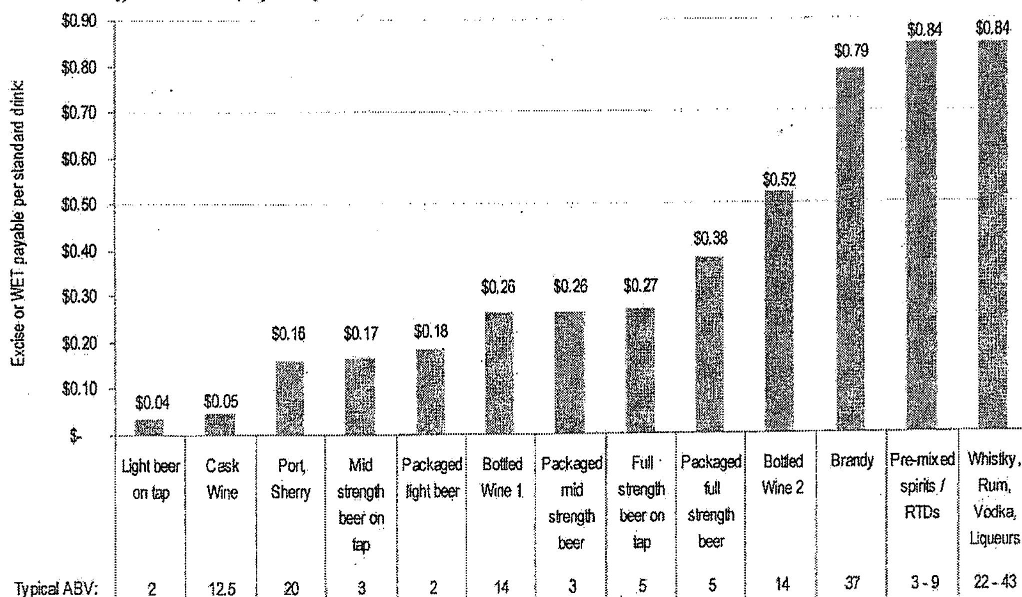
	Beer	Spirits & RTDs	Wine	Cider
GST	Yes	Yes	Yes	Yes
Excise duty	Yes	Yes	No	No
WET	No	No	Yes	Yes
Customs duty (*ad valorem*)	No	Yes (imported)	Yes (imported)	No
Customs duty (*volumetric*)	Yes (imported)	Yes (imported)	No	No

Within some categories there are various concessions and exceptions. Smaller wineries for instance, are largely exempt from their value added tax (the Wine Equalisation Tax) for all cellar door sales.

Recent estimates show that the Australian government will collect over $6 billion as a result of the production and consumption of alcohol during the 2008/09 financial year (DSICA 2008). However, a substantial disparity exists between the amount of tax revenue received by the Australian government from risky drinking compared with the overall amount spent in attempting to prevent alcohol misuse. For example, it has been estimated that Australian adolescents (aged between 12 and 17 years) spent approximately $217 million on alcoholic beverages in 2002, netting the Australian government approximately $112 million in tax revenue (Doran *et al.* 2006). This translates that for every dollar spent on alcohol interventions aimed at adolescents, the government receives around $7 in alcohol tax revenue (Doran *et al.* 2006).

The current taxation rates translate into a wide variety of taxation per standard drink of alcohol (see Figure 13).

Figure 13. Tax payable per standard drink* of alcohol, various products, Australia, June 2008



Note: WET payable per standard drink of wine is based on a 4 litre cask of wine selling for $13.00 (incl. GST), a 750 bottle of wine selling for $15.00 (incl. GST) ["Bottled Wine 1"], a 750 bottle of wine selling for $30.00 (incl. GST) ["Bottled Wine 2"], and a 750 bottle of port selling for $13.00 (incl. GST). * A standard drink is equal to 0.001267 litres or 10 grams of pure alcohol.

For those who argue that alcohol should be taxed according to the amount of alcohol in each product and container, the current system obviously represents a massive distortion of this principle.

As noted above, Australia has been through a continuous process of change in relation to the taxation and pricing of various alcohol products. There are three changes that are particularly interesting to note. In the late eighties in Australia, states and territories adopted various forms of licensing for all alcohol sales. As part of this system, most jurisdictions offered low alcohol beer (less than 3.5% alc by vol) a significant concession in fees. The combination of the license fee concession which translated into cheaper low alcohol beer, intense market competition in the beer market, and introduction of harm reduction measures such as random breath testing all created an ideal environment for low alcohol beer. Producers recognised the benefit of investing considerable developmental and marketing investment into low alcohol beer. As a consequence, low alcohol beer increased its sales very significantly and captured approximately 20% of the total Australian beer market (Stockwell & Crosbie 2001).

The Northern Territory 'Living With Alcohol' program provides another example of how changes in price through government taxation increases contributed to a reduction in per capita consumption. In 1992, the Northern Territory (NT) government used a **hypothecation** approach by placing a levy of 5 cents per standard on the sale of alcohol products with more than 3% alcohol by volume and used the revenue to fund a range of alcohol prevention measures in the territory (Gray *et al.* 2000). Evaluations of the Living With Alcohol program found that the increase in price had contributed to a major reduction in the level of alcohol related harm within the NT (Stockwell 2007; Chikritzhs 2005).

Over the last 15 years, there have been a series of changes in the level of excise and taxation applied to various forms of the RTD product segment of the Australian alcohol market. These changes have resulted in major shifts in drinking patterns across Australia particularly in relation to brown spirit pre-mixed drinks (mostly around 5% alc by vol in 375 ml cans) and white spirit pre-mixed bottled drinks (mostly around 5% alc by volume in 375 ml bottles). With each price change, sales of these RTDs have increased or decreased quite significantly. While there is considerable evidence that these increases and decreases in sales represent shifts in product preferences (market share) rather than shifts in per capita drinking, the patterns of consumption have clearly been directly influenced by taxation and pricing. There is substantive evidence that the higher the price, the lower the consumption of these products, and the lower the price, the higher the consumption of these products. Perhaps just as importantly, the shifts in consumption patterns are more marked amongst the young and lower social economic groups (DSICA 2008; DSICA 2006; AIHW 2008).

The principles of alcohol taxation reform most often discussed by public health advocates is usually about taxing alcohol as alcohol in a purely volumetric alcohol taxation system. Some economists question the merit of using alcohol price as a lever for consumption amongst higher income groups (Leung & Phelps 2008; Easton 2004). As a consequence they argue for alcohol taxation and pricing strategies to concentrate on the cheapest forms of alcohol, what is referred to as the **floor price.** Given that price is being used as the lever, it is the floor price that should be given more attention in order to achieve a real shift in per capita consumption rather than just product preference. Within this context, it is important to acknowledge that the impact of any increase in the floor price for alcohol will impact more on young people, indigenous communities, heavy drinkers, and lower socio economic groups.

While there are different views among the authors and expert advisors for this paper, it appears that the most likely model that can effectively reduce alcohol related harm would be based on a volumetric model, that also includes regulating the floor (minimum) price, especially with regards to small containers. The volumetric tax could be scaled within different product types to ensure there were strong financial incentives for the production of lower alcohol products (e.g. low strength beer, wine and RTDs), and so that the highest-risk alcohol products (i.e. spirits, which can more easily cause overdose) are taxed at an appropriately higher rate. Thought should be given to ensuring that, for example, no alcohol product could be sold in less than 300ml containers, as a way of supporting floor price approach. In combination with a volumetric taxation system, in which all products are taxed according to alcohol content, all products could effectively have a floor price based on their alcohol content in a 300 ml container.

Modelling this alcohol taxation system would be a very challenging exercise, particularly when health advocates have very limited access to actual sales data. As noted above, competing in the alcohol market requires extensive market testing and monitoring. This generates a level of detailed information that is not available to health researchers and policy makers. Perhaps just as importantly, this model would have a negative impact on some segments - particularly cask wine and cider, while advantaging other market segments – spirits and spirit based Ready to Drink products. It would be very difficult to gain broad political support for such a model given the level of public and political opposition from powerful alcohol producers. There has been some modelling undertaken which considered a range of alcohol taxation scenarios that would move the alcohol excise and taxation system closer to a true volumetric base while remaining revenue neutral within each market segment. These models are publicly available, but have attracted limited support as they increase the price of cask wine and ciders while more expensive wines are reduced in price. (NDRI 2007) Until public health researchers and advocates have access to accurate sales data, and economic modelling can be implemented on the combination of floor price and a more volumetric approach to alcohol taxation, it is difficult to strongly put forward a particular model. At the same time, there is a substantive history in Australia that illustrates the danger of changing taxation levels of particular products without considering the implications both on consumption patterns and the development and marketing of alternative alcohol products.

2.6 Drink Driving Countermeasures

Drink-driving laws and the associated programs of enforcement and social marketing are considered to be one of the great public health success stories of the late 20th century. In Australia, state and territory laws allow a Blood Alcohol Content (BAC) of up to 0.05 per cent while driving for full licence holders, 0.00 per cent for learner drivers, and 0.00 per to 0.02 per cent for provisional drivers, depending on the state or territory. Those who operate commercial aircraft, public or heavy vehicles, commercial vessels, machinery, and mobile plant or farm equipment must observe BAC restrictions required by their employer as well as those required by law. For most adults, drinking no more than two standard drinks on an occasion will maintain their BAC below 0.05 per cent. The evidence for the deterrent effect of such laws is strong, although the effects can erode over time, and hence some countries have continued to **lower BAC limits** (Babor *et al.* 2003). From the 1970s, Australian states were world leaders in driving down rates of drink-driving through random breath tests and other means.

There is some evidence, albeit tentative, that having **lower BAC limits for young drivers** reduces the risk of road fatalities, especially if the BAC limit is 0.00 per cent (Loxley *et al.* 2004). More broadly, there is good evidence that lower BAC limits, delayed access to full license, and curfews for young drivers can be effective in reducing drink driving among young people – **graduated licensing schemes** can potentially incorporate all of these measures within a single system (Babor *et al.* 2003).

Random breath testing (RBT) has been shown to be effective in several countries, including Australia, in reducing road crashes, injuries and fatalities (Loxley et 2004). The defining feature of RBT is that any motorist at any time may be required to take a breast test, and there is nothing that he or she can do to influence their chances of being tested (Babor *et al.* 2003). Research suggests that there is a strong tendency for motorists to comply with drink driving laws in jurisdiction that use RBT programs because of the *uncertainty* about the real risk of detection (Babor *et al.* 2004). Herein lies part of the impressive cost effectiveness of random breath testing. RBT is considered a superior method of enforcing drink driving laws than **sobriety check points** which only check drivers who are judged to have been drinking (Babor *et al.* 2004). In Australia, creating the public perception that there is a high chance of being caught drink driving through RBT has been achieved by a combination of high-visibility policing (road blocks, 'booze buses') and frequent social marketing campaigns that emphasise the likelihood of drink-drivers being detected (Loxley *et al.* 2004).

Among the range of punishments for drink driving, the one that appears to have had the most consistent impact is **license suspension** (Babor *et al.* 2003). On the other hand, increasing the severity of fines and imposing penalties such as imprisonment for drink driving have not been shown to result in reduced rates of drink driving or car accidents (Babor *et al.* 2003). However, it is estimated that up to 70 per cent of people who lose their license continue to drive while unlicensed, as the risk of apprehension is relatively low (Loxley *et al.* 2005). The major concerns with disqualified drivers continuing to drive are that it obviously undermines the effectiveness of license suspension and is also linked to a range of other high-risk behaviour such as repeated drink driving and speeding (Loxley *et al.* 2005). Court diversion of drink drivers to educative and **mandatory treatment** interventions and incapacitation of vehicles using **ignition interlock devices** are regarded as effective means of increasing compliance with license suspicion and reducing recidivism (Babor *et al.* 2003; Loxley *et al.* 2004).

While there is no evidence that on-premise **designated drivers** programs produce negative effects, the impact of such programs is very modest and even with concerted promotions they only produce a small effect (Babor *et al.* 2003). An Australian review of these schemes was somewhat more supportive, pointing to research findings that the programs do have some positive influence on behaviour of young people in selecting a sober driver, and that given the cost of such programs is usually borne by licensed premises, there is no opportunity cost is recommending such schemes (Loxley *et al.* 2004).

2.7 Treatment and Early Intervention

This paper considers treatment and early intervention as essential components of a preventative approach to alcohol misuse. While treatment and prevention are traditionally viewed as separate and sometimes unrelated activities, it is critical that they be embraced as part of a holistic approach to tackling alcohol problems from a public health perspective. While treatments are primarily designed to serve the needs of individuals, there are a number of ways that treatment can also have a positive impact at a whole-of-population level:

- By raising public awareness of alcohol problems;
- Influencing national and community agendas;
- Involving health professionals in advocacy for prevention; and,
- Providing secondary benefits for families, employers, and road users (Babor *et al.* 2003).

Brief interventions in primary health settings for early stage alcohol problems are consistently identified as a key ingredient in a comprehensive alcohol prevention strategy because they are regarded as relatively inexpensive, take very little time, and can be implemented by a wide range of health and welfare professionals (Loxley *et al.* 2004). Their benefit as preventative measures arises from the relative effectiveness in treating early stage problem drinking, obviating the need for later more intense and costly treatment (Loxley *et al.* 2005). Brief interventions are designed to motivate high-risk drinkers to moderate their alcohol consumption and typically involve one to three sessions before or soon after the onset of problem drinking (Babor *et al.* 2003). In Australia, brief interventions, as yet, are a relatively untapped opportunity due in part to the need for greater recognition of the role that the primary health workforce can play (Loxley *et al.* 2005). Efforts during the 1980's and early 90's to introduce more systematic screening, early identification and potentially brief or extended responses were variously tried. These included the Coordinator of Alcohol and Drug Education in Medical Schools (CADEMS) that supported curriculum development for undergraduate medical students, a range of General Practice trials (especially in NSW sometimes in association with other specific interventions including tobacco and even efforts to develop a combined risk screening instrument for a number of conditions) and studies of the use of screening instruments (especially AUDIT) in hospital settings. Follow up has been patchy and even where the uptake and utility under experimental conditions was promising, the longer term effort and cost required to achieve widespread involvement has not been sustained. With a sense of déjà vu, the authors note a recent study of the effectiveness of brief interventions in hospital emergency departments that suggests that these can potentially reduce subsequent alcohol-related injuries significantly (Havard *et al.* 2008).

While this paper addresses primary prevention especially, it is worth noting that there remains a serious lack of accessible and available evidence based treatment services for later stage alcohol dependence and other alcohol related disorders across Australia (in private and public as well as in city and remote locations). With a still evolving specialist clinical workforce there remains a relative vacuum for training and professional development at senior clinical levels, and it is this group that ultimately set the standard and nature of practice in any field. A comment from a senior clinician on the more recent development of Medicare support for private practice GPs and clinical psychologists: *"it means that I get all these patients treated under the mental health items with fundamental alcohol related problems where alcohol was not properly managed.* (Paul Haber 2008, pers. comm.).

Australian workplaces are another setting with great potential for brief interventions with at risk drinkers. There are two main rationales for **workplace interventions** with regards to alcohol misuse: (i) to improve productivity, and (ii) to improve workplace safety (Loxley *et al.* 2004). In the

Australian context, approaches to workplace alcohol issues are influenced by occupational health and safety laws and polices, and devising prevention strategies must be considered in this context. Historically, alcohol problems in the workplace have been dealt with through employee assistance programs (EAPs) and employers' policies on alcohol and drug use, however there has been insufficient research to determine the effectiveness of EAPs in responding to and/or preventing alcohol issues in the workplace (Loxley *et al.* 2004). Nonetheless, EAPs do provide the potential opportunity for interventions that are known to be effective, such as brief interventions for high-risk drinkers. A recent study of alcohol consumption by Australian workers and the impact on absenteeism has pointed to the need for workplace education to influence young employees' attitudes and behaviours regarding alcohol use (Roche *et al.* 2008). The study also suggests that there is a need to take a whole-of-workplace approach when designing and implementing prevention strategies that target both 'problem drinkers' and workers who drink at short-term risk levels, even infrequently, because the latter have an elevated risk of alcohol-related work-place absenteeism (Roche *et al.* 2008). Others have pointed to the need for addressing structural factors in the workplace as a more sustainable prevention measure, such as reducing stressful working conditions that may lead to health damaging behaviour such as alcohol misuse (LaMontagne 2006).

Internationally, and particularly in Australia, the evidence base with regards to **alcohol problems treatment** is very well developed and is now at the stage of determining what is best practice rather than attempting to determine if treatment can work (Loxley *et al.* 2004). Effective alcohol treatment options include motivational interviewing, brief interventions, social skills training, community reinforcement approach, relapse prevention and some aversion therapies (Loxley *et al.* 2004). There is evidence that **mutual help** programs such as 12-Step Facilitation Therapy, which encourages attendance at Alcoholics Anonymous (AA) meetings, are particularly effective for severely dependent drinkers with low levels of social support (Loxley *et al.* 2004). Although popular and widely used, there also treatments which have little evidence of efficacy including insight orientated psychotherapy, confrontation counselling, relaxation training, general 'alcoholism counselling', education and milieu therapy (Loxley *et al.* 2004). **Pharmacotherapies** for alcohol dependence include disulfiram, naltrexone, and acamprosate. Reviews have found that naltrexone and acamprosate are the safest and most effective of the three pharmacotherapies in the long and intermediate terms, respectively (Loxley *et al.* 2004).

A unique preventive measure to address risk of serious brain damage from thiamine deficiency (known as Wernicke-Korsakoff's syndrome) that can result from heavy consumption of alcohol over many years, along with poor nutrition, is **thiamine supplementation**. Since 1991, all baking flour in Australia has been supplemented with thiamine as a universal method to increase thiamine levels in the diet of at risk populations (Loxley *et al.* 2004). This however is included here as an example of a preventative measure that requires ongoing consideration since there has since been advocacy for removal of supplements (including thiamine) by the pure food advocates and there is concern that the reach of thiamine in bakers flour might not be the most cost-effective population measure in preventing this condition (Harper 1998).

Since the 1980s, **sobering-up centres** have been established in many parts of Australia, particularly Indigenous communities, as humane forms of care for publicly intoxicated individuals, and as an alternative to individuals being arrested and held in police cells and watch houses (Brady *et al.* 2006). However, there have been very few evaluations of sobering up centres, despite their popularity in Australia (Gray 2006). In many ways, sobering up centres function primarily as a broad harm reduction measure, rather than as a treatment program. As Brady *et al.* (2006) describes them, sobering-up centres are not a detoxification centre, nor are they aimed at long-term rehabilitation, but rather their role is to keep people out of police custody to reduce alcohol-related harm and to offer practical care in a safe environment for a limited time, including protection, shelter and food. Nevertheless, they could provide an opportunity for interventions that can be effective. Sometimes related to these are **night patrols**, which are a particularly common alcohol harm reduction strategy in many Indigenous communities (Loxley *et al.* 2004). Night patrols provide transport to safe locations for intoxicated persons, particularly in remote areas (Loxley *et al.* 2004). Evaluations of the effectiveness of night patrols, on their own, as an intervention is somewhat equivocal although they have been rated effective in communities where they exist in reducing alcohol-related violence and getting intoxicated people off the streets (Loxley l*et al.* 2004).

2.8 Altering the Drinking Context

Because drinking takes place in a social, cultural, and community context, it follows that alcohol misuse or the harmful consequences of this may be prevented or ameliorated though strategies which modify this context (Babor *et al.* 2003). Such harm reduction measures are important elements of an overall alcohol policy as they are generally more socially and politically palatable. However, harm reduction measures should not be considered as an equal substitute for the measures known to be most effective, as measures that aim to alter the drinking context are comparatively under-evaluated and generally possess less potential for reducing alcohol misuse and related harm (Babor *et al.* 2003).

It is clear that effective law enforcement is the key ingredient to ensure the efficacy of strategies that aim to alter drinking contexts as a way of preventing alcohol misuse and reducing harms. While all Australian jurisdictions do have **bans on serving intoxicated persons and underage** persons, it is the extent to which these laws are adequately enforced that determines their effectiveness. Similarly, although very popular, the effectiveness of **responsible service of alcohol** (RSA) programs (also referred to as responsible beverage service (RBS)) is also contingent on proper enforcement (NDRI 2007). Without concerted efforts by police and/or liquor licensing authorities to enforce existing liquor laws, the imposition of RSA policies and/or training, while potentially raising awareness of relevant issues, has limited impact on the behaviour of servers or intoxication levels of patrons (NDRI 2007). When highly publicised, the threat of substantial financial penalty has been shown to be particularly effective at motivating behaviour change among licensees which has in turn resulted in reduced levels of alcohol-related harms, but it is not clear whether such financial penalties remain effective in the long-term without frequent and highly visible examples of enforcement (NDRI 2007). There is evidence RSA programs being effective when they include a mandatory component combined with effective enforcement (Babor *et al.* 2003). While mandatory server training has led to an increase in the number of servers undertaking training, program quality and content differ significantly between jurisdictions and the high mobility of the work force makes it difficult to sustain and monitor.

Mosher *et al.* (2002) assessed training programs offered by states and territories that have either mandatory or incentive based laws, and found that the quality of programs is generally low, with only two jurisdictions meeting minimum standards. A further criticism of RSA training programs has been that they focus solely on training servers, and do not include a more comprehensive community plan to address wider environmental issues, a factor that limits their potential (Mosher & Jernigan 1989). To date, only a limited number of RSA training programs have been evaluated in

Australia (NDRI 2007). In addition to training bar staff in responsible service of alcohol, there have also been programs designed to train staff in **managing aggressive behaviour**, given the reality that some patrons may have become already intoxicated elsewhere and that some aggressive behaviour may not be necessarily alcohol related at all (Babor *et al.* 2003). There have been very few evaluations of such programs, although there is evidence that they can improve staff and patron interactions generally, but the long-term sustainability of these improvements relies of maintaining training and standards of practice (Babor *et al.* 2003).

Proactive policing or **intelligence led policing**, involving monitoring alcohol related incidents in and around licensed premises combined with regular police visits to the licensed premises that are most often linked to alcohol problems has been successful in some parts of the world and has been partially adopted in some Australian jurisdictions (Babor *et al.* 2003). For example, the New South Wales police have adopted a system of enforcing liquor laws through collection of data such as feedback to police about alcohol-related crimes that have followed drinking at a specific licensed premises (Wiggers *et al.* 2004). Known as the Alcohol Linking Program, the intelligence led enforcement system has been shown to reduce alcohol related crime and similar approaches are now being trialled and implemented in other jurisdictions.

Voluntary codes of bar practice typically take the form of 'liquor accords' in Australia. The emergence of **liquor accords** as a means of reducing alcohol-related problems in late-night entertainment centres began in Victoria in the early 1990s, and since then there has been a rapid proliferation throughout several states (NDRI 2007). Accords are local, community-based initiatives to involve licensees, other businesses, local government authorities, community representatives and police, but which are implemented and largely co-ordinated by the latter to reduce alcohol-related harm in the late-night drinking environment (NDRI 2007). There are many possible components of accords such as RSA, drink discounting bans, trained security personnel, provisions of food, use of safe glassware and alcohol containers, and environmental modifications to reduce conflict and thereby reduce risk of violence (Loxley *et al.* 2004). Few accords have been formally evaluated and among those that have, most have been unable to demonstrate effectiveness in either short- or (particularly) long-term reduction of alcohol-related harms (NDRI 2007). The appeal of accords probably rests more on the development of local communication networks, the facilitation of local input, a sense of local 'control', and improving public relations through open negotiations, than in the actual reduction of harm. Even so, improved communication and participation may also be perceived as desirable and worthwhile outcomes in some circumstances. Loxley *et al.* (2004) acknowledge that there is no doubt that accords can be an effective vehicle for introducing some harm reducing practices into licensed drinking venues, however it is recommended that voluntary regulation such as this is accompanied by effective law enforcement (Loxley *et al.* 2004).

Promoting alcohol-free events, whilst popular in many counties, including Australia, have not been found on their own to be effective in reducing alcohol problems (NDRI 2007). Alcohol restrictions for large sporting and leisure events have usually been implemented as one part of a range of initiatives, thus making it difficult to determine their specific impact (NDRI 2007). Based on evidence that some injuries from alcohol related violence were linked to the use of drinking glasses and bottles weapons, a number of licensed premises around the world now serve alcohol only in **toughened glass** or **plastic containers** (Babor *et al.* 2004). However, the soundness of this approach has been called into question by a study which found that injuries to bar staff actually increased when toughened glass was used (Babor *et al.* 2003). Providing **food service** on premises which serve alcohol, as a way of encouraging eating while drinking and hence reduce the effects of alcohol, is a popular element in liquor accords (Loxley *et al.* 2004). However, the specific contribution of making food available on licensed premises as a way of preventing intoxication has not been determined, and in the case of some certain food (e.g. salty snacks) there may actually be a risk of the opposite effect on alcohol consumption (Loxley *et al.* 2004).

Community mobilisation has been used to raise awareness of problems associated with on-premise drinking, develop specific solutions to problems, and pressure licensees to take responsibility for some of the impacts on local the community such as noise, litter, and anti-social behaviour (Babor *et al.* 2003). There is no set formula by which community action projects operate, with each having differing aims and objectives, often in response to localised problems (NDRI 2007). Studies overseas support the view that when community mobilisations are implemented as comprehensive research evidence-based strategies and well funded, they can influence server behaviour, drinking behaviour and levels of alcohol-related harms associated with licensed premises (NDRI 2007). Although some relatively small community mobilisation projects are currently underway in Australia, results from evaluative studies are yet to be published (NDRI 2007). In general, community mobilisation approaches have at least a temporary effect on licensed premises in terms of serving practices and patron behaviour but in the longer term they often tend not to be implemented in systematic way and prove to be expensive and difficult to sustain (Babor *et al.* 2003).

2.9 Regulating Promotion

Alcohol marketing and promotion is a global activity, with the largest corporations promoting their products across the world (Babor *et al.* 2003). Marketing strategies include an integrated mix of advertising on television, radio, print media, point of sale promotions, product design including the packaging and naming of alcohol beverages, and the internet. Sponsorship of sports and cultural events is also a common marketing strategy used by alcohol companies, particularly in Australia. The key questions from a public perspective are what is the impact of marketing and promotion on overall consumption and particularly misuse of alcohol in the community, and what are most effective measures for preventing the adverse impacts of alcohol marketing and promotion.

Total alcohol advertising expenditure in Australia in 2007 was reported to be $128 million (see Table 8). This figure is probably conservative given that it does not include 'below the line' advertising or internet advertising, the latter being a significant growth area in recent years. In Australia, the main sectors in which alcohol adverting expenditure occurs, and through which the greatest exposure is achieved, are through commercial television advertising (38 per cent) and outdoor advertising (32 per cent). Globalised alcohol manufacturers (e.g. Diageo; Pernod Ricard Pacific) are among the biggest spending advertisers in Australia. The amount spent on advertising by spirits and wine producers combined now equals that of the traditionally dominant beer market in Australia, reflecting an increasingly competitive alcohol beverage market.

Table 8. Alcohol advertising in Australia by sector, advertiser, and beverage category, 2007.

Sector	Percentage Share
Metro TV	33%
Regional TV	5%
Metro Press	5%
Regional Press	1%
Magazines	14%
Radio	5%
Cinema	5%
Outdoor	32%
Direct Mail	1%

Rank	Advertiser	$ millions	Annual change
1	Diageo	19.1	29%
2	Carlton & United Beverages	14.4	-24%
3	Tooheys Brewery	14.0	10%
4	Boag J & Son	9.9	13%
5	Pernod Ricard Pacific	6.9	60%
6	Beringer Blass Wine Estates	5.3	93%
7	Southcorp Wines	4.8	191%
8	Suntory	4.8	421%
9	Carlton Special Beverages	4.7	238%
10	Heineken	3.9	36%
	Others not in top 10	39.9	-5%

Beverage category	Percentage Share
Beer	47%
Spirits	26%
Wine	21%
Premix / cider	6%

Source: Nielsen Media Research AdEx 2008

The impact of advertising upon individuals can be seen as having both immediate effects, such as influencing decision making with regard to brand preference, as well as longer term effects such as reinforcing pro-drinking messages (Babor *et al.* 2003). In this way, it is both the content of, and the frequency of exposure to advertising that can have an impact on individuals attitudes and behaviours. The impact of alcohol advertising on young people is an area where there has been considerable research, but of somewhat poor quality, yielding conflicting results that range from positive associations between young people who have been exposed to and/or enjoy alcohol advertising and an increased risk of alcohol misuse, to negative associations or inconclusive results (Loxley *et al.* 2004). Numerous studies have found a link between alcohol advertising and alcohol-related knowledge, beliefs and intentions of young people (Jones & Donovan 2001). However, causal evidence linking advertising and promotion, with young people's drinking behaviour in experimental or longitudinal studies are lacking (Loxley *et al.* 2004).

Unlike tobacco advertising, which was banned in Australia in 1995, there are no alcohol **advertising bans** in Australia, although some restrictions, including **advertising content controls**, do apply (see further below). In Australia, alcohol advertising is subject to a number of different laws and codes of practice. The Australian Association of National Advertisers Code of Ethics covers general advertising issues. Other applicable laws and codes include:

- The Trade Practices Act;
- State and territory fair trading legislation;
- The Commercial Television Industry Code of Practice;
- The Commercial Radio Code of Practice; and
- The Outdoor Advertising Code of Ethics.

The Commercial Television Industry Code of Practice states that advertisements can only be shown during M, MA, or AV classification periods. However, on weekends and public holidays alcohol advertisements can be shown as an accompaniment to the live broadcast of a sporting event. Alcohol advertising is covered in detail by the Alcohol Beverages Advertising Code (ABAC) Scheme. The main aims of the Scheme are to ensure that alcohol advertising presents a responsible approach to drinking, and does not have appeal to children or adolescents. Among other rules in the code, the administration of the following is often questioned by community members: 'Advertisements for alcohol beverages must not depict the consumption or presence of alcohol beverages as a cause of or contributing to the achievement of personal, business, social, sporting, sexual or other success' (ABAC 2008, Clause C (i)).

The ABAC Scheme is funded and administered entirely by the alcohol industry. Commonwealth and state and territory governments are involved through one government representative on the ABAC Management Committee.

Despite the ABAC Scheme's rules which discourage advertising that has "strong or evident appeal to children or adolescents", research shows that a substantial amount of alcohol advertising is communicated to young people. For example, several advertisements for alcoholic beverages screened on television in metropolitan Melbourne were found to be more likely to reach 13 to 17 year olds than adults (see Table 9).

Table 9. Advertising on metro Melbourne television, year to March 2005

Product	Total Annual Spend	Frequency of ads	Relative exposure (of 13-17 years olds Vs 18-29 year olds)
Heineken Lager	$ 94,000	110	1.12
Cougar Bourbon	$ 45,000	103	1.04
Archers Spri Schnapps	$ 57,000	110	1.04
Bundaberg Rum Dry & Lime Mix	$ 36,000	88	1.06
Orlando Jacobs Creek Sparkling Rose	$ 89,000	34	1.11

Source: King, Taylor, and Carroll (2005a)

As a self-regulatory scheme, ABAC's effectiveness largely depends on the independence of its complaints body with powers to sanction (Loxley *et al.* 2005). Recent research has revealed that less than three in ten (28%) people surveyed reported an awareness of restrictions or regulations covering the advertising of alcohol, in terms of what can be said or shown. It is estimated that only 3 per cent of total adult population are aware of the existing ABAC scheme and know what it relates to (King, Taylor, and Carroll 2005b p.2). Among the 30% of people who reported being concerned about any alcohol advertising, only 2 per cent had made a formal complaint. Some of the reasons why those who were concerned but who did not make a complaint included the belief it would not achieve anything (30%), not having time (25%), and not knowing who how/where to

complain (15%). ABAC currently has no powers to sanction advertisers who breach the code rules, however a Senate Committee inquiry currently underway is considering proposed federal legislation that would introduce sanctions on advertisers who breach the code, which would be determined by an independent adjudicating panel (Senate 2008a).

In 2003, the Ministerial Council on Drug Strategy considered a report on the effectiveness of the ABAC Scheme which identified the following issues of concern:

- the current system does not address public health concerns about alcohol advertising and use. In particular, most complaints about alcohol advertising are dealt with under the general advertising complaints resolution system rather than the alcohol-specific system.
- the high dismissal rate for complaints about alcohol advertisements heard by the ASB does not engender community confidence in the complaint system and may discourage people from making complaints about alcohol advertisements.
- the general public is largely unaware of the complaint resolution system and, in particular, how to make complaints.
- the system lacks transparency. In particular, there is insufficient reporting of the outcomes of complaints.
- the current system does not apply to all forms of advertising, for example, packaging, electronic advertising, sponsorships, point of sale advertising and promotions.
- the effectiveness of the current system is compromised by the amount of time taken to resolve complaints (MCDS 2003, unpublished).

While some of these concerns have been addressed, pressure remains to move to a more tightly regulated advertising environment with strict government controls. The WHO recently recommended that governments be supported:

- to effectively regulate the marketing of alcoholic beverages, including effective regulation or banning of advertising and of sponsorship of cultural and sports events, in particular those that have an impact on younger people;
- to designate statutory agencies to be responsible for monitoring and enforcement of marketing regulations; and,
- to work together to explore establishing a mechanism to regulate the marketing of alcoholic beverages, including effective regulation or banning of advertising and sponsorship, at the global level.

One of the most formidable obstacles to effective education and persuasion strategies regarding alcohol (which are discussed in the next section below) is product advertising by the alcohol industry that intentionally promote pro-drinking messages to the general population, much of which also reaches young people. In response, the governments of some countries have sponsored **counter-advertising** programs (Babor *et al.* 2003). These might include public services announcements, or warning messages within actual product advertisements. However, studies suggest that counter-advertising usually has only limited effectiveness, often because it is communicated at low frequencies and in poorer quality productions compared to alcohol beverage advertising (Babor *et al.* 2003) Nonetheless, counter advertising may be a more politically realistic option than banning advertising altogether and should therefore not be completely ruled out from a public health perspective and, although rare, there are examples of well planned and implemented 'hard-hitting' counter advertising programs that have had some success (Babor *et al.* 2003).

2.10 Education and Persuasion

International reviews of education and persuasion strategies suggest that even with adequate resources, such approaches, on their own, have limited potential for success (Babor *et al.* 2003). Part of the reason for this is the counter effect of powerful forces that underpin unsafe and unhealthy drinking cultures such as the price, availability and promotion of alcohol products. Recent Australian research for the development of national alcohol social marketing initiative reports that 'the challenge for communication is that intoxication is closely linked to alcohol per se. When we simply asked participants about their earliest memories in relation to alcohol there was an overwhelming tendency to leap to their first drunk experience. Further these experiences were recalled with a sense of pride and nostalgia, even though the stories inevitably involved some embarrassment' (Woolcott Research 2007). A key element to the success of **social marketing** in the public health area is effective integration with and reinforcement by other complimentary strategies (Loxley *et al.* 2004). For instance, the success of social marketing in promoting quit smoking and road safety, including anti-drink driving campaigns, is indicative that education and persuasion strategies can be effective when coupled with other measures such as support services, changes to the environment, regulation and enforcement.

Throughout the world, **alcohol education in schools** is an enormously popular approach to addressing the issue of alcohol misuse among young people. The traditional alcohol education programs that are based on an informational approach, while still very common, have not been shown to prevent or reduce alcohol misuse by young people, and in some cases have actually been counter productive by stimulating an interest in drinking among young people (Babor *et al.* 2003). In recent years, there has been a shift towards normative education which aims to correct young people's perceptions about their peers' drinking and thus de-normalise alcohol misuse (Babor *et al.* 2003). While this makes intuitive sense, it has been found that such school based educational interventions, in general, produce only modest results that are short-lived unless accompanied by ongoing booster sessions. Importantly, given there are considerable risks involved in school based education, it has been recommended that investment in such programs be accompanied by a proportionate investment in evaluation (Loxley *et al.* 2004). There are some examples of sound outcomes but these are relatively unusual. These generally involve whole-of-community efforts and they are usually associated with a close evaluation gaze that ensures they are implemented (with modifications through feedback) as planned. In Australia these include the School Health and Harm Reduction Project (SHAHRP) in Western Australia (Loxley *et al.* 2005) and the Gatehouse Project in Victoria whose primary target was reduced school bullying (but where the side benefit was a comparative reduction in use of tobacco and alcohol) (Bond *et al.* 2004) .. Related to alcohol education programs for school students, are **parent education** programs. While some reviews cite promising signs of effectiveness, in general there remains a lack of research to fully determine the value of such programs (Loxley *et al.* 2004).

Low risk drinking guidelines have been adopted in many countries, including Australia, to provide advice on the health risks and benefits of drinking at various levels for the general adult population, and for particular sub-groups. Despite their popularity, there is very little research that demonstrates the effectiveness of guidelines (Babor *et al.* 2003). However, guidelines do potentially fulfil an important function as supporting information for other measures known to be effective such as brief interventions in primary care, and as the basis for health promotion messages and social marketing campaigns. In Australia, the current alcohol guidelines (see NHMRC 2001) are under review. New draft guidelines have been

prepared for public consultation are due to be finalised and released in late 2008. The new draft guidelines have been informed by updated modelling on the health risks of drinking, which have produced new estimates of the lifetime risks of alcohol related harm. Emerging evidence also indicates that previous studies claiming significant health benefits of alcohol consumption have tended to overestimate the effects. As a result, the proposed new guidelines differ significantly from the existing version. The main changes include a new simplified, universal guideline level for alcohol intake for both short-term and long term risks (a maximum of 2 standard drinks per day, for both men and women), a new guideline with special precautions for children and adolescents, and a new guideline for pregnant or breastfeeding women (NHMRC 2007).

Warning labels on alcohol products, while not required in Australia, have a high level of public support. Evaluations alcohol warning labels are generally limited to the US experience, where labels were implemented in 1989. While there is some evidence of effects on knowledge and attitudes, there is no evidence that warning labels influence drinking behaviour (Wilkinson and Room 2007). By contrast, the tobacco labelling experience offers strong evidence that warning labels can be effective not only in increasing information and changing attitudes, but also in changing behaviour. These successes of tobacco warning labels suggest that alcohol warning labels should be graphic and attention-getting, should occupy a considerable portion of the package surface, and should involve rotating and changing messages (Wilkinson and Room 2007). Perhaps most importantly, they should complement, and be complemented by, a wider range of strategies aimed at changing drinking behaviour.

3. Opportunities and priorities for preventative action

"The moral, then, is this. Since societies, like individuals, get the sorts of drunken comportment that they allow, they deserve what they get."

(MacAndrews & Edgerton, 1969: 173, concluding their significant study of drunken behaviour)

3.1 The state of alcohol policy in Australia.

A recent report by the WHO warns that 'the difference between good and bad alcohol policy is not an abstraction, but very often a matter of life and death' (Babor *et al.* 2003: 263). Nonetheless, internationally, it is acknowledged that 'alcohol policy is often the product of competing interests, values and ideologies', and hence is not always based entirely on scientific evidence (Babor *et al.* 2003: 255). More specifically, the cultural significance of alcohol in many societies, its economic importance, and the political influence wielded by the global and domestic alcohol beverage industries create a hostile environment for public health polices; especially those aimed at reducing consumption overall as a way of preventing and reducing alcohol related harm.

While we can see that is politically necessary to have "collaborative and cohesive" alcohol policy where *all* interested parties and included, this poses significant impediments to implementation of the most effective preventative interventions. Notwithstanding this, Australia has been assessed as being comparatively progressive and among the best in the world in terms of evidence based alcohol policy (Brand *et al.* 2007) and in a recent commentary on national alcohol control policies in 18 countries, Babor and Winstanley (2008: 724) report that 'contrary to the generally pessimistic reports about alcohol policies, the case of Australia provides cause for optimism. This assessment probably speaks to the relative low level of well-integrated policies globally rather than an opportunity for complacency in Australia.

Stockwell (2004: 378) has judged that while there are 'some significant disappointments', there are also 'some wonderful examples of successful Australian public policies around alcohol from the past two decades'. Among the population-wide strategies that have been successful in reducing alcohol misuse and related harm in Australia, Stockwell highlights taxation and drink driving legalisation/enforcement. For high-risk groups, the compulsory fortification of bakers' flour with thiamine and liquor licensing restrictions in some Aboriginal communities are considered as successes. Among the strategies not likely to have been effective, Stockwell points to the dissemination of national drinking guidelines, the introduction of standard drink labelling on alcohol containers, and efforts to encourage GPs to deliver brief interventions and advice about low risk drinking. Stockwell also underlines some significant 'setbacks' in Australian alcohol policy, such as the relaxation of liquor licensing laws which has led to the proliferation of outlets in many Australian jurisdictions, changes to the tax rate on wine which has encouraged the production and harmful consumption of cheap wine, and since 1997, the inability of states and territories in Australia to collect levies on the sale of alcohol products.

The recent review of alcohol policies in 30 OECD nations rated Australia as fifth overall, behind Norway (1st), Poland (2nd), Iceland (3rd), and Sweden (4th) (Brand *et al.* 2007). The study rated the state of alcohol policy in each of the 30 countries by creating a composite score based on the extent to which the country had adopted polices in various policy domains such as physical availability of alcohol, prices, drinking context, alcohol advertising, road safety. The study also examined the relationship between each country's score and per capita alcohol consumption and found a strong negative correlation that implied a *decrease* in consumption of one litre of alcohol per year for each 10-point *increase* in the score. In other words, as alcohol policies increased in strength (i.e. effectiveness), alcohol consumption decreased.

Since the late 1980s Australia has adopted several national strategies to tackle alcohol misuse. Australia's first national alcohol strategy was completed in 1989 (see MCDS 1989), followed by subsequent iterations in 1996, (see DHFS 1996), in 2001 (see MCDS 2001), and most recently in 2006 (see MCDS 2006). If the success of these is to be measured on the basis of any change in rates of overall per capita drinking, rates of adult binge drinking, rates of underage drinking, and outcomes such as hospitalisations and crime, then these strategies appear to have had only modest success. One Australian commentator has said that 'while these documents provide the basis for a coherent and legitimate national approach to alcohol there has been poor follow-through on implementation' (Midford 2005: 895). A recent summary of the state of alcohol policy in Australia reported that 'what is needed now is not so much an understanding of *what* works, but an appreciation of ***how to make it work*** in the various contexts in which it is implemented' (Loxley *et al.* 2005: 566) [emphasis added]. Essentially, even the most effective strategies in the world will not be effective if they are not properly implemented as intended.

3.2 The best mix of interventions

While some interventions are more effective than others, there is no one single strategy that can offer a "quick fix" or "silver bullet" to the prevention of alcohol misuse and related harms. The review undertaken by Babor *et al.* (2003) concludes that an integrated approach is required that includes a combination of the strategies that are known to be effective and suitable for the particular context in which they are to be implemented. NDRI (2007) emphasise that it is important to consider t the *quality*, rather than the *quantity*, of interventions. For example, 'a single targeted restriction (e.g. hotel closing at midnight) may be more effective than an entire suite of half-heartedly implemented, watered-down or ill-considered restrictions' (NDRI 2007: xviii). Importantly, choosing high quality interventions does not mean choosing the most expensive. In fact, many of the most effective strategies are the cheapest.

Table 10. Cost-effectiveness (average cost per DALY) of interventions for reducing the burden of alcohol in three WHO sub-regions (at different levels of economic development)

Intervention	Americas	Europe	SE Asia
Brief physician advice	776	2,612	856
Random Breath Testing	1,919	2,741	701
Excise tax (current	364	370	5,420
Excise tax (current + 20%)	326	321	7,414
Excise tax (current + 50%)	297	287	9,418
Reduced retail access	484	1,208	1,406
Comprehensive ad ban	536	660	1,807

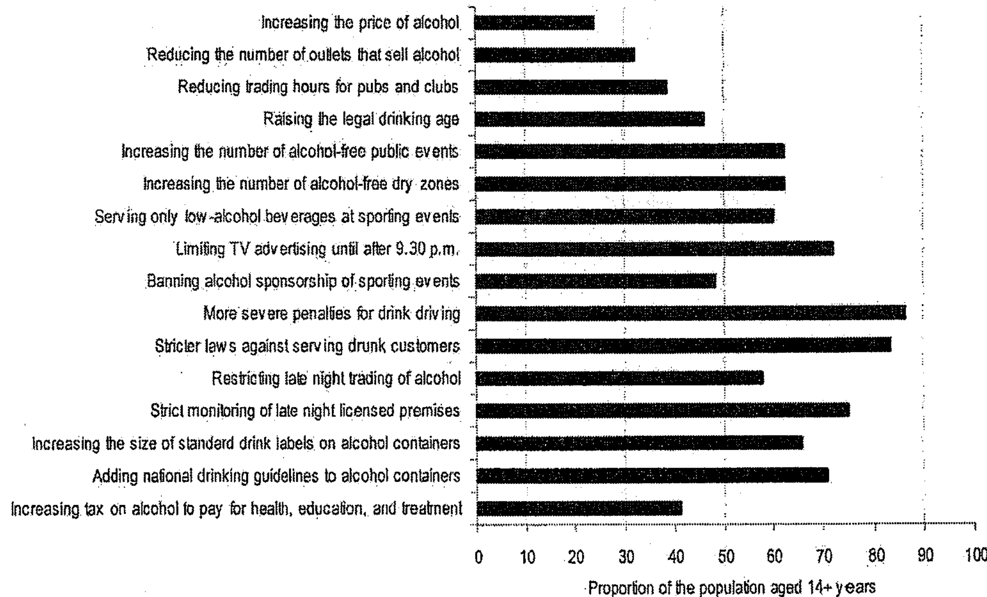
Source: Chisholm et al. (2006)

A recent analysis of studies into the cost effectiveness of various alcohol prevention measures found that there are very substantial differences in costs and effects both between interventions and between world regions (Chisholm *et al.* 2006) (see Table 10). Random breath testing (due to the need for regular sobriety checkpoints administered by police) and brief advice in primary care (the intervention itself, plus costs associated with training) are the most costly interventions. With regards to taxation, cost effectiveness appears to depend in part on the efficiency of the tax system and the degree of anti-drinking sentiment. In the Americas and Europe, where the prevalence of heavy drinking is high, taxation was the most effective and cost-efficient strategy. However, by contrast, tax is actually least effective and least efficient in SE Asia, where low rates of heavy drinking appear to favour more targeted approaches such as random breath-testing and brief physician advice (Chisholm *et al.* 2006).

3.3 Challenges in implementation

With Australia's international score card in the area of alcohol policy appearing quite impressive, as the reviews mentioned above testify, many would argue that incremental policy change, rather than anything radical, is the most appropriate way to proceed. However, some have cautioned against taking comfort in this approach because of the 'cultural inertia' surrounding alcohol policy in Australia, which can be a formidable barrier to meaningful policy changes (Midford 2005: 895): 'Drinking forms part of the romantic Australian legend and there is good precedent in Australian history to suggest that a radical alcohol reform agenda can provoke community backlash – beware the 'wowser' label.' An example of radical policy change that has been successful is the introduction of random breath testing, thanks in part to the accompanying social marketing campaigns that have highlighted both the seriousness of the problem and effectiveness of the policy response. The level of public support in Australia for new alcohol policy interventions and/or the extension of existing interventions is encouraging in some areas (see Figure 14). The level of public support for some measures known to be effective is relatively high, such as strict monitoring of late night licensed premises (75 per cent). While support for measures such as increasing tax on alcohol to pay for health, education, and treatment of alcohol-related problems is relatively lower (41 per cent), it is a reasonably sufficient base of public support in which to build through public education and social marketing about the rationale and potential benefits of such a measure.

Figure 14. Support for alcohol measures, proportion of the population aged 14+ years, Australia, 2007



Source: AIHW 2008

There are some specific challenges that go beyond public understanding and attitudes. These have been mentioned above and include:

- National Competition Policy, as it relates to liquor licensing systems, regulating alcohol prices, and restricting alcohol promotions;
- The division of responsibilities between levels of governments for key alcohol policy areas and the historic complexity in achieving coordinated action;
- The economic and political importance, and thus influence, of the alcohol beverage and related industries.

These challenges arise in the context of broad, community-wide changes in the nature of work, education, social connectedness and occur at a time when:

- Alcohol sponsorship of sporting and cultural activities has replaced and is now prominent in many areas previously occupied by the tobacco industry;
- Alcohol consumption is symbolically associated with positive and pleasurable life in portrayals of Australia's history and culture including the ongoing promotion of alcohol as a necessary ingredient of entertainment, celebration and all 'rite of passage' life course transitions;
- The menu of psychoactive and performance enhancing substances is increasing in scope and complexity within a society which is encouraged to focus on pleasure and performance and where alcohol is seen comparatively as the 'known' commodity and thus "unchallengeable" (or at least acceptable);
- The debate regarding the positive health benefits of small doses of alcohol makes forthright messages for social marketing purposes awkward and less memorable, and where compromise is extracted in every effort to implement effective alcohol harm prevention measures;
- Intoxicated behaviour is regarded by many community members as 'normal' and by many young people as desirable;
- The significantly lower life expectancy of Aboriginal people is intrinsically linked to layered aetiology including historic and structural issues, social and service exclusion and also to patterns of alcohol consumption and where there is great sensitivity to progressing evidence based approaches in some communities and where the consequent immobilisation and inaction from the broader society is the most ready response. There is a parallel dilemma of too much too fast and the possibility of even greater broad dysfunction if not managed carefully;
- 'Consumer' is a complex concept in this field. It can include both alcohol consumers (who generally seek liberal access to their favoured d[illegible]) and service users who are very often extremely reluctant to seek 'help'. Those around or who experience the 'second hand' effects of alcohol misuse are a somewhat untapped group (including parents who are the most identifiable, but extending well beyond this sub-category);
- The extent and level of detail of data available precludes evaluation of the outcomes of the incremental and planned changes to the levers that influence alcohol consumption patterns and patterns of related harm over the past decades and similarly make effective modelling or assessment of the likely impact of future directed changes incomplete and thus less reliable.
- There are few well qualified specialists and many middle-managing health and welfare personnel implementing interventions that they sometimes have little faith in, with the concomitant low expectations of success with patients or clients that can be self-fulfilling. In this context there is now good evidence of what works and we know that treatment, for example, can be successful. Although many will agree with this statement, few in the responding industry seem to believe it or lack the skills to utilise the most effective means to achieve it.
- Community members views tend to be closer to the alcohol beverage industries preferred preventative approaches, such as advocating for measures including school based alcohol education, responsible service of alcohol training, parent support and information and education programs for specific target populations on fetal alcohol effects.

3.4 Opportunities for action

The starting point for considering what should be the priorities for action is perhaps to reflect on the evidence regarding the determinants of alcoh[illegible] misuse and related harm, as gleaned from review of interventions earlier in this paper. In general:

- when alcohol availability increases, alcohol-related harms are likely to increase;
- when alcohol availability decreases, alcohol-related harm are likely to decrease;
- when alcohol prices decrease in real terms, alcohol-related harms are likely to increase; and;
- when alcohol prices increase in real terms, alcohol-related harms are likely to decrease.

In summary, changing the physical and economic availability of alcohol is probably the most effective and reliable way of reducing alcohol misuse and related harm. As NDRI (2007) suggest, 'where the ultimate aim of decision makers is to minimise or reduce the negative impact of alcohol on the public health, safety and amenity of a population, best practice is that which is evidence-based and at very least, avoids implementing changes likely to increase overall availability above the current status quo'.

Government decision making relating to the availability in Australia, whether it be liquor licensing decisions or changes to the excise rates of particular alcohol products, tend to be reactionary. As an alternative, NDRI (2007) suggest that 'authorities and decision makers might consider adopting a pro-active style – one which acknowledges the links between alcohol availability and harms and which plans accordingly. Optimally, such an approach would: include policy and strategies based on sound research evidence for efficacy and/or have a solid theoretical grounding; include processes which support the ongoing, systematic collection of detailed objective data for monitoring and evaluation purposes; employ evaluation findings to inform and support future evidence-based decisions and reliable monitoring of community sentiment'.

Of course, 'supply reduction' measures that restrict availability are not the single solution to addressing alcohol misuse and related harm - harm reduction and demand reduction measures are also important and very necessary. Maintaining and building upon Australia's impressive track record in drink driving countermeasures is an obvious element to include in an overall preventative strategy, but it should not be taken for granted, especially given the powerful cultural forces surrounding alcohol in Australia that could undermine, stall, or worse still, reverse the gains made in

preventing and reducing alcohol related road injuries and fatalities. Brief interventions are known to be one of the most effective preventive measures and more work is needed to examine the most appropriate setting for such interventions. Along with the usual health settings considered, workplaces provide a window of opportunity for reaching thousands of Australians at the early stages of problematic drinking. This also opens an opportunity for novel partnerships. The success of prevention in other areas of public health such as tobacco control tell us that social marketing is a key element, necessary to inform target audiences, shift attitudes, and positively reinforce behaviour changes being driven by other complementary measures such as restrictions on availability, regulation, and enforcement.

The intent of this paper has been to provide background information about alcohol misuse and harm in Australia and summarise international best practice in alcohol prevention policies and programs, rather than to articulate a particular course of action. However, some priorities for preventative policies and programs, and for research, are worthy of singling out, either because they represent a gap in current practice or knowledge in Australia or would enhance and/or inform existing and new practices. These priorities are summarised below:

Priorities in policy and program responses

1. Taxation and minimum price:

    - Improve access to key data sets to monitor and predict alcohol consumption.

    - Undertake proper modelling and forward projections of the impact of changes to the current alcohol taxation system.

    - Commission a comprehensive review of the current alcohol taxation, best practice models, and their likely impacts on health and community.

2. Restrict the availability of alcohol on- and off-premises: Address outlet density, bunching, design, opening times, and more effective controls on the night-time economy. Consider strengthening formal powers for local government to refuse/remove licenses, require conditions on them, and set limits on density.

3. Initiate effective countering of alcohol promotion: Require counter-advertising or introduce bans on advertising. Consider an incremental approach to reform, with initial bans on the promotions that impact most on high risk groups (e.g. young people) such as television, outdoor, and internet advertising, and then move to implement more comprehensive bans.

4. Implement assessment and intervention by health care professionals as a matter of course in primary health care and acute care, explore opportunities for brief interventions in workplaces, and intervene more consistently with drink drive offenders.

5. Social marketing: the present public discourse on drinking and alcohol problems needs to be extended and deepened. There is now substantial public support for some prevention strategies, but tends to be less for the strategies which have the strongest effectiveness. Social marketing is needed to support effective public health legislation and regulation of alcohol, for instance in terms of the potential gains in health and safety from increases in price and reductions in availability. A pioneer New Zealand study demonstrated the possibility of such a campaign making a difference in public opinion on alcohol prevention strategies (Stewart & Casswell 1993).

6. Examine ways of carefully engaging and including community members and consumers to inform alcohol policy development; initially to improve our understanding of a range of alcohol related behaviours and local influences and subsequently, to engage them in advocacy for changes in attitudes and support for evidence based measures. Local government has a role to play here.

7. Explore untapped arenas of potential interest and expertise such as:
    - Engage members of the legal profession in consideration of the costs and benefits associated with alcohol consumption; the current utility and potential of the law to improve alcohol policy and specific legal questions including, for example, exploration of the meaning and use of the concept of 'intoxication' in legal matters.
    - Private industry and peak bodies that go beyond the obvious such as the Insurance Council of Australia, fire services, medical insurers, and others.

Priorities in research and evaluation

1. Improving alcohol statistics:

    - Alcohol sales data for states and smaller areas for each year and where possible each month.

    - Routine recording systems for alcohol involvement in hospital emergency departments and police incident reports.

    - Development of ways of recording adverse effects of drinking on others than the drinker and ultimately converting this to economic data (costs).

    - Develop standardised approaches to population surveys that take into account declining response rates and other methodological challenges of the current times.

2. Studies of heavy drinking subcultures, of how they arise, and of patterns of recruitment to and withdrawal from them. Drinking is a social activity, and heavier drinking is also usually carried on in company, and often in friendship networks or groups who may be brought together by common interests. Such studies should include both qualitative and quantitative approaches, and should be oriented toward potential paths to reducing levels of drinking, and to altering how drinking-related risks are conceptualised and handled in such groups.

3. Pre-allocated funding for policy impact evaluations. Most progress in developing the evidence base for alcohol policies comes from before/after studies of "natural experiments". There is a need for funding to be pre-allocated so that "before" studies can be conducted at short notice, and staff can be mobilised for such impact studies.

4. Studies of the organization and funding of the alcohol treatment system, and its social ecology. What difference does it make whether referral is a reality or not; how the agencies are organized and interrelate;

5. Heavy drinking, stigma and marginalization: interplay of drinking, poverty and marginalization. Why is the gradient by social class/status steeper for alcohol-involved deaths than for amount of drinking? How can the stigma of entering alcohol-specific treatment be minimized?

6. Alcohol consumption is highly organised and suggests that this is where our analysis needs to go - to the elements that maintain our culture of alcohol misuse and ways that they might be destabilised.

A further consideration, upon which most of the above are contingent, is securing adequate levels of financing and ensuring that an appropriate model/s of governance are in place to support the effective implementation of new preventative polices, programs, and research. The current investment in, and governance of, alcohol prevention efforts in Australia is complex - spanning all levels of government and fields on interest (health; law enforcement, road safety; finance and taxation, etc., as well as non-government organisations including private industry). While there are benefits in this diversity, future efforts to prevent alcohol misuse and related harm might be well served by more integrated and coordinated arrangements.

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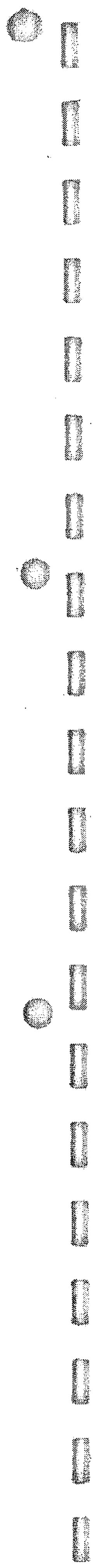

A rapid review of chronic disease prevention strategies and programs in selected OECD countries

PART A

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FINAL DRAFT

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ACRONYMS AND ABBREVIATIONS

ABHI	Australian Better Health Initiative
AIHPS	Australian Institute of Health Policy Studies
AIHW	Australian Institute of Health and Welfare
CCDPC	Centre for Chronic Disease Prevention and Control
CDC	Centres for Disease Control (USA)
CHSRF	Canadian Health Service Research Foundation
COAG	Council of Australian Governments
CVD	Cardiovascular disease
DOHA	Department of Health and Ageing (Australian Government)
KTL	National Public Health Institute (Finland)
NICE	National Institute for Health and Clinical Evidence
NIHR	National Institute for Public Health Research
NPHT	National Preventive Health Taskforce
OECD	Organisation for Economic Cooperation and Development
VicHealth	Victorian Health Promotion Foundation
WHO	World Health Organisation

SECTION 1. EXECUTIVE SUMMARY

Background

The incidence and prevalence of chronic disease such as diabetes and cardiovascular diseases (CVD) are accelerating worldwide and they now make a significant contribution to the burden of disease in almost all countries in the world. In Australia, these conditions not only have significant adverse effects on individuals and their families, but also on the economy, society and the health system as it is currently organised. The current Australian government has recognised the importance of these issues and the ways in which a more nationally coordinated and organised approach to primary and secondary prevention might assist. Germane to this new approach is the need to consider new approaches to prevention and to learn from the experience of other countries.

This report provides a rapid review of the approaches that some other OECD countries have adopted for primary prevention and identifies some of the key features of the systems that underpin these approaches. The major countries selected for the review were: Canada, England, New Zealand, USA and Finland. Prevention policy and some related issues in Thailand were also considered in accordance with the Statement of Requirements for this project. The report identifies a range of issues and emerging themes in relation to the primary prevention efforts of the countries included in this rapid review.

Review findings

While the health ministries or departments in each of the OECD countries reviewed have the overall mandate for population health and prevention, in England, there is also a higher-level cross-government committee in place (Sub-Committee on Health and Wellbeing). This signals the increasing strategic, social and economic importance of prevention and serves to establish ongoing cross-portfolio engagement in the prevention agenda at a national level.

In four countries, a national institute or agency was in place that played a major role in leadership and coordination of the primary prevention and health promotion effort in their respective jurisdictions. The functions of these entities included some or all of the following elements in relation to prevention: coordination and strategic policy development; knowledge development and exchange; oversight and support for national campaigns and other initiatives at a population and/or regional level; monitoring and evaluation of program implementation; surveillance and monitoring of outcomes; and finally, communications and public information. Some of these functions were carried out through formalised partnerships, including government, non-government agencies and/or other organisations.

All of the countries reviewed had a comprehensive, overarching policy for health that incorporated a national framework and strategies which were more specifically relevant to the prevention of chronic disease and the promotion of the health and wellbeing of the whole population. Most of these polices were also well integrated both horizontally and vertically.

Common elements of these frameworks include:

- A population health or whole-of-society approach that also includes some identification of high-risk population sub-groups.
- A life-course approach that also highlight the needs of different groups across the lifecourse, with an increasing focus on the needs of children during the 'early years'.
- A special focus on health disparities, socially disadvantaged population subgroups and the need to 'close the health gap' between different groups.

- An emphasis not only on the 'classical' risk factors but also on the more upstream determinants of health and ill-health or what have referred to as the social determinants of health or the 'causes of the causes'.
- A significant commitment to improve the exchange processes between research, policy and practice.

While there is already considerable evidence that can be used to guide and inform action in relation to the primary prevention of chronic diseases and the promotion of well-being across the life-course, it is well recognised that there is still a lot to be learned about how to improve the overall prevention effort. More emphasis needs to be given to the production of evidence necessary to inform primary prevention strategies as well as the dissemination of evidence at an international level.

Many different kinds of partnerships – across government departments, at different levels of government, and between government, non-government, community and private sector organisations – are being employed in these countries to develop and implement new approaches to prevention and health promotion. The available evidence suggests that strategic partnerships are very important in the development and successful implementation of system-wide efforts related to prevention.

The national ministry of health in each country, together with national public health institutes or agencies, play the key roles in funding strategies and programs. Information on the actual investment levels in programs was not easily ascertained within the timeframe of this review; however, there were certainly new investments being made in relation to research and evaluation in order to support further evidence development and the implementation of strategies. While recent reviews have stressed the importance of governments giving high priority to financing prevention and health promotion, the level of investment from the health budget in primary prevention is still quite low in most countries, accounting for up to only 3-4 percent of health expenditure.

Lessons for Australia

The report identifies a number of findings and lessons arising from this rapid stocktake which require further consideration and analysis with respect to building and enabling sustainable systems for prevention in Australia in the future. Selective examples are used to illustrate some of these potential lessons for Australia. These lessons are presented in two groupings (1) systems underpinning the strategies and programs and (2) strategies and programs for primary prevention and health promotion.

The systems underpinning the strategies and programs:

1. Establishment of a high-level government or equivalent committee with appropriate inter-sectoral partners is necessary to champion primary prevention of chronic disease and ensure high-level political commitment and accountability.

2. New approaches to long-term funding for primary prevention of chronic disease need to be developed and recognise the limited approaches of the past and the need for more innovative and sustainable financing models.

3. Strengthened system components are needed for developing and implementing an effective chronic disease primary prevention strategy and programs.

4. Establishment of measurable targets for primary prevention and health promotion is critical for long term monitoring and evaluation of implementation and outcomes.

5. Establishment of sustainable infrastructure that facilitates the production, dissemination and use of evidence and learning is essential if strategies and programs are to be effective.

Strategies and programs:

6. Strategies and programs should incorporate an integrated approach and a life-course perspective.

7. Strategies and programs need to be adequately supported and funded tp demonstrate their effectiveness.

8. Strategies and programs need to be designed using the best available evidence and implemented using multi-level and multi-sectoral approaches.

9. Addressing inequalities and the health gap between different population subgroups needs to be a critical dimension of all strategies and programs.

SECTION 2. BACKGROUND

Introduction

The incidence and prevalence of chronic disease such as diabetes and cardiovascular disease are accelerating worldwide and they now make the major contribution to the burden of disease in Australia and other countries in the world. The management and prevention of chronic disease will have increasingly important implications for the social and economic fabric of countries like Australia, including the structure and organisation of our health system. Consequently, the health agencies of all countries have to grapple with these issues and to consider new ways of reducing the societal and economic burden associated with chronic disease. However, action to prevent chronic disease and strategies to promote the health and well-being of the whole population, poses major challenges because of the complexity of their causes and the gaps in our knowledge about what to do in order to prevent them. Notwithstanding the fact that there are still many important knowledge gaps, there is already much that we do know, so this remains an implementation challenge for now.

Australia has already put some considerable effort into developing appropriate and contemporary frameworks for chronic disease prevention and health promotion[1]. However, there is still much to be done in order to build a really sustainable and integrated system for prevention in Australia that leads to the implementation of effective strategies and programs with appropriate levels of investment. Key elements for developing such a platform must include the following: engaging all levels of society, strengthening leadership and coordination, creating sustainable funding, building the appropriate infrastructure and resources for action, integrating evidence into policy and practice, and improving the fairness and equity of this response. These were the 6 interlocking strategies that were identified in the lead up to and during the recent Australian Institute of Health Policy Studies (AIHPS) and VicHealth National Prevention Summit (AIHPS & VicHealth 2008; Lin et al 2008).

To the extent that this was possible in the time available, this report documents and reviews prominent strategies and programs that are being undertaken internationally to prevent major chronic diseases and to promote the health and wellbeing of populations (**Appendix 1**). The review focuses on the experiences of 5 OECD countries, that is, Canada, UK, New Zealand, USA and Finland. The review also considers the experiences of some other countries, in particular, Thailand, where this was considered to be particularly pertinent to the terms of reference for this report. The report draws some preliminary lessons and recommendations from this rapid review of these countries. However, a more detailed comparative analysis between these countries and Australia is required before any formal recommendations can be made. The review has focused particularly on the organised systems and elements of system governance, policy and infrastructure that underpin the strategies and programs described, and which appear to be critical to the effective development, implementation and evaluation of these.

Key concepts and themes

2.1 Characteristics of chronic disease

The term chronic disease, also known as non-communicable disease (NCD), refers to an array of conditions and diseases that share common characteristics. They:

- are complex and have multiple causes.

[1] For example, the National Chronic Disease Strategy released by the Department of Health and Ageing in 2006 (DOHA, 2006)

- usually have a long and gradual onset, although clinical diagnosis and identification is often only made following an acute event.
- occur across the lifecycle and become more prevalent with older age.
- can severely compromise quality of life and work performance as a result of accumulating limitations and disability.
- are long term and persistent, leading to gradual deterioration of physical, psychological and social health.
- often occur together, known as co-morbidity.

While usually not immediately life threatening, these conditions are now the most common and leading cause of premature mortality in Australia and most other countries in the world (AIHW, 2006).

2.2 Burden of chronic disease in Australia

Recent Australian data indicate that the most common chronic diseases include cancer, cardiovascular diseases (CVD) such as ischaemic heart disease and stroke, injuries, chronic respiratory disease and diabetes (AIHW 2006).

Figure 2.1 Burden of disease by broad cause group - Australia, 2003

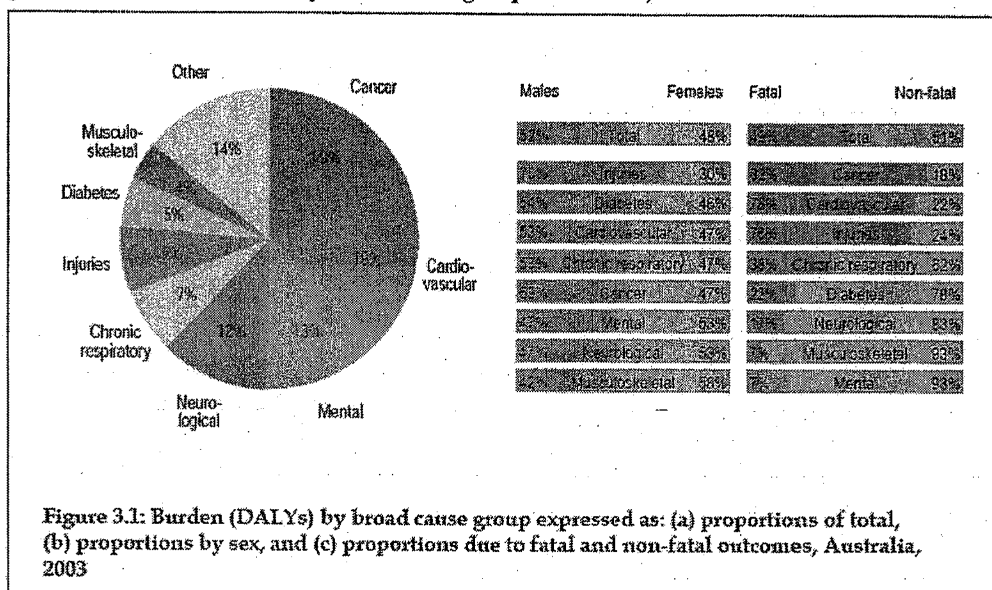


Figure 3.1: Burden (DALYs) by broad cause group expressed as: (a) proportions of total, (b) proportions by sex, and (c) proportions due to fatal and non-fatal outcomes, Australia, 2003

Burden of disease research show that these diseases will persist well into the next decades as sources of ill health among Australians and some are expected to increase in prevalence, such as Type 2 diabetes. The burden of chronic disease disproportionately affects: socially and economically disadvantaged population sub-groups, most particularly Indigenous Australians; older Australians, especially the frail aged; and people with mental illness and physical and intellectual disabilities.

Co-morbidity is common, and of increasing significance in Australian as the population ages (**Figure 2.2**).

Figure 2.2. Distribution of number of reported long term conditions

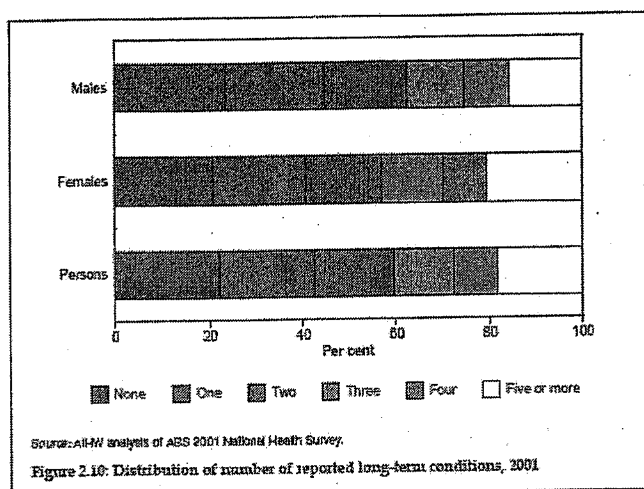


Figure 2.10: Distribution of number of reported long-term conditions, 2001

Source: AIHW, 2004 p 34

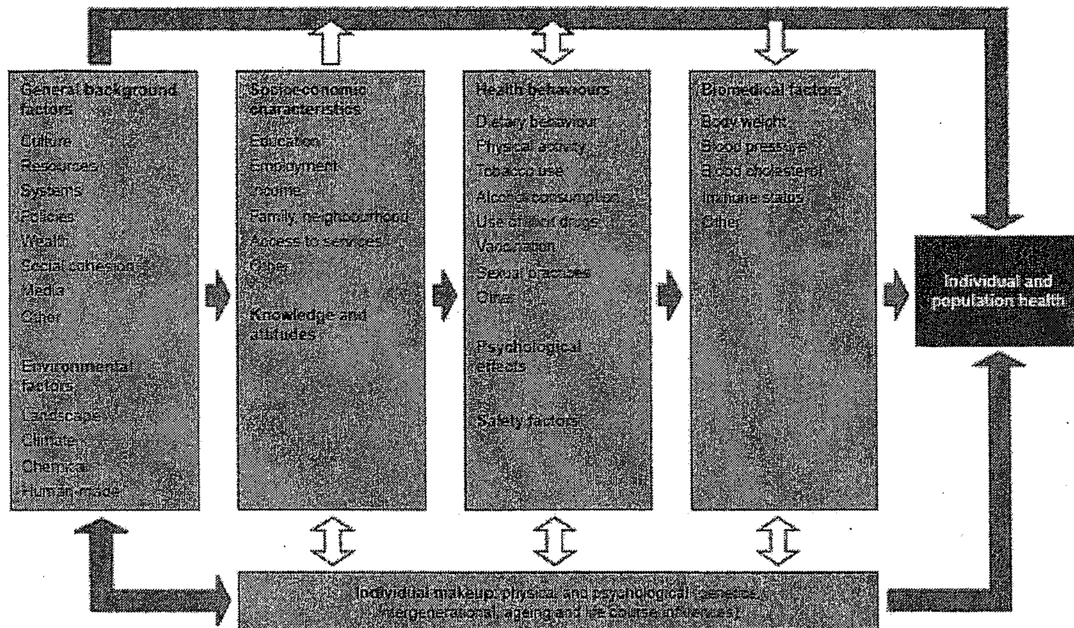
2.3 Causes of chronic disease

While both communicable and non-communicable diseases can become chronic in their effects, this report primarily focuses on the **prevention of chronic diseases** associated with key **risk behavioural factors or causes** that epidemiologic studies have demonstrated can be modified, namely:

- Unhealthy nutrition and diet
- Physical inactivity or sedentary lifestyles
- Overweight and obesity
- Tobacco smoking
- Harmful use of alcohol.

However, it is very important to consider the more upstream determinants of health or what have been called, the determinants of health, or more recently, the 'causes of the causes', as these are both directly and indirectly linked to the behavioural risk factors already identified. These are summarised in **Figure 2.3**. What also must be taken into consideration are those more upstream influences, including socioeconomic disadvantage, environmental and neighbourhood features, which have an independent and more direct impact on health and well-being. This must be taken into consideration in relation to the design and development of prevention programs directed at those population subgroups whose health outcomes are currently poorer than for the rest of the population.

Figure 2.3 A conceptual framework of the determinants of health



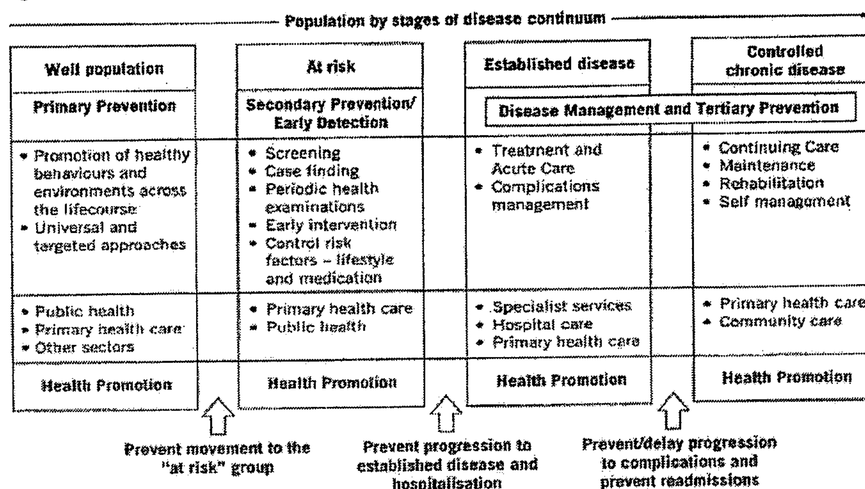
Source: AIHW (2006) p 143

Research is accumulating that demonstrates complex interplay among these influences from early life and onwards throughout the whole life-course. It is precisely these kinds of complex interactions between socio-environmental, behavioural and biological processes from early life that are contributing to the development of Type 2 diabetes and heart disease at a much younger age than was the case even half a generation ago.

2.4 Prevention of chronic disease in populations

Prevention has been defined as an 'action to reduce or eliminate or reduce the onset, causes, complications or recurrence of disease' (AIHW, 2006). Prevention approaches should focus on both the factors that influence the development or progression of chronic disease in the whole population, as well as, the population groups who are at highest risk. Primary prevention is typically directed towards preventing the initial occurrence of a disease in a population. Secondary prevention strategies focus on early detection and appropriate interventions; and tertiary prevention is generally directed at reducing the occurrence of relapse and maximising quality of life and wellbeing in those who already have a chronic disease (WHO, 1998). The concept of a continuum for preventing and managing chronic disease is helpful in defining different population subgroups in terms of those (1) who are well and without disease (primary prevention) (2) those who are at risk of, or in the early stages of the disease process (secondary prevention) and (3) people currently living with chronic disease (tertiary prevention) (**Figure 2.4**). This conceptualisation can also be useful in designing different levels and types of interventions for the whole of the population and/or specific populations subgroups.

Figure 2.4. Chronic Disease Prevention and Management Continuum



(National Public Health Partnership (2001) *Preventing chronic disease: A strategic framework—Background paper*, p.6)

Source: National Public Health Partnership (2001)

The current Australian Better Health Initiative[2] draws on this approach and aims to promote good health, disease prevention and early intervention across a continuum of population groups in order to reduce the burden of chronic disease. The five priority strategies are (the first three of which most pertinent to this review):

1. **Promoting healthy lifestyles**
2. **Supporting early detection of risk factors and chronic disease**
3. **Supporting lifestyle and risk factor modification**
4. Encouraging active patient self management of chronic conditions
5. Improving the communication and coordination between care services

2.5 Building sustainable systems and infrastructure for prevention

In addition to considering the strategies and programs that have been developed internationally to prevent chronic disease and promote well being, this report focuses on the systems that some other countries have used to underpin the organised effort to change patterns of disease burden in the population. This includes the issues related to system governance, policies and the infrastructure and resources required to develop, implement and evaluate effective strategies and programs to the population as a whole, as well as "closing the gap" for those population subgroups who are currently most disadvantaged.

[2] ABHI was announced by the Council of Australian Governments (COAG) on 10 February 2006 as a part of the Better Health for All Australians package and linked to the National Reform Agenda (COAG 2006)

SECTION 3. PROJECT METHODOLOGY

A pragmatic methodology was adopted for this project so that useful policy-relevant information could be generated within a very limited time frame. This is outlined below.

3.1 Refine the scope of the brief

Analysis of structural dimensions underpinning strategies and programs

The Project Team expanded its review to consider issues related to the system governance, policies and the infrastructure and resources because of their significance in enabling primary prevention of chronic disease prevention to be prioritised, organised and implemented.

Focus of strategies and programs under review

The review focused on:

- Prevention strategies and programs aimed at shifting the entire distribution of risks in populations and key sub-groups.
- Prevention strategies and programs aimed at reducing the prevalence of a small number of key, behavioural risk factors, particularly, unhealthy diets, inadequate physical activity and obesity.

Prevention strategies and programs aimed at reducing tobacco use and alcohol-related harm were given less attention, due to time constraints and the role of two other teams commissioned to look at these areas.

Countries under review

The Project Team selected five OECD countries to review for this project; however, we have also referred to initiatives from some other countries, such as Thailand, where they were considered pertinent and relevant to the Australian situation. Country selection was based on the following criteria:

- There was easily accessible information and this was primarily available in English.
- Likelihood of adaptability of strategies and programs to Australia, based on:
    - Past experience of the uptake of policy ideas in Australia
    - Preventive health expenditures
    - Population health and risk profiles
    - High income (World Bank GNI per capita – US$ 9206 or more)

The countries selected for consideration in the review were:

Canada England USA New Zealand Finland

3.2 Conceptual framework for understanding determinants of chronic disease

The conceptual frameworks already identified in **Section 2** were used to guide data collection. As requested by the National Preventive Health Taskforce (NPHT), the review concentrated primarily on specific risk factors for chronic disease – unhealthy eating, physical inactivity and obesity – with secondary reference being given to tobacco use and harmful use of alcohol.

3.3 Data and information collection strategy for each country

Identify data sources and undertake desk review	Literature search - Published peer-reviewed literature - Systematic reviews - Meta-reviews
	Grey literature - Government reports - Other reports and reviews
	Websites of international organisations, governments and lead organisations (such as World Bank, WHO, organisations with a focus on key risk factors or chronic diseases known to be supporting action on chronic diseases)
Seek advice through personal contacts with colleagues working in international organisations	WHO (HQ, EURO) Public Health Agency of Canada Ministry of Health/New Zealand

3.4 Analyse data, prepare synthesis and identify lessons for Australia

Information on strategies and programs were drawn from government reports and other documentation and imported into data tables. Templates for the data tables were formulated from the list of areas set out as the focus for this review in the Statement of Requirement. Emerging directions internationally were identified by examining the data and findings of international reviews.

3.5 Limitations of the review

This review was limited by a number of factors:

- The timeline for the review was very short (three weeks). This imposed major limitations on the ability of the Project Team to comprehensively identify all national level strategies and programs and to analyse their development, system underpinnings and features. As a consequence, the report provides a select overview of strategies, programs and systems from five countries. Additionally, it has not been possible to provide comprehensive details of programs at a local or regional level of the five countries reviewed.
- Access to some data was limited, in particular, strategy and program data on human resources, financing and budgets, and evaluation of implementation and outcomes.
- The Project team did not have sufficient time to validate the data and findings with key informants.

SECTION 4. RESULTS OF THE RAPID SIX-COUNTRY REVIEW

4.1 Introduction

This chapter provides a summary of the data and information collected from the selected countries. The purpose of this initial stocktake is to identify the key common elements and differences in approach among strategies and programs aimed at preventing chronic diseases, promoting health and the systems underpinning them, internationally and in five OECD countries. A description is provided of:

- International (pan-regional) policies and strategies that may influence national policy and program development;
- National systems that support chronic disease prevention (covering governance, policy, infrastructure and resources); and
- Specific national integrated chronic disease prevention strategies and programs.

4.2 Overview of policies, strategies and programs operating at a global or regional level

Policies, strategies and programs formulated by United Nations bodies such as WHO and international organisations such as the European Commission have had an important influence over time on the directions and approaches to prevention and health promotion by member countries (also see **Appendix 2**). Such regional or global-level strategies can provide focus, legitimacy, evidence and targets for action, prompts for social mobilisation and broad guidelines and models. Except for the WHO Framework Convention for Tobacco Control (FCTC), the influence of such frameworks is hard to discern and can be quite indirect.

More specifically, in relation to chronic disease prevention, WHO has played an important role in developing and promulgating a range of important policies, strategies and programs over the past 10 years (**Table 4.1**). A number of these are regularly cited in country program documentation as providing an important context for and legitimacy to the development, intensification or realignment of strategies and plans in specific countries. Other than the FCTC, the 2000 *WHO Global Strategy for the Prevention and Control of Non-Communicable Diseases* has probably been most influential. The World Health Assembly has only recently endorsed the action plan associated with the Strategy (WHO/WHA 2008) and recommends a focus on inequalities (gender, ethnic, socio-economic) and the needs of people with disabilities in national frameworks for prevention and control . The framework includes a multisectoral approach that integrates the prevention of chronic diseases into national health plans and urges the reorientation and strengthening of country health systems to meet the needs of people with chronic diseases (WHO, 2008).

This strategy and plan, as well as the 2004 *WHO Global Strategy on Diet, Physical Activity and Health*, reflect the increasing shift towards a more integrated and coordinated approach to chronic disease prevention in many different countries. This approach recognises that the major chronic diseases shared a cluster of risk factors, so that there should be more explicit and programmatic emphasis on the behavioural risk factors and their determinants, rather than focusing on specific diseases per se.

Table 4.1: Major policies, strategies and programs

Chronic disease / Risk factor	Year	Policy, Strategy or Program
Chronic disease / risk factors (Integrated approach)	Adopted - May 2000 Adopted - May 2008	**WHO Global Strategy for the Prevention and Control of NCDs** www.who.int/chp/about/integrated_cd/en/ (Draft) **Action Plan for Prevention and Control of Noncommunicable Diseases** http://www.who.int/gb/ebwha/pdf_files/A61/A61_8-en.pdf
	Endorsed - Sept 2006	Gaining health. The European Strategy for the Prevention and Control of Noncommunicable Diseases www.euro.who.int/Document/RC56/edoc08.pdf
	Approved - Sept 2006	PAHO Regional Strategy on an Integrated Approach to the Prevention and Control of Chronic Diseases Including Diet, Physical Activity, and Health www.paho.org/english/gov/cd/CD47-17rv-e.pdf
Diet and Physical activity	Endorsed - May 2004	**WHO Global Strategy on Diet, Physical Activity and Health** www.who.int/dietphysicalactivity/strategy /eb11344/strategy_english_web.pdf
	2005	European Union's 2005 Platform on Diet, Physical Activity and Health http://ec.europa.eu/health/ph_determinants/life_style/nutrition/ platform/platform_en.htm
Diet	Endorsed - Sept 2000	First European Food and Nutrition Action Plan http://www.euro.who.int/nutrition/actionplan/20070620_3
Physical activity	Launched - May 2007	Steps to health: A European Framework to Promote Physical Activity for Health http://www.euro.who.int/Document/E90191.pdf
Obesity	Adopted - Nov 2006	European Charter on Counteracting Obesity http://www.euro.who.int/obesity/conference2006
Tobacco	Adopted - May 2003 (By all 192 Member States)	**WHO Framework Convention on Tobacco Control** http://www.who.int/tobacco/framework/en/
	Approved - Sept 2002	European Strategy for Tobacco Control \http://www.euro.who.int/tobaccofree/Policy/20030826_3
Harmful use of Alcohol	Endorsed -Sept 2005	Framework for alcohol policy in the WHO European Region http://www.euro.who.int/document/e88335.pdf
Diabetes	Launched – Sept 2003	WHO/International Diabetes Federation Diabetes Action Now Program http://www.idf.org/home/index.cfm?unode=742485e7-0b0f-49df-84d6-a84deb748fcf
Social determinants	Launched – May 2008 (interim statement in 2007)	WHO/Commission on Social Determinants of Health http://www.who.int/social_determinants/en/

4.3 Overview of national systems supporting chronic disease prevention strategies and programs

Key elements of the systems of governance underpinning chronic disease prevention were identified in the six countries (see **Part B**).

Coordinated national leadership and direction

All countries had a national focal point for leadership on chronic disease prevention, in a Cabinet Ministry, unit/department, and /or a national body of some form (e.g. an agency or

institute) (**Table 4.2**) This provided leadership over the establishment and implementation of health promotion/chronic disease prevention framework/s and all appeared to use partnerships as a key means for developing and implementing strategies and programs. Accountability for program delivery varied between Cabinet and Ministerial levels. The most common elements of the leadership function/role included:

- Coordination and strategic policy development
- Knowledge development and exchange
- Oversight and support for national campaigns and other initiatives at a population and/or regional level
- Monitoring and evaluation of campaign program implementation and progress
- Surveillance and monitoring of outcomes
- Communications and public information.

In England, there is a high-level cross-government committee in place (Sub-Committee on Health and Wellbeing) with responsibilities to "consider policy on health and wellbeing, including the prevention of ill-health, the promotion of healthy and active lifestyles and the reduction of health inequalities; and report as necessary to the Ministerial Committee on Domestic Affairs." This signals the increasing strategic, social and economic importance of prevention and serves to establish ongoing cross-portfolio engagement in the prevention agenda at a national level.

Table 4.2. National focal points with responsibilities for chronic diseases prevention

FOCAL POINT	CANADA	ENGLAND	NEW ZEALAND	USA	THAILAND	FINLAND
Cabinet/ equivalent		Sub-Committee on Health and Wellbeing (S-C of Ministerial Committee on Domestic Affairs /www.cabinetoffice.gov.uk/secretariats/committees/dahw.aspx				
Ministry of Health	HealthCanada www.hc-sc.gc.ca/index-eng.php	Department of Health www.dh.gov.uk/en/index.htm	Ministry of Health www.moh.govt.nz/moh.nsf National Advisory Committee on Health and Disability – Public Health Advisory Committee http://www.phac.health.govt.nz/moh.nsf/indexcm/phac-aboutus-tor	Department of Health and Human Services www.hhs.gov	Ministry of Public Health www.eng.moph.go.th	Ministry of Social Affairs and Health www.stm.fi/Resource.phx/eng/index.htx
Unit or department in MOH		Public Health – Health Improvement Unit www.dh.gov.uk/en/Publichealth/Healthimprovement/index.htm	Public Health Directorate www.moh.govt.nz/publichealth	Office of Disease Prevention and Health Promotion www.odphp.osophs.dhhs.gov	Department for Disease Control www.thaigcd.ddc.moph.go.th/link.html	
National Agency or Institute	Public Health Agency of Canada www.phac-aspc.gc.ca/index-eng.php -	National Institute for Health Research – Public Health Research programme		Centers for Disease Control – Prevention of Chronic Disease www.cdc.gov/	ThaiHealth Promotion Foundation www.thaihealth.or.th/en/	National Public Health Institute ww.ktl.fi/portal/english/

	Centre for Chronic Disease Prevention and Control www.phac-aspc.gc.ca/ccdpc-cpcmc/index.html and Canadian Health Services Research Foundation www.chsrf.ca/	(NEW) www.nihr.ac.uk/				

National health policy that incorporates prevention and health promotion

In all countries, there is an overarching policy that provides a context for the prevention of chronic disease and health promotion. Population health targets are identified and used in most countries (e.g. England, New Zealand, USA, Finland) to give direction to and support accountability for national, organised efforts to promote health and prevent disease. Primary prevention and health promotion are major planks in all of these countries' health policies, although there are also differences between countries. For example, in broad terms, the US approach favours prevention efforts with a behavioural focus that locate responsibilities with individuals, while the UK approach has a stronger orientation towards population-level initiatives.

Table 4.3. Policy context for chronic disease prevention

	CANADA	ENGLAND	NEW ZEALAND	USA	THAILAND	FINLAND
Overarching Health Policy		Health Challenge England: Next steps for Choosing Health www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4139514	Health Strategy www.moh.govt.nz/publications/nzhs	Healthy People 2010 www.healthypeople.gov/	Healthy Thailand www.eng.moph.go.th	Health 2015 www.terveys2015.fi/esite_eng.pdf
National population health targets	Under development	Yes	Yes	Yes (2020 targets under development)	?	Yes
Integrated national policy	Pan-Canadian Healthy Living Strategy: Community Action www.phac-aspc.gc.ca/hl-vs-strat/index.html	Healthy Weight, Healthy Lives www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_082378	Healthy Eating - Healthy Action www.moh.govt.nz/healthyeatinghealthyaction	HealthierUS (President's initiative) www.healthierus.gov/	Health Risk Factors Control	Development Programme for the Prevention and Care of Diabetes in Finland DEHKO http://www.diabetes.fi/sivu.php?artikkeli_id=831

Frameworks for national strategies and programs

All countries have some form of overarching and integrated healthy public policy, programs and plans that address multiple risk factors associated with chronic disease. An indication of the range of policies and strategies across the risk factors/diseases in the selected countries appear in **Appendix 3**.

Within the overarching policy for population health are nested national integrated policies/frameworks related to chronic disease see **Table 4.3**. Common elements of these frameworks include:

- A population health or whole-of-society approach that also included some identification of high-risk population sub-groups.
- A life-course approach that also highlight the needs of different groups across the lifecourse, with an increasing focus on the needs of children during the 'early years'.
- A special focus on health disparities, socially disadvantaged population subgroups and the need to 'close the health gap' between different groups.
- An emphasis not only on the 'classical' risk factors but also on the more upstream determinants of health and ill-health or what have been called the social determinants of health or the 'causes of the causes'.
- An emphasis on the need for research and evidence to underpin and inform policy and practice.

The overarching national policies and the specific risk factor plans are all horizontally integrated with vertically integrated programs. **Horizontal** refers to integration across organisations, or sectors, designed to increase capacity, maximise efforts and minimise duplication. **Vertical** refers to a focus on one or more levels of influence which typically include individuals, organisations/settings and different kinds of socioeconomic, physical and other kinds of environments. Most countries have elements of pre-existing national policies and plans relevant to specific risk factors - such as tobacco control, healthy eating and physical activity – which have been embedded into more recently developed integrated approaches to chronic disease prevention and health promotion.

Table 4.4. Themes across major national integrated approaches to primary prevention of chronic diseases

Theme	CANADA	ENGLAND	NEW ZEALAND	USA	THAILAND	FINLAND
Integrated national policy	Pan-Canadian Healthy Living Strategy: Community Action	Healthy Weight, Healthy Lives	Healthy Eating - Healthy Action	HealthierUS	Health Risk Factors Control	Development Programme for the Prevention and Care of Diabetes in Finland (DEHKO)
Diet	x	X	X	X	x	x
Physical activity	x	X	X	X	x	x
Obesity	Healthy weight	Healthy weight	Healthy weight	Healthy weight	Healthy weight	Healthy weight
Tobacco	x		X	X		x
Alcohol			X	X		x
Other themes	Cancer Diabetes Development of supportive environments	Breastfeeding, Workplaces	Breastfeeding Development of supportive environments	Heart Disease/CVD Diabetes		Diabetes

The major national programs reviewed primarily addressed the more proximal causes of key risk factors contributing to common chronic diseases, that is, unhealthy diets, inadequate physical activity, and obesity. While the 'causes of the causes' were addressed more variably, all national strategies and programs at least acknowledged the importance and necessity of tackling the more upstream influences that include underlying population changes, socio-economic conditions, and the related impacts of globalisation. [Refer back to **Figure 2.2**].

National acts, laws and legislation for chronic disease prevention

Legislation, regulations and taxation are increasingly being utilized alongside other approaches. With respect to the countries considered in this review:

- All have food and beverage legislation related to chronic disease prevention (and control), but they vary in nature. They include the use of explicit legislation and/or regulations with respect to food composition (e.g. type of fats permissible in foods), food taxes, food and beverage labelling and advertising/marketing (e.g. to children).
- Canada has a taxation incentive for physical activity. Mello, Studdert, and Brennan (2006) reviewed US State Legislative initiatives to combat obesity in the community between 1998–2005, and identified actions including environmental changes to local areas, community and workplace fitness campaigns and other public education programs. Initiatives involving the introduction of taxes and legislation were much less commonly employed than more individually-focused behaviour change programs. (**Appendix 4**) Legislation and incentives for physical activity in the other countries was not further explored at this stage, but there is increasing attention to the role of public health law in shaping health, for example through the work of Gostin in the US.
- All are signatories to the WHO Framework Convention on Tobacco Control (FCTC) and accordingly, have legislation for tobacco control including health warnings on tobacco products, smoke free environments, bans on smoking advertising and tobacco sponsorship, and taxation and pricing.
- All countries reviewed have legislation for reducing the harmful use of alcohol. They vary in nature and include taxes on products, restrictions on sales to minors and licensing of premises.

Financing and funding for prevention

Financing for primary prevention of chronic disease tends to come from government sources. In the US, philanthropic, private and other kinds of organisations have a strong history supporting some program areas. Work is underway internationally to examine the financing of prevention and health promotion, and innovative ways to establish sustainable, adequate and ethical financing.

The national ministry of health in each country, together with national institutes or agencies, play key roles in funding strategies and programs. Information on the actual investment levels in programs was not easily ascertained within the timeframe of this review; however, there were certainly new investments being made in relation to research and evaluation in order to support further evidence development and the implementation of strategies. While reviews have stressed the importance of governments giving high priority to financing prevention and health promotion, the level of investment from the health budget in primary prevention is still quite low in most countries, accounting for up to only 3-4 percent of health expenditure.

To summarize the findings from this review:

- Thailand, through the ThaiHealth Promotion Foundation, is the only country considered in this review with a dedicated funding source (2% surcharge on alcohol and tobacco tax) and budget for the implementation of a national strategy for the primary prevention of chronic disease.
- For the specific risk factor components listed below in **Table 4.4**, Canada, England, New Zealand and Thailand have specific, dedicated budgets for addressing tobacco use, nutrition/diet, physical activity and alcohol consumption.
- Non-specific sources of financing appear to be the major source of funds in countries rather than more stable routes of financing such as taxation.

Table 4.4- Budget and financing for chronic disease risk factor programs

	CANADA	ENGLAND	NEW ZEALAND	USA	THAILAND	FINLAND
Budget (2006-07)	Disease prevention = 331.8 m CAD Health promotion = 186.5 m CAD	Public Health (healthy individuals) = 1,069 million. GDP (2004/05) 1.83% of NHS budget	Not obtained		55 m USD for ThaiHealth	Health 2015 = FIM 2.5 million from national budget
Financing	Consolidated revenue and Population Health Fund for community-based activities The Healthy Living Fund	National Lottery funding and consolidated revenue	Not obtained	Mix of federal grants, NGOs sector, private sector	2% surcharge on tobacco and alcohol tax	National budget KTL = 61% from National budget, 8.6% chargeable services, 6.8% Academy of Finland, 6.2% EU financing, 2.7% Industry and commerce, 8.2% Co financed research financing; ministries, 6.5% other DEHKO financed by Finland's Slot Machine Association (RAY), Finnish Diabetes Association and diabetes-related companies

National health surveillance and reporting system

All countries have recognised the need to establish surveillance systems that monitor:

- Macro-level trends and policies that impact on healthy eating and physical activity (such as urban design, transport, food product content, advertising, agricultural policies)
- Individual self-report data on physical activity and dietary intake (plus possible inclusions of car ownership, driving times, frequency of walking and cycling to work school; home food preparation)
- Measured biomedical risk factors (such as weight, blood pressure, cholesterol).

Furthermore, the review identified that:

- All five countries have established health information and monitoring system covering chronic disease and major risk factors, and all have included chronic diseases in their annual health reporting system. The performance of these systems was not analysed for this review.
- With respect to data included in the national annual health report system, all have a broad coverage across risk factors, cause-specific mortality, and mortality. [3]
- National policies acknowledge and are premised upon continuous, long-term population-level surveillance for key variables at the individual and environmental levels.

[3] Time limitations prevented specification of the regularity and mechanism of these (eg. Annual - nationwide - measured/ self-reported/ risk factor prevalence surveys)

Research, Evaluation and Knowledge Management

The national systems for public health in England, Canada (Wolbeck et al 2006), USA and Finland have institutions that lead or support the ongoing development of knowledge and the evidence-base for interventions. Each of these institutions plays an important part in funding, creating and/or managing the links necessary for the production and use of knowledge and evidence that supports and informs effective policy and practice for chronic disease prevention and health promotion.

Institutions include Centres for Disease Control (CDC) in the US, Canadian Health Service Research Foundation (CHSRF) and Centre for Chronic Disease Prevention and Control (CCDPC) in Canada and National Institute for Health and Clinical Evidence (NICE) and National Institute for Public Health Research (NIHR) in England. They play critical roles in a range of essential activities for the production and utilisation of knowledge, including the funding of programs and supporting their evaluation. They are also supported by a number of other agencies and/or government-funded programs (**Table 4.5**).

Table 4.5. Institutions with major responsibilities for research, evaluation and knowledge management

	CANADA	ENGLAND	NEW ZEALAND	USA	THAILAND	FINLAND
Primary institution	Canadian Health Services Research Foundation	National Institute for Health and Clinical Excellence (NICE) National Institute for Health Research – Public Health Research Program (NIHR)	Ministry of Health	Centres for Disease Control (CDC)	Units within Ministry of Health	National Public Health Institute (KTL)
Partner institutions	Health Evidence Canada Effective Public Health Practice Project Chronic Diseases Knowledge Exchange program Canadian Best Practices Portal National Collaborating Centres for Public Health	Centre for Reviews and Dissemination, York Evidence for Policy and Practice Information and Coordinating Centre Public Health Observatories Obesity Observatory	Health research Council of New Zealand	Prevention Research Centers Community Guide to Preventive Services, National Center for Health Marketing (NCHM)	Centre for Alcohol Studies The Tobacco Control Research and Knowledge Management Centre	

Monitoring and evaluation programs have been established in England, Canada, USA and Finland, with associated institutions to assist in understanding the progress and the impact of multi-faceted, multi-level, multi-sector, and population-wide strategies/programs. A new Obesity Observatory was established in England in December 2007, to provide an authoritative source of data and evidence on obesity, overweight and their social, economic and environmental determinants and evaluating pilot programs/projects and demonstration sites.

4.4 Overview of strategies and programs in selected countries

Policy framework

In all of the countries reviewed there is a mix of single risk factor /disease and integrated programs addressing risk factors associated with the prevention of chronic disease and the promotion of health and wellbeing.

The results reported on in this section are limited to integrated risk factor programs in the areas of physical activity, healthy eating and obesity. The list of single risk factor and disease programs in each country can be referred to in **Appendix 3** (at this stage this is an indicative overview). Programs associated with tobacco control and harmful use of alcohol are covered in separate reports commissioned by the Department of Health and Ageing and have not been detailed here.

The articulation between the more recently implemented integrated programs and older, but continuing, single risk factor/disease programs was not examined. With the exception of USA, the countries reviewed do not include chronic disease in their strategy title.

As stated earlier in this section the integrated programs typically focus on the proximal causes of key risk factors contributing to common chronic diseases while acknowledging the need to tackle the broad societal (distal) factors underlying chronic disease patterns. The upward articulation with macro-social and economic policies was not generally apparent in the policy documents and websites that were examined.

Table 4.6: Specific national integrated programs responding to unhealthy diet, physical inactivity and obesity

CANADA	ENGLAND	NEW ZEALAND	USA	THAILAND (ThaiHealth only)	FINLAND
Integrated Pan Canadian Living Strategy	Healthy Weight, Healthy Lives	Healthy Eating – Healthy Action	HealthierUS	Health Risk Factors Control Plan Physical Exercise and Sports for Health Plan	Development Programme for the Prevention and Care of Diabetes in Finland DEHKO
2007 - 2011	2008 -2011	2004 - 2010	Ongoing	2007 -2009	2000-2010
Goal set for: 2015	Goal set for: 2020	Goal set for: 2010	Goal set for: 2010	Goal set for: Not stated	Goal set for: 2010

All of the integrated programs detailed in **Table 4.6**, are nested in national health policies/frameworks related to promoting health and preventing chronic disease, the features of which have already been described.

The programs have elements reflecting both horizontal and vertical integration. Many of the more integrated programs implement action across a range of sectors and settings, including: schools; workplaces; transport; private sector; and local geographic institutions and areas.

Partnerships

A myriad of institutional links and partnerships exist in each country to facilitate strategies and programs. They take a number of forms and arise to meet various needs. The utilisation of partnerships across government, non-government organisations, community, and private sector organisations is a feature of all programs and configured according to each country context.

Given the complexity of the integrated approaches, England and Canada have instituted mechanisms to achieve horizontal integration either pre- or post strategy implementation (**Box 1**).

BOX 1 HORIZONTAL INTEGRATION

HEALTHY WEIGHT, HEALTHY LIVES, ENGLAND
The Cabinet Sub-Committee on Health and Wellbeing has a remit to tackle obesity and promote healthy weight, and the membership includes all of the lead departments. A Cabinet Committee on Families, Children and Young People also monitors progress with respect to child weight problems. Reporting to the new committee is a new cross-Government obesity unit. This is based in the Department of Health but led jointly by the Department of Health and the Department for Children Schools and Families, and includes staff and resources from across Government.

Integrated Pan Canadian Healthy Living Strategy, Canada
To support the intersectoral development of the Strategy, the Coordinating Committee of the Intersectoral Healthy Living Network was established in September 2004, led by three chairs representing federal, provincial/territorial governments, and the non-government sector. Comprising representatives of regional networks, governments, the private and voluntary sectors, and national Aboriginal organizations, the Coordinating Committee acts as an engine to move the Pan-Canadian Healthy Living agenda forward.

Timeframe

As shown in **Table 4.6** above, the timeframe for the implementation of integrated strategies was generally 3-4 years (possibly associated with electoral cycles) and the time for achieving goals was set for longer periods (around 10 years).

Leadership

The implementation of the integrated program in each country is supported by a lead agency/institution, situated centrally in national government or other authority that provides overall direction, coordination and support (such as related capacity building and workforce development).

Program design and implementation strategy

Typically, the integrated programs are multi-faceted and incorporate:

- multi-level interventions– national, sub-national and local level initiatives;
- multi-sector interventions – across government portfolios and the community and private sectors; and
- a combination of strategies that span legislation/regulation, social marketing, environmental changes, community development and capacity building, as well as, programs and services supporting and enabling individual change approaches.

Addressing socioeconomic inequalities and disadvantage

All of the integrated programs incorporate a goal and associated sets of actions for reducing health disparities. The most common approach involves targeting "at risk" groups (such as native populations or particular ethnic groups) and addressing the needs of children and families.

The links between the integrated health-oriented programs and other government policies on social inclusion/exclusion or equity are not clear at this stage of the review. More insights about ways forward in this area are likely to be set out in the upcoming final report of the WHO Commission on the Social Determinants of Health (WHO 2008).