

# Interventions for reducing alcohol supply, alcohol demand and alcohol-related harms

Associate Professor Peter Miller, Ashlee Curtis, Professor Tanya Chikritzhs, Professor Steve Allsop and Professor John Toumbourou

## Introduction

Alcohol accounts for approximately four percent of deaths worldwide and 4.65 percent of the global burden of injury and disease, placing it alongside tobacco as one of the leading preventable causes of death and disability (Rehm et al. 2009). Four of five Australians aged over 14 years report drinking alcohol recently and one in five report drinking seven or more drinks on a single occasion at least monthly (Australian Institute of Health and Welfare 2008); two-thirds (61%) of 18–29 year olds report consuming alcohol to get drunk (Laslett et al. 2010). The annual cost of alcohol-related harm in Australia is estimated to be between \$15.6b (Collins and Lapsley 2008) and \$36b (Laslett et al. 2010), depending on the model used and whether harm to others is included. For many individuals, the personal cost of alcohol-related trauma is overwhelming (Laslett et al. 2010). Almost every type of alcohol-related harm is on the rise in Australia (Livingston et al. 2010).

The most authoritative review of alcohol-related harms and measures to reduce them is *Alcohol: No Ordinary Commodity* (Babor et al. 2010). The book uses an expert consensus model, with the authors representing a collection of the leading international researchers in the field. Other reviews address more specific issues or locations; for example, Anderson and Baumberg (2006) produced a comprehensive description of alcohol-related harms and the measures required to address them for the European Union. There have also been a substantial number of topic-specific reviews relating to supply- or demand-reduction strategies. Recent stand-out examples of reviews of supply-reduction strategies include *Raising the Bar* (Graham and Homel 2008), which provides a comprehensive review of strategies around licensed venues, and the National Drug Research Institute report *Restrictions on the Sale and Supply of Alcohol: Evidence and Outcomes* (Chikritzhs et al. 2007), which looks at restricting supply more broadly. Specific reviews of demand-reduction strategies include the article *Interventions to reduce harm associated with adolescent substance use* (Toumbourou et al. 2007) and *The Prevention of Substance Use, Risk and Harm in Australia: a review of the evidence* (Loxley et al. 2004).

However, it is also clear many of the interventions discussed have not been tested in the Australian context; and some of those that have—in particular, increasing the price of alcohol—have not been popular with politicians, policymakers or the public. The broad array of research knowledge and practical experience often results in confusing messages for practitioners wishing to reduce alcohol-related harm in their community. Much of the evidence remains poor quality and is often of limited relevance to multiple settings. This project synthesises the wide range of information into three major streams of supply reduction, demand reduction and harm reduction.

In this context, supply reduction is defined as any measure associated with reducing the supply of alcohol. These measures can include serving practices in licensed venues, or limiting the number of outlets in a specific geographic area. They can also include restrictions on access such as implementing a minimum purchasing age or restricting trading hours.

A vast array of strategies can be included under the banner of demand reduction. Major strategies include the restriction of alcohol advertising and marketing, prevention programs, early intervention programs for people experiencing alcohol problems, education measures and treatment, as well as policy-level measures such as pricing controls—though some may conceptualise this as supply reduction. As with supply reduction there have been many reviews of these measures, both general reviews and those targeted on specific locations and intervention types. For example, both Loxley et al. (2004) and Toumbourou et al. (2007) described conceptual frameworks for thinking about reducing demand for substance use.

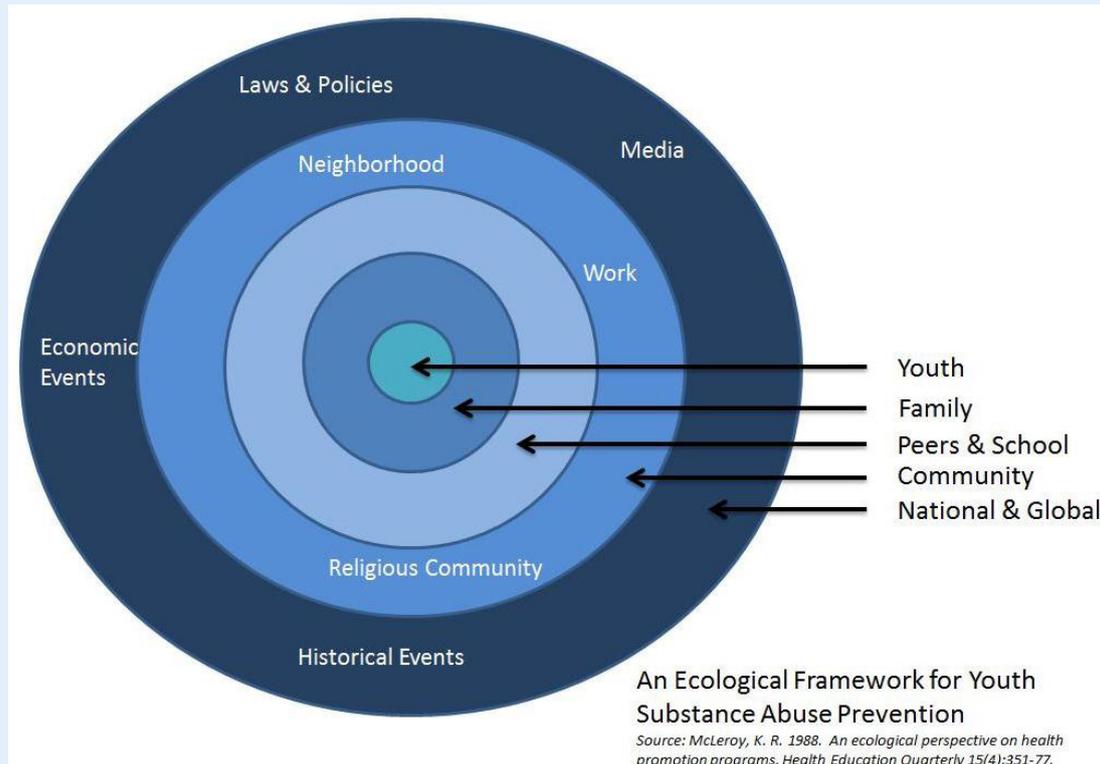
Finally, the report will look at the many harm reduction strategies employed across Australia. Some of these contain elements of both supply and demand reduction. Major elements of these include responsible service of alcohol (RSA) programs, community intervention programs and security and management strategies for licensed venues as well as newer technological innovations such as CCTV in venues, radio networks and ID scanners. The key themes of enforcement, cost-effectiveness and the utility of voluntary versus mandatory restrictions on the advertising, promotion and supply of alcohol will be explored. Finally, the paper proposes a set of recommendations based on the evidence gathered.

### *The ecological framework*

This report utilises the ecological framework (McLeroy et al. 1988) when describing interventions, to allow existing interventions to be better understood from a broader perspective and acknowledge any gaps in these.

Whether alcohol consumption is encouraged or inhibited is influenced by *societal interventions*. These include economic measures such as tax, social policies, the advertising of alcohol and its availability. Community factors include the character of one's neighbourhood, the influence of any local religious communities and the influence of any situational factors unique to the context of alcohol consumption—for example, a venue's policy on alcohol consumption. *Situational interventions* are those focused on managing the alcohol consumption of an individual within the community. *Social interventions* focus on peer groups and social norms; these interventions acknowledge the importance of a person's social circle and the social norms they are aware of, and how these influence their alcohol consumption. *Family interventions* involve the family, to provide the individual with the support they require. *Individual interventions* focus on assisting the individual to change their alcohol consumption and their behaviour while consuming it. Such interventions may include prescribing medication for the individual or assisting them to change their alcohol-related behaviours.

Figure 1: An ecological framework for youth substance abuse prevention (McLeroy, 1988)



## Methods

### Systematic review

A large number of systematic searches were conducted, using relevant keywords, of the MEDLINE Complete, PsycARTICLES, PsycINFO, Academic Search Complete and the Psychology and Behavioural Sciences Collection electronic databases. The searches were limited to articles in English. Two of this paper's authors (AC and PM) independently screened the titles and abstracts of all publications returned by the search and assessed the full text of those selected for inclusion. In questionable cases, the authors discussed the inclusion and exclusion requirements and came to a consensus on all items.

### Delphi method

The Delphi method provides a reliable consensus of opinion from a panel of experts. It involves conducting a series of structured surveys, the responses to which are summarised and returned to the panellists in the next survey (Hasson et al. 2000). This iterative process continues until consensus is reached—ie, until responses are stable through a series of rounds (Crisp et al. 1997).

In round 1, panel members were asked to rate the importance of the supply-, demand- and harm-reduction strategies identified through the systematic literature review and environmental scan. The panel were asked to rate interventions on their effectiveness in reducing alcohol-related assaults, reducing intoxication, solving crime, preventing crime, reducing alcohol-related harms and reducing alcohol consumption. In round 2, the interventions were again presented to the panellists to be rated. Panel members were first asked to re-rate any interventions which received low mean effectiveness scores on each of the domains. They were then asked to rate any new interventions suggested in round 1.

## Results synthesis and summary

This section synthesises and summarises the findings of the literature review and Delphi study. League tables have been produced, identifying the intervention types identified in the study and classifying them according to a rating system based on the one developed by Babor and colleagues (Babor et al. 2010). Descriptions of each measure are provided in Monograph no. 57, *Interventions for reducing alcohol supply, alcohol demand and alcohol-related harm*. Wherever a measure is described in this summary, a reference number which can be used to locate the measures in the monograph is provided.

### Evidence rating system

For the purpose of this report a system was developed to rate the interventions identified by the literature review and the Delphi study according to their impact or level of effectiveness. These ratings are outlined in Table 1.

Table 1: Evidence and effectiveness rating system	
Symbol	Criteria
✓✓✓	This is the highest level of impact for interventions identified in the literature review. To qualify for this rating, there must be substantial compelling evidence of the effectiveness of the intervention in both an Australian and an international context. All relevant literature supports the intervention.
✓✓	Any intervention for which there is strong evidence of positive outcomes is given this rating; however, studies of the intervention may be confined to an international context, or the evidence of its impact in an Australian context may be limited. Studies with small effect size may also be rated at this level.
✓	The third level of impact for interventions identified in the literature review is applied where studies support their effectiveness, but the effect sizes are small and the number of studies limited.
?	This rating is given to any intervention for which the evidence of effectiveness is inconclusive. This may mean the evidence both supports and contradicts the effectiveness of the intervention, or that research in the area is so limited no conclusion can be drawn.
✘	This rating was applied to interventions which were not supported by the evidence in the literature. The evidence consistently indicates a lack of, or poor, outcomes for reducing harm.
***	This is the highest level of impact for interventions identified in the Delphi study. This rating is applied where the evidence in the literature is unclear but the Delphi study suggests high effectiveness. Interventions were given this rating if they achieved a mean effectiveness rating of 7.1–10.
**	This rating was applied to interventions which were not supported by clear evidence in the literature, but which received a Delphi study rating between 3.1 and 7.
*	This rating was applied to those interventions which are not supported by the literature and also received low mean ratings of effectiveness in the Delphi study (0 to 3).

### Supply reduction

Supply-reduction interventions are those measures associated with the supply of alcohol. The current review found supply-reduction interventions are not well-represented in the literature, and the Delphi study revealed the same issue. Societal supply-reduction interventions consistently showed the greatest impact and effectiveness. These interventions included restricting the hours of alcohol sales, especially in on-premises venues (68), the setting of a minimum legal purchase age (MLPA; 54) and alcohol outlet density reduction (48), and received the highest rating of effectiveness.

In the Australian context the restriction of trading hours is supported by the strongest evidence base. Recent work indicates intoxication and subsequent harms increase significantly after midnight (Chikritzhs & Stockwell 2002, 2006, 2007; Miller et al. 2014b). Reducing the MLPA from 21 to 18 has been demonstrated to cause an increase in episodes of binge drinking and the rate of traffic accidents. Increased alcohol outlet density is associated with an increase in violent crime in the relevant geographical area; this relationship exists for violence in licensed premises and on the street (Livingston 2008; Livingston et al. 2010), as well as in off-license outlets and in family or domestic contexts (Liang & Chikritzhs 2011).

While this study was unable to find explicit examples of interventions that reduce the density of outlets per se (such as license buy-back schemes), a number of governments within Australia have enacted freezes or caps on the number of liquor licenses, especially late-night licenses, they grant. The Victorian government conducted a review of one such intervention; that freeze has been extended until 2019, although the related report was not made publicly available.

The Western Australian liquor license restrictions (under s64(10) of the *Liquor Control Act 1988* [WA]) consistently scored the highest rating in the Delphi study for supply reduction. This intervention allows the WA Police to apply to the Director of Liquor Licensing for liquor restrictions on a town, a number of adjoining towns or even a region. They can also request conditions to be placed on the licence of a particular licensed venue. This intervention was rated in the Delphi study as moderately effective in preventing crime and reducing intoxication, alcohol consumption and alcohol-related assaults and harms.

Another intervention which received moderate effectiveness ratings in the Delphi study for preventing crime and reducing intoxication, alcohol consumption, alcohol-related aggression and alcohol-related harms was schedule 4 of the *Liquor Act 2007* (NSW), which regulates the use of the violent venues register (81). This involves applying conditions to licensed premises found to be violent under the Act to reduce sales of alcohol and venue access and improve security. These conditions are intended to address poor management of licensed premises and situations where venues place profit before the prevention of alcohol-related harms, and to ensure the responsible service of alcohol.

**Table 2: Summary of interventions for reducing alcohol supply and their effectiveness ratings**

Intervention	Reference number <sup>1</sup>	Type of intervention	Effectiveness rating <sup>2</sup>	Comment
Reducing alcohol outlet opening hours	68	Societal	✓✓✓	There is strong international evidence of the relationship between reducing alcohol outlet opening hours and alcohol consumption.
Minimum legal purchase age	54	Societal	✓✓✓	International evidence suggests increasing the minimum purchasing age is effective.
Reducing alcohol outlet density	48	Societal	✓✓	Evidence suggests an increased density of alcohol outlets is associated with increased levels of harm in the community.
Restricting sales of specific beverage types	14	Societal	✓	Research demonstrates an association between full-strength beer and alcohol-related problems; however, this research is limited.
Placing conditions on the most violent licensed premises through the violent venues register ( <i>Liquor Act 2007</i> [NSW] Schedule 4)	81	Societal	**	Delphi panel review revealed moderate effectiveness in reducing alcohol-related assaults and harms, alcohol consumption and intoxication, as well as in preventing crime.
Including emergency, health and social services in the liquor-license planning assessment process	40	Societal	**	Delphi panel review revealed moderate effectiveness in reducing alcohol-related assaults and harms.
Restricting secondary supply	65	Community	**	Delphi panel review revealed moderate effectiveness in reducing alcohol-related harms, alcohol consumption and intoxication.

1: See main report for descriptions of interventions

2: See Table 1 for explanation of ratings applied

## Demand reduction

Demand-reduction interventions cover many major areas such as the restriction of advertising/marketing, prevention programs, early intervention programs for people with alcohol problems, education measures and treatment, as well as policy-level measures such as pricing controls—though some may conceptualise this as supply reduction.

Like supply-reduction interventions, demand-reduction interventions were not widely represented in either the literature or the Delphi study. While many of these interventions are undertaken within the community, few have ever been evaluated, and they tend to be short-lived. The literature review identified one intervention which could be considered to have the highest level of evidence for impact, which was increasing the price of alcohol, including through excise or taxation (57). Increasing the price of alcohol has consistently been associated with a reduction in alcohol consumption and alcohol-related harms.

Educational programs aim to prevent and/or reduce problematic alcohol-related behaviour through increasing knowledge and understanding of the risks associated with alcohol consumption, and to help develop sensible attitudes to alcohol consumption. The School Health and Alcohol Harm Reduction Project (SHAHRP; McBride et al. 2004; 25) had substantially reduced risky drinking by students after 17 months.

Many reviews have been conducted to determine the effectiveness of education initiatives, each noting a lack of positive outcomes (Foxcroft et al. 2003). However, in the systematic review the authors note some educational programs show promise, including the Strengthening Families Program (Spath et al. 2001a; Spath et al. 2001b) and some culturally focused programs; however, these require further investigation to establish their effectiveness on a larger scale.

The Delphi study rated two interventions as moderately effective against certain variables. The first of these was the use of alcohol warning labels (9), a societal intervention which received a moderate effectiveness rating for reducing alcohol consumption. The second was an individual intervention, known as the Early Intervention Pilot Program (24), which incorporated a variety of prevention measures; it was rated as moderately effective for reducing alcohol consumption, intoxication and alcohol-related harms, and for preventing crime.

## Harm reduction

Few well-researched and strongly evidence-based interventions for reducing alcohol-related harms were found in the literature. Four interventions reached the second-highest level of effectiveness according to the rating system: targeted police interventions (55), Safer Bars (64), mandatory plastic glasses (30), and community interventions such as Stockholm Prevents Alcohol and Drug Problems (STAD; 16).

Targeted interventions by police involve highly visible enforcement of drinking laws on and around licensed premises and have been found to reduce alcohol-related assaults, and harm more generally. Safer Bars is a comprehensive strategy focused on training staff in pragmatic and applied methods for reacting to and dealing with patrons' problem behaviour and aggression; it has been found to be effective in changing staff attitudes and reducing bar-room aggression (Graham, Jolley & Purcell 2005). Using plastic glasses in venues is also an effective strategy for reducing glassware injuries and assaults, and an easy-to-implement strategy.

Community interventions were the fourth group of interventions to receive the second-highest effectiveness rating. These interventions typically incorporate community mobilisation through publicity campaigns, local task-force activities and community forums and discussion groups. They usually place greater emphasis on RSA practice, security staff capabilities, environmental safety factors and police enforcement of liquor laws. While the STAD strategy appears promising, it was implemented in the context of very low-level (if any) regulation or enforcement, and is unlikely to have an impact in an Australian context.

The Delphi study rated 43 interventions as moderately effective against a variety of other measures. The three interventions which were most effective against all outcome variables were interventions under various legislation: firstly, interventions under section 175(1a) of the Western Australian *Liquor Control Act 1988* (41; M=5.82); followed by liquor license restrictions under section 64 of the Western Australian *Liquor Control Act 1988* (10; M=5.36); and finally, interventions under schedule 4 (relating to the violent venues register) of the New South Wales *Liquor Act 2007* (81; M=5.08). The latter two are supply-reduction measures, which supports the idea that reducing the supply of alcohol can help reduce harm. Interestingly, these interventions all involve restrictions on alcohol consumption that apply to entire communities. This is consistent with the literature review, which found that interventions that apply alcohol restrictions on the community as a whole (such as the introduction of an MLPA or alcohol-outlet density restrictions) have the strongest supporting evidence base.

The Delphi study rated only one type of intervention as very effective in reducing alcohol consumption: those made under section 175(1a) of the *Liquor Control Act 1988* (WA; 41). It was the only intervention in the Delphi study to achieve this rating for any outcome measure. This intervention also received moderate ratings for reducing assaults, harm and intoxication, and for preventing crime. The intervention involves an Indigenous community applying to the Minister for Racing, Gaming and Liquor to have their community declared a restricted area. Once so declared, it is illegal to take liquor into the community and/or consume it there.

Interventions that involve reducing the alcohol content of beverages served after midnight (4) fared well across a variety of measures and were found to be moderately effective in reducing consumption, intoxication and alcohol-related assaults and harms, and in preventing crime. Banning the sale of shots (46) was rated moderately effective against the same variables. This is a promising result, as these strategies are very easy to implement.

Although they did not rate as highly as the interventions listed above, free availability of water (29) and limiting the alcohol percentages of drinks (4) are logical interventions for reducing intoxication and, in turn, reducing alcohol-related harms. Although they are not necessarily considered a solution to alcohol-related harms, they certainly play their part in the complex process of harm reduction.

**Table 3: Summary of interventions for reducing demand for alcohol and their effectiveness ratings**

Intervention	Reference number <sup>1</sup>	Type of intervention	Effectiveness rating <sup>2</sup>	Comment
Alcohol price including excise and taxation	57	Societal	✓✓✓	Strong international evidence base for effectiveness.
Developmental prevention interventions	19	Individual	✓✓	Some evidence of effectiveness, but should be used in conjunction with other interventions to increase effectiveness.
Alcohol advertising and promotion	3	Social	✓	Strong associations have been found between advertising and subsequent high levels of alcohol consumption and increased harm. Few results available on the impact of reducing advertising, although positive effects found.
Education	25	Social	✓	Some interventions have been shown to be effective; however, interventions are normally low frequency. Research is needed into high-prevalence campaigns such as anti-smoking campaigns.
Acamprosate	51	Individual	✓	Some evidence that acamprosate is effective, if used in conjunction with therapy. The research base is in its infancy.
Family-based alcohol use prevention	28	Family	✓	Evidence of some impact, although more sophisticated research is required.
Good Sports	31	Community	?✓	Some evidence of culture change in clubs which adopt this program. However, only a small proportion of clubs adopt the program. Needs further evaluation.
Social norms	25	Social	?	Only one evaluation in an Australian context was examined and this did not show long-term effects.
Naltrexone	51	Individual	?	Some evidence of success in short-term effects, but evidence is mixed for long-term effects. Very minimal research in the area.
Early Intervention Pilot Program	24	Individual	**	Delphi study revealed moderate effectiveness in reducing alcohol consumption, intoxication and alcohol-related harm as well as moderate evidential support for effectiveness in preventing crime.
Alcohol warning labels	9	Societal	**	The Delphi study rated these as moderately effective in reducing alcohol consumption.

1: See main report for descriptions of interventions

2: See Table 1 for explanation of ratings applied

**Table 4: Summary of interventions for reducing alcohol-related harms and their effectiveness ratings**

Intervention	Reference number <sup>1</sup>	Type of intervention	Effectiveness rating <sup>2</sup>	Comment
Safer Bars	64	Community	✓✓	Has received support in an international context. Further evaluation in an Australian context is needed.
Police interventions—targeted	55	Community	✓✓	Evidence of effectiveness, mainly in an Australian context.
Consequence policing	18	Societal	✓✓ **	Consequence policing received empirical support from one study, although it showed a strong impact across a number of indicators (eg police assaults and emergency department attendance). This intervention was rated moderately effective by the Delphi study in reducing assaults and intoxication, preventing crime, and reducing harm and consumption.
Mandatory polycarbonate (plastic) glassware	30	Community	✓✓	Evidence of effectiveness, particularly for reducing glass injuries.
Community interventions (eg STAD)	16	Community	with enforcement ✓✓ without enforcement ✗	Evidence of sustained success of these approaches in Australia is limited.
Risk-based licensing	60	Community	✓ **	Strong rationale in favour, despite lack of evaluation. Intervention may be of use over the longer term if penalties are appropriate. Rated moderately effective by the Delphi for reducing assaults, harm and intoxication, and for preventing crime. Enforcement is crucial.
Alcohol-free or 'dry' zones	23	Community	✓	Strong rationale in favour. Alcohol-free zones within entertainment districts allow greater control of behaviour on the street and around licensed venues, and constitute best practice despite the lack of specific evidence.
Police interventions—random	55	Community	✓	Some evidence to support effectiveness, however only small effect sizes have been found. There was also evidence of a lack of effectiveness in some studies.
RSA training	61	Community	with enforcement ✓ without enforcement ✗	RSA training is not in itself a satisfactory approach to reducing alcohol consumption and harms and should serve only as a support to more effective restrictions. RSA should be mandatory for all who serve alcohol.
Alcohol management plans: Liquor restricted area (section 175(1a) of the <i>Liquor Control Act 1988</i> )—an Indigenous community can apply for their community to be declared an alcohol restricted area	41	Societal/ Community	✓ ***	Some evidence for effectiveness in the Northern Territory. Received strong support from the Delphi for reducing alcohol consumption. Moderate ratings for reducing assaults, harm and intoxication, and for preventing crime.
ID scanners	36	Community	with enforcement ? without enforcement ✗	Evidence of the effectiveness of this intervention remains mixed, and there are still very substantial issues around the enforcement of proper practice regarding privacy and informed consent. Once this framework is in place, mandatory implementation is indicated with minimum equipment standards.
Liquor accords	1	Societal	with enforcement ? without enforcement ✗	In an environment of low regulation, accords may improve communication. Accords can provide a platform for implementing effective approaches but voluntary accords may even be counterproductive in some circumstances.
Supervised taxi ranks	71	Community	✓	Strong rationale in favour despite a lack of evaluation; dependent on identified need.
Night-time buses and trains	71	Community	✓	Strong rationale in favour despite a lack of evaluation; dependent on identified need.

**Table 4: Summary of interventions for reducing alcohol-related harms and their effectiveness ratings cont.**

Intervention	Reference number <sup>1</sup>	Type of intervention	Effectiveness rating <sup>2</sup>	Comment
CCTV	15	Community	? **	Strong rationale in favour. Ideally, CCTV should be part of an overall security plan. CCTV provides a major benefit in terms of solving crimes already committed.
Test purchasing	70	Societal/ community	✓ **	Minimal evidence in the UK found a positive effect. Needs investigating in an Australian context. The Delphi study rated this intervention as moderately effective in reducing intoxication, consumption and harm, and in preventing crime.
Patron banning notices	11	Societal/ community	**	Effectiveness uncertain. Further research required. Received moderate ratings on the Delphi for reducing assaults and harm, as well as preventing crime.
Precinct ambassadors	56	Societal/ community	**	Strong rationale in favour despite lack of evaluation. Received moderate ratings for reducing assaults and harm, as well as for preventing crime.
'User pays' policing	72	Societal/ community	**	Moderate rationale in favour despite lack of evaluation if hired through police services; but further research recommended. General direct hiring of off-duty police not recommended. Received moderate ratings in the Delphi study for reducing assaults and harms and for preventing crime.
Security plans	67	Societal/ community	**	Strong rationale in favour despite lack of evaluation. Received moderate effectiveness ratings in the Delphi study for reducing alcohol-related assaults and harms.
RSA marshals	62	Societal/ community	**	Moderate supporting evidence with regard to larger venues, despite lack of evaluation. Moderate support from the Delphi study for reducing alcohol-related assaults and harms, alcohol consumption and intoxication, and for preventing crime.
Mandatory high-visibility clothing	33	Societal/ community	**	Moderate supporting evidence despite lack of evaluation. Found to be moderately effective in reducing alcohol-related assaults and harms, and in preventing crime.
Internal radio networks	58	Community	**	Strong rationale in favour despite lack of evaluation. Received moderate ratings in the Delphi study for reducing assaults and preventing crime.
External radio networks	58	Community	**	Strong rationale in favour despite lack of evaluation. Received moderate ratings on the Delphi for reducing assaults and harms, preventing crime, and reducing consumption and intoxication.
Liquor restricted premises section 152P Liquor Control Act (WA)—Once declared it is unlawful for anyone to take liquor onto the premises.	42	Societal	**	Showed moderate evidence of effectiveness in reducing alcohol-related assaults and harm, as well as in reducing alcohol consumption and intoxication, and preventing crime.
Drunk tanks	22	Societal	**	Rated moderately effective by the Delphi study in reducing assaults and harms, as well as in preventing crime.
Mandatory treatment (NT)	44	Individual	**	Delphi study results showed moderate support for the effectiveness of this intervention in reducing consumption and intoxication, and in reducing harm.
Holyoake family alcohol and drug programs (Tas)	35	Individual	**	The Delphi study found moderate evidence these interventions reduced alcohol-related harm, and alcohol consumption.
No sale of shots, or cheap drinks/promotion	46	Community	**	Was rated moderately effective in reducing intoxication and consumption, and in reducing alcohol-related assaults and harms.

**Table 4: Summary of interventions for reducing alcohol-related harms and their effectiveness ratings cont.**

Intervention	Reference number <sup>1</sup>	Type of intervention	Effectiveness rating <sup>2</sup>	Comment
Alcohol to finish 30 minutes before closing	8	Community	**	Rated as moderately effective by the Delphi study for reducing alcohol-related assaults and harm, preventing crime, and reducing alcohol consumption and intoxication.
Free water	29	Community	**	Rated as moderately effective for reducing alcohol consumption and intoxication, for preventing crime and for reducing alcohol-related harms.
Random breath testing in venues	59	Community	**	Rated as moderately effective for reducing assaults, harms, consumption and intoxication, and for preventing crime.
Banning multi-buy promotions (2 for 1 deals), especially from off-license premises	12	Community	**	Rated as moderately effective in the Delphi study for reducing alcohol-related assaults and harms, alcohol consumption and intoxication. Susceptible to industry simply reducing price.
No RTD beverages more than 6%	14	Community	**	Rated as moderately effective in the Delphi study for reducing alcohol-related assaults and harms, reducing consumption and intoxication, and for preventing crime.
Preparing youth and parents for nightlife	53	Community	**	Rated as moderately effective for reducing alcohol-related assaults and harms, as well as alcohol consumption and intoxication.
People management by pedestrianising roads	50	Community	**	Received moderate ratings for effectiveness in reducing alcohol-related assaults and harms and for preventing crime
Energy drink restrictions	26	Community	**	Received moderate ratings of effectiveness in the Delphi study for reducing alcohol-related assaults and alcohol-related harms, as well as for reducing consumption and intoxication.
Drug dogs	21	Community	**	Rated as moderately effective for both solving and preventing crime.
Lockouts	43	Community	✖?	Evidence shows a lack of impact and some potential negative consequences. May be considered as a pragmatic but short-term approach to reducing acute workload pressures on police during late-night hours. Should be regarded as a support strategy, secondary to other more effective mandatory restrictions. Further research is required on venue-level lockouts.
Drink Safe precincts	20	Societal	✖ **	Minimal evidence of effectiveness, and results of evaluations mixed. Received moderate ratings of effectiveness in the Delphi study for reducing alcohol-related assaults and alcohol-related harms, alcohol consumption and intoxication, and for preventing crime. Found ineffective by an Auditor General's report.
Managing people through the strategic location of food outlets	50	Community	*	Low effectiveness ratings for reducing assaults and harm and for preventing crime.

1: See main report for descriptions of interventions

2: See Table 1 for explanation of ratings applied

## Limitations

One limitation of the Delphi method is that many members of the panel may have no prior knowledge of a particular intervention and thus rate it as ineffective, with the result that its overall mean effectiveness rating is reduced. It is possible many of the ratings assigned by the Delphi study are lower than they would be if a panel of experts on that intervention were rating it.

A further limitation is that the scope of the environmental scan is unclear. While a very wide range of international stakeholders and experts were contacted, their participation was anonymous and it was not clear whether there were a substantial number of participants globally. However, offline communication shows the study was successful in obtaining responses from the Netherlands, the United Kingdom, the US and Canada, as well as Australia. To address this limitation, it would be ideal to have an online register of these interventions and their evidence base which could be updated when necessary. Alternatively, this exercise could be conducted regularly—probably triennially.

### **Mandatory vs voluntary interventions**

A range of the research reviewed in this study highlighted the difficulties and benefits associated with voluntary measures as compared with mandatory ones (Chikritzhs et al. 2007). This has been identified as an issue with measures ranging from restricting the advertising of alcohol implementing ID scanners and CCTV in nightclubs. A recent large-scale study of licensing interventions specifically compared a system of voluntary measures in Geelong to a system of mandatory measures in Newcastle (Miller et al. 2012); it found patrons in Newcastle were more likely to report refusal of service when intoxicated in the past 12 months. Further, observational data showed that RSA practice was significantly more common in Newcastle, where such practices were mandated across the board. In contrast, many Geelong venues were not signatories to a liquor accord and operated outside any voluntary harm-reduction schemes.

The evidence shows that mandatory measures, where possible, are more likely to be effective than voluntary systems. Further, while voluntary measures allow poor practice to continue while penalising good operators, mandatory systems provide a predictable operating environment for businesses.

### **Enforcement**

This review repeatedly found a need for effective enforcement of restrictions. There is abundant evidence that enforcement is a crucial element in the range of factors needed for successful implementation of measures (Babor et al. 2010; Chikritzhs et al. 2007; Hughes et al. 2011). Without such enforcement interventions typically have limited impact, or fail. Enforcing restrictions is left almost entirely to police, although the use of other agents in detection (eg liquor-licensing authorities) is a more effective and cost-effective approach. Restrictions often fall short of their full potential simply because there are too few police to enforce them. In these cases, alternative enforcement strategies should be considered (see the entry for ‘user pays’ policing intervention in Table 4). The appointment of specially trained liquor-licensing officers to monitor server behaviour and report to and assist the police in charging licensees (or others who breach restrictions) might be considered. With the cooperation of state, territory and Commonwealth governments, hypothecated alcohol taxes or liquor-licence fees could fund the enforcement of restrictions; it is likely this would receive public support (Tobin et al. 2010).

It is not enough, however, simply to enforce. The penalties imposed must be substantial enough to outweigh any financial, personal or social gains to be made in violating the restrictions. The threat of considerable financial loss, when well publicised, is in itself a significant deterrent to those who might otherwise act irresponsibly (Chikritzhs et al. 2007).

### **Cost-effectiveness**

Another key element of the interventions reviewed is their cost-effectiveness. There is almost no information on how cost-effective most interventions are, despite governments around the world spending substantial amounts on such interventions. There is also a lack of research on the costs associated with some elements of alcohol sales and consumption. For example, although Australia has good estimates of the direct costs of alcohol (Collins and Lapsley 2008) and the costs of alcohol harms to others (Laslett et al. 2010), there is little evidence of the costs associated with night-time entertainment precincts in terms of harms or police and emergency services responses—and how this might benefit the community in terms of employment and associated trade.

However, some key principles do apply. Preventing alcohol-related harms is far more efficient and far more desirable than trying to treat or ameliorate their consequences. Interventions, such as the restriction of trading hours in Newcastle, come at almost no cost to the local community; that intervention has been found to have prevented almost 5,000 assaults (Kypri et al. 2014) and 340 emergency department attendances per year (Miller et al. 2014a). Further, previous general prevention-education trials in schools have also demonstrated some economic benefit in preventing subsequent substance use and antisocial behaviour (Kuklinski et al. 2012). The benefits of these types of preventative interventions need to be compared to those of interventions such as intensive policing which, while effective, have substantial budgetary implications for state and federal governments.

## Conclusions

This study identifies a large number of interventions for the reduction of alcohol-related harm, and the majority of these have very limited evidence bases. This is concerning, as resources are potentially spread too broadly; resulting in a lack of capability, and thus evidence, for promising interventions. A further concern is that the bulk of interventions have been developed to reduce alcohol-related harms, and as a result fewer supply- and demand-reduction strategies exist. Such supply- and demand-reduction strategies, if effective, may have a flow-on harm-reduction effect such that, if alcohol supply and demand are reduced, there is less alcohol-related harm as a result. In addition, while the most effective solutions act at the societal level there is—in the absence of action by state and federal governments—a clear demand for more interventions at the community, social, family or individual level, even where these may not have the same impact.

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