

REVIEW

Warnings on alcohol containers and advertisements: International experience and evidence on effects

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Abstract

Issues. In light of possible introduction of alcohol warning labels in Australia and New Zealand, this paper discusses the international experience with and evidence of effects of alcohol warning labels. **Approach.** The report describes international experience with providing information and warnings concerning the promotion or sale of alcoholic beverages, and considers the evidence on the effects of such information and warnings. The experience with and evaluations of the effects of tobacco warning labels are also considered. **Key Findings.** The most methodologically sound evaluations of alcohol warning labels are based on the US experience. Although these evaluations find little evidence that the introduction of the warning label in the USA had an impact on drinking behaviour, there is evidence that they led to an increase in awareness of the message they contained. In contrast, evaluations of tobacco warning labels find clear evidence of effects on behaviour. **Implications.** There is a need and opportunity for a rigorous evaluation of the impacts of introducing alcohol warning labels to add to the published work on their effectiveness. The experience with tobacco labels might guide the way for more effective alcohol warning labels. **Conclusion.** Alcohol warning labels are an increasingly popular alcohol policy initiative. It is clear that warning labels can be ineffective, but the tobacco experience suggests that effective warning labels are possible. Any introduction of alcohol warning labels should be evaluated in terms of effects on attitudes and behaviour. [Wilkinson C, Room R. Warnings on alcohol containers and advertisements: International experience and evidence on effects. *Drug Alcohol Rev* 2009;28:426–435]

Key words: alcohol policy, alcohol warning, evidence, effect, tobacco warning.

Introduction

Food Standards Australia and New Zealand (FSANZ) is the regulatory body responsible for content and labelling of food in both countries, and is the authority responsible for the issue of alcohol warning labels. As discussed below, FSANZ is currently considering mandating warning labels on alcoholic beverage containers. In light of this, the present paper considers the international experience with notices and warnings concerning alcohol beverages, whether on alcoholic beverage containers, in places where alcohol is sold, or in alcohol advertisements. Also brought into consideration is the experience with warning labels on tobacco products.

It should be noted that we are concerned here only with notices and warnings concerning alcoholic beverages

themselves and their inherent qualities. Thus, for instance, signs prohibiting drinking in a specific place or warnings concerning behaviour while drinking are outside the present frame of reference.

Product labels and warnings can serve a number of purposes, including providing information about the product to the consumer, enticing the consumer to buy the product and warning consumers of dangers and health risks from the product [1]. These different purposes serve different interests. For instance, there is a public health interest in describing the health risks, whereas the producer and seller will prefer to present information on the attractions of the product. As governments have mixed interests concerning the sale of alcohol—interests in economic development and fiscal revenues as well as in public health and order [2], it is

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common for governments to be regulating labelling in the interests of reducing harm and at the same time acting on labelling in ways that are seen as helping a local industry.

One argument in common between the various interests debating labels and warnings is the idea that the state should be acting in the best interests of the consumer. In the ideology of consumer capitalism, consumers with full information will act in their own best interest. This provides a strong argument for providing the consumer with what is seen as 'full information' on the product in conjunction with the purchase of the product. In line with this, in the current era it is rare to find an argument concerning labelling and warnings which opposes the principle of informing the consumer. Rather, the arguments tend to be concerned with such issues as what it is most important for the consumer to know, how strong the evidential backup is for a statement, or whether and how much effect a warning label will have.

The issue of the effectiveness of warning labels, considered later in this paper, thus often becomes important in the policy debate. It is tackled in the published work in terms of measurable effects at the individual level over a relatively short term—a matter of months or at most a few years. This framing is conventional for policy impact studies, in part because the policy process is geared primarily to shorter-term outcomes, and in part because it is much more difficult to attribute changes in the longer term to the effects of a specific policy change.

However, there is an often-unspoken dimension in the argument which concerns the longer term. Apart from the issue of any short-term effect on behaviour, to require that a substance be sold with a warning on the container is a symbolic statement concerning the nature of the substance. Along these lines, an early initiative of the state into consumer protection was 19th-century legislation requiring clear labelling of poisons. Although the multiplication of state requirements on labelling of consumer products has taken some of the sting out of a labelling requirement, a warning label is still a statement that the product labelled is a special commodity, rather than an ordinary commodity. From this perspective, the issue of warning labels inherently involves 'the broadest of the cultural choices' concerning alcohol: 'whether it is to be regarded as a consumer commodity like any other, or whether it is to be singled out from ordinary commerce for special treatment' ([3], p. 96).

If the criterion for success of a warning label requirement is this broader question of shifting the place of alcohol in the culture, this is a longer-term issue, and the appropriate time-period for measuring impact would be longer than in the evaluation studies. It could

plausibly be argued that where relatively strict warning label regulations have been used, there has indeed been a shift towards regarding alcohol as more problematic and heavier drinking as less 'normalized'. However, the direction of the causal arrows remains thoroughly in question, and would be difficult to determine with methods currently available.

From this perspective, it remains highly relevant, of course, to ask the question, what do the evaluation studies show? But from the perspective of the cultural position of alcohol, the results of the available evaluation studies do not necessarily determine the issue of the social utility of warning labels.

Types and locations of informational and warning labels concerning alcohol

As an initial step, we consider the variety of types of informational and warning labels and signs which presently exist, and also the variations in their form or location.

The information in the label or sign can take several forms:

- 1 Information about the contents or composition of the beverage. On a container of an alcoholic beverage, this can include:
 - a The amount of the beverage, usually by volume, for instance in millilitres.
 - b The proportion of the beverage which is alcohol. Typically, this is stated as a percentage by volume.
 - c Nutritional information about the contents. For instance, this might include the carbohydrate content, the number of calories or kilojoules in a standard amount, etc.
 - d A listing of ingredients, usually in order by their proportion in the beverage's composition. In the case of wine, this often includes listing of the wine grapes from which the beverage is fermented.
 - e Statements relating to qualities of the ingredients or production method, for example that the beer is made from pure water from a named spring. In the past, these included positive health claims for the beverage.

Typically, although there is considerable variation, government regulations require that (a) and (b) are stated on the label of the alcoholic beverage container. However, there have been some instances where government regulations forbid such information. For instance, until a few years ago the alcohol content could not be stated on the label of beer in the USA, on the theory that stating it would encourage customers to purchase stronger beers [4]. Governments typically require that statements in category (e) be truthful, but might or might not otherwise regulate them.

Alcoholic beverages are often exempt from the requirements to list nutritional information (category c) which apply to other foodstuffs. For some alcoholic beverages, this is often true also for category (d). For instance, it is not required in the USA that the beer labels disclose which grain it is brewed from. For wine and increasingly also for distilled beverages, there are increasingly complex rules concerning labelling in terms of the district of origin of the grapes or grain and the place and means of production, originally imposed at a national level but now backed up internationally by trade agreements and disputes. The wording of statements in categories (d) and (e) are of great commercial significance to the producers and distributors of the products.

Positive health claims in alcoholic beverage advertising and on beverage containers were common in the past; Guinness was 'good for you'. Positive health claims can still be found in advertising in developing countries [5], but are disallowed or discouraged in the USA and in most developed countries. The most recent attempt in the USA, when a winery requested permission to put a neck-hanger on its bottle about heart-protective effects of drinking, in part to counter the official warning label, was allowed, but with the requirement of so many caveats that it was essentially impractical (see below; [4]).

2 Health-oriented warnings, statements or claims.

These can take a number of forms.

- a Number of 'standard drinks' contained in the container. This is more or less an Australian specialty, not in force elsewhere. The idea behind it is that the confusing variety of container sizes and beverage strengths make it difficult for the consumer to know how much s/he is drinking. The idea of 'standard drinks' labelling was put forward by researchers and eventually adopted as a regulation in 1995 [6].
- b Advisory statements concerning specific non-alcohol ingredients. For instance, in the USA wine must carry a statement 'contains sulphites' if they are used in the winemaking, to warn customers allergic to sulphites. In Australia, pre-mixed drinks often include advisory statements about non-alcohol ingredients on the can, for instance, 'contains caffeine'.
- c Warning statements concerning the mode of use of the beverage, or concerning potential adverse health and other consequences of drinking. These are often in the form of informational statements, but could be considered warnings because they describe potential adverse consequences of use.

These have taken a number of forms:

- (i) Generalised statements about normative ways of using the product. Increasingly, such statements are voluntarily placed on the label by the producers. Diageo products in Australia, for instance, carry the statement on the label, 'True Aussies drink responsibly'. There are also some government requirements for such warnings. Thus in Mexico and several other countries, it is required that billboard advertising of alcoholic beverages include a small slogan, such as 'enjoy in moderation'.
- (ii) Warnings about one specific adverse effect of alcohol. In Yukon Territory in Canada, alcohol containers carry a warning about the dangers of drinking alcohol in pregnancy [7]. In California, as the result of a law passed by referendum requiring the disclosure of carcinogens and teratogens in products for sale, all stores selling alcohol beverages must post a warning sign in a prominent place. At first, in 1988 this covered only birth defects, but by 1989 it dealt also with cancer: 'Drinking Distilled Spirits, Beer, Coolers, Wine and Other Alcoholic Beverages May Increase Cancer Risk and, During Pregnancy, Can Cause Birth Defects' [8].
- (iii) Warnings about multiple adverse effects of alcohol. The prototype here is the warning label required on all alcoholic beverage containers sold in the USA after 1989: 'GOVERNMENT WARNING: (i) According to the Surgeon General, women should not drink alcoholic beverages during pregnancy because of the risk of birth defects. (ii) Consumption of alcoholic beverages impairs your ability to drive a car or operate machinery, and may cause health problems.'
- (iv) Rotating warning labels, each about a different adverse effect. The Swedish regulations on newspaper advertisements for alcohol beverages are an example of this. They require one of 11 different warning labels to be printed in bold black letters in an area comprising 1/8 of the space of the advertisement (The Swedish warnings, in translation, are: Alcohol can damage your health; Alcohol is dependence-producing; Alcohol can cause nerve and brain damage; Alcohol can cause damage to the liver and the pancreas; Alcohol can cause stroke and cancer; Every second driver who dies in a single-vehicle traffic crash is under the influence of alcohol; Half of all who drown have alcohol in their blood; Alcohol in connection with work increases the risk of injuries; Alcohol consumption during pregnancy can injure the child;

Children who are given alcohol at home drink to drunkenness more often than other children; To begin to drink at an early age increases the risk of alcohol problems [9].).

- 3 Locations and formats for alcohol warning signs. As already implied, information and warning labels can be posted and can be required in a number of formats and locations.
 - a Perhaps the most common location is on the alcoholic beverage container itself. This has the advantage of putting the message in front of the eyes of a majority of drinkers in most societies, and the more frequent drinkers more frequently. In contrast, as has been noted in the published work, the minority of drinkers who drink only in restaurants and bars might never see the warning label, as the customer is unlikely to handle the container for beer that is on tap or wine or spirits poured by the glass.
 - b Another location which has been specified is on a sign in a place where alcoholic beverages are sold, whether in the container or by the drink. The tradition of such warning posters was well established in temperance times: a 'Warning word against drinking spirits and drunkenness', signed by a famous physician, was ordered to be posted in every Swedish schoolroom in 1888; and French restaurants and cafés still must post somewhere accessible to customers a wordy sign, among other things specifying classes of beverages in order of their dangerousness. As of 1996, 16 US states and 15 localities in other states required the posting of warning signs wherever alcoholic beverages are sold [10].
 - c A third location is as part of alcoholic beverage advertising, whether on billboards, in newspapers or magazines, or in electronic media. An example is the Swedish requirement, already mentioned, for rotating warnings in conjunction with newspaper advertisements. A French court has recently ruled that the French warning which must accompany newspaper advertising, 'alcohol abuse is dangerous to your health', should also accompany an editorial article promoting the sale of alcoholic beverages [11].

Of the various types of informational and warning signs and labels, for only one type has there been any substantial gathering of international experience and evaluations studying effects—for warning labels on alcoholic beverage containers. We focus on this category in the remainder of this paper.

International experience with warning labels on alcoholic beverage containers

A number of countries have mandated health-related messages on alcoholic beverage containers. A 1997 report by the International Centre for Alcohol Policy, an alcohol-industry funded body, identified nine countries with some kind of mandated warning label [12]. Stockwell [13] identified a further eight countries which had since mandated the labels, and a number of other countries who were in the process of introducing them.

There is neither international consensus on the use of warning labels on alcoholic beverages nor consistency of format or wording, although there seems to be an international trend towards warnings specifically concerning pregnancy. The USA has required a health advisory label on alcohol containers since 1989, which as noted warns of the risks of drinking and driving, operating machinery and drinking while pregnant and other general health risks. Other countries prescribing warning labels for alcoholic beverages regarding pregnancy are Colombia and South Korea [13], and more recently France, Finland and South Africa [14]. In Japan, a health warning has been voluntarily used by some breweries about drinking during pregnancy [13]. The EU has recently decided not to require standard EU-wide legislation for alcoholic drinks to carry a warning label. Instead, EU member states have been urged to develop their own requirements with respect to warning labels on alcoholic beverages [14]. The UK has mandated a government health warning label, giving details of the alcohol unit content and the safe daily limits for consumption in men and women [15, 16].

In several countries, the warning label mandates include specific provisions to ensure the label's visibility. In Thailand, for example, the label must be printed in bold characters at least 2 mm high [13]. In France, the health message mandated in 2005 against drinking while pregnant appears as a pictogram, as well as in a statement format [14].

The issue of alcohol warning labels in Australia and New Zealand

Neither in Australia nor New Zealand are health-warning labels mandated. The *Australia New Zealand Food Standards Code*, the legal governing document managed by FSANZ, requires alcoholic beverages to be labelled with information on the level of alcohol content (percentage of alcohol by volume), and since 1995 also with the number of standard drinks this represents [17]. Neither in Australia nor New Zealand is the packaging of alcoholic beverages, unlike that of other beverages, required to display a list of ingredients or nutritional information. This exemption is hard to justify.

Table 1. Summary of Statement of Reasons for rejection of Application A359 and response from ALAC

Statement of reasons	Summary of ALAC response
Scientific evidence indicates that health advisory labels are not effective in changing behaviour of 'at-risk' groups	<ul style="list-style-type: none"> • Labelling on alcoholic beverage containers will contribute to an overarching strategy to address FASD. • There now seems to be two distinct profiles of 'at-risk' women, including middle class European women. • Many women report that they continue to drink because of misperceptions about how much alcohol intake is acceptable and how much harm it can cause.
Simple, accurate warning statements would be difficult to devise, given the complexity of the issues and the benefits of moderate consumption	<ul style="list-style-type: none"> • The current Application addresses a single issue for which there is clear evidence of potential harm, not a broad approach as suggested under Application A359. • The need for a balancing message about the possible health benefits of alcohol does not apply. The latest evidence shows there are no health benefits in drinking alcohol before middle age.
Alcohol consumption and alcohol-related harm are trending down in Australia and New Zealand	<ul style="list-style-type: none"> • The downward trend in alcohol consumption identified in 1999 has not been realised and the most current and credible research available shows that alcohol consumption in women of child bearing age has increased.
Public health strategies aimed at reducing alcohol-related harm are already implemented in Australia and New Zealand	<ul style="list-style-type: none"> • New Zealand and Australia have implemented drug strategies that tend to focus on reducing drink driving or underage drinking through health promotion initiatives, community action programs and social marketing campaigns. • Health advisory labels can be put into place quite quickly and cost effectively compared with other initiatives which will take some time and significant resources to develop and implement.
Alcohol is regarded as having health benefits when consumed at low to moderate levels	<ul style="list-style-type: none"> • This issue is not directly relevant to the Application (A576). A message advising of the potential dangers of drinking alcohol during pregnancy does not bring any particular responsibility to also provide information about the potential to gain health benefits. • Such an approach could undermine the benefits of the proposal. • Such benefits do not accrue to women of child-bearing age.
The available literature suggests that 'there was no evidence that light drinking by pregnant women harms the foetus	<ul style="list-style-type: none"> • A review of evidence available in 2004 supported the conclusion that alcohol consumption during pregnancy can have a direct harmful effect on a foetus, although it is not possible to specify exactly how much alcohol is required for this harm to occur. • Some studies suggest that even very light drinking can have an effect on foetal development.

ALAC, Alcohol Advisory Council of New Zealand; FASD, foetal alcohol spectrum disorder.

There have been two previous applications by Australian non-governmental organisations to FSANZ (then the Australia New Zealand Food Authority) for health advisory labels on alcohol containers (1996: Application A306; 1998 Application A359). The most recent application, lodged in 1998 by the Society without Alcohol Trauma, called for alcohol beverage labels to have the following warning statement 'This product contains alcohol. Alcohol is a dangerous drug.' The application was rejected by FSANZ in 1999, citing a number of reasons [18].

A new application has now been lodged by the Alcohol Advisory Council of New Zealand (ALAC). ALAC are requesting that the *Australia New Zealand Food Standards Code* be amended to require alcohol drinks to be labelled with a warning about the risks of consuming alcohol when planning to become pregnant and during pregnancy.

Food Standards Australia and New Zealand have released an Initial Assessment Report in regards to

ALAC's proposed Code and have sought comments from stakeholders on the issue. FSANZ is required to make a final decision within the coming 12 months. If FSANZ amends the code to require labelling, the debate will move to one of determining the content, wording and format of the label.

The application submitted by ALAC addresses directly a number of the reasons given by FSANZ for their previous rejection of the submission (see Table 1; Application A576; [14]).

Public support for informational and warning labels

The experience internationally has been that alcohol warning labels are a relatively popular idea with the public. A recent EU survey in 29 European countries found that on average 47% 'totally agreed' and 30% 'tended to agree' that warnings should be put 'on alcohol bottles and adverts with the purpose to warn

pregnant women and drivers of the dangers of drinking alcohol'. Agreement was lowest in Denmark, Finland and the Netherlands, but even here majorities were in favour. In Ireland 82% and in the UK 85% agreed with putting warnings on bottles and advertisements. Although current drinkers were less likely to favour the labels than abstainers, the difference was not great (75% vs. 83% on average; [19]).

Room *et al.* [20] explored the impact of the introduction of the US warning label on public support, comparing the USA and Ontario for the years 1989, 1990 and 1991. They found that support significantly increased after the introduction of the labels. A more recent US analysis [21] found warning labels to be the only US policy of 11 studied in six telephone surveys to have shown a steady and statistically significant increase in support over the period from 1989 (87%) to 2000 (94%).

Evidence suggests that alcohol informational labels are a fairly well-supported policy choice also among the Australian public. A recently published survey of university students found that more than three-quarters of those sampled would like ingredient and nutritional information displayed on alcoholic beverage packaging [22]. Support for labelling alcoholic containers with information from the National Drinking Guidelines was supported by a strong majority of respondents in the National Drug Strategy Household Surveys (e.g. 69.9% in 2004; [23]). A public opinion poll of Victorians conducted by the Roy Morgan organisation for the Salvation Army, found that 68% of those surveyed support the idea of all alcohol products, by law, carrying health warnings with phrases, such as 'Drinking alcohol regularly while pregnant can harm your unborn child' or 'Alcohol is a drug and it can be addictive'. Thirteen percent of respondents also told the interviewers that they would buy less alcohol if warnings were on products [24].

Studies of the effectiveness of warning labels

A number of reviews of the effectiveness of alcohol warning labels have been undertaken. The most recent comprehensive review is a report written by Stockwell [13], commissioned to inform parliamentary debate on alcohol warning labels.

Stockwell's report focuses largely on the findings of a series of before and after national surveys which were required by the US warning label legislation to evaluate the impact of the introduction of the warning labels in 1989. With funding from the US national alcohol problems research agency (National Institute on Alcohol Abuse and Alcoholism), a baseline national survey was carried out in 1989 and a further four national surveys conducted in 1990, 1991, 1993 and 1994. Comparison

surveys were also conducted in 1990, 1991, 1993 and 1994 in the control site of Ontario, Canada, where no warning labels were implemented. Stockwell identifies this series as the most methodologically sound evaluation of the impact of warning labels, as it was the only evaluation identified incorporating any kind of control series. As such, this report will stress some of the findings of this evaluation series according to awareness of the label, recall of the labels message and behaviours related to the label message.

By 1994 awareness of the label increased to 43% of the US respondents (excluding lifetime abstainers), compared with 30% in 1990. In all survey years awareness was greater among young people (61% of 18–29 year olds in 1994) and heavy drinkers (74% in 1994) than for the general US population [25]. The highest recall of the health warning message in the US 1994 survey was for the 'birth defects' message (80% of respondents who had seen the warnings were able to recall its message), followed by 59% for the operating heavy machinery and 47% recall of the drink driving message [25]. Recall of the general health message was not assessed. Percentage recall was significantly lower for two dummy health messages used as a check for affirmation bias.

In terms of behaviour, the results of Greenfield *et al.* [25] suggest that exposure to the warning label was associated with having conversations about both drunk driving and drinking during pregnancy. There was no evidence, however, that seeing the label was related to engaging in conversations about drinking and adverse health, the other warning message in the US label. In an analysis testing the effect of seeing versus not having seen the label, Greenfield *et al.* found a significant divergence over time in drinkers reporting limiting drinking because of health. Among a subsample of the survey, those who were current drinkers and drove, the authors found those seeing the label were significantly more likely to deliberately not drive after drinking.

Two other primary studies evaluating the US experience with warning labels are identified and summarised by Stockwell [13]. Unlike the studies conducted by Greenfield *et al.*, however, these study designs did not incorporate a control site, so changes in alcohol risk behaviours could have been influenced by a large number of uncontrolled variables. The first investigated the impact of the US warning labels on adolescents during the 5 years after their introduction, comparing measures of awareness, exposure, memory, beliefs, alcohol use and drinking and driving, before and after the warning was required [26]. Although the study found an increase in adolescent's awareness of the labels, there was no effect on alcohol-related behaviours. The second study evaluated the impacts on perceived risks and drinking behaviour of the messages on

4397 women who were black, pregnant and consecutive attendees at an antenatal clinic in Detroit [27]. This study found a significant increase in awareness and recall of the message. Although there was a small significant effect on reducing the alcohol consumption of those defined as low-risk drinkers, there was no evidence of changes in consumption for the more at-risk heavy drinkers [27].

Stockwell's report concludes that both reviews and primary studies of the effects of the US warning label experience, whether written by independent researchers or by those employed in the alcohol industry, conclude that alcohol warning labels have minimal to no impacts on drinking behaviour [13]. However, all of the reviews and most of the primary studies included point out that the introduction of health warning labels in the USA led to an increase in awareness of the message they contained. Stockwell summarises the additional conclusions drawn from the published work by health researchers:

Health researchers commenting on the studies have almost universally suggested that warning labels have the potential to contribute to positive outcomes as part of a larger range of more proven strategies, and especially if they are enhanced so as to be more noticeable, impactful and varied. These researchers have also been more likely to highlight (i) the high and increasing levels of public support for alcohol warning labels in the US since their introduction; (ii) evidence that the highest risk groups of drinkers (including young people, pregnant women, and heavy drinkers) are particularly likely to recall the messages; (iii) evidence that, especially early after their introduction, the labels prompted drinkers and high-risk drinkers to engage in more discussion about the risks of drinking alcohol; and (iv) evidence that recall of warning labels was associated with being less likely to report having engaged in drunk driving. Health researchers reviewing the literature are also more likely to emphasise the very low costs of implementing warning labels and the fact that no negative consequences have been demonstrated [13].

A contrasting experience: Tobacco warning labels

As noted above, the best-studied experience with alcohol warning labels is for the US label. This label is fixed rather than rotating, and has not changed since its introduction in 1989. It is a relatively lengthy message which is usually in small and hard-to-read print. The experience with tobacco warning labels offers a contrast with the alcohol experience, both because of the very

different form and presentation of cigarette labels today, and because of the contrast in the conclusions from the evaluated work.

Following the introduction of new health warnings and strengthened contents labelling of tobacco warning labels in 1995 in Australia, an evaluation found that relative to non-smokers, smokers showed an increased knowledge of the main constituents of tobacco smoke and identified significantly more disease groups [28]. The warnings 'encouraged some smokers to delay smoking or to smoke less of a cigarette'. A quasi-experimental study by the International Tobacco Control Policy Evaluation Survey, evaluating changes in perceptions and reactions to warnings when the EU countries were mandated to increase the size of warnings, found significant increases for a UK national sample—relative to samples drawn from Canada, Australia and the USA—in (i) salience and noticeability of the warnings; (ii) thinking about the health risks of smoking; and (iii) forgoing a cigarette because of the label [29].

Canada implemented pictorial warning labels in 2000, the first country to do so. The top 50% of each main panel of a cigarette package features one of 16 warnings. Each includes a photograph or other illustration, a marker word ('Warning') and a short summary statement. Inside each pack, one of 16 text messages provides additional information on the health risks of smoking, as well as cessation-related information [29].

In Australia, cigarette packages have required a pictorial warning label since 2006. With New Zealand, Australia requires the largest area of the tobacco pack to be covered with a warning label, 30% of the front and 90% of the back of the packs [30]. Seventeen nations (at April 2008; [31]) require pictorial warnings, a number of countries are currently considering implementing pictorial labels, and in the coming years this is likely to increase as countries change their labelling policies to meet the standards for cigarette health warning labels set out in the WHO Framework Convention on Tobacco Control. These standards require the labels to be rotating, large, clear, visible and legible; they should comprise 50% or more of the principal display areas and no less than 30% of the principal display areas, and might also be in the form of or include pictures [29].

Results from the International Tobacco Control evaluation also support the effects of pictorial labelling. At least one-quarter of respondents from all four countries reported that the package warnings had made them more likely to quit, although Canadian smokers were significantly more likely to report cessation benefits from the warnings than smokers in the other three countries that have text-only warnings [29]. Ferrence *et al.* [29] stress a number of factors which increase the

effectiveness of tobacco warning labels, including vivid messages which provoke an emotional reaction, specific unambiguous warnings rather than general messages, and warnings that are attributed to a specific source (e.g. in the USA the Surgeon General). Design factors increasing the salience of warnings are a larger size, positioning of the warning on the front rather than a side panel on the cigarette package, greater colour contrast of the message text compared with the background and use of pictures and graphics.

The tobacco experience with warning labels thus offers a sharp contrast with the experience so far with alcohol warning labels, and the tobacco published work offers some insights relevant to arguments concerning alcohol warning labels. For example, one of the reasons used to justify the rejection of the 1998 application to FSANZ was that alcohol education was too complicated to be reduced to simple messages on alcohol containers. Stockwell [32] points out that if health information were displayed on alcoholic beverage containers in the same proportions as are required on cigarette packages, much more information could be displayed. Furthermore, the tobacco experience suggests that a solution to the problem of complication is to split the message across a number of rotating warnings. Rotating warnings have the advantage that any particular one does not become too familiar and 'worn out'; Ferrence *et al.* [29] note that 'it is important . . . that warnings be revised on a regular basis'. A recent review of problems related to alcohol consumption by a WHO expert committee noted that it was the introduction of more graphic and larger cigarette warning labels, with rotating messages, which has affected behaviour [33].

It should, of course, be recognised that the tobacco experience cannot be simply transferred without alteration to the alcohol field. The tobacco warning labels have been implemented in the context of intense and persistent public health campaigns against tobacco smoking, and it is not easy to separate effects of the labels from effects of other contemporaneous interventions. In theory, at least, most cigarette smokers these days desire to quit, which is not true of most alcohol drinkers. The cultural position and politics of tobacco and alcohol differ; few among opinion leaders and the affluent these days are smokers, whereas most are drinkers. Nevertheless, the lesson of the published work on tobacco warnings is that the relative ineffectiveness found so far for alcohol warnings might be a reflection primarily of the flawed nature of the specific labelling tested.

Some conclusions about alcohol warning labels

1 There is considerable public support for alcohol warning labels in Australia and elsewhere, and

support seems to tend to increase after the labels are implemented.

- 2 Evaluations of the effect of alcohol warning labels are limited to the US experience with labels implemented in 1989. Although there is some limited evidence of effects on knowledge and attitudes, there is only slight evidence of any effects on drinking behaviour. In contrast to this, the tobacco labelling experience offers strong evidence that warning labels can be effective not only in increasing information and changing attitudes, but also in affecting behaviour.
- 3 Unlike current cigarette warnings, alcohol warning labels have been extremely limited in scope. To use the terms of Ferrence *et al.* [29], warnings are often 'vague and equivocal' rather than 'specific and unambiguous'. Alcohol warnings have not been presented 'in a vivid manner that evokes an emotional reaction'. The Swedish warning labels on advertisements seem to be the single example in the alcohol field of rotating warnings; otherwise a single warning has been used, which will not continue to catch attention. It is not surprising in these circumstances that no effectiveness in changing behaviour has been showed for alcohol warning labels.
- 4 The tobacco experience points the way to alcohol warning labels with a greater chance of effectiveness in changing behaviour. The warnings should be attention-getting, should occupy a considerable portion of the package surface, and should involve rotating and changing messages. Given the profile of problems related to drinking, the messages should address social as well as health and injury problems, and problems for others around the drinker as well for the drinker him/herself. A fixed warning concerning a single problem, for instance concerning the effects of alcohol on the foetus, also risks carrying the implication to the consumer that other problems from alcohol are negligible or less prevalent.
- 5 Given that for a considerable fraction of alcohol consumption the drinker does not see the package, there is a need to broaden the discussion of alcohol warnings beyond just the container. A requirement of warning posters and signs in establishments serving alcohol should be considered. A set of warning messages specified by public health authorities should be included on a rotating basis in alcohol advertisements and other promotional materials. Such messages, occupying a considerable fraction of the space or time in alcohol advertising and promotion, offer scope for effective counter-advertising. Warning messages on containers and elsewhere should be linked with messages in other prevention initiatives.

- 6 Public health analyses have made clear that alcohol is responsible for substantial health and social harm. Adding warning labels to alcohol containers has a longer-term social utility in helping to establish social understanding that alcohol is a special and hazardous commodity. This function of warning labels extends beyond the issue of the shorter-term effect in changing the behaviour of individual drinkers.
- 7 When and if labels are introduced in Australia and New Zealand, provision should be made for well-designed evaluations, particularly as the existing research published work is so heavily based on the experience with the US warning label. Resources and enough time should be provided before any labels are introduced for baseline measures to be taken. Including a control site (e.g. by implementing the changes in Australia for a year or two before doing so in NZ, or vice versa), would ensure more rigorous test of the effectiveness of warning labels. The potential interaction of the labels with other interventions or policy changes should also be taken into account in the evaluation study design. Changes in public support for alcohol warning labels should also be measured in the evaluations.

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