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Title: Are the Public Health Responsibility Deal alcohol pledges likely to improve public health? An evidence synthesis

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Abstract

Aims: The English Public Health Responsibility Deal (RD) is a public-private partnership involving voluntary pledges between industry, government and other actors in various areas including alcohol, and designed to improve public health. This paper systematically reviews the evidence underpinning four RD alcohol pledges.

Methods: We conducted a systematic review of reviews of the evidence underpinning interventions proposed in four RD alcohol pledges, namely alcohol labelling, tackling under-age alcohol sales, advertising and marketing alcohol, and alcohol unit reduction. In addition, we included relevant studies of interventions where these had not been covered by a recent review.

Results: We synthesised the evidence from fourteen reviews published between 2002 and 2013. Overall, alcohol labelling is likely to be of limited effect on consumption: alcohol unit content labels can help consumers assess the alcohol content of drinks, however, labels promoting drinking guidelines and pregnancy warning labels are unlikely to influence drinking behaviour. Responsible drinking messages are found to be ambiguous, and industry-funded alcohol prevention campaigns can promote drinking instead of dissuading consumption. Removing advertising near schools can contribute to reducing underage drinking, however community mobilisation and law enforcement are most effective. Finally reducing alcohol consumption is more likely to occur if there are incentives such as making lower strength alcohol products cheaper.

Conclusions: The most effective evidence-based strategies to reduce alcohol-related harm are not consistently reflected in the RD alcohol pledges. The evidence is clear that an alcohol control strategy should support effective interventions to make alcohol less available and more expensive.

Introduction

Excessive alcohol consumption is globally one of the largest risk factors for death and disease (1-5) and, as such, holds a prominent place on the health policy and research agenda of most governments.

Although voluntary agreements (6, 7) involving the alcohol and other industries have been established with the explicit aim of improving health behaviours and outcomes, their effectiveness has been questioned (8-19). Lessons learned in a range of countries (14, 20, 21) and from arenas such as tobacco and food (12, 15, 22-24) indicate that voluntary agreements may at first appear helpful but ultimately serve to stall meaningful government action in public health (24). In line with this evidence, in 2011 the UK the House of Lords' Science and Technology Select Committee reported its doubts about the effectiveness of voluntary agreements with commercial organisations due to inherent conflict of interest (25).

In March 2011, the Government in England launched the Public Health Responsibility Deal (RD) as a public-private partnership involving voluntary agreements by businesses and public bodies to make health-promoting changes in the areas of food, alcohol, physical activity, health at work and behaviour change (26). The RD aims to bring together those with an interest in these fields including government, academia, the corporate sector and voluntary organizations who can then commit to meet a range of pledges which aim to improve public health. The RD alcohol network is chaired by the Chief Executive of the Portman Group, a not-for-profit organisation funded by alcoholic drinks producers, and its core membership comprises twelve representatives of major alcohol companies and trade consortia, and three non-governmental organisations (27).

The RD sits within a range of policy initiatives proposed by the government in England to tackle excessive alcohol consumption (28), as reflected in the latest (2012) alcohol strategy (1). However, in England and beyond, a focus on self-regulation of the alcohol industry has attracted criticism on the grounds that this approach is rarely effective at reducing alcohol-related harms and risk behaviours (12, 29-36).

The RD is currently being evaluated in terms of its process and its likely impact on the health of the English population (19, 37). A linked paper reports on our study evaluating whether the RD alcohol pledges are likely to motivate action among the partners to the RD (38); the study finds that the majority of signatories are pledging actions to which they appear to have been already committed,

regardless of the RD. A small but influential group of alcohol producers and retailers reported taking measures to reduce alcohol units in the market available for consumption. However, where reported, these measures mainly involved launching and promoting new low alcohol products rather than removing units from existing products.

This paper assesses the evidence of effectiveness underpinning four individual RD alcohol pledges: alcohol labelling (pledge A1), tackling under-age alcohol sales (pledge A4), advertising and marketing alcohol (pledge A6) and alcohol unit reduction (pledge A8). Though there were eight RD alcohol pledges (Table 1) at the time of data collection (end 2013) (26) we focussed our analysis on these four because they cover much of the material proposed in the remaining pledges. When we reflected our selection of four alcohol pledges against the Nuffield Council on Bioethics's Ladder of Interventions (39), they covered a range of approaches, from providing information to consumers to reducing or elimination of people's choices.

Table 1. Interventions proposed under each alcohol pledge, matched against the intervention ladder

Alcohol pledges	Stated objectives	Interventions proposed in "How you can deliver this pledge" section of each pledge	Matched against Intervention Ladder(39)	Research questions formulated to inform the review
A1- Alcohol labelling	"We will ensure that over 80% of products on shelf (by December 2013) will have labels with clear unit content, NHS guidelines and a warning about drinking when pregnant."	Unit alcohol content;	Provide information	What is the evidence on the effectiveness of providing clear unit content, government guidelines, warning labels, and/or counter-advertising to influence consumers' knowledge / consumption of alcohol?
		Chief Medical Officers' daily guidelines for lower-risk consumption	Provide information	
		Pregnancy warning	Provide information	
		drinkaware.co.uk	Provide information	
		Responsibility statement	Provide information	
A2. Awareness of Alcohol Units in the On-trade	"We will provide simple and consistent information in the on-trade (e.g. pubs and clubs), to raise awareness of the unit content of alcoholic drinks, and we will also explore together with health bodies how messages around drinking guidelines and the associated health harms might be communicated."	Materials that can be used by on-trade premises to raise customer awareness about units.	Provide information	
		Industry will also explore whether and how further information can be included, such as calories, health harms, and drinking guidelines.	Provide information	
		Members can make the materials available on their own company websites.	Provide information	
A3. Awareness of Alcohol Units, Calories & other information in the Off-trade	"We will provide simple and consistent information as appropriate in the off-trade (supermarkets and off-licences) as well as other marketing channels (e.g. in-store magazines), to raise awareness of the units, calorie content of alcoholic drinks, NHS lower-risk drinking guidelines, and the health harms associated with exceeding the guidelines."	Raise customer awareness about units across both the on-trade and off-trade.	Provide information	
A4 Tackling under age alcohol sales	"We commit to ensuring effective action is taken in all premises to reduce and prevent under-age sales of alcohol (primarily through rigorous application of Challenge 21 and Challenge 25)."	Challenge 21 (applied in the on-trade) requires customers attempting to buy age-restricted products to prove their age if in the retailer's opinion they look under 21	Eliminate choice	What is the evidence on the effectiveness of age verification schemes in reducing under age alcohol sales?
		Challenge 25 (applied in the off-trade) require customers attempting to buy age-restricted products to prove their age if in the retailer's opinion they look under 25	Eliminate choice	
A5- Support for Drinkaware	"We commit to maintaining the levels of financial support and in-kind funding for Drinkaware and	Drinkaware will contact companies that sign up to discuss how they can deliver on this pledge.	Provide information	

Alcohol pledges	Stated objectives	Interventions proposed in "How you can deliver this pledge" section of each pledge	Matched against Intervention Ladder(39)	Research questions formulated to inform the review
	the "Why let the Good times go bad?" campaign as set out in the Memoranda of Understanding between Industry, Government and Drinkaware."	This includes members' financial and other support for Drinkaware campaigns		
A6- advertising and marketing alcohol	"We commit to further action on advertising and marketing, namely the development of a new sponsorship code requiring the promotion of responsible drinking, not putting alcohol adverts on outdoor poster sites within 100m of schools and adhering to the Drinkaware brand guidelines to ensure clear and consistent usage."	the promotion of responsible drinking	Provide information	What is the evidence on the effectiveness of alcohol education, 'responsible drinking' messages and banning alcohol adverts near schools on delaying the onset of drinking by young people / reducing alcohol consumption / improving knowledge?
		adverts near schools: not putting alcohol adverts on outdoor poster sites within 100m of schools	Guide choice through changing the default policy	
		adhering to the Drinkaware brand guidelines to ensure clear and consistent usage.	Provide information	
A7 Community Actions to Tackle Alcohol Harms	"In local communities we will provide support for schemes appropriate for local areas that wish to use them to address issues around social and health harms, and will act together to improve joined up working between such schemes operating in local areas as: Best Bar None and Pubwatch, which set standards for on-trade premises; Purple Flag which make awards to safe, consumer friendly areas; Community Alcohol Partnerships, which currently support local partnership working to address issues such as under-age sales and alcohol related crime, are to be extended to work with health and education partners in local Government; Business Improvement Districts, which can improve the local commercial environment"	Local alcohol partnerships for responsible and safe drinking initiatives, about safety and crime reduction	*Combination*	
A8 Alcohol unit reduction	"As part of action to reduce the number of people drinking above the guidelines, we have already signed up to a core commitment to "foster a culture of responsible drinking which will help people drink within guidelines. To support this we will remove 1bn units of alcohol sold annually from the market by December 2015 principally through	reducing the alcohol content of drinks, even by small changes of 0.1% ABV in a product	Restrict choice	What is the evidence on the effectiveness of interventions to reduce alcohol content of drinks and promote smaller alcohol measures on alcohol consumption?
		development of new lower alcohol products	Enable choice	
		Improving availability, better marketing of lower alcohol products in store and promotion of lower alcohol products	Enable choice	

Alcohol pledges	Stated objectives	Interventions proposed in "How you can deliver this pledge" section of each pledge	Matched against Intervention Ladder(39)	Research questions formulated to inform the review
	improving consumer choice of lower alcohol products."	On-trade premises and producers could also offer and promote smaller measures	Enable choice	
		On trade premises could reduce the promotion of larger measures, making smaller measures the default size	Guide choices through changing the default policy	

Sources: (26, 39)

Methods

We first considered the RD alcohol interventions (as proposed within each pledge) in the broader context of alcohol control actions against the strength of evidence informing them (8, 18, 40, 41). We then conducted a synthesis of reviews (42) specifically relevant to a selection of the RD alcohol pledges, following standard evidence synthesis methods (43), and informed by specific research questions (Table 1). We included both systematic and other non-systematic reviews published in any year or language and categorised them according to the strength of evidence they presented (Box 1).

Box 1. Categorisation of reviews according to the strength of evidence

Level 1= systematic reviews, defined as an exhaustive summary of the high quality literature on a particular topic,(44) typically involving an a priori comprehensive search strategy, with the goal of reducing bias by identifying, appraising, and synthesizing all relevant studies on a particular topic;(45)

Level 2= reviews with three core criteria; i.e. evidence of comprehensive search, clear selection (inclusion/exclusion) criteria and process of quality assessment of papers reviewed

Level 3= reviews not meeting the criteria of Level 2. This group is therefore weaker methodologically, but was taken to represent "suggestive evidence".

Reviews were included if they evaluated the effectiveness of the interventions in individuals or populations of any age group. The effectiveness of interventions was defined against two key outcomes: 1) reducing alcohol consumption; and 2) raising awareness or knowledge related to alcohol consumption behaviours. In addition, where there was no recent or relevant systematic review, we searched for individual studies of the effectiveness of the relevant intervention. That is, we included the latest relevant research where this had not been included in a recent review.

A standardised search strategy for systematic reviews (available from the authors) was developed and applied to the following databases, for publications to the end of 2013: the Centre for Reviews and Dissemination's Database of Abstracts of Reviews of Effects (DARE); PubMed; and the Database of Promoting Health Effectiveness Reviews (DoPHER). We also conducted an Internet search for unpublished systematic reviews. Data relevant to the research questions were

extracted from the selected reviews and studies. A narrative synthesis of the data was conducted, organised by pledge. The quality of each review was assessed using the Assessment of Multiple Systematic Reviews (AMSTAR) instrument (46, 47).

A panel of experts in alcohol policy (listed in the Acknowledgements) commented on the methods, coverage and completeness of the study, and interpretation of the findings, though the final interpretation was solely that of the research team.

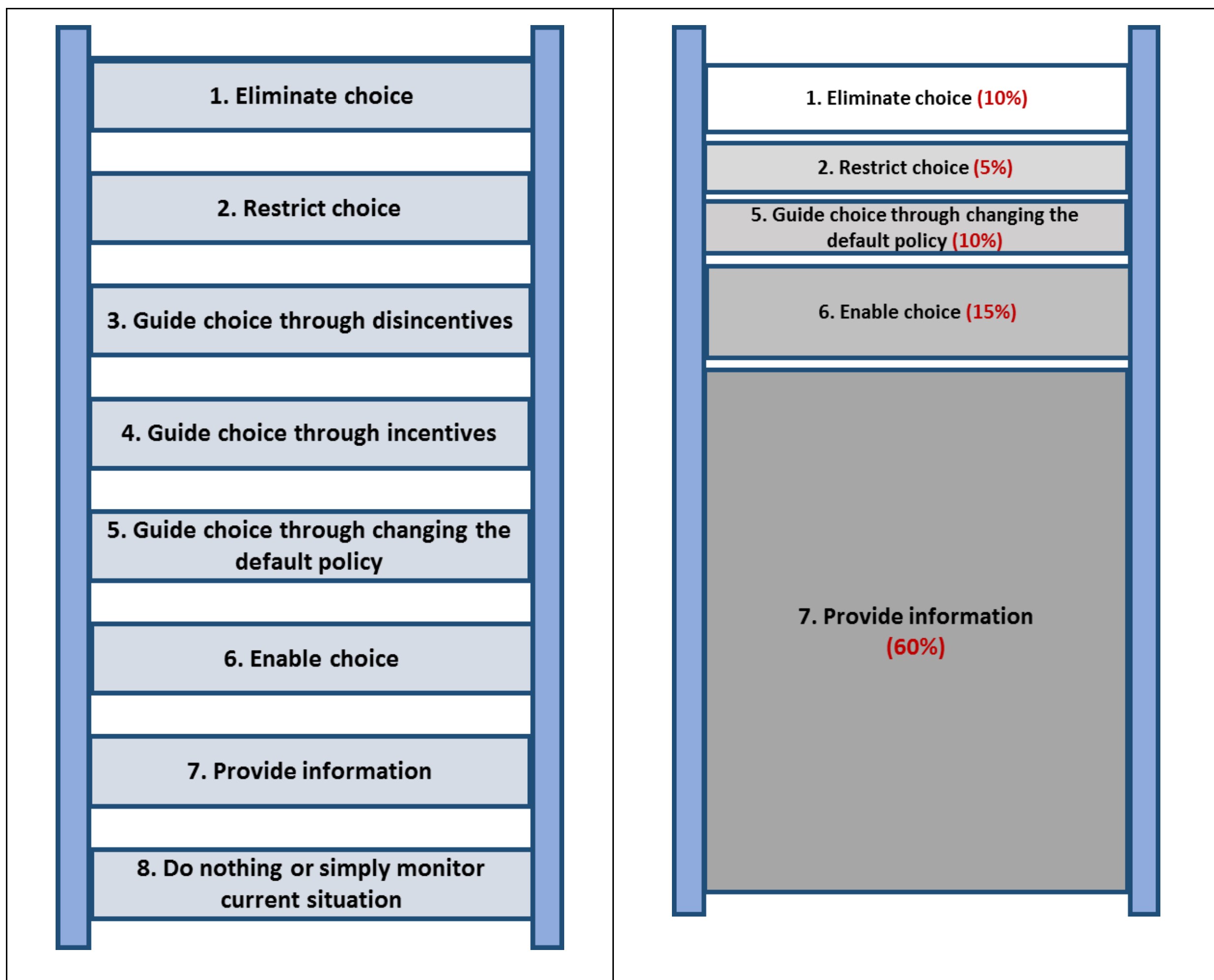
Results

Assessing the RD alcohol pledges against the Ladder of interventions

In order to get a sense of the nature of the interventions proposed in the RD pledges, we considered them in terms of the Ladder of Interventions (39) (Figure 1) which proposes a range of approaches to meet public health goals, from doing nothing, or providing information to consumers, to reducing or eliminating people's choices (48). The majority of RD alcohol interventions are situated towards the bottom of the Ladder, with 60% proposing provision of information to the consumer and 15% enabling choice (Figure 1).

Figure 1

a) Ladder of Interventions	b) Proportion of alcohol pledge interventions, in terms of the Ladder of Intervention



Sources: [8,39]

NB: the Ladder is not to scale

Putting the RD pledges in context: an overview of the broader evidence

The evidence on effective alcohol interventions (Table 2) consistently points to the effectiveness of comprehensive policies (49) to change the market environment, including banning alcohol advertising (17, 50-55), and making alcohol more expensive and less available (3, 41, 55-67). Table 2 shows that many of the strategies likely to be effective in reducing alcohol related harm are not consistently reflected in the RD alcohol pledges. Conversely, most RD alcohol pledges fall into the category of "probably ineffective" or "no/poor/inconclusive evidence", with the exception of reducing availability of alcohol to certain age groups by means of a minimum purchasing age.

Table 2. The range of alcohol policy options, evidence of their effectiveness in reducing consumption, and where the RD alcohol pledges are situated among them.

Policy option	Evidence of effect	RD alcohol pledges
Education and information		
School – based education	Probably effective [a]	
Parenting programmes	Effective	
Social marketing programmes	Probably effective	
Public information campaigns	**Probably ineffective**	**A1**
Counter-advertising	**No/poor/inconclusive evidence**	**A1, A5, A6**
Drinking guidelines	**No/poor/inconclusive evidence**	**A1, A2**
Health warnings	**Probably ineffective**	**A1**
Health sector response		
Brief advice	Probably effective	
Cognitive behavioural therapies for alcohol dependence	Effective	
Benzodiazepines for alcohol withdrawal	Effective	
Glutamate inhibitors for alcohol dependence	Effective	
Opiate antagonists for alcohol dependence	Effective	
Community programmes		
Media advocacy	Probably effective	
Community interventions	Probably effective [a]	
Workplace policies	Probably ineffective [a]	
Local Public private partnerships	**No/poor/inconclusive evidence**	**A7**
Drink-driving policies and counter-measures		
Introduction and/or reduction of alcohol concentration in the blood	Effective	
Sobriety checkpoints and unrestrictive (random) breath testing	Effective	
Restrictions on young or inexperienced drivers (e.g. lower concentrations of alcohol in blood for novice drivers	Probably effective	
Mandatory treatment	Probably effective	
Alcohol locks	Probably effective	
Designated driver and safe ride programmes	No/poor/inconclusive evidence	
Addressing the availability of alcohol		
Government monopoly of retail sales	Effective	
Minimum purchase age	**Effective**	**A4**
Restriction on density of outlets	Probably effective [b]	
Days and hours of sale	Effective	
Rationing	Effective	

Policy option	Evidence of effect	RD alcohol pledges
Different availability by alcohol strength	Effective	
Reformulating drinks to have lower alcohol content	**No/weak/inconclusive evidence**	**A8**
Developing lower alcohol products	**No/weak/inconclusive evidence**	**A8**
Restricting the marketing of alcohol beverages		
Legal restrictions on exposure	**Probably effective**	**A6**
Self-regulation of alcohol marketing	Ineffective	
Marketing lower alcohol products	**No/poor/inconclusive evidence**	**A8**
Promoting smaller measures	**No/poor/inconclusive evidence**	**A8**
Pricing policies		
General price increases	Probably effective [a, c]	
Alcohol taxes	Effective [a]	
Minimum unit price	Probably effective [c, d]	
Bans on price discounts and promotions	Probably effective [c]	
Differential price by beverage	Probably effective	
Special or additional taxation on alcopop and youth oriented beverages	Probably effective	
Harm reduction by modifying the drinking environment		
Training of bar staff, responsible serving practices, security staff in bars and safety-oriented design of the premise	**Inconclusive evidence**[e]	**A4**
Staff and management training to better manage aggression	Probably effective	
Reducing the public health effect of illegally and informally produced alcohol		
Informal and surrogate alcohols	Probably effective	
Strict tax labelling	Probably effective	

Source: evidence drawn from Anderson et al 2009 and Babor et al 2010 (8, 18) and further supported by additional studies for which reviews were not identified, and/or reviews published after 2010, including: [a]Evidence drawn from a review of systematic review by Martineau et al (2013); [b]Evidence drawn from a systematic review by Bryden et al (2012) (68); [c]Suggestive evidence drawn from a modelling study by Brennan et al (2008) (41); [d]Suggestive evidence drawn from recent studies (41, 61-64); [e] Evidence drawn from the CDC Community Guide (2014) (55)

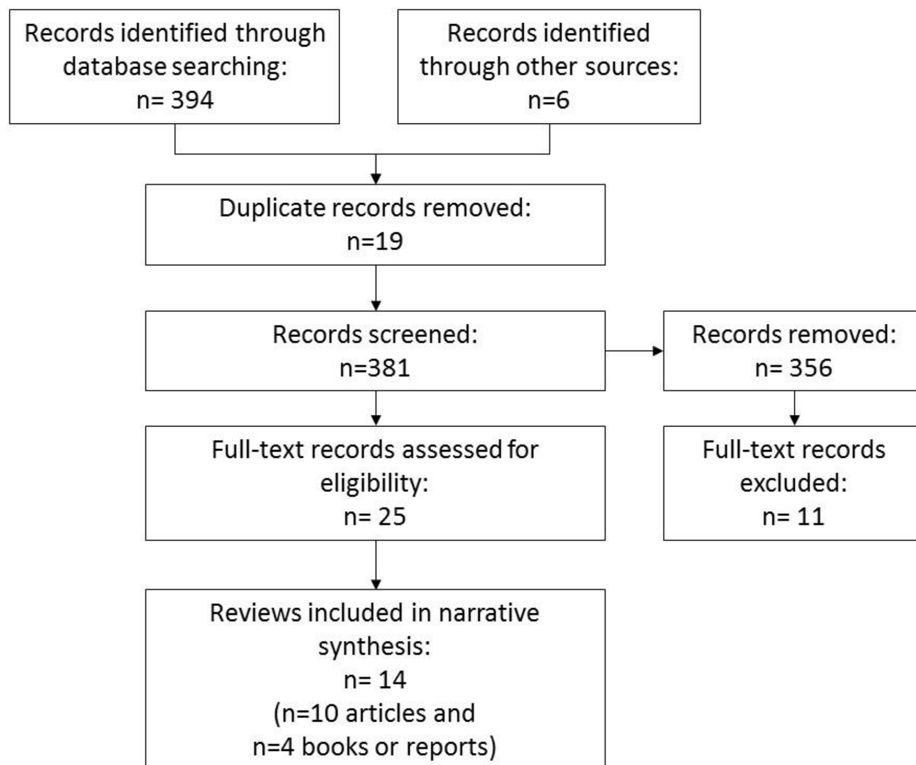
The evidence underpinning the RD alcohol pledges

Review characteristics and quality assessment

We identified 400 records (394 from database searches and 6 from other sources). After removing duplicates and screening titles and abstracts, 25 full text reviews were assessed for eligibility, of which 14 reviews published between 2002 and 2013 were identified for inclusion. Figure 2 shows

the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram of the review screening process (69). The reviews typically included international evidence from longitudinal and/or cross-sectional studies assessing the impact, or likely impact, of particular alcohol interventions on knowledge, awareness, intentions and behaviour. Eight reviews contributed relevant evidence for Pledge A1 (8, 70-77), four for A4 (8, 78-80), two for A6 (18, 51), and one for A8 (81). Ten of the 14 reviews were peer-reviewed, and included five systematic reviews (Level 1) (51, 73, 76, 78, 80), one Level 2 review (79), and four Level 3 reviews. The four other included reviews were reports of non-systematic reviews (71, 72, 75, 81) and a book reporting a systematic review of alcohol policy (8). The quality of reviews, assessed against AMSTAR domains (http://amstar.ca), ranged from a score of 1 to 9, with 3 reviews scoring 8 and 9, and the rest scoring 6 or below.

Figure 2. PRISMA flow diagram of review screening process



The synthesis of the evidence underpinning interventions proposed under four selected RD alcohol pledges is summarised in Table 3 and reported below.

Table 3. Evidence synthesis: alcohol interventions in pledges A1, A4, A6, and A8

Pledge (Intervention)	Authors & year	Review method level*	Direction of effect on consumption **	Direction of effect on awareness **	Quality score (AMSTAR)
A1 (Unit alcohol content)	Martin-Moreno et al (2013) (74)	3	↓	↓	2/11
	Kerr & Stockwell (2012) (70)	3	↓	↑	1/11
A1 (Warning label (including about pregnancy)	Martin-Moreno et al (2013) (74)	3	n/a	↑↑	2/11
	Scholes-Balog et al (2012) (73)	1	↓↓	↑	6/11
	Babor et al (2010) (8)	1	↔	↑	4/11
	Wilkinson et l (2009) (71, 82)	3	↔	↑	5/11
	ICAP (2009) (75)	3	↓↓	↑	0/11
A1 (Guidelines for lower risk consumption)	Babor et al (2010) (8)	1	↓	↑	4/11
	Kerr & Stockwell (2012) (70)	3	↑	↑	1/11
A1 and A6 (Responsibility statements)	Martin-Moreno et al (2013) (74)	3	↓	↓	2/11
	Babor et al (2010) (8)	1	↓	↓	4/11
	Barry & Goodson (2010) (76)	1	↔	↔	6/11
	Agostinelli (2002) (77)	3	↔	n/a	2/11
A4 (Enforcing minimum drinking age)	Jones et al 2011 (78)	1	↑↑	↑↑	8/11
	Babor et al (2010) (8)	1	↔	↔	4/11
	Spoth et al 2008 (79)	1	↑	↑	9/11
	Ker & Chinnock (2008) (80)	1	↔	↔	11/11
A6 (Placement of advertisements near schools)	Anderson et al (2009) (51)	1	↑↑	n/a	9/11
A6 (Adhering to Drinkaware brand guidelines)	Anderson et al (2009) (18)	1	↓↓	↓↓	4/11
A8 (Alcohol unit reduction)	Jones & Bellis 2012 (81)	3	↔	↔	1/11

* **Review levels**: First level= systematic reviews; Second level= reviews with three core criteria i.e. 1) evidence of comprehensive search; 2) clear selection (incl/excl) criteria; and 3) process of quality assessment of papers reviewed; Third level= reviews without the above criteria and therefore poor methodological approach but reporting "suggestive evidence".

** **Legend for direction of effect**: ↑↑= effective; ↑= probably effective; ↔= No/weak/inconclusive evidence; ↓= probably ineffective; ↓↓= ineffective

Alcohol labelling

Labelling falls under the broad category of education and persuasion programmes which are mainly about imparting information to consumers (8). The content of information campaigns

cannot easily challenge more persuasive campaigns to support drinking (e.g. alcohol advertising) (8).

Unit alcohol content

Labelling products with alcohol content in units aims to convey information about alcohol intake for drinkers (70). Two Level 3 reviews assessing its effectiveness in reducing alcohol consumption were identified (70, 74). Martin-Moreno et al (2013) (74) and Kerr & Stockwell (2012) (70) found that alcohol unit content labels can assist drinkers to accurately assess the alcohol of drinks. This was reflected in a recent Canadian study where customers reported being more likely to use unit alcohol labels to stay within drinking guidelines than to identify the cheapest way of getting the most alcohol (83). However, other studies report that unit content labels may be used as a scale to gauge how many drinks it takes to become inebriated and are therefore of limited use unless supported with measures to educate consumers on their meaning (84, 85).

Warning labels

Five reviews (two Level 1, three Level 3) assessing the effectiveness of warning labels in reducing alcohol consumption were identified (8, 72-75). Martin-Moreno et al (2013) (74) concluded that health warnings on alcohol containers can help raise awareness of the dangers of alcohol consumption during pregnancy. Scholes –Balog et al (2012) (73) agreed but found that they do little to change individual beliefs regarding the risks of alcohol use or influence alcohol consumption. Babor et al (2010) (8) and Wilkinson et al (2009) (72) supported the finding that warning labels generally have a limited impact on drinking and risk behaviour. Wilkinson et al (2009) also specifically reviewed studies on alcohol and pregnancy (71) finding that information about the risks of alcohol in pregnancy is likely to be noticed and recalled by women of childbearing age (86, 87) but with limited effect on consumption among pregnant women (88) and a differential effect according to the risk level of drinkers ("at risk" drinkers did not significantly change their alcohol consumption) (86, 87, 89-92). An industry-funded International Center for Alcohol Policies (ICAP, 2009) report agreed that health warning labels do not appear to influence drinking behaviour, including among pregnant women, but may provide reminders, information and education to consumers (75).

Guidelines for lower risk consumption

There are no systematic or other reviews on the effect of publicising drinking guidelines (18). Two reviews (one Level 1 and one Level 3) assessed the effectiveness of low risk drinking guidelines. Babor et al. (2010) concluded that disseminating guidelines may be considered appropriate because it provides information to consumers, but there is no evidence that guidelines have any effect on alcohol consumption (8). Kerr and Stockwell (2012) (70) highlight a 2007 Scottish workplace-based study where participants were asked about their drinking in relation to the UK Sensible Drinking daily guidelines; 20% reported using the guidelines to guide drinking (93).

Responsible drinking statements

Four reviews (two Level 1 and two Level 3) assessed the effectiveness of responsibility messages. Martin-Moreno et al (2013) (74) and Babor et al (2010) (8) concluded that the concept of responsible drinking is inherently subjective and should be tailored to individuals' specific risk profiles and target audiences. Barry & Goodson (2009) (76) note responsible drinking messages' strategically ambiguous nature, reporting that brewer-sponsored responsible drinking messages often had an underlying pro-drinking theme, assumed that the recipient of the message was drinking, and did not mention situations in which individuals should not drink. Agostinelli et al (2002) echoed these findings.

Tackling under age alcohol sales

Four systematic reviews (all Level 1) (8, 78-80) summarised the evidence on the effectiveness of age verification. Jones et al. (2011) (78) found that policy campaigns and other enforcement approaches of alcohol sales laws (such as underage sales checks) were shown to be largely effective at reducing alcohol use and associated harms. The clearest indication of effectiveness came from studies of multicomponent programmes which included community mobilisation and stricter enforcement of licensing laws (94-97). Spoth et al (2008) (79) found that interventions focusing on reducing sales to minors, increasing identification checks by vendors and reducing community tolerance of underage alcohol purchasing and consumption were relatively effective (98, 99); their review also included community mobilisation interventions and enforcement of laws.

Jones et al. (2011) (78) reported on server training interventions and found either no impact (100) or that trained servers did not often deliver the intervention (101, 102). Studies of server training found a minimal effect on patrons' alcohol consumption and drink driving behaviour, except

where server training was mandated (103). Babor et al. (2010) (8) concurred in their wide-ranging systematic review of alcohol policies finding that responsible beverage service (8) training is likely to have at best a modest effect on alcohol consumption and that this will depend on the nature of the programme and the consistency of its implementation. Ker & Chinnock (2008) (80) found no conclusive evidence that interventions in drinking establishments are effective in reducing patrons' alcohol consumption due to lack of compliance with interventions. As above, they suggested mandated interventions with incentives for compliance. No reviews specifically examined the effectiveness of "Challenge 21" or "Challenge 25", initiatives (applied in the on-trade and off-trade, respectively) requiring customers attempting to buy age-restricted products to prove their age. However, an illustrative case is a recent pilot initiative in selected pubs and shops in Shropshire (UK) which was conducted to check the effectiveness of their 'Challenge 25' policies; they found that a third of licensees failed to follow the policy (104).

Advertising and marketing alcohol

Alcohol advertisements near schools

There were no reviews on the effectiveness of removing advertising near schools, though Anderson et al. (2009) report consistent evidence that exposure to media and advertising promoting alcohol is associated with the likelihood that adolescents will start drinking, with increased drinking among baseline drinkers (51). One study (105) found outdoor adverts within 453m of schools to have an effect on intention to drink in the next month.

Adhering to the Drinkaware brand guidelines to ensure clear and consistent usage

Anderson et al. (2009) report that industry-funded-alcohol prevention campaigns (such as Drinkaware) tend to lead to positive views about alcohol and the alcohol industry (106, 107). Moss et al (2012) evaluated the effects of the Drinkaware 'Why let the good times go bad?' campaign, reporting at a conference (108) that Drinkaware posters seem to have the opposite result to that which is intended with participants drinking more when the Drinkaware posters were on display.

Alcohol unit reduction

Lower alcohol products

Jones & Bellis (2012) (81) (Level 3 review) examined whether the promotion of lower alcohol products can help reduce consumption and suggested that substitution (i.e. replacing higher

strength alcohol with lower alcohol alternatives, with the aim of reducing overall consumption) is more likely to occur if there are incentives, such as price differentials making lower strength products cheaper (81). Moreover, restricting the availability of high strength alcoholic beverages (109) alongside increases in the availability of lower alcohol alternatives through effective marketing and price incentives can increase consumers' choice of lower alcohol drinks (110). The UK Treasury (111) reported that consumers generally respond to changes in the price of alcohol and an increase in price will lead to lower consumption; however, low consumer demand for lower alcohol alternatives limits the scope of taxation as a means of encouraging the production of these alternatives. Thus there is scope for promoting lower alcohol content drinks alongside price-based interventions.

Promotion of smaller measures in the on-trade

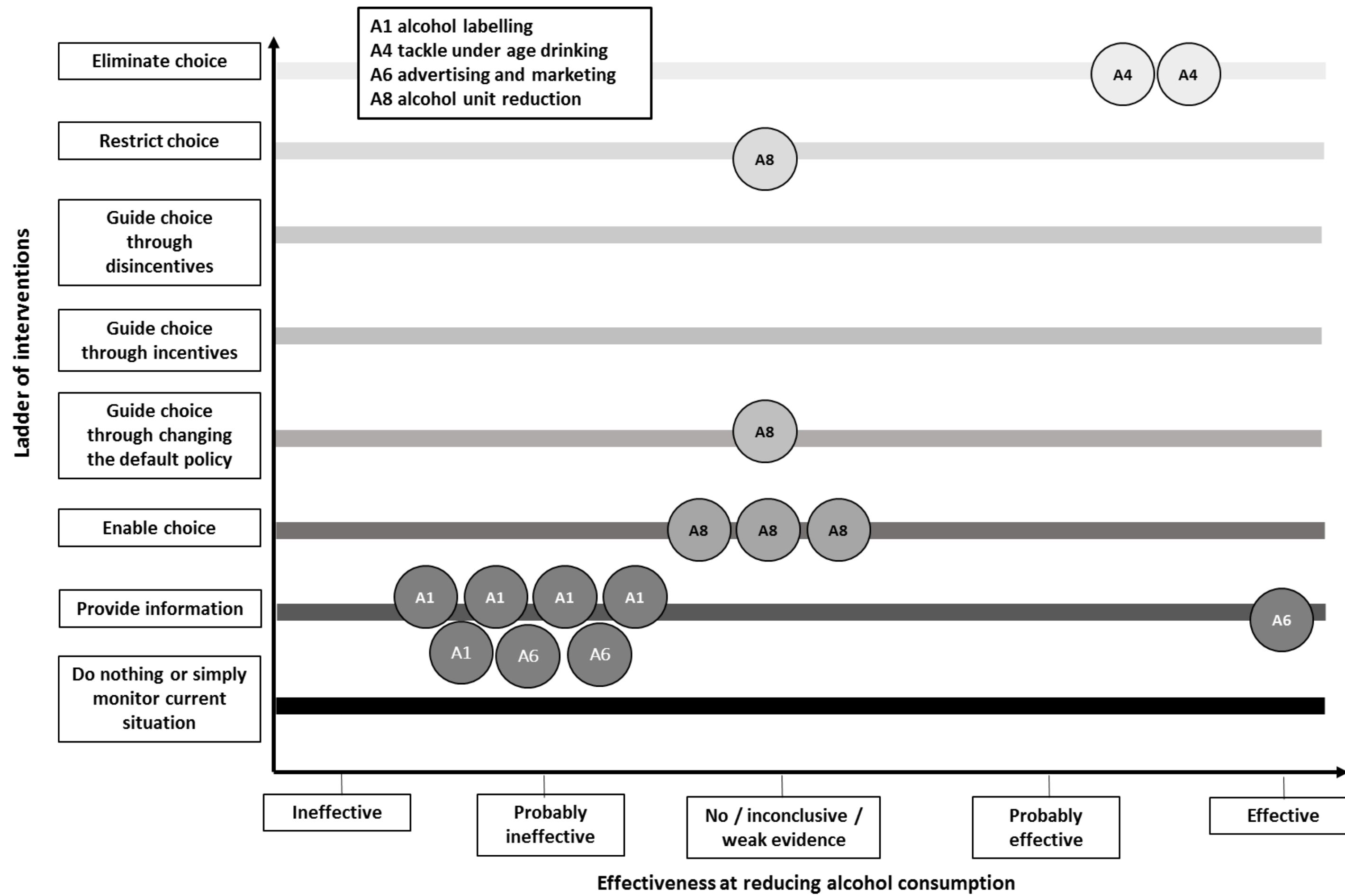
No systematic reviews on the promotion of smaller measures in the on-trade were identified. However, an experiment by Kerr et al. (2009) found that the mean ethanol content of drinks served in a range of drinking establishments was found to be significantly greater when the drinks were served in larger glass types compared to smaller options (112).

Discussion

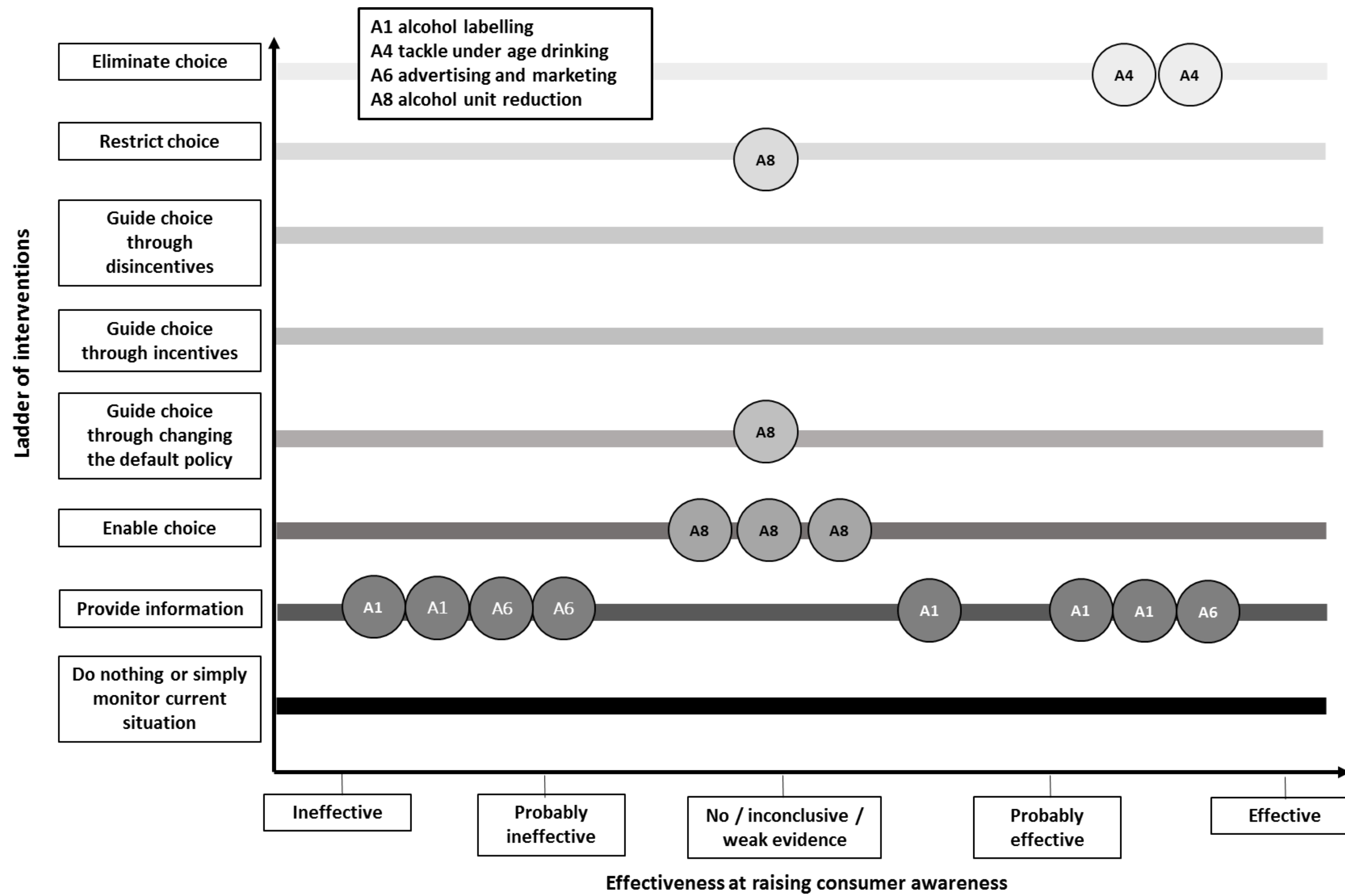
The majority of the RD alcohol pledges propose interventions that favour information and communication, and overall are probably ineffective at reducing alcohol consumption. Though there is potential for the RD alcohol pledges to contribute to improving consumers' knowledge and awareness (Fig 3), the literature suggests that this does not generally translate into positive behavioural change (8, 113). Individuals also require skills, resources and motivation to change their behaviour, and information provision should be coupled with other effective interventions.

Figure 3. Proportion of alcohol pledge interventions, in terms of the Ladder of Interventions and their effectiveness at:

a) reducing alcohol consumption



b) raising consumer awareness about alcohol consumption



The evidence suggests that the RD pledge to reduce the alcohol content of drinks is promising if it is implemented. However, understanding the balance of reformulated products against new products (which could potentially increase the total of alcohol products on the market, thereby maintaining consumption) will be crucial (114). Evidence suggests that replacing (rather than adding to) higher strength alcohol products with lower alcohol alternatives is more likely to occur if proper incentives, such as price differentials making lower strength products cheaper (81), and restricting the availability of higher strength alcoholic beverages (109), are in place to increase consumers' choice of lower alcohol drinks (110).

Reviewing literature reviews is methodologically challenging (42). Though this review includes grey literature, there may be unpublished but completed reviews we did not locate. Our assessment of the potential effectiveness of RD pledges may also represent an over-estimate, because we have assumed that any pledge would be implemented to a similar standard as those similar interventions which had been evaluated in previous research studies. As shown in our separate analysis of the RD delivery plans (38), we know that this is unlikely to be the case. This means that our assessment of the potential effectiveness of RD pledges is, if anything, an overestimate.

In summary the most effective strategies to reduce alcohol-related harm are not consistently reflected in the RD alcohol pledges. If fully implemented, the pledges may potentially be effective in improving consumers' knowledge and awareness, but they are unlikely to affect consumption. This suggests that in their present form, they are unlikely to have any significant positive impact on population health in England. The evidence is clear that in order for alcohol-related public health to meaningfully improve, an alcohol control strategy should support effective interventions, notably those which change the market environment to make alcohol less available and more expensive.

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