



Public Health
England

Protecting and improving the nation's health

The Public Health Burden of Alcohol and the Effectiveness and Cost-Effectiveness of Alcohol Control Policies

Annexes

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

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Annexe 1

Methodology

Design

The present study used a ‘rapid review methodology’ to search and evaluate published evidence used by universities, UK government departments, and allied agencies. Definitions, methods and applications of rapid reviews vary from traditional systematic review methods by utilising more stringent search strategies with stricter eligibility criteria centring around year of publication, search databases, language, and sources beyond electronic searches (1,2). Rapid reviews involve the same level of rigour employed for a systematic review, but by agreeing sharply focused search parameters and limiting the searches and databases used, the process can be accelerated to deliver robust results within a limited time or resource framework (2).

Procedure

The review was implemented in the following stages: harm and policy identification, literature search and evidence selection, data extraction, study quality rating, and synthesis of evidence.

Policy and harm identification

Four main areas of alcohol-related harm and seven broad policy areas were identified (Tables 1a and 1b). These were informed by previous expert reviews (3–8) and guided discussion with an expert advisory group setup at the outset of this work (Annexe 2).

Table 1a: Identified alcohol-related harms included in this review

Alcohol-related harms	Specific harms
Alcohol consumption and health	<ol style="list-style-type: none"> 1. Alcohol-related hospital admissions 2. Alcohol-related mortality 3. Cancer 4. Liver cancer 5. The cardiovascular system: hypertension, haemorrhagic and ischemic stroke, heart disease, atrial fibrillation 6. Pregnancy 7. The central nervous system: alcoholic neuropathy, epilepsy 8. Brain damage: Wernicke-Korsakoff's syndrome, dementia 9. Injury 10. Unsafe sex 11. Mental health and wellbeing: alcohol use disorders, depression and anxiety, bipolar disorder, suicide 12. Other health correlates: diabetes, pancreatitis, pneumonia, tuberculosis, overweight and obesity, psoriasis
Alcohol and the family	<ol style="list-style-type: none"> 1. The impact of parental consumption and attitudes on children 2. Parental provision of alcohol to children and adolescents 3. Relationship breakdown 4. Adverse childhood experiences 5. Alcohol consumption and intimate partner violence
Alcohol and employment	<ol style="list-style-type: none"> 1. The cost of alcohol to the workplace 2. Sick leave due to harmful alcohol consumption 3. Alcohol, job strain and long working hours 4. Alcohol and unemployment
Crime and disorder	<ol style="list-style-type: none"> 1. The types of crime associated with alcohol 2. Alcohol-related assaults caused by glass and bottles 3. The prevalence of alcohol use disorders in the prison population 4. Perceptions of crime in the night-time economy 5. Alcohol consumption and sexual assault

Table 1b: Identified alcohol control policies included in this review

Alcohol control and demand reduction policies	Specific policy
Taxation and price regulation	<ol style="list-style-type: none"> 1. Taxation 2. Minimum pricing 3. The relative and combined impact of taxation and other pricing policies 4. Banning the sales of alcohol below the cost of taxation 5. Bans or restrictions on price promotions
Regulating marketing	<ol style="list-style-type: none"> 1. Advertising bans 2. Industry self-regulation of alcohol marketing 3. Specific actions to protect children from exposure to alcohol marketing
Regulating availability	<ol style="list-style-type: none"> 1. Density of alcohol outlets 2. Hours and days of sale 3. The responsibility deal pledge to <i>“remove 1bn units of alcohol sold annually from the market by”...“improving consumer choice of lower alcohol products”</i>
Providing information and education	<ol style="list-style-type: none"> 1. Mass media campaigns which aim to change alcohol consumption 2. Social marketing approaches 3. Social norm approaches 4. Alcohol education programmes 5. Labelling of alcoholic beverages
Managing the drinking environment	<ol style="list-style-type: none"> 1. Multicomponent community programmes 2. Server training 3. Server liability 4. Replacing glassware with safer alternatives 5. Voluntary removal of the sale of high strength alcohol 6. Policing and enforcement approaches 7. Public drinking bans
Reducing drink-driving	<ol style="list-style-type: none"> 1. Blood alcohol concentration limits 2. Breath testing 3. Graduated driver licensing 4. Immediate licence revocation 5. Alcohol ignition interlock devices 6. Preventive education programmes targeting drink-driving offenders 7. Designated driver programmes 8. Mass media campaigns to prevent drink driving
Brief interventions and treatment	<ol style="list-style-type: none"> 1. Identification and brief advice in primary health care 2. Identification and brief advice in emergency departments 3. Identification and brief advice in criminal justice settings 4. Electronic identification and brief advice 5. Identification and brief advice in adolescents 6. Identification and brief advice in sexual health clinics 7. Identification and brief advice in pharmacies 8. Identification and brief advice in the workplace 9. Psychosocial or psychological treatment for alcohol dependence 10. Pharmacological for alcohol dependence

Search strategy

Electronic databases (MEDLINE; Pubmed) were searched for studies identifying alcohol-related harms or the effectiveness and cost-effectiveness of alcohol control policies for reducing alcohol consumption or harm. Supplementary search strategies included hand searches of references from key publications and input from an expert advisory group (Annexe 2). Inclusion periods ranged from 2000 to 2016.

Keywords and phrases used in the literature search were selected in an attempt to balance sensitivity with specificity in line with the rapid review approach. In practice, this meant the search terms used were more focused than those typically used in a full systematic review. An overview of the search terms used in this review can be seen in Annexe 7.

Study selection

Papers identified from the literature search were preferentially selected according to a hierarchy of evidence (Figure 1). This was operationalised as selecting the most recent review, including meta-analyses, and eligible studies published after this review. Where two or more reviews existed, preferential selection was given to higher-quality reviews, or those with most relevance to the English context.

Higher quality reviews were defined as those which included studies which sat higher up the evidence hierarchy. Relevance to the English context was hierarchical, selecting first studies from England, Great Britain or the UK, then Western Europe, followed by the rest of Europe, and other OECD countries.

If reviews evaluated different outcomes, or there were a large number of high-quality reviews, all were included. In the case of areas where no reviews were identified, evidence was drawn only from single studies in accordance with the eligibility criteria with preferential selection given to studies higher up the evidence hierarchy, and relevance to the English context (as defined above).

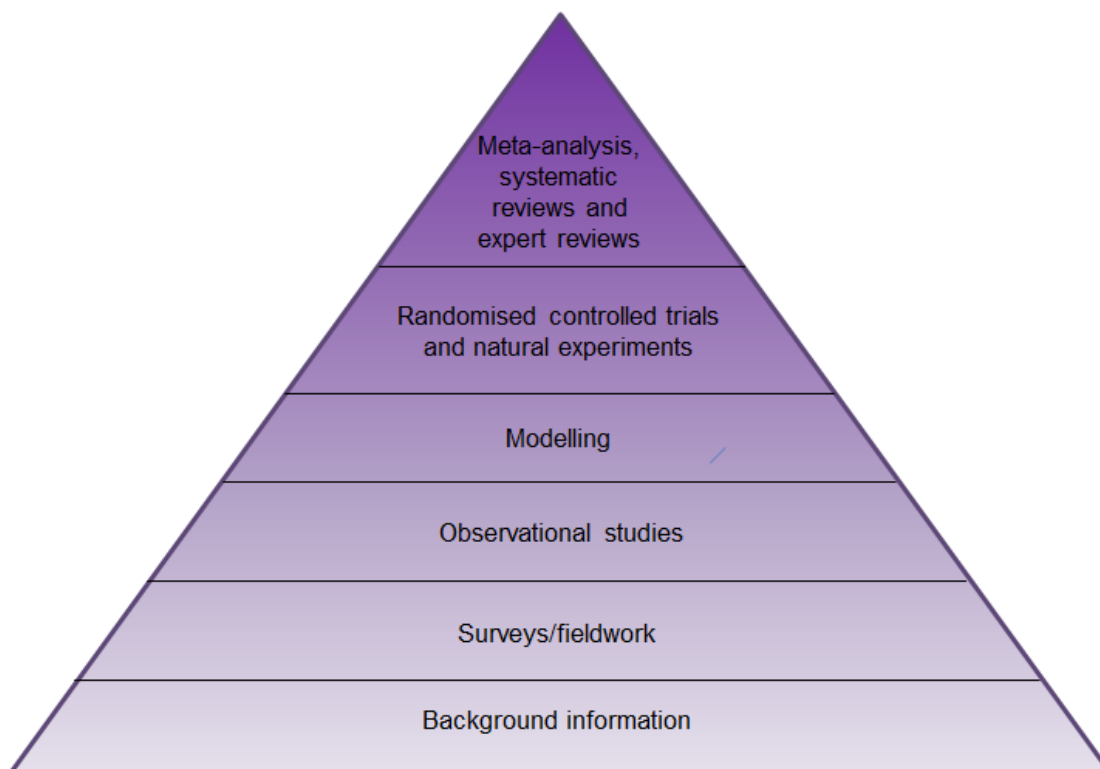
Some studies were considered outside the scope of this time-limited review such as papers which evaluated narrow outcomes. The exclusion of these papers was agreed by the project team on a case-by-case basis. Abstracts were filtered against the following inclusion criteria: study had a stated aim to identify and/or measure alcohol-related harm, be predominantly conducted in an OECD country, and for studies evaluating policies, the research had to evaluate interventions to reduce alcohol consumption and/or alcohol-related harm or present a dose-response relationship, report outcome data on alcohol consumption and/or alcohol-related harm. OECD countries were chosen to have the same level of income and similar government structure. A review or pooled analysis which included some non-OECD countries was included if the majority of findings were derived from an OECD country.

Exclusion criteria were as follows:

- study used an animal sample
- study was not published in the English language
- study evaluation was reported to be carried out or directly funded by the alcohol industry

Several studies have shown that conflicts of interest in health research are associated with biased research findings that favour commercial interests at the expense of public health and patient welfare. The decision to exclude industry funded evidence was based on ensuring the review was completely independent of possible conflicts of interests.

Figure 1: Hierarchy of evidence



The evidence for the effectiveness of treatment for alcohol dependence was entirely derived from the National Institute for Health and Care Excellence (NICE) guidelines (9). Following the literature search, all included references were sent to nominated members of the advisory group assigned by speciality who advised on material that may have been overlooked. An overview of the screening process can be seen in Figure 2 (for alcohol-related harms literature) and Figure 3 (for alcohol control policies literature).

Figure 2: Flow diagram of study screening and selection process for alcohol-related harms literature

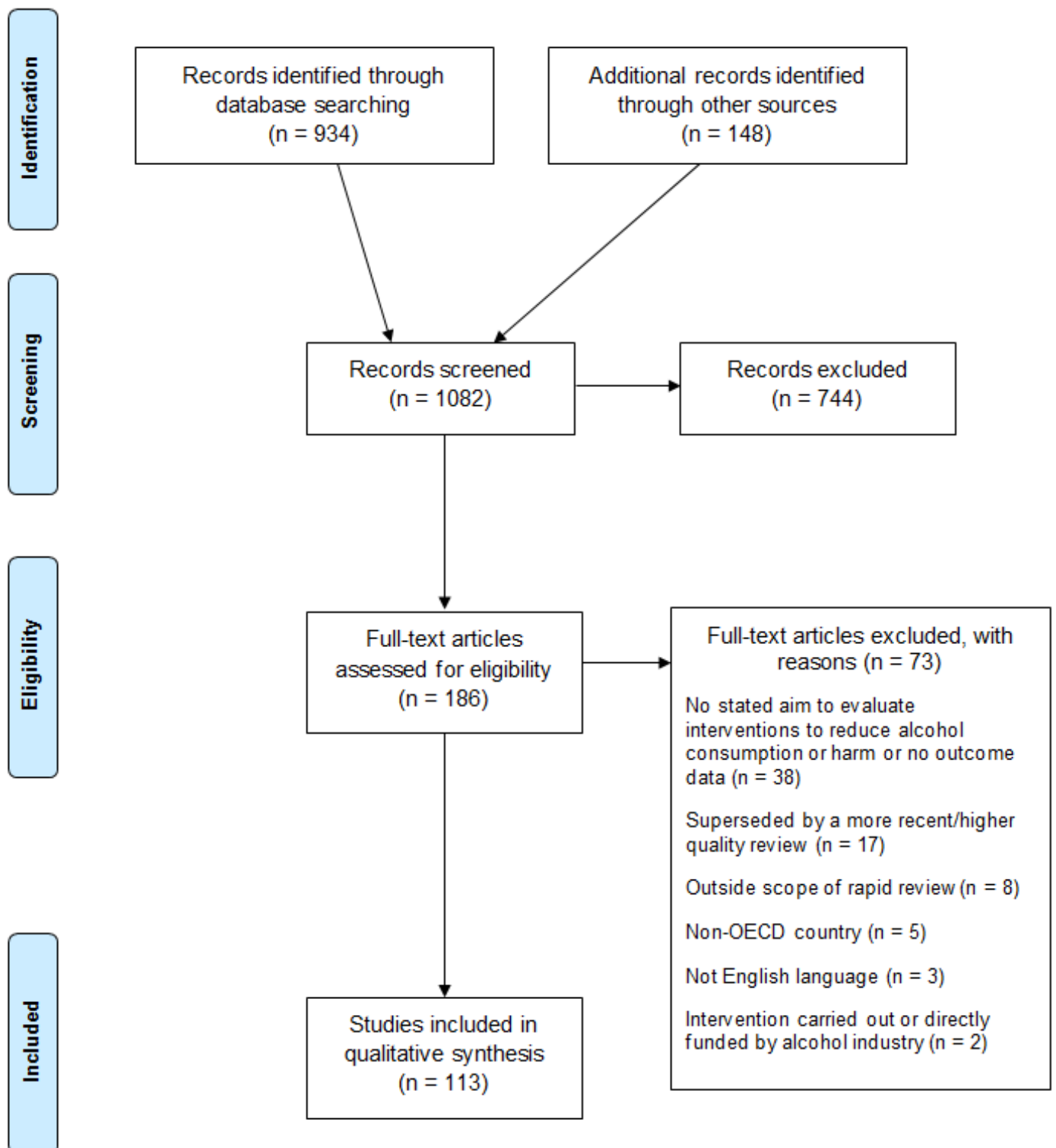
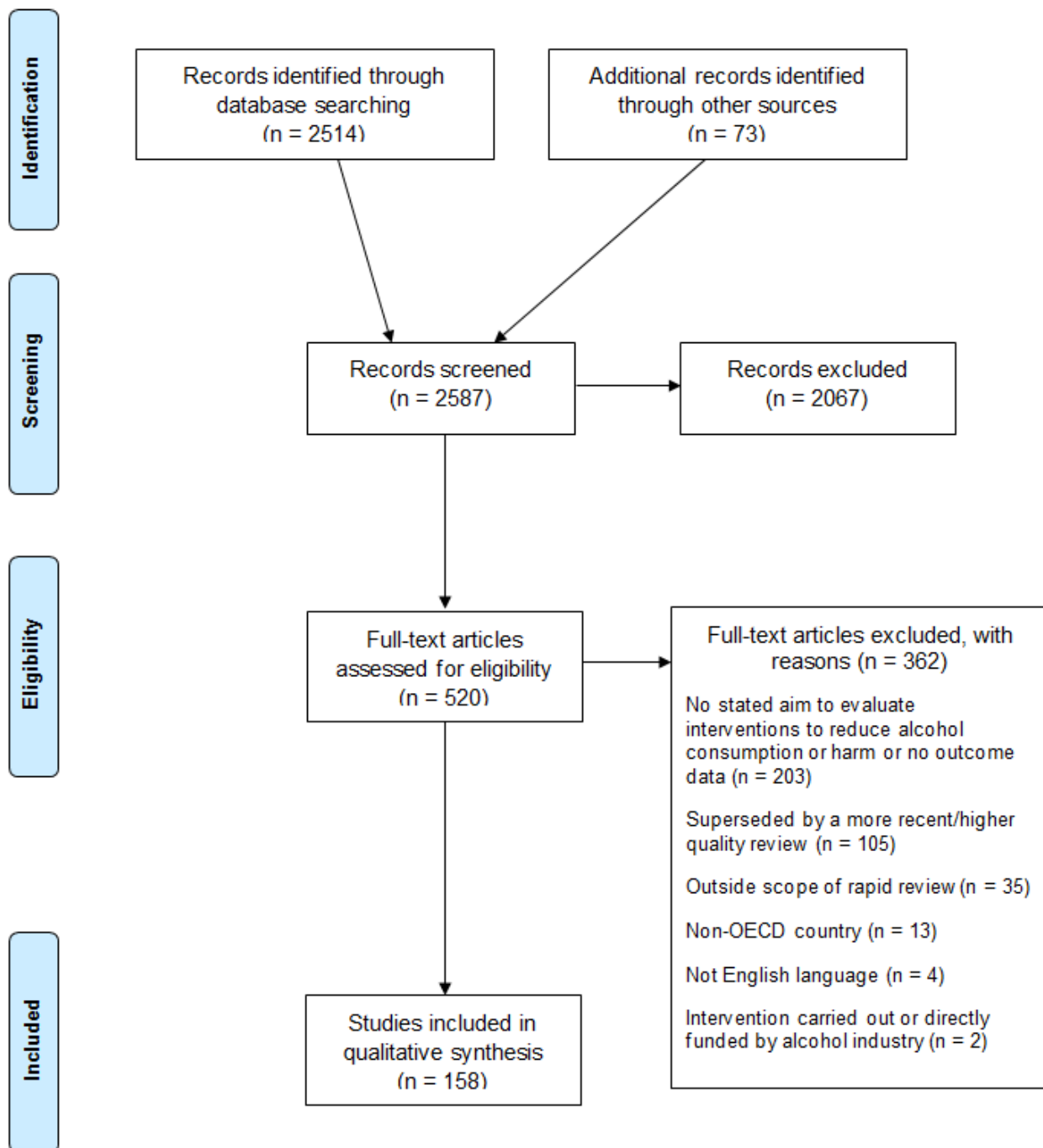


Figure 3: Flow diagram of study screening and selection process for alcohol control policies literature



Data extraction

Data was extracted from included studies using a standardised template (Table 2). Data extraction was split between five researchers and a random sample was checked for accuracy by a second. Completed templates for evidence relating to alcohol control policies, alongside original research articles, were used by five reviewers to assign quality ratings using the Grading of Recommendations Assessment, Development and Evaluation

(GRADE) (10,11). Quality of evidence was not assigned to evidence derived for alcohol-related harms.

Table 2: Data extraction template

Data item	Summary
Reference	Author; article title; journal
Aims	As described in the report
Design/setting	Systematic review, RCT, prospective cohort, case-control, other
Population	Participants (including eligibility criteria, case definitions/indication)
Intervention/exposure	Intended for each group studied
Country	All countries listed
Outcome(s)	Definition of primary and relevant secondary outcomes
Results	<ul style="list-style-type: none"> • Number of participants randomised or allocated • Results on primary outcome (effect size estimate and precision) • Summary of sensitivity and relevant sub-group analyses • Summary of relevant synthesis (e.g. consistency in meta-analysis)
Conclusions	Summary of conclusions as stated
Strengths	<ul style="list-style-type: none"> • Summary of study strengths as stated • Evaluation of strengths relating to design, population, attrition, bias
Limitations	<ul style="list-style-type: none"> • Summary of study limitations as stated • Evaluation of limitations relating to design, population, attrition, bias
Inequalities	Summary of differential effects across groups as defined by the <i>Equalities Act 2010</i>
Costs	Summary of intervention costs and cost-effectiveness
Recommendations	As described in report

Study quality rating

The study used the GRADE method to rate the quality of the evidence which related to alcohol control policies which was identified by the search procedure (Table 3) (10,11). Evidence based on randomised controlled trials (RCTs) begins as high quality evidence, but the confidence in the evidence may be decreased for several reasons, such as study limitations or reporting bias. Conversely the low rating of a cohort or case-control study might be upwardly revised if the study is of high quality with adequate control of confounders or evidence for a dose-response relationship.

Table 3: The Grading of Recommendations Assessment, Development and Evaluation

Very low quality	Any estimate of effect is very uncertain
Low quality	Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate
Moderate quality	Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate
High quality	Further research is very unlikely to change our confidence in the estimate of effect

Most alcohol policies cannot be directly manipulated and subjected to experimental methods such as an RCT. Their evaluation has to rely on other research methods, namely natural experiments. Where natural experiments cannot be done, or when predicting long-term outcomes, modelling studies are used. On these occasions, natural experiments were considered the highest level of evidence followed by modelling studies (Figure 1). For reviews, the rating reflected the quality of the constituent primary studies.

Each study was independently rated according to GRADE by two researchers. Discordant ratings were defined as a one point difference, (for example, one study is rated ‘very low’ by rater A and ‘low’ by rater B) and were resolved by local discussion resolution regarding the methodological rigour of the studies. GRADE ratings were considered alongside wider evidence and contextual factors to arrive at a consensus summary statement for each policy by the core policy team. These factors included:

- *nature of evidence*: research designs used by the retrieved literature
- *GRADE rating*: very low quality, low quality, moderate quality, high quality
- *limitations*: notable limitations above and beyond those reflected in GRADE
- *effect*: impact of the intervention on outcome measures stated in the primary research;
- *coverage*: likely reach of an intervention such as a population, product or place
- *economic impact*: cost-effective, cost-saving, not cost-effective or inconsistent
- *implementation*: any known or assumed barriers to implementation
- *inequalities*: the impact of an intervention on an inequality group as defined by the *Equality Act 2010*

The GRADE rating, limitations, coverage and economic impact are all derived from the evidence included in the nature of evidence. Implementation issues and the impact on inequalities are derived from a combination of the nature of evidence but also from pragmatic judgements. For example, taxation is a government budgetary measure (implementation) and mass media campaigns can be designed to target and appeal to specific socioeconomic groups (inequalities).

Narrative synthesis

The evidence derived from the methodology described in this section was used to write the main report on alcohol-related harm and policy responses (*See The public health burden of alcohol and the effectiveness and cost-effectiveness of alcohol control policies: An evidence review*). The narrative synthesis was reported in the structure outlined in Table 1.

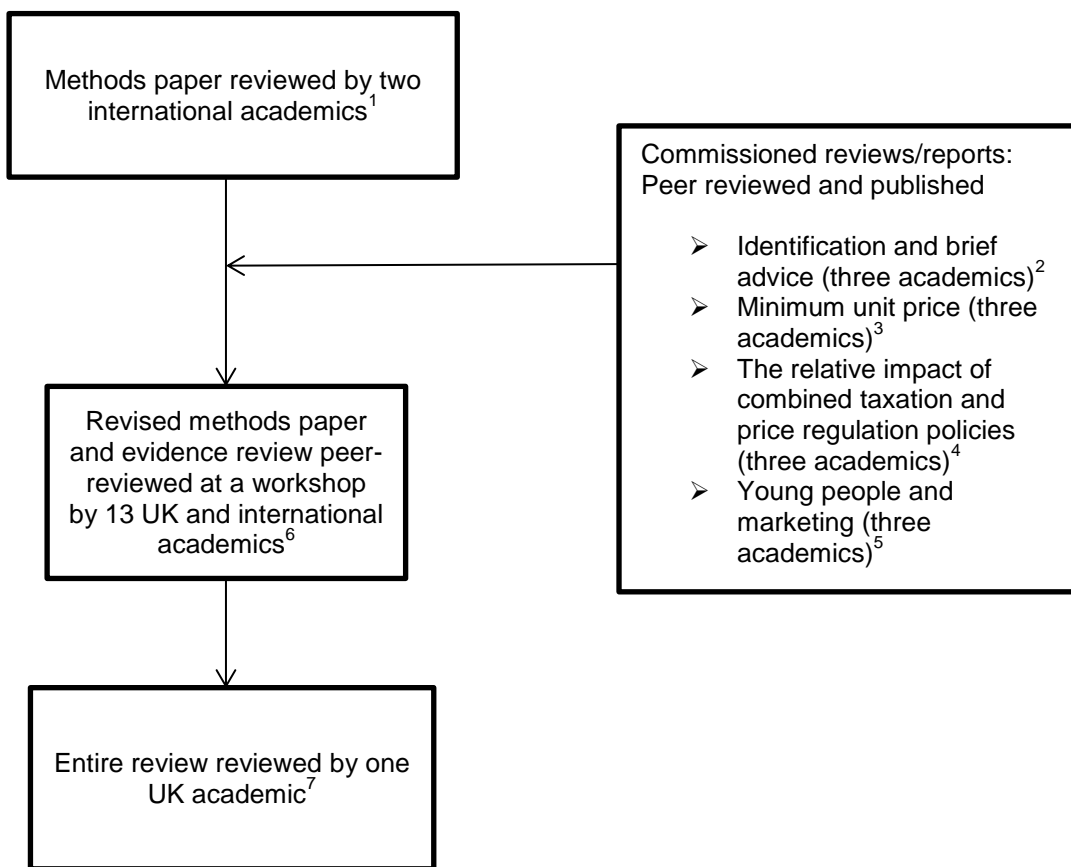
Strengths and limitations

Strengths of this review include the use of a pragmatic approach to reviewing scientific evidence to identify alcohol-related harms and for policy decisions in a Government environment, which has presented conclusions similar to those that have been reported previously (3,6–8,12). The review has also identified and assessed novel policy interventions that, to our knowledge, have not been subject to previous review. Limitations include the use of a deliberately constrained search methodology, which prioritised reviews, and the most recent primary research studies and the focus on medical databases which may have biased the results towards medical outcomes. This was mitigated by the presence of an expert advisory group.

The benefits of synthesising such a variable body of evidence must be weighed against the corresponding loss of detail. Further, including evidence that has been published only within the last ten years may exclude important evidence or long-established alcohol-related harms or interventions that have not been recently studied. It is possible that the selection of harms and policies considered were not exhaustive. Nonetheless, all evidence identified by the search process was circulated to an expert advisory group with the purpose that any key omissions relevant to the English setting would have been identified.

This report has been subject to extensive internal and external peer review throughout its genesis comprising leading UK and global experts (Figure 3). There is strong agreement in the outcome of this review with other expert reviews, particularly when the quality of evidence was judged to be high.

Figure 3: Peer review process of the rapid evidence assessment methodology and evidence review



Role of the funding source

The work was commissioned by the Department of Health. Resources were provided by PHE. The Department of Health had no role in study design, the synthesis and interpretation, or the writing of this report. The views expressed in this review may not reflect the stated position or policy of the Department of Health.

Annexe 2

Members of the expert advisory group

- Crispin Acton (Department of Health, England, UK)
- Joe Barry (Trinity College, Republic of Ireland)
- Clare Beeston (NHS Scotland, UK)
- Mark Bellis (Public Health Wales, UK)
- Katherine Brown (Institute of Alcohol Studies, UK)
- Stephen Cummins (Home Office, England and Wales, UK)
- Colin Drummond (Kings College London, UK)
- Ian Gilmore (Liverpool University, UK)
- Karen Hughes (Liverpool John Moores University, UK)
- David Humphreys (University of Oxford, UK)
- Sarah Jones (Public Health Wales, UK)
- Eileen Kaner (University of Newcastle, UK)
- Mike Kelleher (South London and the Maudsley NHS Mental Health Trust, UK)
- Iain MacAllister (Scottish Government, UK)
- Gary Maxwell (Department of Health, Social Security and Public Safety, Northern Ireland, UK)
- Maureen McCartney (Department of Health, Social Security and Public Safety, Northern Ireland, UK)
- Petra Meier (University of Sheffield, UK)
- James Nicholls (Alcohol Research UK)
- Owen O Neil (Public Health Agency, Northern Ireland, UK)
- David Ryan-Mills (Home Office, England and Wales, UK)
- Bobby Smyth (Alcohol Action Ireland, Republic of Ireland)
- Tom Smith (Alcohol Concern England, UK)

Methods paper peer reviewers

- Gerhard Gmel (Epidemiology and Statistics, Addiction Switzerland)
- Tim Stockwell (University of Victoria, Canada)

Commissioned reviews/reports peer reviewers

- Linda Bauld (Stirling University, UK)
- Chris Hackley (Royal Holloway University, UK)
- Eileen Kaner (Newcastle University, UK)
- Vittal Katirenddi (University of Glasgow, UK)
- Anne Ludbrook (University of Aberdeen, UK)
- Lisa Retat (UK Health Forum)
- Laura Webber (UK Health Forum)
- Brian Young (University of Exeter, UK)

Peer review workshop

- Peter Anderson (Newcastle University, UK)
- Annie Britton (University College London, UK)
- Colin Drummond (Kings College University, UK)
- Gerhard Gmel (Epidemiology and Statistics, Addiction Switzerland)
- Gerard Hastings (Stirling University, UK)
- Karen Hughes (Liverpool John Moores University, UK)
- Theresa Marteau (University of Cambridge, UK)
- Petra Meier (University of Sheffield, UK)
- Eileen Kaner (Newcastle University, UK)
- James Nicholls (Alcohol Research UK)
- Jürgen Rehm (Centre for Addiction and Mental Health, Toronto, Canada)
- Elizabeth Richardson (University of Edinburgh, UK)
- Rob Tunbridge (UK Independent consultant specialising in driver impairment due to alcohol, drugs or fatigue)

Final peer review

- Mark Bellis (University of Bangor/Public Health Wales, UK)

Annexe 3

Glossary

Abstainer: a person who refrains from drinking alcohol

Acute alcohol harm: this describes damage related to alcohol misuse that is severe, of short duration and quickly comes to a crisis

Alcohol by volume: abbreviated as ABV, is a standard measure of how much alcohol is contained in a given volume of an alcoholic beverage expressed as volume percent

Advertising (marketing) bans: the process of preventing alcohol producers promoting alcoholic beverages through a variety of media, such as television, radio and newspapers

Age verification filters: customer proof of age checks

Aggregate: a whole formed by combining separate groups, for example a national population made up from smaller local populations

Alcohol attributable fraction: the proportion of a condition assessed to have been caused by alcohol

Alcohol dependence: a clinical diagnosis characterised by craving, tolerance, and a preoccupation with alcohol, withdrawal and continued drinking despite harmful consequences

Alcohol harm paradox: disadvantaged populations who drink the same or lower levels of alcohol, experience greater alcohol-related harm relative to more affluent populations

Alcohol test purchase: where an actor portrays extreme drunkenness, or looks under the age of 18 years and attempts to purchase an alcoholic drink

Alcohol use disorder: this term describes a wide range of alcohol-related mental health and/or behavioural problems, on a continuum of severity, as recognised within the international disease classification systems (ICD-10, DSM-V)

Bans on public drinking: known in England as Designated Public Place Orders, these are designated places where restrictions on public drinking apply

Ban the sales of alcohol below the cost of taxation: the ban of alcohol sold at below the cost of taxation, operationalised in England and Wales as a ban on the sale of alcohol for less than the cost of excise duty plus VAT

Bans or restrictions on price promotions: within the EU, there is no standard or legal definition of what constitutes a price promotion, however this typically means that alcohol is sold with a price-based promotion such as 'buy one get one free' or 'happy hour'

Binge drinking: the practice of consuming quantities of alcohol over a short period of time. The definition used for binge drinking by the Office for National Statistics is drinking more than eight units for men or more than six units for women in a single session

Blood alcohol concentration: the concentration of alcohol in a person's blood commonly described as the mg of alcohol per 100ml of blood. This measure is commonly used as a metric indicating intoxication for legal purposes in driving

Breath testing: roadside checks of drivers to assess breath alcohol content

Cardioprotective: protective of cardiovascular disease

Challenge 21/25: if a seller of alcohol believes a customer to appear under the age of 21/25, and is attempting to purchase alcohol they are asked to provide proof of their age

Chronic alcohol harm: this term describes long-lasting or recurrent damage relating to the misuse of alcohol

Clearances: the total amount of alcohol released to the market for purchase and on which tax has been paid

Cochrane review: systematic reviews and meta-analyses of the scientific literature that adhere to the methodological prerequisites of the Cochrane Collaboration

Composite International Diagnostic Interview: a comprehensive, fully-structured interview designed to be used by trained lay interviewers for the assessment of mental disorders

Confidence interval: a range of values with a specified probability that the value of a parameter lies within it

Cross-sectional study: a study which examines the relationship between an outcome of interest and other variables of interest as they exist in a defined population at a single point in time or over a short period of time

Cost effectiveness analysis: a form of economic analysis that compares the relative costs and outcomes (effects) of different courses of action

Cumulative impact policies: these were introduced as a tool for licensing authorities to limit the growth of licensed premises in a problem area. This is set out in the statutory guidance issued under section 182 of the *Licensing Act 2003*

Density of alcohol outlets: the number/density of licensed premises (either on- or off-premise) in any given geographic region

Designated driver programmes: programmes to encourage a person who abstains from alcohol in order to drive not under the influence of alcohol

Dose-related: the change in effect on an individual caused by increased consumption of a substance (alcohol) or differing levels of exposure

Drink-driving: people who drive a vehicle while over the legal alcohol limit (80mg is the legal blood alcohol concentration limit in the UK)

Drinking guidelines: the advice that the UK Chief Medical Officers give to the public about how to keep risks to health low from drinking alcohol

Education programmes: programmes with the aim of teaching about the harms associated with alcohol-consumption

Elasticity: a measure of the responsiveness of one variable to changes in another

Exposure of children to alcohol advertising: children seeing/watching adverts about alcoholic beverages

Externalities: costs or benefits arising from an economic activity that affect somebody other than the people engaged in the economic activity and are not reflected fully in prices

General lifestyle survey: a multi-purpose continuous survey that has been carried out by the Office for National Statistics since 1971. The survey presents a picture of families and people living in private households in Great Britain

Graduated driver licensing: the process by which driver's licences are issued with limitations on driving privileges together with loss of license if tested as higher than blood alcohol concentration limit

Gross domestic product (GDP): the monetary value of all the finished goods and services produced within a country's borders in a specific time period

Health Survey for England: an annual survey looking at changes in the health and lifestyles of people all over the country

Heavy drinker: a man who regularly drinks above 50 units of alcohol per week and a woman who regularly drinks above 35 units per week

Hours and days of sale: the hours of opening and days of the week in which it is legal to sell alcoholic beverages for consumption on-or off premises

Identification and brief advice: the use of validated screening tools to identify risk, followed by the delivery of brief alcohol advice to encourage lower consumption and the reduction of risk. Also known as Alcohol Screening and Brief Interventions

Ignition interlocks: a mechanism, such as a breathalyser, installed in a motor vehicle that prevents the engine from being started if the driver exhales a sample of breath with a breath-alcohol concentration result greater than the allowed blood alcohol concentration for driving (which varies between countries)

Immediate licence revocation: a driver's licence is revoked immediately without the need for a judicial process, in the event of a drink-driving arrest or conviction

Incremental cost-effectiveness ratio (ICER): a statistic used in cost-effectiveness analysis to summarise the cost-effectiveness of a health care intervention. It is defined by the difference in cost between two possible interventions, divided by the difference in their effect

Industry self-regulation: the regulation of an industry by its own members

Incident rate ratio: relative difference measure used to compare the incidence rates of events occurring at any given point in time

Interquartile range: the interquartile range is the difference between the upper quartile and lower quartile

Intoxication: a more or less short-term state of functional impairment in psychological and psychomotor performance induced by the presence of alcohol in the body

J-shaped relationship: refers to relationships where a curve initially falls, then steeply rises above the starting point

Joint Strategic Needs Assessment: assessments of the current and future health and social care needs of the local community

Licensed premise: a premise which has been awarded the permission to sell alcohol

Licensing conditions: conditions given to licensed premises relating to where, when, and who they can sell alcohol to that are consistent with the licensing objectives (for example, limited shelf space dedicated to alcohol)

Licensing system: a system for controlling the sale and distribution of alcoholic beverages by means of licenses granted by a national or local government authority

Literature review: an evaluative report of information found in the academic literature related to a selected area of study

Longitudinal studies: a study where subjects are followed over time with continuous or repeated monitoring of risk factors or health outcomes, or both

Marketing regulations: regulations refer to the restrictions on the content and what advertisers can and can't do. These can be statutory or voluntary agreements and can be either independently, self or co-regulated

Mass media campaigns: the exposure of high proportions of large populations to messages through routine uses of existing media, such as television, radio and newspapers

Meta-analysis: statistical analyses in which data from several different studies are reanalysed

Minimum legal drinking age: the minimum age to be sold alcohol or be served in/at licensed premises

Minimum pricing: a direct price control set by government aimed at preventing the sale of alcohol below a certain price

Morbidity: a term used to describe how often a disease occurs

Mortality: a term used to describe the number of deaths that occur from a specific cause, at a specific time or in a specific group

Multi-buy ban: a ban on multi-buy promotions, (for example buy one, get one free)

Multicomponent community programmes: programmes with the aim of reducing alcohol-related harm in drinking environments by coordinating and strengthening local preventative activity

National Institute for Health and Care Excellence: the institution which provides national guidance and advice to improve health and social care

Natural experiment: the investigation of change within and in relation to its naturally occurring context, as when a policy is implemented in one community but not in a comparable community

Night-time economy: economic activity which occurs during the night involving the sale of alcohol for consumption on-trade (for example, bars, pubs and restaurants)

Observational study: a study in which a researcher observes behaviour in a systematic manner without influencing or interfering with the behaviour

Odds ratio: a measure of association between an exposure and an outcome

Office for National Statistics: the UK's largest independent producer of official statistics and the recognised national statistical institute of the UK

Off-trade: includes all retail outlets where alcohol is not consumed on-site such as supermarkets, convenience stores, mini markets, kiosks, wines and spirits shops

On-trade: includes all retail outlets where alcohol is consumed on-site such as pubs, clubs, bars and restaurants

Organisation for Economic Co-Operation and Development: an institution which provides a forum where governments can work together to share experiences and seek solutions to common problems

Overprovision: where an area is considered to have too many licensed premises

Pareto principle: a principle, named after economist Vilfredo Pareto, that specifies an unequal relationship between inputs and outputs

Pass-through: the extent to which a tax increase is passed on

Personal licence: authorises individuals to supply alcohol, or authorise the supply of alcohol, in accordance with a premises licence

Pharmacological interventions: the use of medication to assist in the treatment of alcohol dependency

Precautionary principle: the principle implies that there is a social responsibility to protect the public from exposure to harm, when scientific investigation has found a plausible risk. If an action or policy has a suspected risk of causing harm, in the absence of scientific consensus that the action is not harmful, the burden of proof that it is not harmful falls on those taking an action that may or may not be a risk

Preloading: the practice of purchasing and consuming alcohol at home in order to get the effects of alcohol at a lower price prior to embarking on a night of continued drinking in a licenced premise

Premises license: authorises the use of any premises or parts of a premises for licensable activities and includes the times and conditions under which a venue can sell alcohol

Prevention: the action of stopping something from happening or arising

Price elasticity of demand: the responsiveness of alcohol consumption to changes in its price

Psychosocial interventions: a range of 'talking therapies' that are effective in the treatment of alcohol misuse mainly based on cognitive behavioural therapy

Public drinking bans: policies can enforce bans on drinking in specific locations, known in England as Designated Public Place Orders (DPPOs) under section 13 of the Criminal Justice and Police Act 2001. These policies are implemented to address crime and disorder in public places that is caused by alcohol and do not aim to address alcohol consumption per se

Quality adjusted life years: is a generic measure of disease burden, including both the quality and the quantity of life lived. It is used in economic evaluation to assess the value for money of medical interventions

Randomised controlled trial: a research design in which study participants are randomly allocated, either to a group that will receive an experimental treatment or, to one that is to receive a comparison treatment or placebo. Randomisation is done to eliminate error from self-selection or other kinds of systematic bias

Rapid evidence assessment: a process of gathering the available research evidence on a policy issue, as comprehensively as possible, within the constraints of a given timetable

Recidivism: the habitual relapse (return to a previous behaviour) into crime

Reducing the overall strength of alcohol: reducing the overall strength (alcohol by volume [ABV]) of alcohol are based on the relationship between alcohol consumption and health harm – the greater the amount of alcohol, the greater the levels of harm.

Regressive tax: a tax whose burden falls less as income rises; as distinct from a progressive tax whose burden falls more as income rises

Removing the sale of high strength alcohol: initiatives designed to tackle the problems associated with street drinking have removed from sale low-price, high strength alcohol products (6.5% ABV or above) through voluntary agreements with local retailers

Responsibility deal: the Responsibility Deal (RD) was a government ambition for a more collaborative approach to tackling the challenges caused by our lifestyle choices. Organisations signing up to the RD commit to taking action voluntarily to improve public health through their responsibilities as employers, as well as through their commercial actions and their community activities. Organisations can sign up to be either national partners or local partners

Road traffic crash: a crash resulting in bodily injury to any person or damage to property caused by, or arising out of, the use of a motor vehicle on a road or other public place

Safer glassware: the use of toughened glass or polycarbonate glassware in pubs, bars and nightclubs serving alcohol specifically to reduce glass-related violence and injury

Sales below cost: this refers to sale of alcohol below the cost of excise duty plus value added tax

School-based, family and community information campaigns: the exposure of targeted populations to messages through routine uses of existing media, such as television, radio, newspapers, newsletters or advertising

School of Health and Health Related Research: a centre of excellence in research, teaching and consultancy across public health, health services research, health economics and decision modelling and medical statistics

Secondary care alcohol specialist services: these provide specialist support to patients whose alcohol use may be causing, complicating or exacerbating their presenting condition or putting their general health at risk. These services include nurses with alcohol specialist skills and/or by non-nursing alcohol specialist workers and

usually led by senior medics. These services can carry out assessments, provide advice, support medical interventions, and refer patients to community alcohol treatment services

Server liability: legal statutes imposing liability upon the licensed drinking establishment or its representatives (e.g. servers) for injuries caused to, or by, intoxicated persons to whom they have sold alcoholic beverages

Server training: an education programme that trains owners, managers and employees of alcohol licensed premises how to avoid illegal selling alcohol to underage or intoxicated patrons

Smoking Drinking and Drug Use Survey: each survey since 1998 has included a core set of questions on smoking, drinking and drug use. Since 2000, the remainder of the survey questions have focused in alternate years on smoking and drinking or on drug use

Social marketing approaches: social marketing programmes use marketing techniques to achieve a social or health goal and can be used in alcohol education

Social norm approaches: social norms interventions aim to increase information to correct misconceptions about levels of consumption in peer groups (usually that one's peer's drink less than one thinks)

Spill over effects: this is where harms (or benefits of interventions) occur not only in the area of intervention, but in nearby locations to which the drinkers return

Statement of licensing policy: this details how the licensing authority intends to operate and promote the licensing objectives in their area

Stockholm Prevents Alcohol and Drug Problems: in Sweden, the Stockholm Prevents Alcohol and Drug Problems (STAD) programme, combined community mobilisation with server training and stricter enforcement of alcohol laws

Systematic review: a literature review focused on a research question that tries to identify, appraise, select and synthesize all high quality research evidence relevant to that question

Tackling drink-driving reoffending: some drivers who have been convicted of drink-driving continue to drink-drive and are re-arrested or involved in further road traffic crashes. There are two approaches aimed at tackling drink-driving reoffending, namely alcohol ignition interlock devices and preventative education programmes

Taxation: a financial charge or other levy imposed upon an individual (or entity) by a government such that failure to pay, or evasion of or resistance to collection, is punishable by law

Time series analysis: this is a type of research method which uses trend data to understand how a particular variable changes over time. For example, how alcohol consumption varies over time in relation to its price

Treatment for people with harmful drinking and alcohol dependence: the treatment for harmful drinking and alcohol dependence can be broadly separated into pharmacological treatments which use medications to support abstinence and prevent relapse and psychosocial treatments which apply psychological methods for the same goals

Unit: a way of expressing the quantity of pure alcohol in a drink. In the UK, one unit equals 10ml or 8g of pure alcohol, which is around the amount of alcohol the average adult can process in an hour

Workplace interventions: since the majority of adults are employed and spend a significant amount of time at work, the workplace may provide opportunities for implementing prevention strategies to reduce the harm caused by alcohol

Annexe 4

Minimum alcohol duty rates according to the EU directive

The EU directive¹ allows member states to apply reduced rates for:

- Beer <2.8% volume
- Wine < 8.5% volume
- Intermediate products <15%
- Fermented beverages other than beer and wine < 8.5% volume

¹ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31992L0083&from=EN>

Annexe 5

Rates of alcohol duty in the UK

UK beer duties in British pounds (GBP), April 2016:

Strength (ABV)	Beer Duty rate per litre for each % of alcohol
More than 1.2%, up to 2.8%	8.10 pence
More than 2.8%, up to 7.5%	18.37 pence
More than 7.5%	23.85 pence

UK cider duties in British pounds (GBP), April 2016:

Type of cider or perry	Strength (ABV)	Rate per litre
Still	More than 1.2%, up to 7.5%	38.87 pence
Still	More than 7.5% but less than 8.5%	58.75 pence
Sparkling	More than 1.2%, up to 5.5%	38.87 pence
Sparkling	More than 5.5% but less than 8.5%	268.99 pence

UK wine duties in British pounds (GBP), April 2016:

Type of wine or made-wine	Strength (ABV)	Rate per litre
Still	More than 1.2%, up to 4%	85.60 pence
Still	More than 4%, up to 5.5%	117.72 pence
Still	More than 5.5%, up to 15%	277.84 pence
Still	More than 15%, up to 22%	370.41 pence
Sparkling	More than 5.5% but less than 8.5%	268.99 pence
Sparkling	More than 8.5%, up to 15%	355.87 pence

UK spirits in British pounds (GBP), April 2016:

£27.66 per litre of pure alcohol

Annexe 6

Definitions of drinker type by gender

Average units per week	Males	Females
Moderate	≤ 21	≤ 14
Increasing risk	> 21 and ≤ 50	> 14 and ≤ 35
High risk	> 50	> 35

Note: Guidelines on moderate drinking have since been revised down to 14 units per week for men and women following the Chief Medical Officers review (13)

Annexe 7

Key search terms used in this review

Terms relating to alcohol-related harm

{alcohol} AND {diabetes} OR {atrial fibrillation} OR {dementia} OR {Alzheimer} OR {epilepsy} OR {heart disease} OR {cardiovascular} OR {hypertension} OR {liver} OR {obes*} OR {weight} OR {body mass index} OR {BMI} OR {pancreatitis} OR {pneumonia} OR {psoriasis} OR {sex*} OR {STI} OR {STD} OR {stroke} OR {suicide} AND {review} OR {meta};
OR {crime} OR {criminal} OR {violen*} OR {assault} OR {theft} OR {burglary} OR {prison} OR {probation} OR {domestic} OR {family} OR {CHILD*} OR {relationship} OR {parent} OR AND {review} OR {meta};
AND {econom*} OR {cost*} OR {pric*} OR {cost-effectiveness} OR {cost-utility} OR {cost-benefit} OR {budget*} OR {qaly} OR {daly} OR {value for money} OR {return on investment};

Terms relating to alcohol control policies

{alcohol} AND {pric*} OR {tax} OR {cost} AND {review} OR {meta};
OR {alcohol} AND {density} OR {hours} OR {days} OR {spatial} OR {temporal} OR {licen*} OR {street drinking} OR {drinking ban} OR {server} AND {review} OR {meta};
OR {alcohol} AND {marketing} OR {advert*} OR {promot*} OR {campaigns} OR {mass media} OR {education} OR {label*} OR {responsibility deal} AND {review} OR {meta};
OR {alcohol} AND {identification} OR {screening} OR {intervention} OR {brief} OR {advice} OR {information} AND {review} OR {meta};
{alcohol} AND {blood} OR {breath} OR {enforce*} OR {graduated} OR {designated} OR {interlock} OR {licence revocation} OR {licence suspens*} AND {driv*} AND {review} OR {meta};
AND {econom*} OR {cost*} OR {pric*} OR {cost-effectiveness} OR {cost-utility} OR {cost-benefit} OR {budget*} OR {qaly} OR {daly} OR {value for money} OR {return on investment};

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