



**Liverpool  
Public Health  
Observatory**

# **Prevention Programmes Cost-Effectiveness Review: Alcohol**

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**Janet Ubido, Cath Lewis, Richard Holford and Alex Scott-Samuel**

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**PROVIDING INTELLIGENCE FOR THE PUBLIC HEALTH**

# The cost effectiveness review series

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## Background

There are significant pressures placed upon public sector organisations to ensure that money is spent wisely to ensure the best value for money for services they provide. In the health sector, there is increasing pressure to justify spending on all areas of health care and in particular on preventive programmes. As a consequence, public health is increasingly being asked for cost effectiveness evidence as justification for funding or continued funding of particular initiatives. Although evidence is available nationally for a lot of public health initiatives, this information is not available in one place. The production of a review that includes information on cost effectiveness and potential cost savings in one place will make it easier for public health to develop a business case for continued investment in preventive services.

## About the series

The review series will provide a comprehensive review of the literature on evidence of the cost effectiveness and potential cost savings of preventive programmes and projects by topic area.

This is the second topic area covered by the cost effectiveness review series. It follows on from a review on physical activity. Further topics area will be considered for inclusion as required.

## Alcohol interventions

### Contents

<i>Background &amp; summary</i>	<i>1</i>
<i>1. Alcohol pricing</i>	<i>3</i>
<i>2. Screening &amp; brief interventions</i>	<i>4</i>
<i>3. Tertiary interventions</i>	<i>8</i>
<i>4. Licensing &amp; advertising</i>	<i>10</i>
<i>5. Educational programmes</i>	<i>12</i>
<i>Conclusion</i>	<i>13</i>
<i>References</i>	<i>14</i>

## Glossary

*Cost-effectiveness analysis*: Expressed as a ratio of the costs divided by the health outcomes e.g. cost per quitter

*Cost utility analysis*: a form of cost-effectiveness analysis which is adjusted by health state preference scores e.g. QALY

*Cost savings*: Providing additional healthcare benefits and an overall reduced health service cost

*ICER*: incremental cost-effectiveness ratio, (e.g. cost per QALY gained ratio) - can be used to summarise the trade-off in costs and effects between different programmes, or between a programme and doing nothing

*NHS EED*: NHS Economic Evaluation Database <http://www.crd.york.ac.uk/crdweb/Home.aspx?DB=NHS%20EED>

*RCT*: Randomised controlled trial

*QALY*: Quality adjusted life year. Used in assessing the value for money of a medical intervention, based on the number of years of life that would be added by the intervention. Each year in perfect health is assigned the value of 1.0 down to a value of 0.0 for death. One QALY is equal to a year of life in perfect health

*DALY*: Disability-adjusted life year: While a *QALY* is a year of perfect health gained, a *DALY* is a year of perfect health lost

# Alcohol interventions

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**Background:** Alcohol harm cost the NHS £2.7 billion in 2006/07 (DH, 2008). Hospital inpatient and day visits are the greatest expense (1,190 million), followed by Accident and Emergency (A&E) visits (645.7 million) and ambulance services (372.4 million). NICE estimate that alcohol-related disease accounts for 1 in 26 NHS bed days nationally, and up to 40% of all A&E admissions nationally are thought to be alcohol related (HDA, 2005). Alcohol-related hospital admission rates are strongly associated with deprivation, with higher rates in more deprived local authorities (Morleo et al, 2010). The North West has six out of the top ten local authority areas with the highest rates of hospital admissions for alcohol related harm in people aged sixteen or over (NWPFO, 2010).

**The review:** This cost effectiveness review on alcohol presents evidence on interventions at three levels:

- primary prevention (including education programmes);
- secondary prevention, to detect the early stages of alcohol misuse (e.g. screening and brief interventions) and
- tertiary prevention, including prevention or minimisation of relapse

The review does not cover drug treatments when used exclusively, or surgical interventions. Direct NHS interventions, such as screening for alcohol harm in primary care, and indirect NHS interventions, including lobbying the government for a minimum unit price for alcohol, are included.

Evidence was gathered from National Institute for Health and Clinical Excellence (NICE) publications, NHS evidence library, NHS Evidence, Department of Health, Alcohol Learning Centre and National Treatment Agency for Substance Misuse. A search of electronic databases was undertaken, involving the NHS Economic Evaluation database, National Research Register, MedKnow publications, Cochrane database, Health promis (Database of the Health Development Agency), and hand-search of references from these, advice from University of Liverpool specialist librarian, Scopus, MEDLINE, and Centre for Reviews and Dissemination.

Search terms used were 'alcohol' and 'cost' or 'cost-effectiveness', from 1995 onwards, until September 2010. Only those studies that gave details of costs and cost-savings / cost effectiveness were included. Evidence is presented in tables according to a hierarchy, with systematic and comprehensive reviews first, followed by randomised controlled trials, clinical trials and observational studies, case reports and case series, expert opinions and other relevant reports. Non-UK studies were given a lower ranking.

The sections are ordered according to the degree of evidence on cost-effectiveness, with alcohol pricing first, as this intervention is based on good quality evidence with high cost-savings. Critical appraisals of studies featuring in the NHS Economic Evaluation Database were used to assist in determining the quality of studies. Studies with limited generalisability to the UK were excluded.

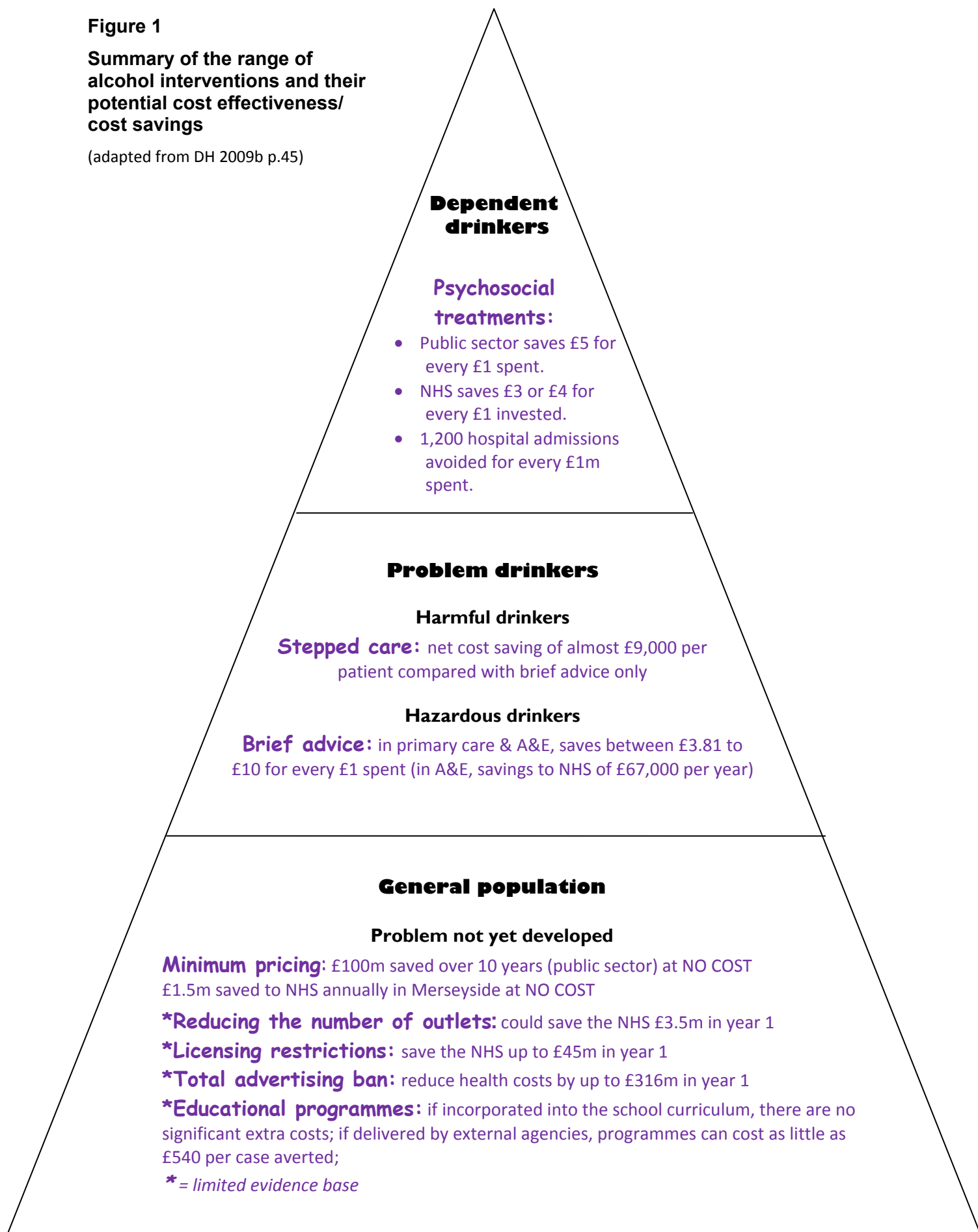
In cost-effectiveness analysis there is often considerable uncertainty associated with the findings as a result of the assumptions and parameters used, therefore a degree of caution is required when reading the results.

Figure 1 presents a summary of the range of alcohol interventions and their potential cost savings.

Figure 1

**Summary of the range of alcohol interventions and their potential cost effectiveness/ cost savings**

(adapted from DH 2009b p.45)



## 1. Alcohol pricing (primary prevention)

The most cost-effective policy option to reduce alcohol-related harm is to reduce the demand for alcohol through minimum pricing.

Study	Intervention	Cost-effectiveness/ savings
NICE (2010a) Review	Minimum price per unit of alcohol	<p>Potential health savings are £80.3m, as a result of reduced hospital admissions. Total <b>savings</b> including criminal justice and workplace savings are estimated at <b>£100m over a 10 year period</b> (based on 40p per unit minimum price).</p> <p>Costs of implementation have not been quantified, but should be nil to the NHS, with costs likely to involve expenses incurred by trading standards and local licensing agencies.</p>
University of Sheffield (2008) Study funded by the Department of Health Policy Research Programme  & Ubido and Cordy (2010) Estimates local outcomes of a 50p minimum price per unit	50p minimum price per unit of alcohol	<p>Costs are minimal, involving lobbying national government and supporting local authorities to take local action.</p> <p><b>in England</b>, a 50p minimum price would result in an estimated 98,000 fewer hospital admissions each year (12.4% fewer).</p> <p><b>in Merseyside</b>, there would be a reduction of an estimated 5,021 admissions each year, with an estimated <b>annual saving of £1.5m</b> (estimates for each PCT given in Ubido and Cordy, 2010)</p>
WHO (2009) An update to the evidence base for alcohol policy	Increase excise taxation by 20%	<p>Tax increases of 20% are highly cost-effective, resulting in a cost of <b>1\$472 for each healthy year of life restored*</b> (WHO, 2009). (*Cost-effectiveness ratio, expressed in terms of international dollars per DALY saved).</p> <p>It may be desirable for the Government to seek to change European regulations on how alcohol taxes can be structured, so that taxes can mimic the impact of minimum prices, whilst ensuring that the resulting revenues go to the government and not firms (Griffin &amp; Leicester, 2010)</p>

## 2. Screening with targeted brief interventions (secondary prevention)

Brief interventions for hazardous and harmful drinking are one of the most cost-effective of all health service interventions leading to health gain (WHO, 2009). The NICE (2010a) review provided costing details for screening and brief advice in primary care. NICE also considered screening at accident and emergency (A&E) and hospital appointments, but found evidence on its cost effectiveness was scarce. Nevertheless, they recommend the following:

*'all NHS professionals should routinely carry out alcohol screening as an integral part of practice: For instance, discussions should take place during new patient registrations, when screening for other conditions and when managing chronic disease or carrying out a medicine review. These discussions should also take place when promoting sexual health, when seeing someone for an antenatal appointment and when treating minor injuries'* (NICE, 2010a, p.22).

NICE recommend that those identified through screening in primary care as harmful/hazardous drinkers should be offered brief advice, either immediately, or as soon as possible – this should take 5-15 minutes – and be routinely monitored for progress in lowering alcohol consumption (NICE, 2010a).

### About brief interventions:

- usually delivered by a competent practitioner in about five minutes, brief interventions normally include information about the nature and effects of alcohol and its potential for harm, goal settings, e.g. start dates, targets for reducing alcohol consumption, and arrangements for follow-up monitoring. Extended brief interventions comprise a series of structured interviews (between three and twelve) in general or non-alcohol specialist settings (DH 2006). Screening with brief intervention is considered to be secondary prevention (as defined in Berglund et al 2003). More lengthy interventions for more severe problems is tertiary prevention (Sections 2 & 3 here may overlap).

Study	Intervention	Cost-effectiveness/ savings
<b>2a Primary care setting</b>		
NICE (2010a) Review	Screening at new registration with GP, with brief advice (5 minutes, 1 session) offered to those identified	Savings not quantified, but assumed to be significant in the long-term (time frame not identified). Costs may be absorbed within current resources. <i>IF NOT</i> – then nationally, <b>costs</b> will be: <ul style="list-style-type: none"> <li>- <b>£6.8m annually for screening</b> at registration by practice nurse (if GP – much more)*, <b>PLUS:</b></li> <li>- <b>£7.3m constant annual cost</b> for providing <b>brief advice</b> to those identified through screening at registration**</li> </ul>
NICE (2010a) Review	Screening at next GP attendance, with brief advice (5 minutes, 1 session) offered to those identified.	Savings not quantified, but assumed to be significant in the long-term (timeframe not identified). <b>Screening:</b> Costs compared to screening at new registration would be potentially significant because of larger numbers, and because the screening would involve GP rather than practice nurse time. If it is possible to incorporate screening (5 minutes) at next attendance, there may be little or no extra cost. <i>IF NOT</i> , then nationally, costs would be:

Study	Intervention	Cost-effectiveness/ savings
		<ul style="list-style-type: none"> <li>- for screening by GP, cost = 85% of practice population multiplied by £15*.</li> </ul> <p><b>Brief advice:</b></p> <ul style="list-style-type: none"> <li>- for providing brief advice by practice nurse, <b>cost = £35.4m in year 1, reducing to £7.9m in year 3**</b>.</li> </ul> <p>* <i>5 minutes screening cost: practice nurse = £2.65; GP = £15</i></p> <p>**<i>5 minutes brief advice cost: practice nurse = £11.50; GP = £23.85 (includes time plus material costs)</i></p> <ul style="list-style-type: none"> <li>- training practice nurses to deliver screening and brief interventions would be a cost effective use of resources, as such interventions are at least half the cost of those delivered by a GP.</li> </ul>
<p>University of Sheffield (2009a) Economic review for NICE</p>	<p>Screening and brief interventions cost-effectiveness review (brief intervention of less than 10-15 minutes, 1 session)</p>	<p>Screening plus brief intervention is cost-effective in the primary care setting. Increasing the intensity of the intervention does not increase the effectiveness – <b>very brief interventions</b> (i.e. less than 10-15 minutes) <b>are likely to be more cost-effective than extended brief interventions</b> (i.e. involving more than one session/contact).</p> <p>Lifetime QALY gain per individual due to screening and brief intervention is likely to be 0.004 to 0.019 compared to no intervention – such interventions are cost-effective based on a cost-effectiveness threshold of £20,000 per additional QALY</p>
<p>The Sheffield review found 22 studies looking at the economic effects of screening and brief intervention in primary care, all assessed as of low to moderate quality. One of these, the US Fleming study, is listed separately here, as it has been used by the UK government to estimate intervention effects:</p>		
<p>Fleming et al (2002) US RCT, described as 'low in external validity' by NHS EED, but one of 3 studies used by the UK Alcohol Learning Centre (2010) on which they base their 'alcohol ready reckoner (see p.6)</p>	<p>Trial for Early Alcohol Treatment (Project TrEAT). Brief intervention (extended - including 2 primary care physician visits and 2 nurse follow-up phone calls)</p>	<p>Cost effective – significant reductions in:</p> <ul style="list-style-type: none"> <li>• alcohol use over 4 years;</li> <li>• hospitalisation and emergency department visits;</li> </ul> <p><b>£4.30 reduction in future health care costs for every £1 invested.</b></p>
<p>Ludbrook et al (2002) &amp; Ludbrook (2004) Review for the Scottish Executive, including</p>	<p>Brief interventions</p>	<p>Cost per patient = £86.74. Life years saved = 0.033. Cost per life gained = £2,600 (if no resource savings are taken into account). If reduced health and legal costs are taken into account, then benefits exceed costs, with <b>cost savings of £2,000 per life per year</b>. Healthcare savings are £21.81 per patient, rising to £66.31 if vehicle crimes are included.</p>

Study	Intervention	Cost-effectiveness/ savings
Scottish modelling		
<b>Department of Health estimates</b>		
DH (2009) Guidance for commissioners	Identification and advice for harmful/hazardous drinkers	In the average GP cluster (population 50,000), <b>for every £14,990 invested, there would be a saving of £64,458 in return</b> on the investment (£4.30 for every £1).  In the average PCT (population 350,000) – for every £91,611 invested, there would be a saving of £393,927 in return on the investment.
<b>Local data</b>		
HELP resource (2010) (Health England Leading Prioritisation Tool)	Brief interventions delivered in GP surgeries	Found to be the second most cost effective of interventions for all PCTs, after changes in taxation. The cost was £105.08 per person more than usual care. Estimated reductions in alcohol consumption of 40%, with additional 0.0233 QALYs per person, and <b>cost savings of £123 per person.</b>
Alcohol Learning Centre (2010)	Alcohol Ready Reckoner	For each PCT in England, this resource provides monetary values for costs and benefits of alcohol interventions, including GP screening and brief interventions.
<b>2b Emergency care and hospital settings</b>		
The available evidence does not allow firm conclusions regarding the cost effectiveness of interventions in a UK emergency care or hospital setting to be made (NICE, 2010b & University of Sheffield 2009a). The University of Sheffield found only three papers which investigated the economic aspects of screening plus a brief intervention in the emergency care setting. They considered that one of these (Kunz et al 2004) was considered of limited use within the UK because the study population was unrepresentative. The other two are as follows:		
Barrett et al (2006) Study quality++ rated by University of Sheffield (2009a)	Screening in A&E followed by brief intervention by hospital alcohol health worker (AHW) in alcohol misusing patients in A&E	There is at least a 65% probability that referral to an AHW is the more cost-effective strategy in reducing the consumption of alcohol among A&E attendees with a hazardous level of drinking, compared to an 'information-only' control group. The brevity of the treatment, its low cost (£6 per patient for each brief intervention) and short-term efficacy adds to its case for selection.
Results are transferable to the whole of the UK (NHS EED). Although NHS EED assessed the study as of good quality, they noted that the intervention effects are not great.		



Study	Intervention	Cost-effectiveness/ savings
Gentilello (2005) US study, rated high quality + by University of Sheffield, (2009a)	Screening plus brief intervention in trauma centres	Cost minimisation analysis showed that cost savings were £47 per patient screened, or £175 each patient offered an intervention. <b>Savings were £3.81 for every £1 spent</b> (conversions from US dollars based on Jan 2005 exchange rate of £0.53 per US\$).
<b>Department of Health estimates</b>		
DH (2009) Guidance for commissioners	Identification and advice for harmful/hazardous drinkers in A&E.	One nurse could prevent about 40 admissions each year and deliver <b>net savings to the NHS of around £67,000</b> (having allowed for estimated salary costs of £60,000).
<b>Local examples</b>		
<i>quoted in</i> Royal College of Physicians, (2001), HubCAPP (2010a) and recommended by Department of Health (2009)	Alcohol liaison nurse in hospital setting to case-find and deliver brief advice. Additional work would include medical management of patients with alcohol problems; liaison with community alcohol and other specialist services; education and support for other healthcare workers in the hospital	At the Royal Liverpool Hospital, economic analysis suggested that the post <b>saved 10 times more in reducing repeat admissions than it cost</b> (15 fewer admissions or readmissions per month).
NHS Innovations North West, (2009)	Combination of: access to specialist alcohol nurses; Link Nurse development programmes; brief intervention; staff education/information sessions; resource packs; detoxification clinics; Antabuse clinics; introduction of acamprosate; rapid access alcohol clinics; nurse-led liver clinics supported by gastroenterologists; and links with community alcohol teams.	Three North West Acute NHS Trusts have implemented alcohol services that have led to <b>savings in each Trust of between £140,000–£300,000 over a 3–12 month period</b> . Savings were due to reduced alcohol-related hospital admissions and reduced length of stay.
Alcohol Learning Centre (2010)	Alcohol Ready Reckoner	For each PCT in England, this resource provides monetary values for costs and benefits of alcohol interventions, including provision of hospital alcohol health workers.
<b>2c Pharmacy setting</b>		
<b>Local example</b>		
HubCAPP (2010b) Hub of	NHS Wirral is supporting all of	Customers complete a brief questionnaire, and receive advice and information from pharmacy staff where

Study	Intervention	Cost-effectiveness/ savings
Commissioned Alcohol Projects and Policies	Wirral's 86 Pharmacies to provide an alcohol screening and brief intervention service.	appropriate. Customers are contacted at 8 and 52 weeks to see if the brief intervention has had any effect. The Pharmacy staff also undertake screening with customers frequently presenting with symptoms associated with alcohol misuse. (Nothing on cost-savings yet - project is ongoing).

### 3. Psychotherapy and other interventions for those with moderate or harmful dependence (tertiary prevention)

For those who are more alcohol dependent and who may seek treatment, brief interventions may be appropriate as an initial treatment. Those patients who do not respond to such interventions can be referred to more intensive/extensive treatment, in a 'stepped care' approach (Moyer et al, 2002).

There is another NICE alcohol publication due in February 2011 that will deal with planned withdrawal for people presenting with harmful and dependent drinking.

Study	Intervention	Cost-effectiveness/ savings
UKATT, (2005) UK randomised trial. No comment on study quality in NHS EED, but it states that 'you should decide if this [the new social behaviour & network therapy] represents a valid health technology in your own setting'.	Psychosocial/ family therapies	The new social behaviour & network therapy is equally as cost-effective as the proved motivational enhancement therapy (MET). <b>Both saved about five times as much in expenditure on health, social, and criminal justice services as they cost</b> - i.e. every £1 spent on evidence based alcohol treatment results in a net saving of £5 to the public sector. Extending such treatments to 10% of dependent drinkers would reduce overall annual public sector costs by £109m to £156m (more if long-term savings included) (UKATT 2005)
Drummond et al (2009) UK pilot RCT  Full RCT now underway. NHS EED commented that study methods were good, but	Stepped intervention in primary care, compared to brief intervention -stepped care offers a potentially resource-efficient means of meeting the needs of individuals in more severe cases - provides a means of delivering high-intensity and more costly interventions only to those who fail to benefit	Stepped care interventions consisting of three successive steps (a single session of behaviour change counselling delivered by a practice nurse; four 50-minute sessions of motivational enhancement therapy delivered by a trained alcohol counsellor; and referral to a community alcohol treatment agency) resulted in greater cost savings and more motivation to change compared with minimal intervention (5 minute directive advice from a practice nurse, and self-help booklets). The stepped care intervention costs ten times that of the minimal

Study	Intervention	Cost-effectiveness/ savings
conclusions on cost-effectiveness of stepped care difficult to assess.	from less intensive interventions, more in keeping with the way clinical care is typically delivered than the application of blanket brief interventions.	intervention (£216 compared to £20), but after 6 months, the mean social cost per patient in the 6-month period preceding follow-up was £2,308 in the intervention group and £12,617 in the control group. <b>The net cost-saving is almost £9,000 per patient in stepped care compared with minimal intervention.</b>  N.B. this intervention takes place in primary care – but involves those with more severe problems seeing a trained alcohol counsellor. As a result of this study, a large-scale pragmatic randomised controlled trial of stepped care alcohol intervention in primary care has begun. <sup>45</sup>
Hilton et al (2001), reporting on US randomised clinical trial (Stout et al, 1999). No NHS EED entry.	Extended case monitoring (low intensity long-term interaction with a case worker, monitoring major life problems as well as substance misuse, and referral for additional treatment as appropriate)	Effective and cost-effective in preventing lapses in those who have misused alcohol in the past, and in reducing severity of lapses.  After the first year, case-monitored subjects had 73% fewer visits to emergency hospital departments (significantly fewer).  In the <b>first year</b> , there were cumulative <b>savings on outpatient treatment of approximately £144 per case</b> (conversions based on Jan 1999 exchange rate of £0.60 per US\$).
Slattery et al (2003) Scottish modelling study for the Scottish Health Technology Board (not a journal article, & not in NHS EED)	Coping and social skills, behavioural self-control training, motivational enhancement therapy, and family therapy	The cost of a course of treatment is estimated at £385 per person for each of the psychosocial therapies.  This study modelled health care cost savings in Scotland over 20 years. The savings were estimated from the evidence on abstinence rates, estimated relapses and the likelihood that those continuing drinking would develop alcohol-related conditions. At 2002/03 prices, the range of therapies offered produced <b>net savings of £1,600 per abstinent patient.</b>
Meads et al (2007) UK systematic review by the University of Birmingham, for the West Midlands Health Technology Assessment Group (not in NHS EED)	Psychosocial/ family therapies	Family therapy produced cost savings to the NHS over 20 years when compared to undefined standard care, i.e. the discounted incremental <b>saving per additional abstinent patient was £2,696</b>
Long et al (1998) 'May be some sampling bias' / 'only % change reported – no	Comparing effectiveness and cost-effectiveness of a 5-week inpatient and a two week in- and day-	Change in programme delivery did not affect outcome but <b>treatment costs</b> and mean <b>length of stay</b> for the revised programme were <b>significantly reduced</b> . A two week in- and day-patient treatment was more cost effective than a 5-week inpatient treatment.

Study	Intervention	Cost-effectiveness/ savings
costs' / 'treat with caution, pending RCT' (NHS EED)	patient regime	
Birmingham Total Place Project (HM Treasury 2010)	Whole area approach to public services, providing a multi-agency approach to the needs of adult dependent drinkers who are frequent A & E attenders.	Evidence from Birmingham and other pilots shows that preventive services can both significantly improve outcomes and save public funds. Frequent attenders at A&E probably cost Birmingham's health service around £6m a year. Birmingham estimated that they can save over 10% of health service costs associated with alcohol misusers with frequent A&E attendance through more effective interventions with this group. Birmingham found that <b>every £1 spent on early intervention work could save £4</b> of public funding.
<b>Department of Health estimates</b>		
DH 2009 Guidance for commissioners	Interventions for dependent drinkers (range of interventions to suit a variety of users – those based on cognitive behavioural approaches have best chance of success)	In the average PCT (population 350,000) – <b>for every £583,464 invested, there would be a saving of £1,808,737</b> in return on the investment.  For every additional £1m invested in appropriate levels of intervention, up to 1,200 alcohol-related hospital admissions could be avoided.
<b>Local examples</b>		
Alcohol Learning Centre (2010)	Alcohol Ready Reckoner	For each PCT in England, this resource provides monetary values for costs and benefits of alcohol interventions, including treating dependent drinkers with motivational or social network therapy.

## 4. Licensing, advertising and breath testing interventions (primary prevention)

Analyses looking at the effects of outlet density, licensing hours and advertising policy are more exploratory than the pricing and brief intervention analyses presented above, due to a limited evidence base (University of Sheffield, 2009b). However, according to the WHO (2009), there is convincing evidence that such restrictions will reduce alcohol-related harm. The WHO also found convincing evidence for raising the minimum purchase age. Combined policy action over time may be needed to maximise harm reductions – for example combining advertising and pricing restrictions.

Study	Intervention	Cost-effectiveness/ savings
University of Sheffield (2009b) Report to the NICE Public Health Programme Development Group	Outlet density reduction	A 10% decrease in the number of both off-trade and on-trade outlets could result in public sector cumulative 10 year harm reductions of between £0.4b and £5.1b.  <b>Potential health savings in year 1 range from £3.5m to £49m</b> (including 5,800 fewer hospital admissions in the 1 <sup>st</sup> year, rising to 23,000 annually with the full effect of the policy)
University of Sheffield (2009b) Report to the NICE Public Health Programme Development Group	Reduction in licensing hours	A 10% reduction in hours could result in cumulative 10 year savings for the public sector, ranging from a loss of £0.36b <sup>1</sup> to a gain of £5.2b  <b>Potential healthcare cost reductions in year 1 range from a loss of £2.9m<sup>1</sup>, to gains of £45m</b> (including at least 3,600 fewer hospital admissions in the 1 <sup>st</sup> year, rising to 14,100 annually with the full effect of the policy)  <sup>1</sup> losses due to one study in the analysis which suggested that a reduction in licensing hours was associated with a small increase in alcohol consumption, possibly due to limited time for drinking leading to people drinking faster
University of Sheffield (2009b) Report to the NICE Public Health Programme Development Group	Advertising restrictions	With a total advertising ban and associated price control <sup>2</sup> , cumulative 10 year savings for the public sector could be as much as £33.5b.  <b>Healthcare cost reductions in year 1 could be up to £316m</b> , (including 72,000 fewer hospital admissions in the 1 <sup>st</sup> year, rising to 279,900 annually with the full effect of the policy).  <sup>2</sup> Restrictions on advertising alone without pricing controls could lead to an increase in alcohol consumption, due to suppliers turning to reducing prices as they compete for a share of the market.
WHO (2009) cost effectiveness modelling study (not in NHS EED)	Reduced access to retail outlets plus comprehensive advertising ban	<b>Each healthy year of life restored costs around I\$2,509*</b> (I\$ = international dollars)
WHO (2009) cost effectiveness modelling study (not in NHS EED)	Drink driving legislation and enforcement (via random breath-testing campaigns)	<b>Each healthy year of life restored costs around I\$3,762*</b> (I\$ = international dollars)
Vos et al (2010) Australian cost-effectiveness analysis (not in NHS EED)	Advertising bans & licensing controls	Advertising bans could improve health and achieve net cost savings (dominant on cost-saving, with limited strength of evidence).  Licensing controls could improve health at a <b>cost of less than £6,000 for each healthy year of life restored*</b>

		(very cost-effective, with evidence likely to be strong) (conversions based on Sept. 2010 exchange rate of £0.59 per Aus\$).
Vos et al (2010) Australian cost-effectiveness analysis (not in NHS EED)	Random breath testing and mass media drink driving campaigns	Such measures could improve health at a <b>cost of £6,000-£30,000 for each healthy year of life restored*</b> (cost-effective, with evidence likely to be strong) (conversions based on Sept. 2010 exchange rate of £0.59 per Aus\$).

\*cost-effectiveness ratio, expressed in terms of I\$ or £ per DALY saved (DALY= disability adjusted life-year)

## 5. Educational programmes (primary prevention)

NICE reported a lack of clear evidence on the effectiveness of school-based intervention approaches to the prevention and/or reduction of alcohol use (Jones et al, 2007). They recommend further study before widespread implementation can be supported. The WHO reported that although it is not expensive, there is convincing evidence that school based education does not reduce alcohol related harm and therefore should not be implemented in isolation as an alcohol policy (WHO, 2009 and Moller and Matic, 2010). Foxcroft et al (2003) note that there is a need for more studies on primary prevention amongst young people in different settings, as well as in schools.

Study	Intervention	Cost-effectiveness/ savings
NICE Public Health Guidance 7 (NICE, 2007a) & NICE costing statement (NICE, 2007b)	School based education and advice	Overall, school-based alcohol interventions were found to be cost effective, given the fact that they may avert the high costs associated with harmful drinking (both in terms of health and other consequences). Intensive long-term programmes may not be cost effective (NICE, 2007a).  Alcohol education incorporated into the science and PSHE (personal, social and health education) curriculum is <b>unlikely to generate any significant additional costs. Benefits would include reductions in alcohol-related missed schooling, teenage conceptions and anti-social behaviour &amp; crime</b> (NICE 2007b).
NICE effectiveness & cost effectiveness review (Jones et al, 2007)	Review of interventions in schools to prevent/ reduce alcohol use. <ul style="list-style-type: none"> <li>STARS for families (Start Taking Alcohol Risks Seriously) – US, nurse consultation and family-based programme<sup>1</sup> and</li> <li>SHAHRP (School Health</li> </ul>	The evidence on which types of school programmes are most effective is not clear. Only 3 programmes were considered suitable for inclusion in the NICE cost-effectiveness analysis – none from the UK.  Costs and effects were modest. Cost per student: <ul style="list-style-type: none"> <li>STARS: £20.30</li> <li>SHAHRP: £31.16</li> </ul>

Study	Intervention	Cost-effectiveness/ savings
	and Harm Reduction Project) – Australian, classroom based programme <ul style="list-style-type: none"> <li>Lions Quest SFA (Skills for Adolescence) US classroom based programme</li> </ul>	<ul style="list-style-type: none"> <li>SFA: £150.72</li> </ul> <p><b>Costs per case of hazardous/harmful drinking averted: (2 year outcome)</b></p> <ul style="list-style-type: none"> <li>STARS: £540.25</li> <li>SHAHRP (20 months): £284.54</li> <li>SHAHRP (32 months): £1,869.71</li> <li>SFA: £34,254.70</li> </ul> <p>ICERs showed that compared to STARS, the SHAHRP programme cost an additional £257.47 to prevent one case of hazardous/harmful drinking. Both STARS and SHAHRP were less costly and more beneficial than SFA.</p> <p><sup>1</sup> the STARS 'brief intervention' component was delivered to the whole randomly selected group and did not involve screening out of 'at risk' individuals, as in section 2 above.</p>
Spoth et al (2002) US study Excluded from NICE review (Jones et al, 2007, above), because not directly school-based. Not in NHS EED.	Family skills training interventions: <ul style="list-style-type: none"> <li>ISFP (Iowa Strengthening Families Program): seven sessions which parents and students attended together, and</li> <li>PDFY (Preparing for the Drug Free Years): five sessions focusing mainly on parents.</li> </ul>	ISFP resulted in a <b>benefit-cost ratio of £9.60 per £1 invested</b> , and a net benefit of £4,087 per family. PDFY had a <b>benefit-cost ratio of £5.85 per £1 invested</b> , and a net benefit of £1,860 per family. (conversions based on Jan 2002 exchange rate of £0.69 per US\$)

## Conclusion

There are numerous cost-effective alcohol prevention initiatives. The NICE costing report (2010a) concludes that the interventions with the most significant resource implications are:

- Minimum price per unit of alcohol
- Screening adults in primary care
- Brief interventions in primary care

Other cost-effective interventions include:

- Increasing the proportion of dependent drinkers treated with brief counselling packages such as motivational or social network therapy
- Providing alcohol Health Workers in A&E and in acute hospital clinics to work with non-dependent and dependent drinkers

(Alcohol Learning Centre, 2010)

There are additional potentially cost-effective initiatives that require further study. These include school-based educational programmes and legislation covering licensing, advertising and breath testing interventions.

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Matthew Ashton,	Assistant Director of Public Health, Strategy & Intelligence, NHS Knowsley / Knowsley MBC.	Jane Harris,	Research and Administrative Assistant, North West Public Health Observatory.

## Authors

Janet Ubido & Cath Lewis, Researchers, Liverpool Public Health Observatory

Richard Holford, Public Health Development Manager, NHS Knowsley/ Knowsley MBC.

Alex Scott-Samuel, Director, Liverpool Public Health Observatory.

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Contact email: [obs@liv.ac.uk](mailto:obs@liv.ac.uk)

**Liverpool Public Health Observatory**

Division of Public Health  
Whelan Building  
Quadrangle  
University of Liverpool  
Liverpool L69 3GB

Tel: 0151 794 5570/81  
Fax: 0151 794 5588  
E-mail: [obs@liv.ac.uk](mailto:obs@liv.ac.uk)

WWW: <http://www.liv.ac.uk/PublicHealth/obs>



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