Reducing harm in drinking environments

Evidence and Practice in Europe

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Summary

Preventing alcohol-related harm in drinking environments is critical in meeting the key priorities of the European Union's Alcohol Strategy (see Box). Much risky alcohol consumption and related-harm, particularly in young people, occurs in and around drinking venues, including pubs, bars and nightclubs. In addition to damage to individual health and communities, alcohol-related harm places large burdens on business and public services, for example through absenteeism, medical treatment, criminal justice sanctions and street cleaning after a night's entertainment. Drinking environments are also workplaces for millions of individuals across Europe, who can be the victims of other people's drinking through, for example, violence. Thus drinking environments are critical locations for addressing harmful and hazardous alcohol consumption and the harm it causes to society. However, to date there has been very little information available across Europe on the effectiveness of interventions to reduce harm in these settings.

Key priorities of the European Union's Alcohol Strategy:

- Protect young people, children and the unborn child;
- Reduce injuries and death from alcohol-related road accidents;
- Prevent alcohol-related harm among adults and reduce the negative impact on the workplace;
- Inform, educate and raise awareness on the impact of harmful and hazardous alcohol consumption, and on appropriate consumption patterns;
- Develop and maintain a common evidence base at EU level.

To address this gap in knowledge, the FASE (Focus on Alcohol Safe Environments) project was co-funded by the European Commission to develop a better understanding of measures that can be effective in reducing alcohol-related harm in drinking environments. The project has focused on interventions that can be implemented at local level, and has involved a systematic literature review to identify studies that have measured the effectiveness of interventions to reduce harm in drinking environment, and the collation of examples of practice in Europe. It focused on five key areas:

1. Responsible server/staff training interventions
2. Interventions to reduce underage access to alcohol
3. Policing and enforcement approaches
4. Interventions delivered in drinking establishments
5. Multi-component community interventions

This report combines the findings from both sections of the FASE project. For each intervention type, it summarises the findings of the literature review and provides examples of practice in Europe. It then provides recommendations for the development of policy to reduce harm in European drinking environments.

1. Responsible server/staff training interventions

- Studies have shown that responsible server and staff training interventions can increase staff knowledge about alcohol issues and have benefits in improving staff practice. However, the impacts of training programmes on alcohol use and related harms are generally small, except where training is made mandatory.

- Responsible server and staff training programmes are commonly used in Europe. However, with the exception of work in Sweden, few programmes have been subjected to rigorous evaluations to measure their effectiveness. More research is needed to develop understanding of how bar staff and server training could be implemented in European nightlife.

A responsible beverage service training programme has been developed in Stockholm, Sweden. The two day programme covers issues including alcohol's effects, alcohol legislation, service refusal skills, conflict management and drug issues. The training is mandatory for staff working in late night bars. Evaluation found continued improvements over time, with 70% of servers tested refusing alcohol service in 2001 compared with just 5% at baseline in 1996.

2. Interventions to reduce underage access to alcohol

- There is little evidence to support the placement of age verification devices in drinking venues as a standalone method of reducing underage sales. Enforcement activity to deter underage sales has shown some success, yet effects can be short lived. Enforcement needs to be applied regularly to maintain its effects and can benefit from the use of real deterrents and staff training.

- There is growing concern about underage alcohol use in European drinking environments. Whilst several countries appear to be taking action to address this, few studies have explored and reported the impacts of interventions being used. Consequently, there is little information available on the effectiveness of measures to reduce underage access to alcohol in European drinking environments.

In the UK, enforcement activity in the form of 'test purchasing' is part of routine practice by local authorities. Underage volunteers attempt to buy alcohol under the supervision of authorities to enable prosecution of those who break the law and act as a deterrent to underage sales. Test purchasing takes place in both on and off licensed premises. Data collected during national test purchasing campaigns found the failure rate was reduced from 25% to 15% in three months, building on a failure rate of 50% from a previous campaign.

3. Policing and enforcement approaches

- Findings from studies on the effectiveness of policing and enforcement activity in reducing alcohol-related harm are mixed. Some studies have found higher levels of alcohol-related problems following policing and enforcement activity, although this may be due to better detection and reporting of such problems. The strongest evidence comes from targeted enforcement in high risk premises.

- Policing and enforcement appears to play a key role in measures to reduce alcohol-related harm in European drinking environments. Whilst some measures report success, few interventions are subjected to rigorous evaluation meaning there is little information available on the use or effectiveness of different strategies.

In Slovenia, enforcement has been a major component of a national campaign to reduce alcohol related harm. This has included random breath testing of drivers and increased inspections in licensed premises to enforce laws preventing the sale of alcohol to underage or intoxicated individuals. During the campaign, the number of road traffic accidents and fatalities decreased significantly compared with the same period in previous years.

4. Interventions delivered in drinking establishments

- There is limited evidence to support the effectiveness of interventions delivered in drinking environments as standalone measures. Brief interventions delivered in bars have been found to reduce alcohol consumption in heavy drinkers, but methods to combat drink driving have been less effective.

- Interventions to address alcohol-related harm are being implemented in European drinking environments. Many interventions focus on reducing drink driving, often promoting designated driver programmes that lack evidence of effectiveness. However, new studies are emerging that contribute to the European evidence base on what is and is not effective in reducing alcohol-related harm.

In Milan, Italy, the Safe Driver project targeted young people in city nightclubs to prevent road accidents. It provided incentives for designated drivers to keep their blood alcohol concentration (BAC) within legal limits for driving. Whilst the BAC of designated drivers was significantly reduced compared to controls, many participants reported that they were not influenced by the incentives and that it did not change their drinking rates

5. Community-based, multi-component programmes

- Community-based programmes that combine a range of co-ordinated measures implemented through strong multi-agency partnership provide the clearest evidence of effectiveness in reducing alcohol-related harm in drinking environments. Studies have associated these measures to reductions in alcohol consumption, drink driving, road traffic crashes, violence and underage alcohol sales.

- Community-based multi-component approaches to reducing alcohol-related harm in drinking environments are evident in several countries. However, with the exception of the STAD project in Sweden, few measures have been rigorously evaluated.

The STAD (*Stockholm Prevents Alcohol and Drug Problems*) project in Sweden developed a multi-agency partnership to implement a range of measures to prevent alcohol related violence and injury in drinking environments. These included responsible beverage service training, community mobilisation and increased enforcement. Through ongoing research and evaluation, it was shown to reduce the number of violent crimes by 29% in the intervention area. The programme was also found to be cost-effective.

Key points and recommendations

- Although there are many interventions underway across Europe to create safer drinking environments, few of these are rigorously evaluated. Consequently there is very little information available on their effectiveness in reducing alcohol-related harm, and on their cost-effectiveness. Sharing and developing the existing evidence base is critical in protecting health in drinking environments.

- Local agencies often lack the capacity and resources required to implement rigorous evaluations of their work. Support for evaluating interventions in drinking environments should be provided at a European level. This should include evaluating both effectiveness in terms of reduced alcohol-related harm and the cost-effectiveness of programmes.

- Interventions with a clear evidence base should be promoted and tested for transferability in different settings. Authorities should be discouraged from investing in measures that have been shown to have no benefits.

- The clearest indication of effectiveness from the international evidence base comes from community-based, multi-component programmes, which combine community mobilisation, responsible beverage service training and stricter enforcement of licensing laws. Partnership approaches that enable pooled resources to be targeted at joint priorities should be promoted.

- The collection and sharing of reliable local level data on alcohol use, alcohol availability and alcohol-related harms should be encouraged and supported in

order to facilitate the targeting, monitoring and evaluation of interventions to reduce alcohol-related harm.

- Evaluation and monitoring of interventions should take into account any broader impacts of interventions implemented in drinking environments. For example, measures that reduce violence in drinking environments should ensure displacement effects are not moving violence into homes and vulnerable communities, where violence is less visible.

- A major limitation of many interventions in drinking environments is their short-term approach, with the benefits of measures introduced through one-off funding often being short-lived. Support is needed to enable national and local agencies to build effective measures into routine practice. Measuring the economic benefits of interventions to health and criminal justice services, as well as the night time economy itself, is an important factor in sustaining effective practice.

- There is a major gap in knowledge of drinking behaviours in young adults in Europe, with no consistent data available on this high risk group and few studies conducted even at country level. Further, there is very little information on alcohol-related harm occurring in or because of European drinking environments and the costs this imposes on public services, communities and the alcohol industry. Developing this knowledge would greatly facilitate the creation of safer drinking settings in Europe.

- Interventions to reduce alcohol-related harm in drinking environments are often implemented as reactive rather than preventive problems. The literature suggests that high concentrations of alcohol outlets, longer opening hours and cheap alcohol prices contribute to increased alcohol-related problems. This literature should be used to inform regulatory control measures that prevent the development of drinking environments conducive to alcohol-related harm.

- Measures to reduce alcohol-related harm in drinking environments should form part of broader strategies to understand and address alcohol-related problems. Interventions should not focus solely on preventing harm, but also on reducing the drinking behaviours and other behavioural, environmental and cultural factors that contribute to such harm.

Introduction

Reducing alcohol use and related harm in young people is a major European public health priority (1). Young Europeans typically consume greater quantities per drinking occasion than other drinkers (2), with many binge drinking or drinking to the point of drunkenness (3). These drinking patterns are reflected in the disproportionate burden of alcohol-related harm seen in young people across Europe. Over 25% of deaths in 15-29 year old males, and over 10% in females, are associated with alcohol use, largely through violence, road traffic crashes and unintentional injuries (4). Much alcohol consumption by young people takes place in public drinking environments, including pubs, bars and nightclubs. Consequently, these venues and their surrounds can see high levels of alcohol-related harms; high densities of drinking premises have been associated with increased binge drinking, violence, road traffic injuries and sexually transmitted infections (5). There is currently little consistent information available at a European level to identify levels of alcohol use and related harm in drinking environments. However, a number of studies have highlighted the extent of alcohol use and related harms in European nightlife (see Table 1). In addition to damage to individual health and communities, alcohol-related harm places large burdens on business and public services, including through absenteeism, health treatment, criminal justice sanctions and street cleaning after a night's entertainment. Drinking environments are also important workplace settings for millions of individuals across Europe, who can become victims of other people's drinking (e.g. through violence). Thus, managing drinking environments and implementing interventions to reduce harm among those visiting and working in drinking environments are growing priorities in many European countries.

Existing evidence suggests that regulatory and legislative measures that control alcohol availability through, for example, restricting the density of drinking venues and controlling opening hours and the price of alcohol, are important in preventing alcohol-related harm. However, such measures are often dependent on national and international policy. Consequently, to develop a better understanding of measures that can be implemented locally to reduce alcohol-related harm in drinking environments, a systematic literature review was conducted through the European FASE (Focus on Alcohol Safe Environments) project (6). This identified a range of studies where the effectiveness of interventions to reduce alcohol-related harm in drinking environments had been assessed, falling into five key areas:

1. Responsible server/staff training interventions
2. Interventions to reduce underage access to alcohol
3. Policing and enforcement approaches
4. Interventions delivered in drinking establishments
5. Multi-component community interventions

These intervention types have shown varied levels of success, and overall the strongest evidence comes from multi-component community interventions. However, the vast majority of studies have been conducted in non-European countries. Thus, the second stage of the FASE project has sought to identify examples of how the various intervention types identified in the literature review are being implemented in Europe, and how well they are working. This report combines

the findings from both sections of the FASE project. For each intervention type, it summarises the findings of the literature review and provides examples of practice in Europe. It then provides recommendations for the development of policy to reduce harm in European drinking environments.

Table 1: Alcohol use and related harm in drinking environments: some findings from studies in Europe

Alcohol use	Violence
▪ A study of young nightlife users in nine European countries found that seven in ten had been drunk in the last four weeks (7).	▪ One in five nightlife users surveyed across nine European cities had been involved in violence in the last 12 months (15).
▪ Among young Danish tourists in a Bulgarian resort, 98% had consumed alcohol the previous night, 85% had consumed over 8 units, and 46% had some form of memory loss the next day (8).	▪ In England and Wales, one in five of all incidents of violence occur in or around pubs, bars and nightclubs, with the vast majority occurring after the perpetrator had been drinking (16).
▪ Research in England found that average alcohol consumption in young people on a night out in a city drinking environment exceeded 20 units (9).	▪ An emergency department study in Norway found most assault victims were young men, assaulted at weekend nights by strangers in public locations after drinking alcohol (17).
Road traffic injuries	**Sexual health**
▪ 18% of nightlife users across nine European cities had driven when drunk in the last four weeks, and 37% had taken a lift from a driver who was drunk or drugged (10).	▪ Many young Europeans cite meeting sexual partners as being a major reason for using pubs, bars and nightclubs (18).
▪ In Switzerland, increases in alcohol-related road traffic casualties at weekend nights correlate with risky single occasion drinking outside of the home (11).	▪ 29% of drinkers in a European nightlife study used alcohol specifically to facilitate sexual encounters (7).
▪ Italian emergency department studies show alcohol-related traffic injuries peak in young people at weekend nights (12,13).	▪ Alcohol use is associated with regretted sex, unprotected sex and sexual assault (7,19,20)
▪ In England, 63% of drivers and 80% of pedestrians killed on the road at weekend nights have been drinking (14).	▪ 60% of victims reporting drug facilitated sexual assault in the UK had alcohol concentrations above 150mg% (21).

1. Responsible server/staff training interventions

The behaviour and attitudes of staff working in licensed premises can have an important impact on levels of alcohol-related harm (22). For example, factors such as overserving (service of alcohol to customers who are already drunk), the presence of underage patrons, and poor staff ability to identify and handle problems have been associated with increased levels of aggression and crime in drinking establishments (23). Despite sale of alcohol to underage or intoxicated individuals being illegal in many European countries, studies show that such sales do occur. Bar servers can fail to refuse sales due to factors including low awareness or personal responsibility, difficulties identifying and refusing service and commercial pressure to sell alcohol (24-27). Thus, effective training programmes for staff in drinking environments can be important in preventing alcohol-related harm by developing positive attitudes and skills regarding factors such as service refusal, conflict resolution and responsible venue management.

1.1 Evidence summary

Studies have shown that responsible server and staff training interventions can increase staff knowledge about alcohol issues and have benefits in improving staff practice. However, the impacts of training programmes are generally small, except where training is made mandatory.

The FASE systematic review identified seven studies that had evaluated the effect of bar server and staff training programmes. Of these, three were conducted in the US (28-30), two in Canada (31,32), one in Australia (33) and one in Sweden (34,35). All training programs aimed to make servers and managers aware of their responsibility towards creating a safe drinking environment, and provide them with skills to prevent alcohol-related harm. Most focused on managers, servers and the responsible service of alcohol, but one study (31) developed conflict resolution skills to prevent aggression in bars.

The evidence from these studies suggests that responsible training programmes can be effective in increasing staff knowledge regarding alcohol issues, and that training can have some benefits in improving server practice. However, the impacts of such programmes are generally small, except where training is mandated. Elsewhere, the impacts of training programmes can be reduced through factors including poor support from bar managers and high staff turnover. Brief summaries of the interventions and their outcomes include:

- A six hour training programme covering the need for responsible service, methods of preventing customers from becoming intoxicated and ways of intervening with drunk customers was provided to servers and managers in eight US states. Bar managers also received training on developing responsible service

policies and guidelines to deliver the programme in the workplace. Following the training, staff reported improved knowledge and self-reported behaviours, and were observed to intervene more with intoxicated customers. However, despite this improvement, overall intervention rates remained low (28).

- In Ontario, Canada, a server training programme was delivered to staff in licensed premises to develop their skills in preventing intoxication. As part of the training, owners and managers were encouraged to establish responsible server policies and bar servers were familiarised with these policies and trained in responsible serving practices. Evaluation found that the knowledge of trained staff regarding their obligations and strategies in dealing with alcohol-related problems increased. Further, trained servers exhibited less inappropriate responses to acted-out scenarios than untrained servers (32).

- In Sweden, servers in student-focused drinking venues were trained through an awareness and education programme that included: alcohol expectations and beliefs; alcohol facts and myths; and techniques to refuse service to intoxicated customers. The effect of the training was examined by exploring changes in patron's breath alcohol concentration (BrAC) and the social atmosphere in bars. Following the training, the BrAC of patrons in participating bars decreased compared to those in non-participating bars, as did the observed level of 'rowdy' social atmosphere, although the intervention did not reduce the proportion of patrons with high BrACs (>0.1%) (34). A follow up study five months after the programme found that the positive effects of the training were not sustained (35).

- In Australia, a responsible server training programme was delivered to staff in seven 'medium to high risk' premises[1], covering alcohol service legislation, the effects of alcohol, recognising intoxication, ways of intervening with drunken customers and developing venue policies. The training was designed to last three hours, but in practice was limited to 1-2 hours due to time constraints imposed by bar managers. Evaluation following the training found a small reduction in servers' knowledge, but no significant changes in patron blood alcohol concentration or in drink driving offences associated with the venues. Further, service refusal and age verification practices were found to be poor. The lack of success of the programme was attributed to low support by bar managers (33).

- In the US, the Alcohol Risk Management (ARM) programme, consisting of five one-to-one training sessions for bar managers and owners, was tested in five drinking establishments. Owners and managers in participating venues received tailored help to produce venue policies regarding sales of alcohol to underage and intoxicated patrons and communicating the policies to staff. Underage sales and service to intoxicated customers decreased, but not significantly, following the training programme (29).

- In Oregon, US, mandatory alcohol server training for staff in licensed premises was established in 1986. The one day training package included modules on: the effects of alcohol and its interaction with other substances (e.g. drugs); state alcohol laws; liability issues; and effective patron intervention methods. After three years over 50% of all servers had been trained and the effect on traffic

[1] Identified as those associated with drink driving offences.

crashes was assessed. The mandatory training programme was associated with a significant reduction in single-vehicle night-time crashes (30).

- The *Safer Bars* programme in Canada aimed to reduce aggression in large capacity bars by providing managers and staff with training including: recognising signs of aggression; early intervention techniques to avoid and defuse aggression; and legal issues relating to managing problem behaviour. Managers were also provided with a risk assessment workbook alerting them to environmental factors that could contribute to aggression in their bars. Incidence of severe and moderate aggression was low across participating bars, but following the intervention patron physical aggression reduced in bars that received the training, whilst it increased in control bars. Staff aggression increased in both control and intervention bars, but was more pronounced in the control bars. The effects of the programme were moderated by high staff turnover (i.e. bars with higher staff turnover had higher staff aggression after the intervention) (31).

1.2 Responsible server/staff training interventions in Europe

Responsible server and staff training programmes are commonly used in Europe. However, few rigorous studies have been implemented to evaluate their effectiveness. Greater research in this area would develop understanding of how staff training courses can best be developed and implemented and how their use can be incorporated into nightlife practice at local, national or European levels.

Responsible server and staff training programmes are among the most common interventions used in European nightlife environments. Many training programmes are developed locally based on evidence of good practice elsewhere (e.g. Barcelona, Spain [36], Netherlands, see page 13). In some areas, completion of training programmes for staff working in drinking establishments has become mandatory. For example, in Stockholm, staff working in late night bars are required to complete a responsible beverage service training programme developed and implemented by local authorities. This training programme has been evaluated and has shown positive effects on reducing sales to pseudo-intoxicated customers (see page 14). In Scotland, all individuals working as alcohol servers are required to undertake at least two hours training prior to serving alcohol, either through attending a training course or through in-house training delivered by supervisory staff (see page 15). In most parts of the UK, individuals who manage or act as supervisors in licensed premises are required to hold a personal license enabling them to authorise the sale of alcohol, and must complete a recognised training course as a condition of obtaining such a license. Also in the UK, all individuals working as door supervisors require a license and must complete a recognised training course (covering skills including conflict resolution, customer services skills and alcohol and drug issues) as a part of licensing conditions. Despite the widespread use of staff training programmes, few rigorous evaluations have been conducted on their effectiveness. The following case studies provide examples of practice in the Netherlands, Sweden and the UK.

Bar Veilig (Bar Safe) in the Netherlands

Bar Veilig is a training programme in the Netherlands that aims to support bar owners and staff in reducing aggression in their venue. The programme is based on the Safer Bars training programme developed in Canada (31) and consists of two key components:

1. A discussion with bar owners to identify ways in which their bar environment can be modified to prevent the risk of aggression

2. A training course for bar staff to increase their awareness and skills regarding the prevention of aggression.

The discussion with bar owners includes a risk assessment process that identifies potential factors that may contribute to aggression within individual bar premises, and provides advice for removing such risks. It covers both the physical bar environment (e.g. design, crowding, seating areas) and the establishment's policy and practice (e.g. responsible server practice, customer behavioural standards). The discussion lasts approximately one hour and afterwards the bar manager is provided with a report detailing issues discussed and suggested improvements.

The training course focuses on developing staff skills in identifying the early stages of aggression, techniques for intervening in aggressive situations to avoid and defuse aggression (including conflict resolution, anger management and body language), and aspects related to legislation. The course lasts half a day and is designed for all staff working within licensed premises (e.g. owners, managers, bar servers; except for security staff). Planning of both the training and the discussion with the bar owner is co-ordinated by municipalities and facilitated through a web-based system that enables the course to be tailored to meet local needs.

Although no outcome evaluation has been undertaken of the Bar Veilig programme in the Netherlands, the training is based on the evaluated Safer Bars programme and has been subjected to a process evaluation in three municipalities in the Netherlands. The evaluation involved 11 bar owners and 94 bar staff who took part in the training. This found that the participants self-reported increased ability to deal with aggression following participation in the training, and that the checklist discussion was rated positively by owners (37).

Responsible Beverage Service in Sweden

A responsible beverage service training programme has been developed in Stockholm as part of the STAD programme (see page 36). The training programme began operating in 1997 and, in 1999, became mandatory for licensed premises that stayed open until 1am or later. It predominantly targets alcohol servers, but can also be delivered to other staff working in drinking establishments, including managers and door supervisors. The training aims to reduce alcohol-related injuries and violence by improving staff knowledge, attitudes and skills, with the specific goals of:

- Preventing sales of alcohol to minors
- Preventing sales of alcohol to intoxicated customers
- Improving the ability of staff to recognise high-risk situations and intervene appropriately
- Helping staff from drinking establishments develop their own alcohol service guidelines.

The training programme has a local focus, with trainers coming from the same municipality as trainees. This provides opportunities for staff from drinking establishments to meet and form relationships with local authorities responsible for alcohol issues. The training programme last two days, and covers issues including:

- The effects of alcohol
- Swedish alcohol legislation
- The extent of alcohol-related violence and how this can be prevented
- Service refusal issues and skills
- Drug issues
- Conflict management skills

At the end of the course, participants undertake a written examination and those who successfully complete this are awarded with a diploma. The responsible beverage service training programme has been evaluated through the use of pseudo-intoxicated patrons (i.e. actors pretending to be drunk) to test servers' refusal of alcohol to intoxicated customers. This found continued improvements over time, with 70% of servers tested refusing alcohol service in 2001 compared with just 5% at baseline in 1996 (38).

Training for alcohol servers in Scotland

In Scotland, the Licensing (Scotland) Act 2005 introduced mandatory training for all individuals who serve alcohol. From September 2009, all alcohol servers are required to have undertaken training, with the level of training required depending on the role and responsibilities of alcohol servers (39).

The act introduced two types of license to govern all alcohol sales. Each establishment that sells alcohol (e.g. a pub, bar or nightclub) must have a 'premises licence', and each individual that authorises alcohol sales within a licensed premises (e.g. a bar manager or owner) must have a 'personal license'. Whilst it is not necessary for all staff in licensed premises to hold a personal license, it is a condition of law that a personal license holder is present to supervise alcohol sales at all times. In order to obtain a personal license, individuals must have completed an accredited personal license holder qualification. Accredited qualifications cover, for example:

- Licensing legislation and its objectives;
- The roles and functions of licensing authorities
- Responsible operation of licensed premises (e.g. service refusal and conflict resolution)
- The effects of alcohol
- The effect of irresponsible operation on society and health

For those alcohol servers who are not personal license holders, a minimum of two hours of training is required by law. This training can be provided either by an accredited trainer or by a personal license holder and must cover information including licensing legislation, responsible alcohol service and the effects of alcohol. Completion of the training must be documented by both the trainer and the trainee.

The impact of the mandatory training scheme has not yet been evaluated. However basic evaluation of the ServeWise training programme managed by Alcohol Focus Scotland (an accredited training provider under the new licensing legislation) found that 98% of participants reported learning something new about licensing legislation and 93% used the information they had learnt through the training programme in their job (40).

2. Reducing underage access to alcohol

Throughout Europe, legislation governs the age at which young people can purchase and consume alcohol in public drinking venues. Such laws vary between countries, with minimum legal alcohol purchase ages ranging from 16 years (e.g. in Italy) to 20 years (e.g. in Iceland) (4). However, studies frequently show that young people below legal drinking ages are often able to access and consume alcohol in public drinking premises, with legislation often not adhered to (41,24). Preventing underage access to alcohol is a critical part of reducing harm in drinking environments. Young drinkers are particularly vulnerable to the acute effects of alcohol, with youth alcohol consumption associated with increased risks of alcohol-related injuries, involvement in violence, risky sexual behaviour, drug use and dangerous driving behaviours. Further, children who begin drinking at an early age are more likely than those who start drinking later to drink more frequently, in greater quantities and to drink to get drunk. Alcohol consumption in childhood can also affect children's development, and is associated with social problems and alcohol abuse in later life (42).

2.1 Evidence summary

There is little evidence to support the placement of age verification devices in alcohol retail establishments as a standalone method of reducing underage sales. Enforcement activity to deter underage sales of alcohol has shown some success, yet effects can be short lived. Thus, enforcement activity needs to be conducted on a regular basis to maintain its effects, and can benefit from the use of real deterrents (e.g. sanctions and media attention for those who serve underage customers) and the provision of training for alcohol vendors.

The FASE systematic literature review found seven studies that had evaluated interventions aimed at reducing underage alcohol sales. These included two studies that had assessed the use of electronic age verification devices (43,44) and five that had examined enforcement activities (45-49). Although most studies focused on alcohol sold in off-licensed premises, several included on-licensed alcohol retail outlets such as pubs and bars.

Age verification devices

Electronic age verification devices provide alcohol retailers with a method of easily identifying customers' ages by swiping their driving licenses or other forms of identification through a card reader. However, the two studies exploring the use of such devices in alcohol retail outlets provided little evidence for their effectiveness in reducing underage access to alcohol. Both studies had been conducted in the US:

- In one study (43) there was no change in age verification practices following the introduction of an electronic age verification device (with limited training and encouragement for staff).

- In the second, the introduction of electronic age verification devices, combined with a youth awareness programme, was associated with a *decrease* in age verification practices (44).

Both studies concluded that the attitudes of staff and their commitment to preventing underage sales were more important in determining age verification practices than the availability of age verification devices.

Enforcement activity

The studies that examined enforcement activities were implemented in the US (45-47), UK (48) and New Zealand (49). All used young people either below or close to the minimum purchase age to test alcohol servers' age verification or service refusal practices as part of enforcement activity.

- The UK study found no evidence for the effectiveness of a police intervention that consisted of a warning letter sent to licensees reporting the results of underage purchase attempts, reminding them of their legal responsibilities and advising them of future police operations. The contents of the letter were reiterated in personal visits or through telephone calls. Underage sales were measured by 13 and 16 year old volunteers attempting to purchase alcohol before and after the intervention. Despite some reduction in underage sales immediately following the intervention, overall underage sales increased (48).

- In New Zealand, the proportion of alcohol sales made in off-licenses without age identification decreased following a community action project that: monitored sales of alcohol made without age identification using volunteers of the minimum purchase age (18 years); used monitoring data for media advocacy and direct contact with alcohol retailers; and worked with key enforcement staff to encourage increased monitoring and enforcement of age legislation. In addition, the proportion of age identification signage that was present and visible increased following the intervention (49).

- In the US, civilian-led underage alcohol purchase attempts were used alongside awareness raising activity to deliver citations to alcohol retailers who were willing to serve alcohol to minors, and commendations to those who refused service. The proportion of store clerks willing to sell alcohol products to underage customers decreased in the intervention area, but not significantly, as measured by further underage alcohol purchase attempts. Reductions in underage sales were largest in premises that had received the intervention (46).

- A different US study found no effects of underage alcohol purchase attempts in reducing subsequent underage sales. The authors suggested that the lack of sanctions for sellers who sold alcohol to underage individuals during the study may have accounted for the intervention's lack of effect (47).

- A US study found some positive yet short-lived effects of police enforcement in reducing alcohol sales. Pseudo-underage volunteers (who were over the legal alcohol purchase age but looked younger) were used to check whether alcohol vendors requested age verification. The likelihood of sales to young volunteers reduced by 17% immediately following the intervention. However, three months later these effects had decayed to 8% in on-licensed premises and zero in off-licensed premises. An increase TV broadcasts regarding enforcement checks initially decreased the likelihood of underage sales, but again effects were short lived. The authors suggested that ongoing enforcement checks were necessary to maintain their deterrent effects. The study also examined the effects of a training programme for managers of retail establishments, yet found this to be associated with an increase in the likelihood of sales to young people (45).

2.2 Reducing underage access to alcohol in Europe

There is growing concern about underage alcohol consumption in public drinking environments in Europe. Whilst several countries appear to be taking action to address this, few studies have explored and reported the impacts of interventions. Consequently, there is little information available on the effectiveness of measures to reduce underage access to alcohol in European drinking environments.

There is very little information available on work underway in Europe to prevent underage access to alcohol in pubs, bars and nightclubs. However, news reports and governmental action in several countries suggest that underage drinking is an issue that is receiving increasing attention. For example, moves are underway in France to increase the legal alcohol purchase age from 16 to 18, with large fines for vendors who sell alcohol underage. In Malta, legislation has been amended to make it illegal for bartenders and other retailers to sell alcohol to individuals under the age of 17, and for under-17s to purchase alcohol and consume it in public places. In Cyprus, underage alcohol consumption in bars and nightclubs has received much media attention in recent years and police activity to enforce age legislation has been increased, with alcohol-free nightclubs for under-18s also being proposed. Despite such activity, few studies have explored the effectiveness of different techniques to reduce underage access to alcohol in European drinking environments. In the Netherlands, mystery shopper programmes are being used to examine underage sales of alcohol in bars and nightclubs and measure the effectiveness of broader activity to reduce underage drinking (41). In the UK, such practice is built into routine enforcement activity through test purchasing (See page 19). In parts of Italy, local regulations are being used to strengthen restrictions on young people's access to alcohol and increase enforcement activity (see page 20). The following case studies outline work underway in the UK and in Milan, Italy, to reduce underage access to alcohol in public drinking environments.

Test purchasing in the UK

In the UK, enforcement activity in the form of 'test purchasing' is used as part of routine practice by Trading Standards authorities* and police. Test purchasing involves underage volunteers attempting to buy alcohol to enable authorities to identify retailers who sell alcohol to customers below the legal minimum purchase age (18 years). It is used to both deter underage sales and enable prosecution of those who break the law.

Test purchasing is conducted in both on- and off-licensed premises, and can be implemented randomly or targeted at high-risk venues. Underage volunteers visit licensed premises and attempt to purchase alcohol under the instruction and supervision of the authorities. A successful sale can result in sanctions including fines, prosecution and review of the premise's license to sell alcohol. Persistent sales of alcohol to minors (e.g. three sales committed within a three month period) can result in a fine of up to £10,000 for the retailer and a three month license suspension. Individual staff that sell alcohol to minors can receive an on the spot fine of up to £1000.

Guidelines on test purchasing (50) highlight the need for careful selection of underage volunteers, consent from parents or guardians and protection of the anonymity of the child, often meaning that operations cannot take place in an area that the child may be recognised. Underage volunteers are fully trained and briefed on each operation to ensure that they are in no danger, and officers are always on hand to intervene in case of problems. Generally, volunteers are given a set amount of marked money to use to attempt to purchase alcohol from a retailer and are told exactly what to say in each case. An officer may accompany the child into the premises where closer supervision is required to protect the welfare of the volunteer. On attempt to purchase alcohol, if asked for age identification the volunteer is usually instructed to answer truthfully then leave the premises. If an alcohol sale is made, officers take immediate action against the retailer.

Assessing the effectiveness of test purchasing operations can be difficult as operations are often targeted at high risk premises rather than conducted randomly. However, a series of national campaigns have shown reductions in underage sales following sustained test purchasing operations. In 2007, the national Tackling Underage Sales of Alcohol Campaign (24) used new legislation to prosecute licensees for underage sales under the Licensing Act 2003. High risk premises were identified and subjected to a test purchase operation every two weeks, with the threat of immediate prosecution, penalty fines and license reviews. Across the three month campaign the test purchase failure rate was reduced from 25% to 15%. This built on findings from a previous campaign, where the failure rate was approximately 50%.

* Trading Standards is the organisation responsible for enforcing legislation and regulations governing the sale of goods and services, including alcohol.

Reducing underage drinking in Milan, Italy

National legislation in Italy prevents the sale of alcohol to individuals who are under the age of 16 in pubs, bars and restaurants. However, to address concerns regarding teenage alcohol consumption, authorities in the city of Milan have used local legislation to strengthen restrictions against underage drinking, increase enforcement activity and impose a series of penalties on those who violate the law (51,52).

In 2009, a local order was introduced that banned any sale or provision of alcohol to those under the age of 16, and made it illegal for under-16s to consume alcohol in public places. Thus, adults are not allowed to purchase alcohol on behalf of those under the age of 16, and underage youth are not allowed to consume alcohol in public places (including pubs and bars) or purchase alcohol themselves from any outlet (including vending machines and supermarkets). Violation of the legislation is punished through fines that can be imposed on both those who sell alcohol to underage drinkers, and on the parents of the underage drinkers themselves. For example, the fine for parents is 500 Euros, with a reduced fine of 450 Euros if paid within five days.

The introduction of the local law was accompanied by increased police enforcement activity to check compliance and identify and punish violations. Responsibility for enforcement is shared between the local police, the state police, the carabinieri (a branch of the armed forces that protects both civil and military populations) and the Guardia di Finanza (Finance Guard). Enforcement is focused particularly in nightlife areas and at peak times for underage drinking, such as holiday periods.

In addition to age legislation, increased enforcement activity focuses on detecting and addressing violations of other alcohol-focused legislation such as that governing alcohol sales hours. Authorities in Milan are also working with alcohol retailers to develop a code of practice to encourage self-regulation and responsible retail practice. There is currently no information available on the impacts of the new legislation on underage drinking or alcohol-related harms in Milan. However, several other cities in Italy are adopting similar local orders to address concerns regarding increasing underage alcohol consumption and associated harms.

3. Policing and enforcement approaches

Drinking environments are often key locations for alcohol-related crime and disorder, including violence, sexual assault, noise, vandalism and drink driving (9,15,53-56). In England and Wales, for example, a fifth of all assaults take place in or around pubs, bars and nightclubs (54), while a survey of nightlife users in nine European countries found that one in five had driven under the influence of alcohol in the last four weeks (53). Such problems can also be linked to poor practices in licensed premises, such as the service of alcohol to people who are already drunk, tolerance of rowdy and aggressive behaviours and aggressive staff behaviour. Studies exploring alcohol-related harm in drinking environments often find large proportions of incidents are concentrated around just a small proportion of drinking venues (57,58). Thus, interventions to reduce alcohol-related harm in drinking environments frequently utilise targeted policing and strict enforcement of licensing legislation to deter crime, detect and punish offenders, and coerce improved practice in drinking environments. This section summarises the evidence base behind such interventions and provides examples of how they are being implemented in Europe.

3.1: Evidence summary

Findings from studies on the effectiveness of policing and enforcement activity in reducing alcohol-related harm are mixed. Some studies have found higher levels of alcohol-related problems following policing and enforcement activity, although this may be due to better detection and reporting of such problems. The strongest evidence comes from targeted enforcement in high risk premises.

The FASE systematic review identified seven policing and enforcement interventions that had been evaluated for their effectiveness in reducing alcohol related problems. Two had been conducted in the UK (59-61) three in Australia (62-64) and two in the US (65-67). The studies had measured the impacts of interventions on a range of different alcohol-related harms, including alcohol-related crime and assaults, underage drinking and drink driving.

Alcohol-related crime and assaults

- In Cardiff, UK, the TASC (Tackling Alcohol-Related Street Crime) project used a range of enforcement techniques to address alcohol-related crime. Intensive operations targeted at high risk venues, including regular police inspections, training and monitoring of door supervisors, and high profile policing outside the venues, were associated with reductions in violence (59). However, high profile policing operations in streets in nightlife areas were found to have little effect.

The involvement of Emergency Department staff in venue-focused police enforcement appeared to contribute to its success (60).

- Increased police enforcement in licensed premises was tested in Australia. Regular police visits were made to premises in known trouble spots to engage with staff and patrons and check for intoxicated and underage drinkers. A meeting reminded licensees of their legal responsibilities and encouraged them to prevent excessive alcohol use. The study found an increase in offences and assaults during the intervention and a decrease when it ended. The opposite occurred in control areas. The authors suggested that this may have been due to improved detection and recording of crimes during the intervention (62).

- In Australia, a police-led intervention developed an agreement between licensed premises in the city of Geelong to reduce pub-hopping and associated drunkenness and disorder. The Geelong Accord included entrance charges after 11pm, a ban on cheap drinks promotions and enforcement of drinking laws (e.g. underage sales). Evaluation of the intervention suggested it reduced assaults and improved responsible server practices (64), although study limitations complicate the interpretation of study findings (22).

- The Alcohol Linking Programme in Australia enhanced police data collection to identify whether offenders had consumed alcohol prior to committing a crime, and if so where they had consumed their last drink. Data was used by police to enhance enforcement in venues associated with crimes, including informing management of crimes linked to their premises, conducting risk assessments and recommending improvements. Evaluation found reduced alcohol-related crimes in targeted premise (63). The process has been built into routine police practice in New South Wales.

Underage alcohol sales

- In the UK, a police intervention involved a warning letter being sent to all licensed premises within the intervention area, reminding managers of their legal responsibilities to prevent underage alcohol sales, recommending age verification for young customers, and indicating that police would be initiating 'mystery shopper' sales checks using underage volunteers. Police also visited licensed premises and intensive media coverage was given to the operation. Evaluation of the intervention found that, despite some immediate reductions in sales, overall underage sales increased after the intervention (61) (this intervention is also included in Section 2).

Drink driving

- In Michigan, US, alcohol legislation was enforced by plainclothes police officers entering licensed premises to watch for and cite servers who sold alcohol to intoxicated customers. The operation was promoted by media coverage and a seminar for licensees. The intervention was evaluated through the use of "pseudo-intoxicated patrons" (individuals feigning intoxication and attempting to buy alcohol). This found that service refusal increased following the intervention, while the number of arrestees for drink driving coming from bars and restaurants

reduced. There was no change in non-intervention counties (66). The intervention was also found to have cost benefits (67).

- Operation Safe Crossing enforced legislation at the US/Mexican border, focusing on drink driving and laws barring youths under the age of 18 from entering Mexico without an accompanying adult. The interventions aimed to reduce youth binge drinking (with the legal drinking age in Mexico being lower than in the US) and involved special police patrols and sobriety checkpoints, publicised by the media. The programme was associated with reduced border crossings late at night and reduced drink driving crashes in 16-20 year olds, but not in 21-25 year olds (65).

3.2. Policing and enforcement approaches in Europe

Although policing and enforcement appears to play a key role in measures to reduce alcohol-related harm in European drinking environments, there is relatively little information available on the use or effectiveness of different strategies.

Policing and enforcement strategies are used in many European countries to address alcohol-related problems in drinking environments. However, the extent of their use varies and there is little information available to identify either the different strategies in use or their effectiveness in reducing alcohol-related problems. In countries including the UK, town and city centre drinking environments typically have a large and highly visible police presence at peak times, and police and other agencies conduct routine enforcement activity in high risk premises (see page 24). Elsewhere, policing can be less overt, with specific campaigns targeting alcohol-related problems at key times (e.g. holidays) or locations based on need. The following case studies provide examples of policing and enforcement measures to reduce alcohol-related harm in drinking environments in Europe, including routine targeted policing of high risk premises in the UK (page 24), targeted policing in a specific nightlife area in Spain (page 25) and Slovenia and the use of increased enforcement as part of a major campaign to reduce alcohol-related problems and drink driving in Slovenia (page 26).

Targeted enforcement activity in the UK

Targeted enforcement is widely used by police and other authorities in the UK to address alcohol-related problems in nightlife. Typically, this uses data from police, licensing authorities, local authorities and health services to identify premises associated with alcohol-related crime and violence and subject them to increased enforcement activity. Such enforcement provides an opportunity for managers of licensed premises to improve their practice and reduce alcohol-related problems before authorities take official action against them.

In several nightlife areas, targeted policing is implemented through a 'Top Ten' scheme. For example, in Newcastle-Under-Lyme, data on alcohol-related problems in venues are collated on a single licensing database that scores pubs, bars and nightclubs based on the number of problems they experience (e.g. violence, anti-social behaviour, noise complaints). Monthly meetings identify the ten venues with the highest scores, which are subjected to enforcement activity. This involves a meeting between authorities and the venue owners, during which problems are discussed and a formal action plan is developed for the venue to improve its practice. Examples of measures included in the action plans include developing policies for customer behaviour standards, improving bar and door staff practice, installation of CCTV (closed circuit television cameras) in the venue, displaying safety information for customers and establishing a dispersal policy to help patrons get home safely at the end of the night. Police report an average reduction in violence of 85% in venues subjected to action plans through the scheme (68).

In some areas, multi-agency enforcement operations are also used, bringing together a range of different authorities to implement checks in high risk venues. In addition to police, these can include staff from licensing authorities, fire services, environmental health, building control, Trading Standards, Customs and Excise and benefits agencies. This enables thorough review of the venue's adherence to legislation, including licensing legislation, fire regulations, sales of illegal alcohol or tobacco and staff who may be working illegally (e.g. claiming unemployment benefits).

Targeted policing in Barakaldo, Spain

In 2009, in response to high levels of night-time crime relating to drinking venues, the local government in Barakaldo, Spain, increased enforcement activity in nightlife areas. The Council adopted a zero tolerance attitude towards drinking establishments, giving police the authority to permanently close any venue that did not adhere to the control measures.

Targeted police operations were implemented both inside and outside drinking venues. Premises were inspected by authorities, to check venues' compliance with legislation (e.g. capacity limits, age legislation), and to encourage and monitor measures to prevent alcohol-related problems, such as ensuring staff implement age verification checks. Outside drinking establishments, high profile policing operations were implemented including crowd control, weapons searches and breathalyser tests.

Over the enforcement period, a number of premises were closed, at least temporarily, until they improved their practice, with reasons for closures including selling alcohol to minors and uncontrolled noise levels (with the venue required to install a limiter and pay a large fine prior to reopening).

Data showed that the number of crimes recorded in the first half of 2009 had decreased by 38% compared with the same period in 2008. Recorded crimes involving some type of injury (including violence) had decreased by 64%. This was coupled with reports that the number of dangerous items confiscated over the period had reduced, attributed to the constant presence of agents and police in the area. The operations were also reported to have led to an overall reduction in the number of youth in the area, and a reduction in the number of police officers that were required to police the streets. Authorities have committed to maintaining surveillance and control in the nightlife areas to prevent alcohol-related problems (69).

Enforcing drink driving legislation in Slovenia

In 2008, a major campaign was undertaken in Slovenia to reduce alcohol-related harm and road traffic accidents (70). The campaign focused around two key party periods: the week surrounding St Martin's Day in November (when must traditionally turns to wine), and the Christmas and New Year holiday season. A key factor of the campaign was an increase in enforcement activity, particularly at weekend nights but also taking into account the increased daytime drinking over the holiday period. Enforcement activity included random police breath testing of drivers and increased inspections in licensed premises to enforce legislation on underage alcohol sales and sales of alcohol to intoxicated customers. The campaign was supported by intense media coverage, including posters, billboards, and radio and television advertisements. Campaign materials were targeted at young people most at risk of drink driving, including in and around nightlife premises. A telephone survey of drivers was also undertaken to measure public opinion on drink driving and methods of its prevention.

Police statistics show that during the first period of the campaign (November), officers stopped and breathalysed 15,660 drivers. Of these, 4.5% had breath alcohol concentrations higher than the legal permitted level. During the second part of the campaign (December), 74,720 drivers were stopped and breathalysed by police. Of these, 2.1% were found to be over the legal limit. Compared with the same periods in the previous year (2007), the number of road traffic accidents and road traffic fatalities decreased significantly during the campaign. The number of drivers in road traffic crashes who were under the influence of alcohol also decreased, although there was a slight increase in the proportion of all drivers in road traffic crashes who were under the influence of alcohol (70). Evaluation of the media campaign found that the majority of drivers surveyed were aware of, and strongly supported the campaign, including increased random breath tests and detention of drunk drivers (71). A major benefit of the campaign was also considered to be the greater awareness and reduced acceptance of drink driving by the media and civil society.

4. Interventions delivered in drinking environments

With high numbers of young drinkers frequenting public drinking environments, pubs, bars and nightclubs can be appropriate locations for accessing young people at risk of alcohol-related harm and targeting them with preventive interventions. A Norwegian study found that 18-34 year olds visited public drinking premises an average of twice a month (72), while almost half of students (aged 18+) in the UK do so at least once a week (73). More frequent use of nightlife environments has been associated with higher levels of alcohol use, drunkenness and alcohol-related harms including violence (54,72,74). Interventions delivered in drinking environments may seek to reduce drunkenness and encourage more moderate alcohol consumption, or aim to prevent young people from engaging in risky or illegal behaviour after drinking (e.g. drink driving, risky sexual behaviour). This section summarises the evidence base behind such interventions, and provides examples of how they are being used in European drinking environment.

4.1 Evidence summary

The evidence base on the effectiveness of interventions in drinking environments is limited. There is some support for brief interventions delivered in bars in reducing alcohol consumption in heavy drinkers. However measures to discourage drink driving have shown little success.

The FASE systematic review identified seven articles that assessed interventions delivered in drinking environments. These included four interventions that aimed to reduce drink driving (75-78); one that explored the impacts of a brief intervention delivered in bars and taverns (79); and two that had evaluated the impacts of introducing alternative forms of glassware to prevent injury (80,81).

- The *0.05 Know Your Limits* programme in Australia promoted responsible drinking messages on coasters and stickers in licensed premises and provided breath analysis machines for patrons to check they were not over the legal drink driving limit before driving. Evaluation found the intervention had little effect. There were no differences in average breath alcohol concentration or the proportion of drivers over the legal driving limit between patrons from participating venues and control venues. Compliance with the intervention procedures by participating premises was reported to be low (75).

- The *Pick-a-skipper* campaign in Australia involved a media campaign promoting the use of non-drinking designated drivers on nights out and a scheme that offered designated drivers free soft drinks in a local nightclub. Following the media campaign, there was an increase in the number of people stating they always selected a designated driver. However, over a three month evaluation period only 35 people identified as designated drivers at the nightclub (door staff were

noted not to have promoted the scheme well). Further, over half of young people surveyed said they would, at least occasionally, increase their alcohol consumption when going out with a designated driver (76).

- A study in Milan, Italy, evaluated a designated driver programme that offered incentives to young drivers visiting nightclubs to remain under the legal driving limit. Although the study found that designated drivers engaging in the intervention had lower blood alcohol concentrations than other drivers, this was predominantly not due to the intervention. Most designated drivers drank at their usual levels of consumption and had other motivations for remaining sober. Further, designated drivers were found to have a lower risk profile than non-designated drivers (78, see page 31).

- The *Road Crew* programme in the US used old luxury vehicles to provide transport to, between and home from bars in three rural communities, for a cost of $10-$15 per passenger. A total of 19,757 rides were taken in the first year of the programme. Evaluation found the programme had no impact on alcohol consumption, despite concerns that this would increase. A significant shift was identified from individuals driving themselves home to using the ride service. While there was no significant change seen in drink driving on the night participants were recruited to the post-intervention study, frequency of drink driving in the past two weeks decreased. Thus, regular drink drivers were still choosing to drive home after drinking, but on fewer occasions than before the intervention were introduced (77).

- In Australia, *Operation Drinksafe* provided a personalised risk assessment for alcohol use to drinkers in bars and taverns. The assessment used the Alcohol Use Disorders Identification Test (AUDIT) combined with a breath alcohol test, and provided drinkers with information on alcohol use, tips for cutting down and referral to alcohol services where necessary. A follow up survey 12 months after the intervention found reductions in alcohol consumption. The greatest reductions were seen in those who had previously been drinking at harmful levels (79).

- A study in the UK replaced all glassware in 57 bars with toughened glassware (intended to be less breakable and less dangerous when broken) in order to assess its effectiveness in preventing injury to bar staff. However, the study found that the 'toughened' glassware was actually less impact resistant than standard glassware. Consequently, bar staff in premises that had the toughened glassware experienced more injuries than those in control premises that continued using standard glassware (80).

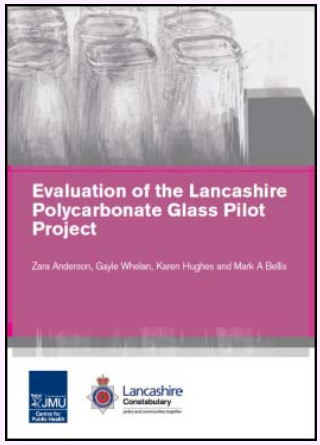
- In the UK, a study explored the impacts of replacing standard glassware in drinking establishments with virtually unbreakable polycarbonate glassware (PCG). Glass breakages reduced to zero in venues that consistently used the PCG, and there were small reductions in injuries. Although the study size was not sufficient to establish injury prevention effects, qualitative data showed that PCG was widely accepted by bar managers and owners and considered to have both cost and injury prevention benefits (81) (see page 30).

4.2 Interventions delivered in European drinking environments

Interventions to address alcohol-related harm are being implemented in European drinking environments. Many interventions focus on reducing drink driving, often promoting designated driver programmes that lack evidence of effectiveness. Evaluations of these and other interventions are helping develop the European evidence base.

A range of interventions are being delivered in European drinking environments. Many address drink driving, often promoting designated driver programmes despite the evidence for these being weak. Although interventions delivered in drinking settings in Europe have not been widely studied, there appears to be a growing trend towards evaluating interventions and a number of recent publications have helped develop the European evidence base. The following case studies provide information on the introduction of polycarbonate glassware in bars and nightclubs in the UK, a designated driver programme in Italy, and wider use of designated driver programmes and responsible driver education in various European countries.

Polycarbonate glassware in Lancashire, UK



Glassware used in pubs, bars and nightclubs can be a major cause of injury to customers and staff. Glasses and bottles are used in 5% of all violent incidents in England and Wales (16) and are the most common weapons used in violence occurring in drinking environments (82). Broken glassware is also a common cause of unintentional injury. To prevent serious violent injury from glassware, police and health services in Lancashire, UK, trialled the use of polycarbonate glassware (PCG) in pubs, bars and nightclubs. PCG is made from robust, durable plastic; it looks the same as normal glassware, but is virtually unbreakable.

The Lancashire trial was evaluated to explore the impact of PCG on injuries and perceived levels of safety in drinking premises. Further, with widespread resistance to the use of PCG among the alcohol industry given perceived negative impacts on trade (e.g. reduced drinking experience and increased perceptions of violence), the study aimed to explore the acceptability of PCG to both drinkers and staff working in drinking venues (81).

Between three and five venues in each of three towns were chosen to participate in the intervention, with each being assigned a matched control. Intervention venues had all their usual glassware replaced with PCG, with extra stock provided if needed through the trial. A before and after survey of customers was undertaken in each establishment. Throughout the trial, data were recorded on: glass injuries in patrons and staff, numbers of broken bottles and glasses, weekly sales figures, and glass-related incidents reported to the police and health services. In addition, semi-structured interviews were conducted with licensees/managers of the intervention premises.

In venues that consistently used PCG, glass breakages decreased from an average of 17 per week before the intervention to none during it. The number of glass-related injuries recorded for staff and customers was low overall, although a non-significant decrease was seen in venues that introduced PCG. There were no changes in customers' perceptions of safety or violence in general in the venues or the study towns, although there was a small increase in the proportion of customers who thought that glass-related violence specifically was a problem in the towns (but not the venues). Weekly sales figures were not affected by the introduction of PCG, few negative impacts on drinking experience were identified and managers reported increased feelings of safety among staff. Despite initial scepticism about PCG, all managers/licensees voluntarily opted to continue using PCG after the trial period. Overall, the study concluded that the introduction of PCG would be acceptable and useful in bars and nightclubs. However, a larger study would be necessary to identify any impacts specifically on intentional and unintentional injury.

The Safe Driver project in Milan, Italy

The Safe Driver project was established in Milan to prevent alcohol-related road accidents among young people using the city's nightclubs. It aimed to prevent drink driving by developing and promoting a designated driver programme. This provided incentives in the form of free nightclub entry to young drivers who acted as designated drivers and remained within the legal blood alcohol concentration (BAC) for driving.

Young drivers were identified by field workers intercepting groups of young people interested in participating were breathalysed and given a bracelet to wear. Upon leaving the club, the drivers returned to the fieldworkers to take another breathalyser test. Those who were below the legal drink driving limit were given a voucher providing them with free entry to the club during the following month. Those who were above the legal driving limit were advised not to drive and provided with alternative options for returning home (78).

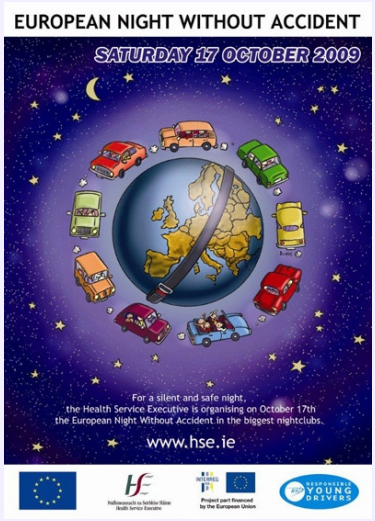
The intervention was evaluated through a study that compared the BAC of those identified as designated drivers to other nightclub users who were driving. Over the study period a total of 405 drivers were approached, and 368 agreed to take part. Of these, 124 took part (i.e. were offered the incentive to act as a designated driver), 139 acted as controls and 105 failed to return to the researchers at the end of the night. In addition to the BAC test, participants completed a questionnaire that collected information on their demographics, their alcohol consumption patterns and their drink driving behaviour.

The study found that the BAC of designated drivers was significantly lower than that of non-designated drivers upon leaving the nightclub. However, the intervention itself was only found to have motivated 5% of those identified as designated drivers to drink less. Most designated drivers (60%) reported having taken part in the intervention as they were interested in having their BAC assessed. Only 18% reported that the incentive had motivated their participation while 17% said that they were not intending to drink much anyway. Most (73%) designated drivers said they had consumed the same amount of alcohol as they normally would have done despite the intervention. Further, analysis found that individuals who acted as designated drivers had a lower risk profile that non-designated drivers; they reported lower levels of alcohol consumption in general and less involvement in drink driving. The authors concluded that the intervention was not supported by strong evidence.

Drink driving interventions in Europe

European Nights Without Accidents (ENWA) in Europe

Implemented on one Saturday night in October each year, ENWA aims to encourage young people to be safe drivers when returning home from a night out. Trained volunteers located at the entrance to nightclubs encourage groups of young people entering to choose a designated driver. This person is asked to commit to staying sober and wear a bracelet (for identification). On leaving the club, the designated driver is then asked to undergo a breath test; if they have stayed sober they are rewarded with a gift. Any driver who fails the breath test is asked to leave their car or to hand the keys to a friend who has not had a drink.



ENWA began in 1995 in Belgium. Each year the intervention is utilised by more countries, and in 2003 it became European-wide. In 2009, 27 countries used ENWA to aim to reduce road traffic crashes amongst young people. An internal evaluation in 2008 reported that 12,000 young people took part in the intervention and 80% of designated drivers respected their commitment to stay within the legal driving limit (83).

Anti-crash operation in France

In France road traffic accidents are a leading cause of death amongst 12-25 year olds, and many occur whilst young people are returning home from nightclubs and parties. In response to this, the Anti-Crash operation was established in 2003 in six regions of France. This is a peer to peer delivered project aiming to educate party goers about the risks involved in using alcohol and drugs before driving. Volunteers are trained by professional educators from the preventive education group, Avenir Sante (Future Health). With support from the media and club owners, a group of volunteers install information stands close to the entrance of nightlife venues. The objective is to engage patrons into conversation and promote use of prevention tools (such as designated driver bracelets, breathalysers, devices that simulate the effects of alcohol, flyers, brochures and games) to encourage responsible driving.

A process evaluation and feedback from the volunteers and organisers of Anti-crash showed that around 160,000 young people are targeted each year. The evaluation suggested a change in mentality among young people and novice drivers, with many thinking about how to get home before a party and using a designated driver (84).

5. Community-based multi-component programmes

Community-based multi-component programmes aim to reduce alcohol-related harm in drinking environments by co-ordinating and strengthening local preventative activity. They bring together partnerships of local authorities, communities and representatives from the licensed trade to identify and address local problems through a range of interventions. These typically include measures to mobilise communities (e.g. through media campaigns and community forums), improve standards in drinking environments (e.g. through responsible beverage service training and codes of practice) and increase enforcement activity (e.g. through targeted policing and licensing visits). By developing strategic, planned approaches to alcohol-related problems, these programmes have produced the clearest evidence of effectiveness in reducing alcohol-related harm in drinking environments.

5.1 Evidence summary

Community-based, multi-component programmes provide the clearest evidence of effectiveness in reducing alcohol-related harm in drinking environments. They have been associated with reductions in alcohol use, violence, drink driving, road traffic crashes and underage alcohol sales.

The FASE systematic literature review found evidence from the outcomes of seven community-based multi-component programmes, implemented in the USA (85-99), Australia (100,101) and Sweden (25,38,102,103). The Australian and Swedish programmes focused specifically on reducing alcohol-related harm in and around pubs, bars and nightclubs:

- The *Stockholm Prevents Alcohol and Drug Problems (STAD)* project in Sweden combined community mobilisation with responsible beverage service training and stricter enforcement of alcohol laws. The programme was associated with significant reductions in violent crime and increases in service refusal rates to intoxicated patrons. Cost effectiveness analyses estimated that the intervention saved €39 for every €1 invested (see pages 36 and 14) (25,38,102,103).

- The *Safety Action Projects* in Australia focused on improving the safety of drinking environments. Implemented initially in Surfers Paradise and replicated in three other sites, the projects involved the formation of community steering groups, forums and task groups, and the implementation of improved venue management, security initiatives and enhanced policing of drinking environments. The projects were associated with reductions in aggression and drunkenness during their implementation (100,101).

The four programmes implemented in the USA used community-based, multi-component approaches to implement alcohol policies covering both on and off licensed premises:

- The *Community Trials* project involved community mobilisation, responsible beverage service training, controls on the density of alcohol outlets and measures to address drink driving and underage access to alcohol, including increased enforcement activity. The project was implemented in three locations over a five year period (1992-1996). The trials were associated with reductions in self-reported alcohol consumption, drink driving, alcohol-related traffic crashes and assault injuries in intervention communities (85-93).

- The *Sacramento Neighbourhood Alcohol Prevention Project* was implemented in two low income, ethnic minority neighbourhoods. It included community mobilisation, community awareness, responsible beverage service training and increased law enforcement to prevent sales of alcohol to underage and intoxicated individuals. The project was associated with reductions in assaults and motor vehicle accidents and underage sales in off-licensed premises, although alcohol sales to intoxicated individuals in on-licensed premises were not reduced (94).

- The *Communities Mobilising for Change on Alcohol* programme focused on reducing youth alcohol consumption, implementing formal and informal control measures and media interventions through a multi-agency partnership. The intervention was associated with a non-significant decrease in youth alcohol consumption and arrests for disorderly conduct, and a significant reduction in drink driving arrests in 18-20 year olds. Underage sales in on-licensed premises also reduced (95-97).

- The *A matter of a Degree* programme was a campus-based community coalition initiative to reduce college binge drinking. Participating sites used a range of interventions to modify drinking environments, for example responsible beverage service training, increased enforcement, bans on alcohol advertising in college areas and awareness-raising. Across all ten implementation sites, there were no overall changes in alcohol consumption or impacts. However, in those that had the highest levels of implementation, there were reductions in self-reported alcohol use, alcohol-related harms (e.g. hangover, missed class), second hand effects (e.g. assault, sleep interrupted) and drink driving (98,99).

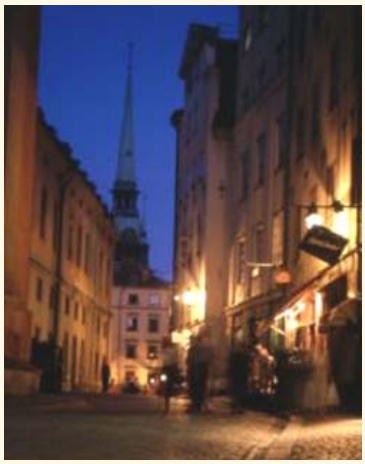
The findings from these studies show that community-based, multi-component programmes can work to reduce alcohol-related harm in drinking environments. Strong multi-agency partnership working to manage drinking environments can bring a range of benefits. These include the use of shared intelligence to identify problems and plan interventions; the ability to co-ordinate multi-agency activity, resources and targets; and the development of community-wide awareness of the causes and consequences of alcohol-related problems and commitment to reduce these. A review of community programmes in drinking environments stressed the need to ensure programmes are sustainable, and identified a number of key attributes that can contribute to the success of such programmes, including a longer-term approach, effective and formalised partnership working, continued media work and ongoing evaluation (22).

5.2 Community-based multi-component programmes in Europe

Multi-agency partnership working to prevent alcohol-related harm in drinking environments at a community level appears to be increasing in Europe. With the exception of the STAD project in Sweden, however, few measures have been rigorously evaluated to demonstrate their effects or identify key components.

Multi-agency partnership working to prevent alcohol-related harm in drinking environments at a community level appears to be increasing in Europe. Many of the examples of practice presented in this report have been implemented through partnerships between different agencies, including local authorities, health services, police and voluntary organisations. The STAD project in Sweden provides an excellent European example of how such sustained and formalised partnership working can achieve positive results through co-ordinated activity to prevent alcohol-related harm. Importantly, the work of STAD extends beyond drinking environments to include work with families, schools and health services to provide a broader approach to preventing alcohol-related problems. It also evaluates all its activities to inform future practice. Whilst there are no other examples of community-based multi-component programmes in Europe that have been subjected to rigorous evaluations, the UK provides evidence of how such partnership working can be mandated through legislation. The following examples provide more information on the STAD project in Sweden and statutory partnership working in England and Wales.

The STAD project in Sweden



The STAD (Stockholm Prevents Alcohol and Drug Problems) project in Sweden was a ten-year multi-component intervention initiated in 1996 to reduce alcohol-related violence and injuries in Stockholm. A major part of the project focused on licensed premises. Development of the project was informed by a study that identified high levels of alcohol service to intoxicated patrons in drinking establishments, and disparities between the views of owners of licensed premises and those of licensing authorities regarding alcohol-related problems.

The project convened a partnership of representatives from the licensing board, police, the county administration, the national health board, Stockholm city council, the organisation of restaurant owners, the trade union for restaurant staff and owners from licensed premises in the city.

The formation of the partnership sought to mobilise the community by increasing knowledge and awareness of alcohol-related problems in drinking environments and gaining multi-agency support for action. Regular partnership meetings were established to enable participants to develop and co-ordinate strategies to prevent alcohol-related problems.

Two key activities undertaken through the project have been the development and implementation of a responsible beverage service training programme (see page 14) and enhanced enforcement of existing alcohol legislation. The increased enforcement included the use of 'notification letters' sent by the licensing authority to premises that were identified by police or other sources as being the focus of alcohol-related problems. Further, joint enforcement activity was established between licensing authorities and police, based on shared intelligence.

The STAD project has been supported through ongoing research and evaluation. Evaluation of the programme's effects on violence (up to the year 2000) found a 29% decrease in violent crimes in the intervention area. Further, a cost-effectiveness study estimated that the programme saved €39 for every €1 invested. The success of the STAD project has been attributed to factors including its long-term, sustainable approach, effective partnership working, continued media work and ongoing evaluation (22,25,38,102,103).

Statutory partnership working in England & Wales

In England and Wales, there is a statutory duty placed on local agencies to work in partnership to address crime and disorder, including alcohol-related crime. These partnerships are known as Crime and Disorder Reduction Partnerships or Community Safety Partnerships and include representatives from local authorities, police, health services, probation services, drug and alcohol action teams, education services, local businesses and residents.

Partners meet regularly to identify and act upon areas of local concern by auditing local crime issues and developing evidence-based responses using shared intelligence. Many local partnerships have prioritised the reduction of alcohol-related violence and disorder in drinking environments. Thus, local multi-agency strategies are set up to plan and implement a range of co-ordinated interventions. The partnership approach allows the various agencies to understand and develop their role in prevention, prevents conflicting action between agencies and facilitates the evaluation and monitoring of prevention activity (104).

In the city of Liverpool, the Crime and Disorder Reduction Partnership has formed the CitySafe initiative, a formalised partnership that has representatives from relevant local agencies working together in one location. CitySafe has developed and implemented a wide range of interventions to reduce alcohol-related crime and disorder in drinking environments. Examples include:

- Targeted and high profile policing in nightlife environments to enforce alcohol legislation and deter crime;
- A Pub Watch scheme that provides a network for local licensees to work together and with police to share information, support responsible practice and ban persistent troublemakers from drinking establishments in the city;
- A training programme that provides conflict resolution skills to bar staff, door supervisors and staff working in late night food establishments.
- A taxi-marshalling scheme that provides security at late night taxi ranks;
- Subsidies to help bar owners replace glassware with safer drinking vessels;
- A street drinking ban;
- Provision of head-mounted video cameras to door supervisors to deter crime and promote responsible practice;
- A closed circuit television (CCTV) network to detect and deter crimes, and help points enabling the public to contact CCTV operators and police.
- Safer drinking messages and safety campaigns targeted at nightlife users.

The work of CitySafe in Liverpool has contributed to a 40% reduction in crime in the city since 2005, despite increased use of the city centre over this same period. Both police recorded violent crime and assault injuries treated in emergency departments have decreased over this period (105,106). At a national level, the work of Crime and Disorder Reduction Partnerships is thought to have contributed to large reductions in the number of crimes, and particularly violence, reported through the annual British Crime Survey (54).

Summary and Recommendations

Preventing alcohol-related harm in young people is a major European priority. With much alcohol consumption and harms in young people occurring in public drinking environments, developing a better understanding of what can be done in such settings at a local level to reduce alcohol-related problems is critical. To support this, the FASE project has brought together evidence from international studies on the effectiveness of interventions to reduce alcohol-related harm in drinking environments, and examples of work already underway across Europe.

The study has shown that the international evidence base for the effectiveness of standalone interventions is relatively weak. For example, studies of responsible beverage service training programmes; measures to reduce underage access to alcohol; and policing and enforcement activity have shown mixed findings, and when positive results are seen these are often short-lived. However, when such measures are brought together through a co-ordinated multi-agency, multi-component approach at a community level, alcohol consumption and related harm can be reduced. Whilst some strong studies have been conducted in Europe (e.g. the STAD project in Sweden), most evidence of effective practice currently comes from non-European countries, particularly the USA and Australia.

The examples of practice provided in this report show that significant work is underway in European countries to address alcohol-related harm in drinking environments. Responsible beverage service training programmes and measures to prevent drink driving appear to be among the most common interventions being implemented in European countries. Although few programmes have been rigorously evaluated, some have been developed based on international evidence (e.g. Bar Veilig in the Netherlands) and evaluative work does appear to be increasing (e.g. Safe Drive in Italy). Better understanding the impacts of European interventions must be a priority in order to increase understanding of what does and does not work to reduce alcohol-related harm in drinking environments, and to enable the dissemination of effective practice. Key points and recommendations from the FASE project include:

- Although there are many interventions underway across Europe to create safer drinking environments, few of these are rigorously evaluated. Consequently there is very little information available on their effectiveness in reducing alcohol-related harm, and on their cost-effectiveness. Sharing and developing the existing evidence base is critical in protecting health in drinking environments.

- Local agencies often lack the capacity and resources required to implement rigorous evaluations of their work. Support for evaluating interventions in drinking environments should be provided at a European level. This should include evaluating both effectiveness in terms of reduced alcohol-related harm and the cost-effectiveness of programmes.

- Interventions with a clear evidence base should be promoted and tested for transferability in different settings. Authorities should be discouraged from investing in measures that have been shown to have no benefits.

- The clearest indication of effectiveness from the international evidence base comes from community-based, multi-component programmes, which combine community mobilisation, responsible beverage service training and stricter enforcement of licensing laws. Partnership approaches that enable pooled resources to be targeted at joint priorities should be promoted.
- The collection and sharing of reliable local level data on alcohol use, alcohol availability and alcohol-related harms should be encouraged and supported in order to facilitate the targeting, monitoring and evaluation of interventions to reduce alcohol-related harm.
- Evaluation and monitoring of interventions should take into account any broader impacts of interventions implemented in drinking environments. For example, measures that reduce violence in drinking environments should ensure displacement effects are not moving violence into homes and vulnerable communities, where violence is less visible.
- A major limitation of many interventions in drinking environments is their short-term approach, with the benefits of measures introduced through one-off funding often being short-lived. Support is needed to enable national and local agencies to build effective measures into routine practice. Measuring the economic benefits of interventions to health and criminal justice services, as well as the night time economy itself, is an important factor in sustaining effective practice.
- There is a major gap in knowledge of drinking behaviours in young adults in Europe, with no consistent data available on this high risk group and few studies conducted even at country level. Further, there is very little information on alcohol-related harm occurring in or because of European drinking environments and the costs this imposes on public services, communities and the alcohol industry. Developing this knowledge would greatly facilitate the creation of safer drinking settings in Europe.
- Interventions to reduce alcohol-related harm in drinking environments are often implemented as reactive rather than preventive problems. The literature suggests that high concentrations of alcohol outlets, longer opening hours and cheap alcohol prices contribute to increased alcohol-related problems. This literature should be used to inform regulatory control measures that prevent the development of drinking environments conducive to alcohol-related harm.
- Measures to reduce alcohol-related harm in drinking environments should form part of broader strategies to understand and address alcohol-related problems. Interventions should not focus solely on preventing harm, but also on reducing the drinking behaviours and other behavioural, environmental and cultural factors that contribute to such harm.

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