



EMCDDA PAPERS

Emergency department-based brief interventions for individuals with substance-related problems: a review of effectiveness

Contents: Abstract (p. 1) | Background (p. 2) | Methods (p. 7) | Results (p. 7) | Discussion (p. 14) | Conclusions (p. 15) | Acknowledgements (p. 20)

Abstract: This paper reviews the effectiveness of brief interventions in an emergency department setting. It presents an analysis of five systematic reviews and 16 randomised controlled trials. Most of these studies focused on alcohol-related cases or on cases of alcohol and drug use, with four studies specifically targeting illicit drug use.

Brief interventions are psychosocial interventions designed to help recipients recognise harmful patterns of substance use, and to motivate and support them to address that use. Brief interventions typically use the collaborative conversation style of motivational interviewing and, as the name suggests, take only a short time, ranging from 5 to 30 minutes. Brief interventions are delivered by a range of professionals, including physicians, nurses and other healthcare workers; one common structure for brief intervention delivery employs the '5As' approach: ask, advise, assess, assist and arrange. Many studies on brief interventions in an emergency department setting stress that this context offers an important 'window of opportunity' in which to engage with people with substance use problems who might otherwise never receive any form of assessment, referral or intervention. Brief interventions have become increasingly popular because they can be delivered in a variety of settings, by a range of workers

(after training) and in a short time frame; all three of these factors combine to keep costs relatively low.

This review found that there are potential benefits of brief interventions, especially in relation to behavioural outcomes. However, a definitive statement about effectiveness cannot be made, as the results of the studies reviewed may not be generalisable to other age groups, to patients with different levels of substance use, or, given that the focus of many of the studies was on alcohol, to those using illicit drugs.

However, the feasibility of brief interventions delivered by emergency department personnel, the absence of reported adverse effects and the potential cost-effectiveness all suggest that brief interventions could be considered as integral to the training of emergency department healthcare staff.

Keywords **brief interventions**
emergency departments **review**

Recommended citation: European Monitoring Centre for Drugs and Drug Addiction (2016), *Emergency department-based brief interventions for individuals with substance-related problems: a review of effectiveness*, EMCDDA Papers, Publications Office of the European Union, Luxembourg.

Background

Psychosocial interventions are structured psychological or social interventions that are used to address substance-related problems. They can be used at different stages of a 'treatment journey' to identify the problem and treat it, and assist with social reintegration (EMCDDA, 2015).

These interventions can be used alone or in combination with other treatments at different points of an individual's drug treatment journey or, more generally, in the context of universal prevention. Often, they are used at a patient's first contact with health services to help them recognise and clarify the nature of their drug problem, and commit to changing their behaviour. At a later stage, these interventions are used to support patients with their treatment. These interventions are also employed, sometimes in conjunction with pharmacological treatment, in the treatment of opioid-related problems. They can help patients to maintain behavioural goals and they support treatment retention. Psychosocial interventions can also involve families and communities during the social reintegration phase of drug treatment.

Brief interventions are practices typically used to help people recognise their substance use problems. They aim to identify a real or potential substance use problem and motivate an individual to change their behaviour. They can be administered opportunistically or after screening. However, there is no standard definition of what constitutes 'brief'. For example, in 2003, the World Health Organization (WHO, 2003, p. 4) defined face-to-face brief interventions addressing substance use in the context of primary care as ranging 'from 5 minutes of brief advice to 15–30 minutes of brief counselling' and, in 2012, as 'a maximum of two sessions' for drug users (WHO, 2012, p. 1); in Australia in 2004, the Department of Health ⁽¹⁾ defined brief interventions as those 'lasting as little as 30 seconds, or extending over a few sessions lasting 5–60 minutes'; and the National Health Service in Scotland ⁽²⁾ defined brief interventions as 'usually less than five minutes but certainly no more than twenty'.

Although there is consensus with regard to the main characteristics and purposes of brief interventions, there is not an internationally agreed definition. In the absence of a standard definition, this report uses an operational definition which characterises a brief intervention as an intervention delivered in a short time frame which:

- is delivered to individuals or small groups and aims 'not solely to prevent substance use, but also to delay initiation,

reduce its intensification or prevent escalation into problematic use' ⁽³⁾;

- does not provide treatment for substance use (e.g. opioid substitution/maintenance treatment, detoxification or psychosocial counselling), although one of the aims of some brief interventions may be to encourage recipients to consider treatment;
- does not usually target those who are substance dependent;
- may include advice and elements of motivational interviewing, such as empathy, open-ended questions, a non-directive approach and reflective listening, in an attempt to reduce ambivalence about substance use and possible treatment.

How the interventions work

Brief interventions use the collaborative conversation style of motivational interviewing to address problematic or risky drug use, but are delivered in a shorter time frame, typically ranging from 5 to 30 minutes. Personalised feedback is provided on a person's substance use. This enables them to understand their use in relation to other people's use. In this approach, the professional delivering the brief intervention asks for permission to talk about possible drug or alcohol use and help patients to position themselves on a scale of use level. Questions are asked about the benefits and harms of substance use in an attempt to elicit a motivation to change. When concluding a brief intervention, a plan for change and a follow-up are negotiated. There are a number of brief intervention models, but one of the most commonly used consists of five phases, known as the '5As': ask, advise, assess, assist and arrange (Babor et al., 2007).

A study carried out in the United States has shown that this approach is used in many different settings, including in emergency departments, with primary care services and with services for the homeless, in order to address the problems that people have as a result of their substance use by encouraging them to reflect and consider making a change (Saitz et al., 2014). While brief interventions are often based on motivational interviewing techniques, the evidence to support their use is still developing and there is a need for further research (Yuma-Guerrero et al., 2012; Taggart et al., 2013).

Motivational interviewing versus brief interventions

Motivational interviewing is a collaborative conversation style for strengthening a person's motivation and commitment to change (Miller and Rollnick, 2012). It is used to help people

⁽¹⁾ <http://www.health.gov.au/internet/publications/publishing.nsf/Content/drugtreat-pubs-front9-fa-toc~drugtreat-pubs-front9-fa-secb~drugtreat-pubs-front9-fa-secb-6~drugtreat-pubs-front9-fa-secb-6-1>

⁽²⁾ <http://www.nhs.gov.uk/content/default.asp?page=s1733>

⁽³⁾ <http://www.emcdda.europa.eu/topics/prevention>

with different types of substance problems. Frequently, individuals are not fully aware of their substance problems or they can be ambivalent about them. Motivational interviewing is often referred to as a conversation about change, and it is used to assist drug users to identify a need for change. It seeks to address individuals' ambivalence about their drug problems, as this is considered the main barrier to change. It comprises five elements: (1) expressing empathy for patients; (2) helping patients to identify discrepancies between their behaviour and their goals; (3) avoiding arguments with patients about their motivations and behaviours; (4) going along with patients' resistance to talk about certain issues; and (5) supporting patients' sense of self-efficacy.

Motivational interviewing is used to promote change in many different situations and settings, including outpatient services and primary care services. It is used in prisons (Day et al., 2013), by social services and in the workplace. Motivational interviewing can be provided by therapists, counsellors or other specifically trained professionals. It can be used to help someone make a decision, to start and follow a pharmacological treatment plan or as a stand-alone psychological treatment. Generally, however, motivational interviewing is undertaken in multiple sessions over a period of weeks and at follow-up points during a course of treatment. The benefits of this approach are supported by evidence, with a recent systematic review (Smedslund et al., 2011) of 59 studies involving 13 342 participants concluding that it can reduce the extent of substance abuse compared with no intervention. Another systematic review focused on the effectiveness of motivational interviewing for tackling drug use problems among adolescents (Barnett et al., 2012); this review included 39 studies, of which 67 % reported statistically significant improvements in substance use outcomes.

While motivational interviewing uses specific tools, intervention protocols, fidelity criteria and training plus supervision of the providers, brief interventions comprise principles from different techniques, including motivational interviewing, but also advice and cognitive behavioural therapy.

A brief intervention that includes elements of motivational interviewing (or cognitive behavioural therapy) can be

delivered in a wide range of settings by a wide range of healthcare and social care professionals who have been trained in the technique, including staff at schools, outreach workers and staff at youth clubs, homeless services, health centres, general practitioners' surgeries, emergency departments, and drug and alcohol services, and by police, probation and prison officers. Brief interventions may be delivered to individuals or to small groups, and may also be self-administered. Delivery may be face-to-face, online or by telephone (including by text message).

■ Brief interventions in emergency departments

Brief interventions in emergency departments emerged from the need to counterbalance the significant impact of the harmful or hazardous use of drugs and alcohol on healthcare costs, as well as to provide an adequate intervention to non-treatment-seeking individuals (Bogenschutz et al., 2011).

Many commentators have pointed out that effective emergency department-based brief interventions that address substance use have the potential to have a large impact on public health, as:

- they offer a 'window of opportunity' in which to reach individuals with unrecognised and unmet substance use treatment needs who might otherwise never receive any form of assessment, referral or intervention (Longabaugh et al., 1995; Havard et al., 2012; Newton et al., 2013; Sanjuan et al., 2014; Ferri et al., 2015);
- they can rapidly achieve important objectives, such as detecting individuals with high-risk and dependent alcohol and drug use, making such individuals aware of their condition and facilitating access to specialty treatment, thus improving quality of care (Bernstein et al., 2009);
- emergency departments are recognised as a setting in which the use of drugs, and the harms associated with the use of drugs, including new psychoactive substances, could be monitored and addressed (e.g. UNODC, 2013; Helander et al., 2014; Wood et al., 2014);
- the brevity of the interventions means that the training of staff does not require a lot of investment, thus minimising the impact on healthcare budgets (Barrett et al., 2006; Havard et al., 2012; Drummond et al., 2014).

Emergency departments and acute drug toxicity: results from a multisite European project

The European Drug Emergencies Network (Euro-DEN) is a European Commission-funded project that brings together 16 specialist centres in 10 countries (Denmark, Estonia, France, Germany, Ireland, Norway, Poland, Spain, Switzerland and the UK) in Europe to collect data on the prevalence of use of recreational drugs and new psychoactive substances, and the associated acute harms.

Clinical toxicologists and poisons centres frequently report case series of acute recreational drug and new psychoactive substance toxicity; however, systematic data on this issue in Europe are limited.

The Euro-DEN project has developed a minimum dataset on all acute recreational drug/new psychoactive substance toxicity presentations to emergency departments in these sentinel centres.

Data from the first 4 months (October 2013–January 2014) of the 1-year data collection period showed that there were 1 290 presentations with acute drug toxicity to emergency departments in 13 (81.2 %) of the 16 centres, in 8 of the 10

participating countries, the majority of which were related to the use of classical recreational drugs.

Most of the cases (743; 57.6 %) involved the use of one drug; 357 (27.6 %) involved two drugs; 133 (10.3 %) involved three drugs; and 57 cases (4.1 %) involved the use of four or more drugs. Alcohol was co-ingested in 532 (41.2 %) cases and not recorded in 450 (34.9 %) cases. The most common drugs were heroin (315 cases; 24.4 %), cocaine (228 cases; 17.7 %), gamma-hydroxybutyrate (GHB)/gamma-butyrolactone (GBL) (211 cases; 16.4 %), cannabis (205 cases; 15.9 %), amphetamine (175 cases, 13.6 %), MDMA (100 cases, 7.8 %), clonazepam (85 cases, 6.6 %), mephedrone (60 cases, 4.7 %), unspecified benzodiazepine (59 cases, 4.6 %) and methadone (56 cases, 4.3 %). There were 126 presentations (9.8 %) involving the use of new psychoactive substances (UK, 94 cases; Poland, 18 cases; Germany, 10 cases; Spain, 2 cases; Norway, 1 case; Switzerland, 1 case).

Source: Annual Meeting of the North American Congress of Clinical Toxicology (NACCT) (2014)

Why this review?

The effectiveness of brief interventions with regard to alcohol misuse is well documented (see box on p. 5); however, there is less information in relation to brief interventions that address drug use. Moreover, the added value of brief interventions in emergency department settings has been extensively discussed, and several commentators have stressed the need for more research. For example:

The emergency department (ED) appears to be a particularly promising setting in which to identify and engage problematic drug users. Relatively high rates of psychoactive substance use disorders have been found in EDs, exceeding that found in primary care settings. This has led clinicians and researchers to argue for the development of more effective methods of screening and case finding, brief interventions, and

referral to appropriate specialty treatment, as well as linkage between substance abuse services and general medical care, for individuals using illicit drugs who are seen in EDs and trauma centers. (Bogenschutz et al., 2011, p. 417)

Further research is needed to determine if ED-based [alcohol] interventions can be successful for the reduction or elimination of other types of drug misuse. (Youmans et al., 2010, p. 44)

The purpose of this review is to gather and assess the existing evidence on the effectiveness of using brief interventions in the context of substance use, in an emergency department setting, to identify individuals with drug problems, support behavioural change and improve referrals to specialised treatment centres.

Brief interventions for harmful alcohol use in primary care settings

There are numerous reviews, studies and commentaries on brief interventions for alcohol use, especially in primary care settings; an example of such a brief intervention is shown in Figure 1. Primary care settings are, in fact, considered to be an ideal setting in which to conduct these interventions because it is reported that between 22 and 70 % of patients use primary care facilities after an alcohol-related injury (e.g. D'Onofrio and Degutis, 2002; Patton, 2012; Wojnar and Jakubczyk, 2014).

Overall, the available evidence points towards a positive effect of brief interventions, especially with regard to alcohol-related behavioural outcomes.

A recent Cochrane review assessed the effectiveness of brief interventions in heavy alcohol users admitted to hospital wards (McQueen et al., 2011). The analysis of 14 randomised controlled trials and controlled clinical trials involving 4 041 individuals, mainly male adults (16 years or older), indicates the potential benefits of brief interventions. Patients in brief intervention groups showed a greater reduction in alcohol consumption than those in control groups at the 6-month and 9-month follow-ups, although this was not maintained at one year. In addition, effects were evident in terms of the reduction in death rates after 6 months (RR (*) 0.42, 95 % confidence interval (CI) 0.19 to 0.94) and one year (RR 0.60, 95 % CI 0.40 to 0.91).

These results confirmed the findings of an earlier systematic review (Kaner et al., 2007) that evaluated brief interventions for alcohol users in primary care settings. A total of 29 controlled trials from various countries were identified in

general practice (24 trials) or in emergency settings (five trials), and the meta-analysis showed that participants in the intervention group had lower alcohol consumption than those in the control group after follow-ups of 1 year or more (mean difference: -38 g/week, 95 % CI -54 to -23 g/week). Interestingly, the authors also found that a longer period of counselling had little additional benefit.

However, as O'Donnell et al. (2014) suggest, there is still a lack of understanding about the 'active components' of such interventions, and caution is needed when planning a wider roll-out. Indeed, the effectiveness of alcohol-related brief interventions is not overwhelmingly supported by the evidence from all sample populations and settings. For example, studies have typically targeted mainly males and are not necessarily applicable to women; in addition, many do not take a long-term perspective or the findings may not be generalisable if the focus of the study is on substances other than alcohol. Relevant recent reviews and commentaries include those by Carney and Myers (2012), Emmen et al. (2004), Foxcroft et al. (2014), Gates et al. (2009), Heather (2011), Kaner et al. (2007), O'Donnell et al. (2013), McCormick et al. (2010), Smedslund et al. (2011) and Wachtel and Staniford (2010).

(*) RR refers to relative risk (or risk ratio). This compares the ratio of the risk of disease (or death) among people who are exposed to the risk factor, to the risk among people who are unexposed. Alternatively, relative risk is defined as the ratio of the cumulative incidence rate among those exposed to the rate among those not exposed. To estimate a relative risk, you need a cohort study, from which incidence can be calculated. An RR of 1.0 means that the two incidence rates are equal, so the factor has no effect. An RR of 2 would indicate that the exposed people are twice as likely to get the disease; an RR of 0.5 means they are half as likely, so the factor has protected them from the disease.

FIGURE 1

How to conduct a brief intervention for alcohol disorders

Brief Intervention Training Notes

Orient the Patient

Identify yourself and explain your role on the trauma team.

Get permission, explicit or implicit, from the patient to talk together for a few minutes.

Explain the purpose of this discussion is to

- 1) give them information about health risks that may be related to their drinking,
- 2) get their opinions about their drinking, and
- 3) discuss what, if anything, they want to change about their drinking.

Feedback

Using Binge Question

Range: The number of drinks people have on a single occasion varies a great deal, from nothing to more than 10 drinks.

And we know that having too many drinks at one time can alter judgment and reaction times.

Normal: Most drinkers in the United States have fewer than 2 (♀) or 3 (♂) drinks on a single occasion.

Give Binge Questions results. "You drank more than that ___ times last month, increasing your risk for health problems."

Elicit the patient's reaction. "What do you make of that?"

Using AUDIT

Range: AUDIT scores can range from 0 (non-drinkers) to 40 (probably physically dependent on alcohol).

AUDIT has been given to thousands of patients in medical settings, so you can compare your score with theirs.

Normal AUDIT scores are 0–7, which represent low-risk drinking. About half of the U.S. population doesn't drink.

Give patients their AUDIT score. "Your score of ___ means you are (at risk or high risk), putting you in danger of health problems."

Elicit the patient's reaction. "What do you make of that?"

Listen for Change Talk

- Goals**
- a) Listen for pro-change talk—the patient's concerns, problem recognition, and downsides of drinking.
 - b) Summarize the patient's feelings both for and against current drinking behavior.
"On the one hand . . . On the other hand . . ."

Methods

"What role do you think alcohol played in your injury?"

Explore **pros and cons** of drinking. "What do you like about drinking? What do you like less about drinking?"

Is this patient interested in change?

"On a scale of 0 to 10 [with 0 indicating not important, not confident or not ready], rate. . ."

". . . how **important** it is for you to change your drinking behavior?"

". . . your level of **readiness** to change your drinking behavior?"

"Why did you choose ___ [the # stated] and not a lower number?"

If the patient is interested in changing, use these questions.

"What would it take to raise that number?"

"How **confident** are you that you can change your drinking behavior?"

Reflect and summarize throughout.

Options

"Where does this leave you? Do you want to quit, cut down, or make no change?"

You could:

- M**anage your drinking,
Eliminate drinking from your life,
Never drink and drive,
 Continue **U**sual drinking pattern, or
Seek help.

If appropriate, ask about a **plan**. "How will you do that? Who will help you? What might get in the way?"

Close on Good Terms

Summarize the patient's statements in favor of change.

Emphasize the patient's strengths.

What agreement was reached?

✓ **Always thank the patient for speaking with you.**

If You Give Advice

When you have significant concerns or important information to impart, use this approach. It reduces the possibility of patient resistance.

Ask: Ask permission to discuss your concerns.

Advise: If permission is granted, give information or share your concerns.

Ask: Ask for the patient's reaction to your comments.

April 2009: C Dunn, C Field, D Hungerford, S Shellenberger, J Macleod

Methods

We included systematic reviews or randomised controlled trials published in English between 2000 and 2014, focusing on brief interventions for substance use in emergency settings. The definition of brief intervention used was very broad (see Background) and substance use included the use of alcohol, tobacco or illicit drugs. All participants were included regardless of age, sex and nationality. The inclusion criteria did not specify any particular outcome and all outcomes were considered.

Search strategy

A literature search was conducted using a variety of search terms, including 'emergency department/room/accident and emergency', 'brief intervention', 'drug', 'alcohol', 'tobacco', 'substance', 'systematic review', 'randomised (or 'randomized') random controlled/control trial' and 'randomised (or 'randomized') controlled/control clinical trial'. The academic databases available via EBSCO (e.g. MEDLINE and PsycINFO) were searched. Searches were also conducted of the Cochrane Library, Drug and Alcohol Findings, the EMCDDA website and Medscape, and of reference lists from relevant published studies.

Data collection and analysis

The author screened all of the titles and abstracts identified through the search strategies. If an abstract suggested that a paper might be potentially relevant, the full text was read and the study was excluded if the focus was not on substance use, if the intervention was not a brief intervention and/or if the study was not conducted in an emergency setting. Studies that were not randomised controlled trials were also excluded.

Information was collated from systematic reviews according to the characteristics of the review, the substance(s) it focused on and the results/authors' conclusions. Information from the randomised controlled trials was collated according to the country in which they were conducted, the characteristics of the trials, the substance(s) they focused on, the samples, and the measures used and their outcomes.

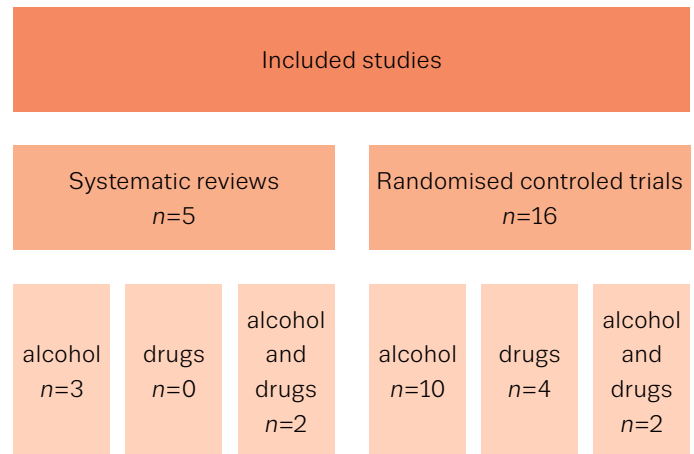
Results

After the results of the search were scrutinised to ensure that they fitted the criteria for inclusion, and those that did not were eliminated, five systematic reviews and 19 publications on randomised controlled trials and randomised controlled clinical trials remained (see Figure 2). However, different

aspects of three randomised controlled trials were reported in two publications each (Barrett et al., 2006, and Crawford et al., 2004; Daepfen et al., 2007, 2010; Magill et al., 2009; Monti et al., 2007), resulting in a total of 16 primary studies.

FIGURE 2

Flow-chart of included studies and subdivision by target substance



Systematic reviews

We included five systematic reviews, which analysed a total of 78 studies. Three of the five systematic reviews focused solely on studies among young people, 'youth', college students and adolescents, while the rest included the general population.

All five were concerned with alcohol, three with alcohol alone and two with alcohol and drugs, although one of the latter group considered seven studies, of which six were concerned with alcohol alone.

To varying degrees, the five publications discussed the quality of the studies they reviewed, pointing out that the poor quality of some and the methodological variations among them meant that firm conclusions about the effectiveness of brief interventions in emergency departments could not be drawn.

Randomised controlled trials

We found publications using the search methods described in Methods; however, different aspects of three randomised controlled trials were reported in two publications each, resulting in a total of 16 studies and a total sample size of 8 875 individuals.

Ten of the randomised controlled trials were based in the United States, two in the United Kingdom, two in Australia, one in Poland and one in Switzerland. Thus, only 4 of the 16 randomised controlled trials were delivered in European

countries, of which three were in European Union Member States.

The majority of studies ($n = 10$) investigated alcohol-related cases. Ten focused on use defined as hazardous/risky/harmful drinking, with one specifically targeting the combination of alcohol and peer violence, another targeting alcohol and risky driving, and a third examining alcohol and human immunodeficiency virus (HIV) risk behaviour. Four studies targeted only drugs-related cases, with three focusing on drug use (whether recent, in the last 3 months or in the last 30 days), while one study included individuals with substance use disorders in general. Two studies targeted both alcohol and drug use. Three also looked into the cost-effectiveness of the brief intervention.

Heterogeneity

The analysis of the 16 trials revealed enormous variation in every aspect of the trials. The participants, study designs, types of interventions and outcome measures varied significantly among studies making comparison difficult, as outlined in the paragraphs below.

Samples

Individually, the size of the different studies varied from 45 to 1 441 participants, and their ages ranged from 14 to over 66 years. Four studies focused exclusively on young people aged 25 years or under.

A lack of effectiveness was reported by one of the studies described here (Cunningham et al., 2012), but this was apparently because of the selection criteria used. Cunningham et al. (2012) reported on a brief intervention that had several aims, one of which was to reduce alcohol use. The intervention was ineffective at achieving this, but this might have been because of the low level of alcohol use (i.e. any alcohol use, even one drink) required for study inclusion and, as noted by recent reviews, positive effects of brief interventions are typically found only with higher than baseline consumption levels.

Follow-up periods and attrition rates

The follow-up periods of the trials reported here varied from 1 to 12 months, and one brief intervention (concerned with changing attitudes) conducted only a single follow-up immediately after the intervention. Woolard et al. (2013) are among those who argue for longer follow-up periods as 'One year follow up may be too short a time to detect small but important changes in negative consequences and injuries. One criticism of studies of BI [brief interventions] has been

this lack of long term follow up. Perhaps longer follow up to 2 years would demonstrate reductions in consequences' (Woolard et al., 2013, p. 1737).

Of the 16 brief interventions analysed, seven included two follow-ups, five had one follow-up, one had three follow-ups and one had four follow-ups. Follow-ups were not part of the study design in two cases, and in the other case follow-up was ongoing at the time of publication and final results were not available. The brief interventions that conducted follow-ups used a variety of methods:

- telephone (used by six brief interventions);
- telephone, email or mail (used by two brief interventions);
- self-administration using a computer (used by two brief interventions);
- face-to-face interview (used by two brief interventions);
- a combination of face-to-face interview and hair analysis (used by one brief intervention);
- a combination of telephone and face-to-face interview (used by one brief intervention);
- a combination of face-to-face questionnaire and scrutiny of records from hospitals, community health services and social services, and information from the police and courts (used by one brief intervention).

Attrition rates varied widely. At 12 months, the lowest rate was 16 % and the highest was 69 %. Overall, the highest rate was 69 % at 12 months and the lowest was 13 % at 3 months.

Attrition can bias the results of studies in which the effectiveness of an intervention is assessed. For example, in a publication that synthesised results from alcohol-related brief interventions delivered in emergency departments, WHO (2009) commented that 'as many as 47 % of patients in the studies refused to participate. Refusal rates of this magnitude can introduce significant bias (e.g., only patients who have less severe problems or are motivated to change their drinking behaviour may agree to participate)' (WHO, 2009, p. 166).

Interventions and comparisons

We observed that, after screening, trial participants that met inclusion criteria were randomised to a diverse range of interventions. Nine trials had three intervention arms, six trials had two and one trial had four. All participants were screened and/or their substance use was assessed, and most of the non-intervention groups received standard care, an information or referral leaflet, or feedback, which, in some cases, was tailored to the participant's assessment results.

The brief interventions were delivered by a range of methods. Many included more than one method because they had more than one intervention condition and different methods were

employed for each intervention condition. The methods used were as follows:

- face-to-face delivery of the intervention by a therapist, health worker, nurse or doctor, which ranged from a few minutes of advice to one or more 30- to 60-minute sessions that included elements of motivational interviewing;
- delivery by a therapist assisted by a computer;
- delivery by a computer;
- an advice leaflet;
- personalised feedback on screening results;
- mail;
- text messaging.

Most of the publications examined provided details of the training that the brief intervention delivery staff had received, and many used professionals that were already experienced in the technique. However, Daepfen et al. (2010) highlighted that, despite systematic training, there were important differences in counsellor performances with regard to eliciting change. These authors noted that 'Counsellors who had superior MI [motivational interviewing] skills achieved better outcomes overall and maintained efficacy across all levels of patient ability to change, whereas counsellors with inferior MI skills were effective mostly with patients who had higher levels of ability to change' (Daepfen et al., 2010, p. 612).

Several of the brief interventions that had more than one intervention condition used different staff for each condition. The information on brief intervention delivery staff was unclear in three of the publications on the 16 trials, but the delivery staff of the remaining 13 trials comprised:

- trained research assistants (two trials);
- a computer only and therapists assisted by a computer (two trials);
- alcohol health workers (one trial);
- nurses (one trial);
- emergency department doctors and nurses, and drug and alcohol counsellors (one trial);
- members of the research team, emergency department staff and alcohol health workers (one trial);
- therapists with a Bachelor's or Master's degree (one trial);
- trained research assistants and nurse clinicians (one trial);
- trained interveners with a Master's degree in the social work field or a related field (one trial);
- professional health educators (one trial);
- trained interveners with a PhD or Master's degree in a discipline related to mental health (one trial).

Outcome measures

The majority of the studies ($n = 11$) focused on behavioural outcomes and substance use, and used self-reported

measurements. Instruments varied among studies but the most commonly used were the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), the Alcohol Use Disorders Identification Test (AUDIT), a shortened version of the Addiction Severity Index (ASI-Lite), the Quick Drinking Assessment Interview (form 90-AQ), the Drinker Inventory of Consequences, the Short Index of Problems (DrInC, SIP) and the Timeline Followback (TLFB) method.

In five studies, the primary outcomes were the following: alcohol-related consequences and peer violence (Cunningham et al., 2012); attitudes and intentions with regard to drugs and HIV (Bonar et al., 2014); uptake of HIV/hepatitis C virus (HCV) screening, and attitudes and beliefs towards HIV/HCV screening (Merchant et al., 2014); risky driving and alcohol use (Sommers et al., 2013); and attendance for substance use treatment (Tait et al., 2005).

Effects of the interventions

A summary of the effects of the interventions analysed, in both systematic reviews and experimental studies, is presented in Table 1.

Systematic reviews

One review (D'Onofrio and Degutis, 2002) concluded that emergency department-based screening and brief interventions were effective at reducing repeated visits to the emergency department. Nilsen et al. (2008) also suggested a positive effect of brief interventions on substance-related outcomes, albeit improvements were also observed in control groups.

The remaining three reviews stressed that the overall effectiveness of the studied interventions was inconclusive: Newton et al. (2013) reported that the brief interventions did not reduce alcohol use significantly more than other care; Yuma-Guerrero et al. (2012) observed that six of the seven studies that they reviewed showed positive effects on alcohol consumption and/or its consequences for all participants regardless of study condition; and Taggart et al. (2013) concluded that the seven studies they reviewed 'showed promise but had variable success'.

Implicitly or explicitly, the review authors suggested the need for more research, development and testing of brief interventions in emergency departments, to establish their short- and long-term effectiveness among a variety of populations. Two issues are particularly significant in this context: variations in the study protocols, which make it difficult to compare different studies, and the poor quality of some of the studies reviewed. Yuma-Guerrero et al. (2012)

therefore call 'for future studies to have more consistent methodology (eg, outcome measures, inclusion criteria) so the results can support decisive conclusions and policy changes' (Yuma-Guerrero et al., 2012, p. 6).

Randomised controlled trials/clinical trials

Overall, the heterogeneity among the 16 trials is clear (see Table 1). This makes comparisons difficult and hampers definitive conclusions about the effectiveness of brief interventions.

Six of the 16 trials (Monti et al., 2007; Walton et al., 2008; Magill et al., 2009; Cherpital et al., 2010; Havard et al., 2012; Suffoletto et al., 2012; Bonar et al., 2014) reported that the brief intervention had been effective, although Bonar et al. (2014) reported on an ongoing trial and had no data on follow-ups at the time of publication.

In two trials (Crawford et al., 2004; Barrett et al., 2006; Sommers et al., 2013), the brief intervention had been effective initially, but the effect had diminished by the 12-month follow-up. Partial effectiveness, that is, measures of different outcomes that showed different degrees of effectiveness (including ineffectiveness), was reported by four trials (Tait et al., 2005; Daepfen et al., 2007, 2010; Cunningham et al., 2012; Woolard et al., 2013).

The ineffectiveness of a brief intervention was reported in four trials (Dent et al., 2008; Drummond et al., 2014; Merchant et al., 2014; Woodruff et al., 2014).

TABLE 1
Synthesis of trials

Brief intervention effectiveness	Trials	Reference
Effective	6	Monti et al., 2007; Walton et al., 2008; Magill et al., 2009; Cherpital et al., 2010; Havard et al., 2012; Suffoletto et al., 2012; Bonar et al., 2014
Effective but not sustained at follow-up	2	Crawford et al., 2004; Barrett et al., 2006; Sommers et al., 2013
Partial effectiveness	4	Tait et al., 2005; Daepfen et al., 2007, 2010; Cunningham et al., 2012; Woolard et al., 2013
Ineffective	4	Dent et al., 2008; Drummond et al., 2014; Merchant et al., 2014; Woodruff et al., 2014

Many studies of brief interventions in emergency departments, including those discussed here, have reported improvements in their control groups, at least in the short term. Two explanations have been given for this. First, the implementation of brief interventions addressing substance use in emergency departments necessarily involves screening

and/or assessment before randomisation to intervention conditions, and establishes the nature and extent of participants' substance use. This, especially if the assessment is lengthy, may motivate participants to change their behaviour without further intervention because their attention will be drawn to their substance use, and, in many trials, feedback is given on the results, or the control groups are given an advice leaflet. Second, participants who perceive that the reason for their emergency department visit is related to their substance use may be motivated to change their substance-using behaviour.

Overall, the evidence suggests a positive trend with regard to the use of brief interventions in emergency settings to reduce substance use. There is also some tentative evidence pointing to the effectiveness of brief interventions at reducing substance-related harms and consequences, such as peer violence and return visits to the emergency department, as well as facilitating access to treatment. However, because the studies are very heterogeneous, it would be premature to make definitive statements about the effectiveness of brief interventions in emergency department settings.

Cost-effectiveness

Three of the randomised controlled trials reported here include data on the cost-effectiveness of brief interventions in emergency departments. Barrett et al. (2006), who reported an effective brief intervention, concluded that a face-to-face intervention with an alcohol health worker was cost-effective. Specifically, the randomised controlled trial did not show significant differences in costs or effectiveness at 12-month follow-up; however, a cost-effectiveness acceptability analysis revealed that there is at least a 65 % probability that a referral to an alcohol health worker is more cost-effective than the control treatment for all values that a decision-maker would be willing to pay for a unit of reduction in alcohol consumption. In addition, the brevity of the treatment, its low cost and its short-term effectiveness add to its case for selection. Similarly, Havard et al. (2012), in a study of a brief intervention that was reported to be effective, concluded that mailing personalised feedback represents a good economic investment, especially relative to face-to-face emergency department-based brief alcohol interventions: 'the direct cost of providing mailed feedback was AUD 5.83 per patient, a fraction of the equivalent per-patient cost of USD 135.35 associated with the face-to-face intervention evaluated in the only comparable study conducted' (Havard et al., 2012, p. 328).

However, Drummond et al. (2014), who reported that the brief intervention that they studied was ineffective, recommended, without providing detailed results of a cost-effectiveness analysis, that screening and feedback 'is likely to be easier and less expensive to implement than more complex interventions' (p. 9).

TABLE 2
Summary of the effects of the brief interventions

Authors and date	Effectiveness quick guide	Outcome(s)	Interventions	Results
Systematic reviews				
D'Onofrio and Degutis (2002); <i>n</i> = 41	+	ED visits	Screening and BI for alcohol problems in the EDs	In the six ED-based studies, the intervention led to fewer ED visits
Nilsen et al. (2008); <i>n</i> = 14	+	Alcohol use, risky drinking practices, harms/consequences and injury frequency	Emergency care BAIs for injury patients	Of the 12 studies that compared pre- and post-BI results, 11 observed a significant effect of the BI on at least some of the outcomes: alcohol intake, risky drinking practices, alcohol-related negative consequences and injury frequency. BI patients achieved greater reductions than control group patients, although there was a tendency for the control group(s) to also show improvements. Moreover, five studies failed to show significant differences between the compared treatment conditions
Newton et al. (2013); <i>n</i> = 9	-	Alcohol use, drug use and substance use-associated injuries	Brief ED interventions for youth who use alcohol and other drugs	Universal and targeted BIs did not significantly reduce alcohol use more than other care. Clear benefits of using ED-based BIs to reduce alcohol and other drug use and associated injuries or high-risk behaviours remain inconclusive because of variation in the methods used to assess outcomes and poor study quality
Taggart et al. (2013); <i>n</i> = 7	?	Alcohol use and alcohol-related harms/consequences	ED interventions for college drinkers	Each study found reductions in alcohol intake patterns or reductions in alcohol-related harm in the intervention group, although some between-group differences were not statistically significant
Yuma-Guerrero et al. (2012); <i>n</i> = 7	?	Alcohol use and alcohol-related harms/consequences	Screening, BI and referral for alcohol use in adolescents	Four of the seven studies demonstrated a significant intervention effect, but no single intervention reduced both alcohol consumption and alcohol-related consequences. Moreover, six of the seven studies reviewed showed positive alcohol consumption and/or consequence effects for all participants regardless of intervention condition
Randomised controlled trials/clinical trials				
1.* Barrett et al. (2006); United Kingdom	(+)	Alcohol use	Information leaflet and referral to an AHW who delivered a BI (lasting 30–50 minutes); or an information leaflet only	Six-month follow-up: statistically significantly lower levels of drinking in those referred to an AHW Twelve-month follow-up: observably lower drinking levels in those referred to an AHW
* Crawford et al. (2004); United Kingdom	(+)			Six-month follow-up: those referred to an AHW were consuming a mean of 59.7 units of alcohol per week compared with 83.1 units in the information leaflet only group. This difference is statistically significant Twelve-month follow-up: those referred to an AHW were drinking 57.2 units per week compared with 70.8 units in the information-only group (not statistically significant) and had a mean of 0.5 fewer visits to the ED over the following 12 months. Differences in quality of life were not found
2. Bonar et al. (2014); USA	+	Attitudes and intentions towards drugs and HIV	Intervener-delivered BI assisted by computer (30 minutes); 30-minute computerised BI; or enhanced usual care, including a 3-minute oral review of health resource brochures	Differences between baseline and immediately post-intervention were measured: <ul style="list-style-type: none"> ■ compared with enhanced usual care, participants receiving the intervener-delivered BI showed significant improvements in confidence and intentions; ■ computerised BI (delivered by computer alone) patients showed increased importance, readiness, confidence and help-seeking; ■ both intervener-delivered BI (assisted by a computer) and computerised BI groups showed an increased likelihood of condom use with regular partners relative to the enhanced usual care group
3. Cherpitel et al. (2010); Poland	+	Alcohol use and alcohol-related harms/consequences	SBIRT (Screening, Brief Intervention and Referral to Treatment)	Three-month follow-up: all three conditions showed a significant reduction in at-risk drinking and number of drinks per drinking day (Cherpitel et al., 2009) Twelve-month follow-up: significant declines between baseline and 12 months in secondary outcomes of the RAPS4 test (four questions to test for alcohol dependence), in the number of drinking days per week and the maximum number of drinks on an occasion (only for the intervention condition) and in negative consequences for both the assessment and intervention conditions

Authors and date	Effectiveness quick guide	Outcome(s)	Interventions	Results
4. Cunningham et al. (2012); USA	(+)	Alcohol-related harms/consequences and peer violence	A BI delivered by a computer alone or a BI delivered by a therapist assisted by a computer	Six-month follow-up: significant reductions in alcohol-related consequences reported for both BI conditions Twelve-month follow-up: <ul style="list-style-type: none"> the significant reductions in alcohol-related consequences reported in both BI groups at 6 months were not maintained; the BIs did not affect alcohol consumption: the BI delivered by computer alone group, the BI delivered by a therapist assisted by a computer group and the control group did not differ in alcohol-related variables; in comparison with the control group, the therapist-delivered BI group showed significant reductions in peer violence
	–	Alcohol use		
5.* Daeppen et al. (2010); Switzerland	+	Alcohol-related predictors of change	A BAI delivered by a trained research assistant; control group with screening and assessment; or control group with screening only	Twelve-month follow-up: the BAI had no influence on the main alcohol use outcome. Across all three groups (BAI, control group with screening and assessment, control group with screening only), there were similar proportions of low-risk drinkers; there were similar reductions in drinking frequency, quantity, binge drinking frequency and scores; and there were similar numbers of days hospitalised and numbers of medical consults
* Daeppen et al. (2007); Switzerland	–	Alcohol use		Twelve-month follow-up: data show an impact resulting from the 'progression of change' talk during the course of the intervention. Communication characteristics of counsellors (i.e. MI-consistent behaviours) and patients (e.g. an expression of an ability to change) during the intervention predicted changes in alcohol consumption 12 months later Despite systematic training, important differences in counsellor performance were highlighted as counsellors with superior MI skills achieved better outcomes overall and maintained efficacy across all levels of patients' ability to change, whereas counsellors with inferior MI skills were effective mostly only with patients who had higher levels of ability to change
6. Dent et al. (2008); Australia	–	Alcohol use	No counselling (standard care); same-day BI by an emergency nurse or doctor; or motivational intervention within 1 week by off-site drug and alcohol counsellors (by MI)	Three-month follow-up: overall, maximum daily alcohol consumption decreased from a median of 13.5 standard drinks at enrolment to 9.25 drinks at 3 months, and participants that received standard care reported fewer drinks than those randomised to MI
7. Drummond et al. (2014); United Kingdom	–	AUDIT status	A patient information leaflet; 5 minutes of brief advice; or referral to an AHW who provided 20 minutes of brief lifestyle counselling	Six- and 12-month follow-ups: there was no difference between intervention conditions for AUDIT status or any other outcome measures. At month 6, the odds ratio of being AUDIT negative for the brief advice (5 minutes of advice) group compared with the patient information leaflet group was 1:103. The odds ratio for the brief lifestyle counselling group (20 minutes of lifestyle counselling by an AHW) compared with the patient information leaflet group was 1:247
8. Havard et al. (2012); Australia	+	Alcohol use	The intervention group received personalised feedback via mail regarding their alcohol consumption; the control group received no feedback	Mailed personalised feedback achieved a statistically significant reduction in the quantity/frequency of alcohol consumption relative to screening alone. However, the effect was limited to patients who reported alcohol consumption in the 6 hours prior to the onset of the condition that led to the ED visit or who perceived that alcohol was a contributing factor in the condition for which they presented

Authors and date	Effectiveness quick guide	Outcome(s)	Interventions	Results
9.* Magill et al. (2009); USA	+	Herbal cannabis use	A one-session motivational intervention that included personalised feedback; or a personalised feedback report only	Six-month follow-up: herbal cannabis use declined from baseline for both groups (a one-session motivational intervention or only a personalised feedback report) Twelve-month follow-up: only motivational intervention participants continued to reduce their use of herbal cannabis. Reductions in the number of days of use of herbal cannabis with alcohol appeared to be primarily a function of decreased alcohol use
* Monti et al. (2007); USA	+	Alcohol use		Six-month follow-up: motivational intervention participants consumed alcohol on fewer days, had fewer heavy drinking days and consumed fewer drinks per week in the month prior to follow-up than feedback-only patients Twelve-month follow-up: the effects at the 6-month follow-up were maintained. Twice as many motivational intervention participants as feedback-only participants had reliably reduced their volume of alcohol consumption
10. Merchant et al. (2014); USA	-	Uptake of HIV/HCV test screening and attitudes and beliefs towards HIV/HCV screening	A self-administered HIV/HCV risk assessment alone (control arm), followed by a post-assessment questionnaire; or the assessment plus a BI about drug misuse and screening for HIV/HCV (intervention arm), followed by a post-intervention questionnaire	Uptake of combined rapid HIV/HCV screening was nearly identical for each study arm. There were no differences between the BI and control study arms with regard to changes in beliefs about the value of combined HIV/HCV screening, self-perception of HIV/HCV risk and opinions about HIV/HCV screening, post- vs. pre-HIV/HCV risk assessment (with or without the BI)
11. Sommers et al. (2013); USA	(+)	Risky driving and alcohol use	BI group (assessed at baseline and received the BI); contact control group (assessed at baseline but received no intervention); or no-contact control group (not assessed at baseline, received no intervention)	Six-, 9- and 12-month follow-ups: risky driving and hazardous drinking were significantly lower in the BI group than in the contact control group with no intervention, at 6 and at 9 months, but not at 12 months
12. Suffoletto et al. (2012); USA	+	Alcohol use	Weekly text-messaging feedback with goal setting (intervention); weekly text-messaging drinking assessments without feedback (assessment); or control (no intervention)	Three-month follow-up: the intervention group (weekly feedback with goal setting) were reported to have fewer heavy drinking days and fewer drinks per drinking day than the other groups. The assessment group increased their drinking over the course of the study
13. Walton et al. (2008); USA	+	Alcohol use and alcohol-related predictors of change	Advice and tailored booklet; advice and generic booklet; no advice and tailored booklet; or no advice and generic booklet	The attribution of injury to alcohol-related factors was found to be an important moderator of change, and highlighting the alcohol-injury connection in brief ED-based alcohol interventions may augment their effectiveness. Twelve-month follow-up: overall, average weekly consumption, frequency of heavy drinking and negative consequences decreased over time. Compared with those who attributed their injury to alcohol but did not receive advice, those who attributed their injury to alcohol and did receive advice had significantly lower levels of average weekly alcohol consumption and less frequent heavy drinking sessions, while this was not significantly associated with a reduction in negative consequences Participants who reported higher levels of self-efficacy (i.e. those who were confident that they could control their drinking) had lower weekly consumption levels and fewer negative consequences, whereas those with higher readiness to change had greater weekly consumption levels and more negative consequences

Authors and date	Effectiveness quick guide	Outcome(s)	Interventions	Results
14. Woodruff et al. (2014); USA	–	Drug use	The Life Shift BI group; or an attention placebo control group focusing on driving and traffic safety (Shift Gears group)	Six-month follow-up: there were no significant differences in self-reported abstinence for the Life Shift (12.5 %) or the Shift Gears group (12 %). However, hair analyses showed that the abstinence rate was only 7 % for the Life Shift group and 2 % for the Shift Gears group. There was no significant difference between the two groups in the short Addiction Severity Index (ASI-Lite) drug use composite scores
15. Woolard et al. (2013); USA	+	Alcohol and herbal cannabis use	Two sessions of BI; or standard care	Twelve-month follow-up: measures of binge drinking and combined herbal cannabis and alcohol use significantly decreased for the BI group compared with the standard care group. There were no differences in negative consequences or injuries between the two groups. The BI appears to offer a mechanism to reduce risky alcohol and herbal cannabis use among ED patients, but the expected reductions in the negative consequences of use (such as injury) were not found at 12 months
	–	Alcohol and herbal cannabis harms/ consequences		
16. Tait et al. (2005); Australia	+	Attendance for substance use treatment	BI enhanced by a consistent support person; or standard care	Twelve-month follow-up: significantly more of the intervention group participants had attended a treatment agency than the usual care group participants, despite the fact that the actual attendance of the intervention group was poor (25 %). The intervention group also had a lower proportion of substance-related ED presentations. Irrespective of group, lower levels of substance use were reported, with both the usual care and the intervention groups showing improvements in psychological wellbeing
	–	Alcohol and drug use		
	+	ED visits		

Notes:

Studies indicated with an asterisk report data on different aspects of the same trials.

Effectiveness quick guide legend:

- + Significant effect on primary outcome.
- (+) Significant initial effect on primary outcome but not sustained at follow-up.
- No significant effect on primary outcome.
- ? Inconclusive results.

AHW, alcohol health worker; AUDIT, Alcohol Use Disorders Identification Test; BAI, brief alcohol intervention; BI, brief intervention; ED, emergency department; MI, motivational interviewing; RAPS4, Remorse, Amnesia, Performance and Starter drinking behaviour questionnaire.

Discussion

This review aimed to explore whether or not brief interventions in emergency departments are helpful for identifying individuals with drug problems, for supporting behavioural change and for increasing referrals to specialised treatment centres.

The literature research did not identify a sufficient number of studies that had included people with drug-related problems, as only two reviews included patients with drug problems, only four studies were on drug users, and only two studies were on alcohol and drug users. Nevertheless, studies conducted in emergency departments show that drugs and alcohol are often used in combination, and it is possible to assume that people with drug-related problems can benefit from brief interventions that target, at least, their alcohol intake.

Behavioural changes resulting from brief interventions, in terms of a reduction in substance use, seem to be supported by the studies, at least in the short term, particularly for people with alcohol problems. However, increases in referrals to treatment centres and in the uptake of treatments were measured and reported by only two studies.

Cost-effectiveness analysis was conducted in only three trials, with positive outcomes in two of these.

The potential benefits of brief interventions for drug users need to be further studied, yet the feasibility of such interventions delivered by emergency department personnel, the absence of reported adverse effects and the potential cost-effectiveness suggest that brief interventions could be considered as part of the training for emergency department healthcare professionals.

Several commentators (e.g. D'Onofrio and Degutis, 2004/2005; Parkes et al., 2011) and many of the reviews and trials cited in this report highlight that there are a number of challenges with regard to implementing brief interventions in emergency departments. In summary, these include:

- constraints on staff time and the perceived need to focus on the acute episode and the more immediate needs of the patient;
- ethical issues, especially in the case of young people for whom permission may be required from a parent or carer in order for them to participate in a brief intervention;
- potential trial participants' refusal to participate for a variety of reasons, including not being able to participate

because they are in pain or are too ill or, especially in the case of young people, because they do not want to reveal their substance use to their parents or others;

- concerns about insurance, because some insurance companies do not cover an injury caused by being under the influence of drugs or alcohol;
- lack of confidence in emergency department staff with regard to assisting in the implementation of brief interventions, possibly as a result of inadequate training.

Conclusions

Suggestions for future directions, in terms of the effectiveness of brief interventions in emergency departments, were made by the majority of the authors of the systematic reviews and reports examined in this report.

The difficulty in reaching an overall conclusion on the effectiveness of brief interventions in emergency departments, because of the heterogeneity of the studies, was discussed earlier, and this issue was commented upon by the systematic review authors and by the majority of authors who reported on the trials. Moreover, the majority of the trials focused on alcohol: only four of the 16 were concerned with drugs only, and two were concerned with drugs and alcohol. The relative lack of brief interventions in emergency departments specifically targeting drug use means that the effectiveness of such interventions cannot be conclusively established (e.g. Bogenschutz et al., 2011).

The authors of the systematic reviews discussed here recommended more research, development and testing of brief interventions in emergency departments, to establish their effectiveness among a variety of populations. This is echoed by the authors of the trial publications, although their

recommendations for future development tend to concentrate on only the specific issues and brief interventions that they have studied. Further high-quality studies examining the relative effectiveness of brief interventions for substance use and other problem behaviours need to be conducted across varying populations. In addition, future studies should investigate the mediators of treatment outcomes, such as setting, context, method of delivery and level of staff training.

Many publications on emergency department-based brief interventions stress that the context offers an important 'window of opportunity' to provide services to those with substance use problems who might otherwise never receive any form of assessment, referral or intervention. Moreover, such interventions can rapidly achieve important objectives, such as detecting individuals with high-risk and dependent alcohol and drug use, making such individuals aware of their condition and facilitating access to specialty treatment, thus improving quality of care. Finally, because of the brevity of this type of intervention, staff training does not require a lot of investment and, thus, any impacts on healthcare budgets will be minimised.

The results of this review show that there are potential benefits of brief interventions, especially in relation to behavioural outcomes, but a definitive statement about 'what works' cannot be made, as the results of the trials reported here may not be generalisable to other age groups, to samples with different levels of substance use or, given the focus of most of the studies on alcohol, to those using illicit drugs.

However, by taking a decision-making approach to the analysis, the feasibility of brief interventions delivered by emergency department personnel, the absence of reported adverse effects and the potential cost-effectiveness suggest that brief interventions could be considered as part of the training for emergency department healthcare professionals.

References

- | 'Annual Meeting of the North American Congress of Clinical Toxicology (NACCT)' (2014), *Clinical Toxicology* 52, pp. 682–818.
- | Babor, T., McGee, B., Kassebaum, P., Grimaldi, P., Ahmed, K. and Bray, J. (2007), 'Screening, Brief intervention, and Referral to Treatment (SBIRT): toward a public health approach to the management of substance abuse', *Substance Abuse* 28 (3), pp. 7–30.
- | Barnett, E., Sussman, S., Smith, C., Rohrbach, L. A. and Spruijt-Metz, D. (2012), 'Motivational interviewing for adolescent substance use: a review of the literature', *Addictive Behaviors* 37(12), pp. 1325–1334.
- | Barrett, B., Byford, S., Crawford, M. J., et al. (2006), 'Cost-effectiveness of screening and referral to an alcohol health worker in alcohol misusing patients attending an accident and emergency department: a decision-making approach', *Drug and Alcohol Dependence* 81, pp. 47–54.
- | Bernstein, E., Topp, D., Shaw, E., et al. (2009), 'A preliminary report of knowledge translation: lessons from taking screening and brief intervention techniques from the research setting into regional systems of care', *Academic Emergency Medicine* 16, pp. 1225–1233.
- | Bogenschutz, M. P., Donovan, D. M., Adinoff, B., et al. (2011), 'Design of NIDA CTN Protocol 0047: screening, motivational assessment, referral, and treatment in emergency departments (SMART-ED)', *The American Journal of Drug and Alcohol Abuse* 37, pp. 417–425.
- | Bonar, E. E., Walton, M. A., Cunningham, R. M., et al. (2014), 'Computer-enhanced interventions for drug use and HIV risk in the emergency room: preliminary results on psychological precursors of behavior change', *Journal of Substance Abuse Treatment* 46, pp. 5–14.
- | Carney, T. and Myers, B. (2012), 'Effectiveness of early interventions for substance-using adolescents: findings from a systematic review and meta-analysis', *Substance Abuse Treatment, Prevention, and Policy* 7, pp. 1–25.
- | Centers for Disease Control and Prevention (2014), 'Planning and implementing screening and brief intervention for risky alcohol use: a step-by-step guide for primary care practices', Centers for Disease Control and Prevention, Atlanta, GA, USA.
- | Cherpitel, C. J., Moskalewicz, J., Swiatkiewicz, G., Ye, Y. and Bond, J. (2009), 'Screening, brief intervention, and referral to treatment (SBIRT) in a Polish emergency department: three-month outcomes of a randomized, controlled clinical trial', *Journal of Studies on Alcohol and Drugs* 70, pp. 982–990.
- | Cherpitel, C. J., Korcha, R. A., Moskalewicz, J., Swiatkiewicz, G., Ye, Y. and Bond, J. (2010), 'Screening, brief intervention, and referral to treatment (SBIRT): 12-month outcomes of a randomized, controlled clinical trial in a Polish emergency department', *Alcoholism: Clinical and Experimental Research* 34, pp. 1922–1928.
- | Crawford, M. J., Patton, R., Touquet, R., et al. (2004), 'Screening and referral for brief intervention of alcohol-misusing patients in an emergency department: a pragmatic randomised controlled trial', *Lancet* 364, pp. 1334–1339.
- | Cunningham, R. M., Chermack, S. T. and Zimmerman, M. A. (2012), 'Brief motivational interviewing intervention for peer violence and alcohol use in teens: one-year follow-up', *Pediatrics* 129, pp. 1083–1090.
- | Daeppen, J-B., Gaume, J., Bady, P., et al. (2007) 'Brief alcohol intervention and alcohol assessment do not influence alcohol use in injured patients treated in the emergency department: a randomized controlled clinical trial', *Addiction* 102, pp. 1224–1233.
- | Daeppen, J-B., Bertholet, N. and Gaume, J. (2010), 'What process research tells us about brief intervention efficacy', *Drug and Alcohol Review* 29, pp. 612–616.
- | Day, E., The TCU team, Mitcheson, L., Lynch, K., Taylor, S. and Whiteley, C. (2013) 'Routes to Recovery via the community: mapping user manual', Public Health England. Available at: www.nta.nhs.uk/uploads/phemappingmanual.pdf (accessed November 2015).

- Dent, A. W., Weiland, T. J., Phillips, G. A. and Lee, N. K. (2008), 'Opportunistic screening and clinician-delivered brief intervention for high-risk alcohol use among emergency department attendees: a randomized controlled trial', *Emergency Medicine Australasia* 20, pp. 121–128.
- D'Onofrio, G. and Degutis, L. C. (2002), 'Preventive care in the emergency department: screening and brief intervention for alcohol problems in the emergency department: a systematic review', *Academic Emergency Medicine* 9, pp. 627–638.
- D'Onofrio, G. and Degutis, L. C. (2004/2005), 'Screening and brief intervention in the emergency department', *Alcohol Research and Health* 28, pp. 63–74.
- Drummond, C., Deluca, P., Coulton, S., et al. (2014), 'The effectiveness of alcohol screening and brief intervention in emergency departments: a multicentre pragmatic cluster randomized controlled trial', *PLoS ONE* 9. Available at: <http://www.plosone.org/article/doi/10.1371/journal.pone.0099463&representation=PDF>
- EMCDDA (2013), *North American drug prevention programmes: are they feasible in European cultures and contexts?*, Thematic Papers, European Monitoring Centre for Drugs and Drug Addiction, Lisbon.
- EMCDDA (2015), *The role of psychosocial interventions in drug treatment*, online publication. Available at: <http://www.emcdda.europa.eu/topics/pods/psychosocial-interventions> (accessed November 2015).
- Emmen, M. J., Schippers, G. M., Bleijenberg, G. and Wollersheim, H. (2004) 'Effectiveness of opportunistic brief interventions for problem drinking in a general hospital setting: systematic review', *The British Medical Journal* 328, p. 318.
- Ferri, M., Bo, A., Amato, L., et al. (2015), 'What is needed in future drug treatment research? A systematic approach to identify gaps on effectiveness of drug treatment from the EMCDDA', *Drugs: Education, Prevention and Policy* 22, pp. 86–92.
- Foxcroft, D. R., Coombes, L., Wood, S., Allen, D., Nerissa M. L. and Santimano, A. (2014), *Motivational interviewing for alcohol misuse in young adults*, Cochrane Database of Systematic Reviews, Issue 8, Art. No.: CD007025. Available at: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD007025.pub2/abstract>
- Gates, S., McCambridge, J., Smith, L. A. and Foxcroft, D. (2009), *Interventions for prevention of drug use by young people delivered in non-school settings (Review)*, Cochrane Database of Systematic Reviews, Issue 1, Art. No.: CD005030. Available at: <http://www.bibliotecacochrane.com/pdf/CD005030.pdf>
- Hart, D., Rathbone, A. and Russell, C. (2012), *Evaluation of the mentor/addaction street talk programme: final report*. Available at: <http://www.mentoruk.org.uk/wp-content/uploads/2012/05/final-report-v1.pdf>
- Havard, A., Shakeshaft, A. P., Conigrave, K. M. and Doran, C. M. (2012), 'Randomized controlled trial of mailed personalized feedback for problem drinkers in the emergency department: the short-term impact', *Alcoholism: Clinical and Experimental Research* 36, pp. 523–531.
- Heather, N. (2011), 'Developing, evaluating and implementing alcohol brief interventions in Europe', *Drug and Alcohol Review* 30, pp. 138–147.
- Helander, A., Bäckberg, M. and Hultén, P. (2014), 'Detection of new psychoactive substance use among emergency room patients: results from the Swedish STRIDA project', *Forensic Science International* 243, pp. 23–29.
- Kaner, E. F., Beyer, F. R., Dickinson, H. O., et al. (2007), *Effectiveness of brief alcohol interventions in primary care populations*, Cochrane Database of Systematic Reviews, Issue 2, Art. No.: CD004148. Available at: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD004148.pub3/full>
- Longabaugh, R., Minugh, P. A., Nirenberg, T. D., Clifford, P. R., Becker, B. and Woolard, R. (1995), 'Injury as a motivator to reduce drinking', *Academic Emergency Medicine* 2, pp. 817–825.
- Magill, M., Barnett, N. P., Apodaca, T. R., Rohsenow, D. J. and Monti, P. M. (2009), 'The role of marijuana use in brief motivational intervention with young adult drinkers treated in an emergency department', *Journal of Studies on Alcohol and Drugs* 70, pp. 409–413.

- McCormick, R., Docherty, B., Segura, L., et al. (2010), 'The research translation problem: Alcohol screening and brief intervention in primary care – real world evidence supports theory', *Drugs: Education, Prevention and Policy* 17, pp. 732–748.
- McQueen, J., Howe, T. E., Allan, L., Mains, D. and Hardy V. (2011), *Brief interventions for heavy alcohol users admitted to general hospital wards*, Cochrane Database of Systematic Reviews, Issue 8, Art. No.: CD005191.
- Merchant, R. C., Baird, J. R., Liu, T., Taylor, L. E., Montague, B. T. and Nirenberg, T. D. (2014), 'Brief intervention to increase emergency department uptake of combined rapid human immunodeficiency virus and hepatitis C screening among a drug misusing population', *Academic Emergency Medicine* 21, pp. 752–767.
- Millner, R. and Rollnick, S. (2012), *Motivational interviewing: Helping people change*, Guilford Press, New York.
- Monti, P. M., Barnett, N. P., Colby, S. M., et al. (2007), 'Motivational interviewing versus feedback only in emergency care for young adult problem drinking', *Addiction* 102, pp. 1234–1243.
- Newton, A. S., Dong, K., Mabood, N., et al. (2013), 'Brief emergency department interventions for youth who use alcohol and other drugs: a systematic review', *Pediatric Emergency Care* 29, pp. 673–684.
- Nilsen, P., Baird, J., Mello, M. J., et al. (2008), 'A systematic review of emergency care brief alcohol interventions for injury patients', *Journal of Substance Abuse Treatment* 35, pp. 184–201.
- O'Donnell, A., Anderson, P., Newbury-Birch, D., et al. (2013), 'The impact of brief alcohol interventions in primary healthcare: a systematic review of reviews', *Alcohol and Alcoholism* 49, pp. 66–78.
- O'Donnell, A., Wallace, P. and Kaner, E. (2014), 'From efficacy to effectiveness and beyond: what next for brief interventions in primary care?', *Frontiers in Psychiatry* 5, p. 113.
- Parkes, T., Atherton, I., Evans, J., et al. (2011), *An evaluation to assess the implementation of NHS delivered alcohol brief interventions: final report*, NHS Health Scotland, Edinburgh.
- Patton, R. (2012), *The 2nd national emergency department survey of alcohol identification and intervention activity. Final report to the funders: Alcohol Research UK*. Available at: http://alcoholresearchuk.org/downloads/finalReports/FinalReport_0102.pdf
- Saitz, R., Palfai, T. P., Cheng, D. M., et al. (2014), 'Screening and brief intervention for drug use in primary care: the ASPIRE randomized clinical trial', *Journal of the American Medical Association* 312, pp. 502–513.
- Sanjuan, P. M., Rice, S. L. and Witkiewitz, K. (2014), 'Alcohol, tobacco, and drug use among emergency department patients', *Drug and Alcohol Dependence* 138, pp. 32–38.
- Schmidt, C., Schulte, B., O'Donnell, A., et al. (2013), 'Project BISTAIRS: Brief interventions in the treatment of alcohol use disorders in relevant settings'. Available at: http://www.bistairs.eu/material/BISTAIRS_WP4_evidence_report.pdf
- Smedslund, G., Berg, R. C., Hammerstrøm, K. T., et al. (2011), *Motivational interviewing for substance abuse (Review)*, Cochrane Database of Systematic Reviews, Issue 5, Art. No.: CD008063, available at: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD008063.pub2/abstract>
- Sommers, M. S., Lyons, M. S., Fargo, J. D., et al. (2013), 'Emergency department-based brief intervention to reduce risky driving and hazardous/harmful drinking in young adults: a randomized controlled trial', *Alcoholism: Clinical and Experimental Research* 37, pp. 1753–1762.
- Suffoletto, B., Callaway, C., Kristan, J., Kraemer, K. and Clark, D. B. (2012), 'Text-message-based drinking assessments and brief interventions for young adults discharged from the emergency department', *Alcoholism: Clinical and Experimental Research* 36, pp. 552–560.
- Taggart, I. H., Ranney, M.L. and Howland, J. (2013), 'A systematic review of emergency department interventions for college drinkers', *Journal of Emergency Medicine* 45, pp. 962–968.
- Tait, R., Hulse, G., Robertson, S. and Sprivilis, P. (2005), 'Emergency department-based intervention with adolescent substance users: 12-month outcomes', *Drug and Alcohol Dependency* 79(3), pp. 359–363.

- | United Nations Office on Drugs and Crime (2013), *The challenges of new psychoactive substances*, Global SMART programme, UNODC, Vienna. Available at: http://www.unodc.org/documents/scientific/NPS_2013_SMART.pdf
- | Wachtel, T. and Staniford, M. (2010), 'The effectiveness of brief interventions in the clinical setting in reducing alcohol misuse and binge drinking in adolescents: a critical review of the literature', *Journal of Clinical Nursing* 19, pp. 605–620.
- | Walton M. A., Goldstein, A. L., Chermack, S. T., et al. (2008), 'Brief alcohol intervention in the emergency department: moderators of effectiveness', *Journal of Studies on Alcohol and Drugs* 69, pp. 550–560.
- | White, A., Kavanagh, D., Stallman, H., et al. (2010), 'Online alcohol interventions: a systematic review', *Journal of Medical Internet Research* 12. Available at: <http://www.jmir.org/2010/5/e62/>
- | WHO (World Health Organization) (2003), *Brief intervention for substance use: a manual for use in primary care, draft version 1.1 for field testing*, World Health Organization, Geneva.
- | WHO (World Health Organization) (2009), *Alcohol and injuries: emergency department studies in an international perspective*, World Health Organization, Geneva.
- | WHO (World Health Organization) (2012), *Brief psychosocial interventions*. Available at: http://www.who.int/mental_health/mhgap/evidence/resource/substance_use_q1.pdf?ua=1 (accessed November 2015).
- | Wojnar, M. and Jakubczyk, A. (2014), 'Brief interventions for hazardous and harmful alcohol consumption in accident and emergency departments', *Frontiers in Psychiatry* 5, Article 152.
- | Wood, D. M., Heyerdahl, F., Yates, C. B., et al. (2014), 'The European Drug Emergencies Network (Euro-DEN)', *Clinical Toxicology* 52, pp. 239–241.
- | Woodruff, S. I., Clapp, J. D., Eisenberg, K., et al. (2014), 'Randomized clinical trial of the effects of screening and brief intervention for illicit drug use: the life shift/shift gears study', *Addiction Science & Clinical Practice* 9, pp. 1–11.
- | Woolard, R., Baird, J., Longabaugh, R. et al. (2013), 'Project Reduce: reducing alcohol and marijuana misuse: effects of a brief intervention in the emergency department', *Addictive Behaviors* 38, pp. 1732–1739.
- | Youmans, Q., Merchant, R. C. and Baird, J. R. (2010), 'Prevalence of alcohol, tobacco and drug misuse among Rhode Island hospital emergency department patients', *Medicine and Health/Rhode Island* 93, pp. 44–47.
- | Yuma-Guerrero, P. J., Lawson, K. A., Velasquez, M. M., von Sternberg, K., Maxson, T. and Garcia, N. (2012), 'Screening, brief intervention, and referral for alcohol use in adolescents: a systematic review', *Pediatrics* 130, pp. 115–122.

| Acknowledgements

The report was written by Jane Fountain.

EMCDDA project team: Marica Ferri and Alessandra Bo.

About the EMCDDA

The European Monitoring Centre for Drugs and Drug Addiction is the hub of drug-related information in Europe. Its mission is to provide the European Union and its Member States with 'factual, objective, reliable and comparable information' on drugs and drug addiction and their consequences. Established in 1993, it opened its doors in Lisbon in 1995, and is one of the European Union's decentralised agencies. The Centre offers policymakers the evidence base they need for drawing up drug laws and strategies. It also helps professionals and researchers pinpoint best practice and new areas for analysis.

Related publications

- | *Multidimensional family therapy for adolescent drug users: a systematic review*, EMCDDA Papers, 2014
- | *Preventing fatal overdoses: a systematic review of the effectiveness of take-home naloxone*, EMCDDA Papers, 2015

These and all other EMCDDA publications are available from www.emcdda.europa.eu/publications

Legal notice: The contents of this publication do not necessarily reflect the official opinions of the EMCDDA's partners, the EU Member States or any institution or agency of the European Union. More information on the European Union is available on the Internet (www.europa.eu).

Luxembourg: Publications Office of the European Union
doi:10.2810/80446 | ISBN 978-92-9168-836-4

© European Monitoring Centre for Drugs and Drug Addiction, 2016
Reproduction is authorised provided the source is acknowledged.

This publication is available only in electronic format.

EMCDDA, Praça Europa 1, Cais do Sodré, 1249-289 Lisbon, Portugal
Tel. (351) 211 21 02 00 | info@emcdda.europa.eu
emcdda.europa.eu | twitter.com/emcdda | facebook.com/emcdda