



Published in final edited form as:

*Alcohol Treat Q.* 2011 April ; 29(2): 146–157. doi:10.1080/07347324.2011.557978.

## Brief Intervention for Emergency Department Patients with Alcohol Misuse: Implications for Current Practice

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### Abstract

This article reviews studies and current practices of brief motivational intervention in the emergency department and identifies factors related to the effectiveness of brief intervention. Studies of brief intervention in the emergency department have had mixed results with most studies showing improvements in both intervention and control groups. Most report brief intervention reducing alcohol's negative consequences without reducing consumption. Clinical practice is incorporating brief intervention as part of emergency treatment and further research is needed to determine the factors most responsible for the improvements noted in most studies.

### Keywords

brief motivational intervention; emergency medicine

### Introduction

In the United States, alcohol misuse is responsible for more than 100,000 deaths annually and it is the leading cause of morbidity (Secretary of Health and Human Services, 2000). Emergency Department (ED) studies of both injured and non-injured patients have found high rates of prior alcohol-related injuries (Cherpitel, 1988), and an alcohol-related ED admission for injury has been found to be predictive of future injury admission (Rivara, 1993). Further, heavy alcohol use is associated with a variety of public health and safety problems including driving under the influence (DUI), violence, injuries, and death (Gmel, 2003; Maier, 2001; Rehm, 2002; Wechsler, 1994; Windle, 2003). These data underscore the importance of the ED as a point of screening and brief intervention for at-risk and dependent drinking to reduce subsequent alcohol-related injuries and their associated costs. While the prevalence of heavy and problem drinking is high in the ED, breath or blood alcohol concentration (BAC) often fails to detect the majority of these patients (Cherpitel, 1995a). Several screening instruments for alcohol use disorders have been developed, but one, the Rapid Alcohol Problems Screen (RAPS and RAPS4 – a 4-item version; Cherpitel, 2000a), was found to out-perform other instruments across gender and ethnic groups (Cherpitel 2000a; Cherpitel, 2004).

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Young adults (18–25) have the highest rates of alcohol consumption and alcohol-related problems, with approximately 41% reporting binge drinking during the previous month. In addition, young adults have the highest rate of alcohol-related traffic deaths and unintentional alcohol-related deaths (Hingson, 2003). Unfortunately, most individuals meeting the criteria for “at risk” and dependent drinking do not seek specialized treatment (Reid, 1999).

## Brief Intervention

The provision of brief motivational intervention (BI) is based on the FRAMES model (*Feedback, Responsibility, Advice, Menu or choice, Empathy and Self-efficacy*) (Miller, 1999; Miller and Rollnick (2002). This model of intervention, also known as Brief Negotiation Interviewing (Bernstein, 1997) takes approximately 20–30 minutes. The counselor, peer advisor, ED staff member or other staff asks the patient to discuss the pros and cons of their use of alcohol and any desire to change their drinking. An important task for the counselor is establishing a relationship of empathy and trust by being respectful and being culturally aware and competent. The counselor begins with a general conversation and then asks the patient for permission to discuss their alcohol use. This request for permission to discuss this sensitive topic is a mark of respect for the patient. The counselor provides feedback about the patient’s drinking compared to established limits for non-hazardous drinking (based on the National Institute on Alcohol Abuse and Alcoholism guidelines for safe drinking). The counselor asks the patient what he thinks about this information. The counselor discusses the pro and cons of the patient’s current use of alcohol and the patient’s life goals for the future. Using reflective listening techniques, the counselor summarizes what the patient says, and asks the patient to add or correct this reflection (Sobell, 1998). The counselor then tries to tip the balance between stated pros and cons of drinking by establishing ambivalence within the patient about the level of drinking and how it impacts what the patient hopes to achieve in the future (Prochaska, 1992). The counselor then asks the patient how ready they are to change drinking and related behaviors using a readiness ruler that graphically indicates how ready the patient is to attempt to change their drinking behavior. If the patient wishes to change drinking or other risk behaviors such as drinking and driving, the counselor focuses on the patient’s concerns with those behaviors. If the patient is ready to change, this decision is reinforced. If the patient is low or in the middle of the readiness ruler, the counselor asks “why didn’t you respond with a lower number?” This approach is less negative and helps reinforce motivation by prompting the counselor and patient to engage in a discussion based on a given level of motivation before moving to what it will take to increase the patient’s readiness to change. If the patient is motivated to change a behavior, they are asked to make a specific behavior change plan and to consider obstacles to carrying out the plan. To help generate a more specific plan for change, a menu of options for change is developed by listing options including local agencies offering counseling or support and then brainstorming other possible solutions. The counselor provides support and when appropriate advises a follow-up with local treatment agencies and makes any desired referral.

## Results of Brief Intervention in the ED

The rationale for BI in the ED for those with alcohol-involved injuries as well as patients with alcohol-related medical conditions is compelling. An intervention that can successfully link drinking and other hazardous behaviors to an experienced health consequence (e.g. driving under the influence that results in injury) may be sufficient to tip decisional balance in favor of reducing alcohol consumption and future alcohol-related negative consequences (Conigrave, 1991; Gentilello, 1988; Gentilello, 1999). Studies reporting outcomes of BI among ED patients are still relatively small in number compared to those reporting findings

from primary care settings (D'Onofrio, 2002; Dinh-Zaar, 1999; Havard, 2007, Antti-Poika, 1988; Gentilello, 1999; Sommers, 2001). While primary care studies have generally found BI to be effective for a reduction in drinking and alcohol-related problems at follow-up compared to controls, studies of ED patients have reported more mixed results (Crawford, 2004; Daepfen, 2007; D'Onofrio, 2002; Hungerford, 2000; Longabaugh, 2001; Bernstein, 1997). A systematic review of BI among injury patients in the ED found that most studies show a positive intervention effect (Nilsen, 2008) either on reducing consumption or consequences with the majority showing reductions in consequences, without effecting consumption. A Cochrane Review of BI to prevent injuries among problem drinkers found interventions to have a beneficial effect on injury risk, but no effect on abstinence or reducing alcohol consumption (Dinh-Zaar, 2004). Another meta-analysis of interventions in the ED found that interventions did not significantly reduce subsequent alcohol consumption, but were associated with a reduction to half of the likelihood of subsequently experiencing an alcohol-related injury (Havard, 2007).

However from a clinical practice perspective, the most influential study has been a multicenter trial that demonstrated effectiveness of brief intervention in reducing alcohol consumption. The Academic ED Screening, Brief Intervention and Referral to Treatment Collaborative (SBIRT) study, conducted at 14 academic medical centers in the U.S., was funded by National Institute on Alcohol Abuse and Alcoholism (NIAAA) and Substance Abuse and Mental Health Services Administration (SAMSHA) as the first multi-site collaborative study of screening, brief intervention, and referral for high risk and alcohol dependent drinking in the ED. Data were collected in 2004 during a two-week period on control subjects (n= 580), and three months later on intervention subjects (n=549). There was a significant decrease in both the typical number of drinks consumed and maximum number of drinks per occasion at 3-month follow-up with a 3.25 greater reduction in drinks per week in the intervention group compared to controls with 28% of the intervention group no longer exceeding NIAAA safe drinking guidelines compared to 18% of the controls (Academic ED SBIRT Collaborative, 2007). No post-intervention differences were found among dependent drinkers who received BI. Dependent drinkers often require additional sessions and ongoing counseling to effect reduction in their alcohol consumption. The availability of ongoing alcohol counseling at most of the sites in the study was limited, hence it is understandable that dependent drinkers may not have benefitted since ongoing counseling was not available.

In some settings brief interventions have been found useful in motivating dependent drinkers to seek treatment (Ballesteros, 2004; Beich, 2003; Bien, 1993; Kahan, 1995; Poikolainen, 1999). However, BI effectiveness among dependent drinkers has not been demonstrated in ED studies (SBIRT 2007b) with one exception: a study of telephone delivered BI to reduce driving under the influence where patients with higher Alcohol Use Disorders Identification Test (AUDIT) scores had the greatest response to BI (Longabaugh, 2001). Nonetheless the target of most studies of BI in the ED remains the early problem drinker or nondependent substance user who could benefit from one or two BI sessions, and most ED studies of BI have excluded patients diagnosed with a substance use disorder or undergoing treatment for substance use.

A particular focus of ED BI studies has been adolescents and young adults. One ED study of prevention and treatment of alcohol misuse for young adults evaluated brief motivational interviewing to reduce alcohol-related consequences compared to standard care among adolescents 18 to 19 years of age admitted to the ED following an alcohol-related event (Monti, 1999). While participants in both groups reduced alcohol consumption, those receiving the intervention had a significantly lower incidence of drinking and driving, and alcohol-related injuries at 6-month follow-up. However, in a subsequent study among young

adults 18 to 24 years of age who were alcohol positive at the time of the ED visit or met screening criteria for problem drinking, the same research group found BI was associated with a decrease in volume of consumption at 12 months but without change in negative consequences or behaviors (Monti, 2007).

A major question concerning effective BI in the ED is the number of counseling sessions required. In most studies, a single session of BI has been offered. However Longabaugh, Woolard, and colleagues showed the efficacy of two sessions of BI for injured problem drinkers in the ED in a study of 539 patients randomized to three treatment arms: standard care, one session of BI, and two sessions of BI. Two sessions of counseling were found to reduce alcohol-related injuries and negative consequences at one year follow-up (Longabaugh, 2001). One session had no effect. However in subsequent ED study of BI for alcohol and marijuana users by the same research group, two session BI were not found to be more effective than assessment alone in reducing most measures of alcohol consumption and consequences (Woolard, 2008). Other investigators have not explored the effects of more than one session of BI.

## Extensions of Brief Intervention

Attempts have been made to extend BI to reduce other drug use, impaired driving, and violent behavior. Woolard and coworkers recently completed a randomized controlled trial of a brief intervention for Emergency Department patients who use alcohol and marijuana. The study, which recruited 515 patients, was conducted at an urban level one trauma center that serves many young adult patients. Patients were randomized into standard ED care or BI treatment (40-minute brief intervention in the ED followed by a booster BI session). On the majority of outcome measures of consumption and consequences both the treatment and control group had significant reduction at one year follow up. However additional reduction in two measures; binge drinking and conjoint use of alcohol and marijuana, were seen with BI (Woolard, 2008). Mello reported outcomes from a randomized controlled trial of 285 injured patients, using a novel model of telephone-delivered BI after ED discharge (Project DIAL; Mello, 2008). Brief intervention consisted of 2 sessions of BI by telephone, focusing on risky alcohol use -- particularly impaired driving. At 3 and 12 months, impaired driving significantly decreased in the treatment group compared with the standard care group without change in measures of alcohol consumption (Mello, 2008). In a study of BI for alcohol use and violence, (Walton, 2010), 726 adolescents reporting past-year alcohol use and aggression were randomized to a control group that received a brochure or a 35-minute BI delivered by either a computer or therapist in the ED. At 3 month follow-up assessments, participants in the therapist intervention reported reductions in aggression (therapist, -34.3%; control, -16.4%; relative risk [RR] = 0.74 with 95% confidence interval [CI] = 0.61-0.90), experience of violence (therapist, -10.4%; control, +4.7%; RR = 0.70 with 95% CI = 0.52-0.95), and violence consequences (therapist, -30.4%; control, -13.0%; RR = 0.76 with 95% CI = 0.64-0.90); and at 6 months, participants in the therapist intervention reported reductions in alcohol consequences (therapist, -32.2%; control, -17.7%; RR = 0.56 with 95% CI = 0.34-0.91). Participants in the computer intervention reported reductions in alcohol consequences (computer, -29.1%; control, -17.7%; RR = 0.57 with 95% CI = 0.34-0.95) at 6 months. Overall, extending BI to address alcohol and violence resulted in a decrease in aggression and alcohol consequences.

In a study of BI for marijuana, 210 ED patients 14-21 years old consented, enrolled and were randomized to a BI for marijuana or standard care (Bernstein, 2009). At 12 months, BI participants were significantly more likely to be abstinent for the past 30 days (odds ratio [OR] for reported abstinence = 2.89, 95% confidence interval [CI] = 1.22 to 6.84). The BI group had greater reduction in days of marijuana use baseline to 12 months after controlling

for baseline use and were less likely to report having been “high” among those who did use marijuana (OR = 0.39, 95% CI = 0.17 to 0.89). Cocaine and heroin use were the targets of BI in a randomized controlled trial conducted by the Bernstein’s who reported promising results (Bernstein, 2005). The BI targeting cessation of drug use was provided by peer educators to 1175 cocaine and heroin users in an out-patient clinic. Among those with cocaine or heroin positive hair tests at entry, at 6 month follow up, the BI group was more likely to be abstinent than the control group for cocaine alone (22.3% versus 16.9%), heroin alone (40.2% versus 30.6%), and both drugs (17.4% versus 12.8%), with adjusted ORs of 1.51–1.57. Cocaine levels in hair were reduced by 29% for the BI group and only 4% for the control group. Reductions in heroin levels were similar (29% versus 25%). In this study, a BI for cocaine and heroin use appeared to help clinic patients achieve abstinence.

The extent to which BI in ED settings will be effective in subpopulations and can be translated into other languages and used in other countries is part of the current research agenda. Few randomized controlled trials have been undertaken outside the US, the most recent reported was a study of SBIRT in Sosnowiec, Poland (Cherpitel, 2009). In a multicenter quasi-experimental trial, 1,132 ED patients screening positive for alcohol dependence (using the RAPS4 or exceeding NIAAA safe drinking guidelines) were recruited and approximately half were given BI by trained ED staff. At three-month follow-up, BI patients reported consuming 3.25 fewer drinks per week than controls, and the maximum number of drinks per occasion was almost three quarters of a drink less than controls (Academic ED SBIRT Collaborative, 2007). Recently, Caetano has reported an equal lack of effectiveness of BI among Latino and non-Latino patients in a Trauma center in Texas (Roudsari, 2009). In that study, 1,493 admitted trauma patients (668 Whites, 537 Hispanics, 288 Blacks)  $\geq 18$  years old were randomized to BI or standard care. After one year of follow-up, the association between BI and the outcomes was not modified by patients’ ethnicity and overall, no effects were seen on alcohol-related injuries. A project testing the effectiveness of *promotores de salud* (Spanish-speaking community health workers) delivering BI in the ED to Mexican-origin young adults is currently underway in Texas (Cherpitel, 2010).

## Conclusions

In most study protocols, the providers of BI have been trained counselors who augment existing ED staff. Most ED staff believes that BI should be provided by trained counselors who are added to existing staff. A well designed study failed to demonstrate that BI provided by existing, trained ED staff was effective (D’Onofrio, 2002). Based on findings we have reviewed, several alternatives may exist for the provision of BI in a cost effective manner without over burdening existing ED staff: counseling over the telephone (Mello, 2009), hiring a single alcohol counselor (Crawford, 2004), using computer interaction (Maio, 1997), or personal digital assistant PDA phone applications (Parker 2010).

The AMEC SBIRT protocol has been translated into routine practice in some EDs. However, the effectiveness of SBIRT in the ED has not been tested in important subgroups, for example Hispanic populations and military settings. The ED SBIRT study trained ED practitioners (physicians, nurses, and physicians’ assistants), but the time constraints in the ED and limited resources, argue for BI providers that are specially hired and trained to provide this additional service for patients. However, the mandate of the American College of Surgeons Committee on Trauma requiring Level 1 trauma centers to provide screening and brief intervention to all admitted trauma patients (American College of Surgeons, 2007) has not been extended to all patients in all EDs by any regulatory organization. New paradigms that are effective and practical are being devised as some EDs adopt SBIRT as

standard practice to address ED patients' alcohol problems. Perhaps some blend of high technology and new counseling resources will be proven most practical for most EDs.

The ED is an important setting for initiating a brief intervention during a “teachable moment” in the patient’s life; for example, when the ED visit is due to the occurrence of an alcohol-related injury. It is also an opportunity for the identification of many who admit substance use and hence are at high risk for negative consequences including injury, whether they presented in the ED with illness or injury (Woolard, 2009). In the primary care setting, screening for alcohol and providing brief intervention is considered standard care and should be part of a routine preventive health evaluation (Gordon, 2005). Based on the majority of ED studies, patients would benefit from BI becoming part of routine care in the ED as well. Most of the benefit expected is reduction of unsafe behaviors (impaired driving) and negative consequences (injury) among patients who are beginning to experience problems related to alcohol use.

Indeed, some ED’s have made BI part of routine care. Project ASSERT (Alcohol and Substance abuse Services and Educating providers to Refer patients to Treatment) trained project counselors to deliver brief motivational interventions for substance use problems under a demonstration grant from the U.S. Center for Substance Abuse Treatment. As a result of its effectiveness both in reducing ED recidivism and increasing use of services for substance misuse, the ASSERT staff became funded in the ED budget as part of routine ED service (Bernstein and Bernstein, in press-b).

The AEMC SBIRT Study, the first multi-site collaborative study of screening, brief intervention, and referral for at-risk drinking and dependent drinking successfully trained over 400 ED providers to implement brief intervention and provided screening to over 8,000 ED patients. Building from this model, more United States EDs will train existing staff in SBIRT. However, many EDs find that staff cannot provide BI given time constraints and high workloads. Alternatives such as screening by staff with subsequent telephone advice or referral to counselor for follow up at more convenient times may be more practical in many busy EDs. These problems can be approached and obstacles overcome to implement this important intervention. Future research needs to further explore delivery strategies to identify the most effective and economically viable solutions. None-the-less, progress is being made in the ED to meet public health goals of reducing alcohol misuse and its consequences.

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