

The Acceptability and Feasibility of Screening for Alcohol and Drug Misuse in a Hospital Emergency Department

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Abstract

Objectives:

Screening and brief intervention (SBI) is an evidence-based technique for reducing harmful consumption of alcohol and other drugs, which has been shown to be effective in Emergency Departments (EDs). The feasibility of SBI in the ED, however, remains contentious and no studies have been conducted on this topic in a New Zealand ED.

Materials and Methods:

This study recruited 8 experienced ED nurses who attempted to provide SBI, using the ASSIST-Lite tool, to as many of their patients as possible over one calendar month. All nurses participated in a comprehensive 1-day training workshop on the administration and interpretation of the ASSIST-Lite and linked brief intervention.

Results:

Only 46 (11.79%) of the 390 eligible patients were given the opportunity to participate over the data collection period. Analysis of the data showed there was a significant, negative correlation between the number of patients in the ED and the average number of screens that were performed by the nurses, and that the number of screens waned immediately after SBI training. Following the data collection period, the nurse participants were interviewed about their experience. These interviews revealed 3 main themes that contextualized the willingness to, but inherent difficulty of, administering the SBI within the ED environment.

Conclusions:

High patient-to-nurse ratios in the ED currently preclude nurses from providing consistent SBI to all eligible patients; however, there are several practical considerations highlighted here that might help nurses increase the participation rate.

Key Words: screening and brief intervention, emergency department, ASSIST-Lite, nursing, alcohol and drug misuse

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New Zealand bears a heavy burden of alcohol and drug-related harm.¹ The latest New Zealand Health Survey found that ~80% of those aged 15

years and over reported consuming alcohol in the past year, and 19% of these people could be classified as hazardous drinkers.² The same survey reported cannabis and amphetamine use by 11% and 1.1% of the sample, respectively.² The social costs of alcohol and drug use, both tangible (within the health and welfare systems) and intangible (to well-being), was estimated at 6.5 million NZD in 2005/06.³

Alcohol and drug users are more likely to attend hospital emergency departments (EDs) than nonusers.⁴ Indeed, there is evidence that up to 40% of presentations to the ED are injury-related and that a significant proportion of these are caused by alcohol use.⁵ It has also been estimated that many people with a potential alcohol or drug use disorder are unaware that they have a problem.⁶ The hospital ED, therefore, represents a window of opportunity to undertake screening and brief interventions (SBI) for alcohol and drug use.

There is growing literature on the effectiveness of SBI for alcohol misuse in a variety of settings,⁷ including primary care^{8–10} and hospitals.⁸ In particular, SBI has been found to reduce subsequent alcohol use and alcohol-induced harms in those attending hospital EDs.^{5,11} Yet few studies have explored the effectiveness of the technique in relation to illicit drugs, applied to the same setting. Woodruff et al¹² examined self-reported abstinence from marijuana, amphetamines, cocaine and heroin at 6-month follow-up after random allocation to either an SBI Referral Treatment group (matched to the participants' drug use severity) or a control

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group in which participants received an intervention related to their driving safety. They found no significant differences between groups in self-reported or biologically verified abstinence from drug use. Nevertheless, there is mounting evidence that SBI may be effective for reducing the use of a number of illicit drugs, such as cannabis^{13,14} and opioids.¹⁵ More recently, Humeniuk et al¹⁶ demonstrated the effectiveness of a brief intervention for illicit drugs that were linked to scores on the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) in primary health care settings in 4 countries, including Australia.

However, studies have highlighted a number of practical issues related to the feasibility of setting up SBI programmes within the hospital ED environment. Hungerford et al¹⁷ demonstrated that an SBI protocol that utilized brief counselling linked to scores on the Alcohol Use Disorders Identification Test (plus a 3-month follow-up assessment), while acceptable to a variety of patients, might face a range of institutional constraints. Fahy et al¹⁸ described the first 2 years of setting up SBI in an Australian hospital, and reported that this was achievable but relied upon managerial support and a dedicated project worker, or "champion." Furthermore, while there is evidence that different members of the ED staff can effectively deliver SBI, including nurses, researchers and doctors,^{18,19} participation rates have been found to be higher when using a dedicated SBI champion rather than existing clinical staff.²⁰ Finally, time constraints have been put forward as a barrier to screening for alcohol and drug use in general medical settings.^{21,22}

To the best of our knowledge there is no existing published data on the feasibility and effectiveness of SBI in hospital ED settings in New Zealand. Kool et al²³ recently reported on the perceptions of trauma patients admitted to an Auckland City Hospital concerning the acceptability and content of a brief intervention delivered by text message for alcohol use. Most participants provided positive feedback about the use of text messages for this purpose and these results will reportedly be used to inform the development of an

upcoming randomized controlled trial.²³ The latter study will examine the effectiveness of an SBI delivered on discharge from the ED, and so there is a need to examine the acceptability and feasibility of delivering an SBI in the ED. In particular, the current study sought to investigate the behaviors and experiences of the nurses administering SBI in the ED.

MATERIALS AND METHODS

Study Setting and Population

The present study was undertaken at a medium to large publicly funded hospital ED in Auckland, New Zealand, serving a population of around 580,000. Two distinct groups of participants were recruited for this study: (1) nurses working in the ED and (2) patients attending the ED during a set time period.

Nurses were invited to participate in the study via a note left in the communication book and were required to have had at least 2 years of experience working in an ED environment. The patient participants were selected from a convenience sample of all patients between the ages of 18 and 80 who presented from February 18, until March 18, 2016. Patients were excluded if they (1) had a Glasgow Coma Scale <15, (2) were unable to understand the research process, (3) were unable to give informed consent, (4) were in the resuscitation room, (5) were medically or emotionally unstable, and (6) if they were over the age of 80, as they are at higher risk of an adverse event occurring in the ED.²⁴

The study was approved by the Health and Disability Ethics Committee (HDEC; Approval Number 14/NTB/195) and was registered with the Australian New Zealand Clinical Trials Registry (Number 367224). All participants provided written informed consent.

Study Protocol

All nurses who expressed an interest in participating in the study attended an information session, where they were introduced to the study and provided informed consent. Those

who volunteered for the study participated in an 8-hour workshop delivered by one of the investigators (D.N.) that provided an overview of (1) drug effects, (2) how to administer and interpret scores on the ASSIST-Lite questionnaire, and (3) how to deliver a brief intervention. Before commencing the study, nurse participants were required to practice administering the ASSIST-Lite and delivering a brief intervention. The data collection period started the day after the training day and nurse participants were all identified by female pseudonyms from the outset to avoid identification of any male participants.

Patients were invited to participate by the participating nurses. If the patient was interested, the nurse provided a participant information sheet, and obtained written consent. The nurse participant performed SBI in any physical area within the ED, except resuscitation, so long as both patient and nurse were comfortable, and usually occurred in the patient's cubicle. The patient's consent and outcomes (screening, ASSIST-Lite score, and the intervention delivered) were documented in the patient's ED nursing notes (longsheet).

Measures

Nurse Participant Measures

Baseline data were collected from nurses, using a self-reported questionnaire that included demographic characteristics, employment history and role, and questions regarding attitudes toward the management of alcohol and drug use. In addition, a 10-point Likert scale asked nurse participants to rate themselves on their perceived level of confidence in addressing alcohol and drug issues with patients (0 represented "not at all confident" and 9 represented "very confident").

At the end of the data collection period, nurse participants were asked to attend a face-to-face interview. The interview schedule consisted of the following 5 questions: (1) "Tell me about how the data collection period was for you"; (2) "Were there any factors that made it easier or harder for you to provide SBI?"; (3) "Did you have any

particular positive or negative experiences with SBI? Tell me about that"; (4) "Do you think we should provide SBI in (this) ED?"; and (5) "How do you think we could best provide SBI in the future?" Interviews were recorded on a dictaphone.

Patient Participant Measures

Information about the patient participants who volunteered to take part in this study was obtained from the electronic Patient Information System at the study hospital. Information included hospital number, sex, age, hospital location where SBI was administered, screening result (negative or positive), whether an intervention was administered, and who the nurse participant was.

ASSIST-Lite²⁵ (Appendix S1, Supplemental Digital Content 1, <http://links.lww.com/ADTT/A7>), is an abbreviated version of the ASSIST.²⁶ The ASSIST has been found to be both reliable and valid in primary health care settings,²⁷⁻²⁹ but has been criticized for being too lengthy to be used in general medical settings.³⁰ The shortened version is considered more appropriate for use in the ED. There are questions on tobacco, alcohol, cannabis, amphetamine-type stimulants, sedative, or sleeping medications (not as prescribed), opioids, and a question asking about other psychoactive drug use. Each question requires a simple yes/no response. The overall logic is simple, with the first question in each section asking if the respondent has used the substance in the previous 3 months. A negative response allows the administrator to skip to the next question. A positive cut-off score for each drug category indicates the need to deliver a brief intervention for that drug.

The brief intervention comprised a series of 9 steps that incorporate feedback from the scores on the questionnaire and their meaning, followed by motivational interviewing and counseling techniques to encourage the patient to think about their substance use and to support change.^{26,27}

Data Analysis

Quantitative data were summarized using proportions, and associations

between variables were examined using the Spearman rank order correlation.

The interviews were transcribed by the primary investigator (K.A.T.). Each was then emailed to the respective nurse participant for checking as a measure to increase internal validity. The nurse participants were all satisfied that the transcripts were accurate. The transcripts were then read through multiple times, coded, and subjected to an iterative thematic analysis.³¹

RESULTS

Patient Participants

There were 505 patients in the relevant ED work areas and within the age range for eligibility for screening during the data collection period. In total, 115 of these patients met the exclusion criteria. Of the 390 eligible patients, 171 (43.85%) were male and 219 (56.15%) were female.

Only 46 (11.79%) of the 390 eligible patients were given the opportunity to participate by the nurse participants. Five patients declined (10.87% of 46), leaving 41 patient participants (10.51% of the eligible 390 patients) to be formally screened. Of these, 27 (65.85%)

screened negative, and 14 (34.15%) screened positive, 13 of whom received a brief intervention and only 1 received information about the local Community Alcohol and Drug Services. Screening forms were returned to the patient participant or disposed of immediately by the nurse participant to uphold patient privacy. As a consequence, data specific to drug type on positive screens were not available for analysis.

Nurse Participants

Nine nurses volunteered to participate in the study but 1 was subsequently unable to attend the training day, and hence was ineligible to participate. The nurses represented a variety of roles within the ED. The sex mix reflected the predominantly female face of nursing with 7 female nurses and 1 male nurse. Several variables were collected in relation to the nurses to ascertain post hoc which, if any, would be helpful in determining valuable traits for future recruitment into SBI programmes (Table 1).

Variables Affecting Screening Administration

There was no relationship between the nurse participants' years of experience

TABLE 1. Demographic Details of the Nurse Participants and the Number of Patient Participants Screened by Each

Nurse Pseudonym	Nursing Role	No. Eligible Patients Screened [n (%)]	Years of ED Experience	Self-rated Confidence*
Honor	Clinical nurse specialist	10 (24.39)	10	4
Georgia	Discharge coordinator	7 (17.07)	8	6
Eva	Discharge coordinator	3 (7.32)	10	5
Lexi	Registered nurse	12 (29.27)	7	8
Ange	Registered nurse	4 (9.76)	11	7
Anna	Registered nurse	3 (7.32)	10	5
Katya	Registered nurse	2 (4.88)	9	6
Marie	Registered nurse	0 (0)	2	4

*The confidence scale ranged from 0 = not at all confident to 9 = very confident and was in relation to self-rated confidence in discussing alcohol and other drug issues with patients. ED indicates Emergency Department.

and number of screens administered ($r = 0.123$, $P = 0.772$), or between self-rated confidence and number of screens administered ($r = 0.427$, $P = 0.292$). There was also no relationship between the nurse participants' years of experience and self-rated confidence ($r = -0.056$, $P = 0.895$).

Over the course of the data collection period, the total number of patients presenting to the ED in each 24-hour period ranged between 123 and 190. There was a significant, negative correlation between the number of patients in the ED and the average number of screenings that were performed by each nurse participant per day, ($r = -0.427$, $P = 0.037$). The busier the department, the fewer screens the nurses performed.

There also appeared to be a change in the frequency of screening over the course of the data collection period (Fig. 1). During the first 2 days, immediately after the training day, the average number of screens per nurse participant was greater than at any other time during the data collection period.

Nurse Participant Interviews

Three major themes arose from the interviews with the nurse participants. These were (1) the nurses' attitudes toward SBI, (2) the working conditions that create barriers to administering SBI, and (3) the ED environment and related logistical difficulties of administering SBI. Each theme was further divided into several subthemes.

Nurses' Attitudes Toward SBI

The nurse participants were unanimous in their opinion that SBI was a good thing for the patients, the patients' families, the nurses, the department, and the society. Although all nurse participants saw the value in providing SBI in the ED, 5 of the 8 expressed the opinion that some other nursing staff in the ED might be resistant to an SBI programme.

Good for the Patients

The benefits of SBI in reducing substance misuse in people with heavy or harmful use of substances were identified by a number of nurse participants, as shown in the following statement.

I was able to give them interventions ... I had a lady who openly admitted she was an alcoholic and overdosing on drugs and I was able to help them with detox at home ... which was incredibly important to me. (Georgia)

Some of the nurses also identified the fact that patients may not have received any health services related to substance consumption before.

For some people it might be the first time that anyone's ever said really anything within the health setting with regard to their alcohol drug use. (Anna)

Good for the Patients' Families

Some of the nurse participants identified times when the screening process opened up the topic of substance use within the patients' families, which gave them an opportunity to learn about available support services. For example:

The first lady I approached didn't have any issues, but she said "Oh this is great, I wish you could do this with my husband" and I said "well, do you want to take the stuff home?" she said "yeah, I'd love to." (Honor)

Good for the Nurses and the Department

The majority of nurses were committed to ongoing professional improvement and a desire to provide the best care for patients. It was recognized that the benefits of SBI were not only for the patients. For example, Lexi mentioned:

I think you absolutely should [implement SBI in the ED]. I think that staff in the ED ... should have education about SBI ... I think that would have a flow on effect to other parts of their nursing practice. (Lexi)

It was also identified that reducing substance use could reduce presentations to the ED.

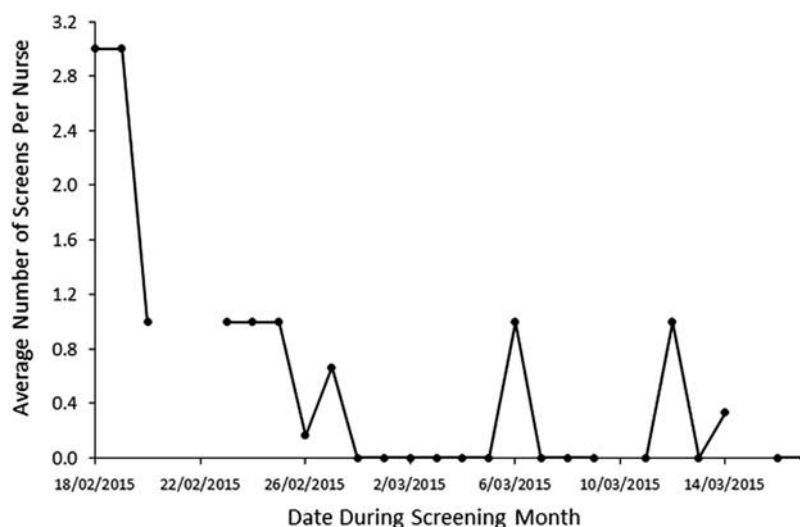


FIGURE 1. Average number of screens per nurse per day over the data collection period. Gaps in the data are days when no nurse participants were at work.

You know the amount of time that drug and alcohol use uses up within an ED department ... It's more time initially but in the long run it might decrease presentations ... (Katya)

Good for Society

Interestingly during the interviews, nurse participants identified substance misuse as an issue in New Zealand society at large. For example:

Yes [we should do SBI]. I think it's a much bigger social problem than people realize. I see a lot of the top end of abuse of drugs and alcohol in my job ... This is probably more important than some of the other stuff we do. (Eva)

Resistance to Change

The nurse participants identified that implementation of meaningful, sustainable changes in practice can be seriously challenging.

Knowing the staff in ED ... I don't think people will do it, even if they're trained ... (Katya)

And;

I don't know how it would go down with the others [nurses], because there are so many other things that we screen for. (Ange)

Working Conditions: Barriers to Administering SBI

The participating nurses repeatedly stated that the time needed to do the SBI was a crucial element regarding whether or not it was done. Workload, the quantity, and quality of the nursing staff and the unpredictable nature of ED work were all strongly identified as significant.

Workload

The nurse participants commented on the tension between their workload and their willingness to provide SBI. For example:

I had good intentions and was feeling really positive about doing it ... However, I think it just came down to staffing and busyness in the department, which made it difficult ... (Marie)

Quantity and Quality of Staffing

Staffing issues were identified by all of the nurse participants as an important factor determining whether or not they had time to perform SBI. Specifically, they identified frequent instances in which nurses were called in from other areas to cover ED nurse shifts. These nurses may be slower to do routine ED work and processes and may require supervision. For these

reasons, screening and health promotion may be overlooked in a busy ED.

I remember a couple of times I was working with a ward nurse and that made it difficult because of the staffing ... (Marie)

If we had an appropriate [number] of staff for the size of the department, I'd say "yeah, great, let's put [SBI] in there." (Katya)

Unpredictability

The nurse participants commented on the unpredictability of the ED and their hesitation to settle down to an activity such as SBI, in case a large number of patients suddenly presented to the department. In particular, Eva raised an ethical issue around the scenario where a nurse may not have time to follow through with an intervention after a positive screen.

There is no point in screening people if you're not going to do anything with the information. You would leave the patient feeling like "You've asked me this, and I've revealed that to you. What are you going to do about it?" And they might not ever disclose again. (Eva)

The ED Environment: Logistical Difficulties

Privacy, area of the ED, time of day, nursing roles, and patient-nurse rapport were all identified as further considerations around the provision of SBI in the ED.

Privacy

The ED environment can be overcrowded. Curtains, not doors, separate cubicles, making complete privacy difficult to achieve. Most of the nurses identified that speaking about substance use should ideally be done in private and that this is lacking in the ED environment.

Privacy was an issue. (Honor)

I wouldn't have screened anyone in the corridor, because it's

personal stuff ... I think you need a quiet environment. (Eva)

Area, Time of Day, and Nursing Role

Nurse participants often identified particular areas, times, or nursing roles within the department as more suitable for the provision of SBI than others. With regard to areas within the ED:

[The] Acutes [area] often was so flat out that I found it difficult to be able to do [SBI]. (Ange) and;

I think Consults would have been the area where it would have been the most feasible. (Marie)

With regard to time of day:

On night shift, that was the opportunity I did have, and [patients] are even more tired on nights, so not interested in doing [SBI]. (Marie)

And nursing role:

I think people in the Discharge Coordinating role ... because they're used to ... building a relationship with them quickly ... (Katya)

Rapport and Openness

Nurse practitioners recognized how difficult it can be to develop a rapport with patients in the fast-paced ED environment. As a consequence it can be difficult to administer SBI to patients. For example, as Eva mentioned:

For that type of screening you need to have a little bit of a lead in ... a bit of quiet rapport with the person to make it effective. (Eva)

Nurses also reported that despite the challenges to the provision of SBI in the ED, many patient participants openly spoke about substance use.

People were all very forthcoming ... They were very receptive to it. (Honor)

Generally, people were happy to talk about their own situations.

We're professionals ... People were quite open about it. (Lexi)

Some nurse participants, however, raised concern about patients who had declined to participate but who were suspected of having substance abuse problems.

I had 2 people decline, who I had a strong suspicion that they needed some intervention. (Eva)

The only real negative was just not being able to get to some of the people who needed it the most. (Katya)

DISCUSSION

This study investigated the behaviors and experiences of nurses administering SBI in a New Zealand ED to evaluate its acceptability and feasibility. Over 1 calendar month, 8 nurse participants were able to provide screening to ~12% of 390 eligible patients. Of the 41 participating patients, over one third tested positive for alcohol or other drugs, and nurse participants identified that patients may not have received any form of health services related to drug use previously. Furthermore, the nurse participants also reported that they were able to support those who felt a family member or friend might benefit from the information provided. Hence, the ASSIST-Lite screening tool acted as a conversation starter that may have impacted more widely than is obvious from the results reported here. These points suggest that SBI in the ED is an important area to pursue, despite the low percentage of eligible patients approached by the nurse participants.

The nurse participants unanimously identified lack of time as the major factor affecting why many eligible patients were not screened. This was supported by the significant, negative correlation between the number of patients in the ED and the number of screens the nurse participants were able to undertake over each 24-hour period. The quantity and quality of staff was an issue identified by all of the nurse participants. Time constraints have been put forward as a barrier to screening

for alcohol and drug use in general medical settings.^{21,22} Indeed, most health care systems in the developed world are experiencing increasing demand in the face of stretched resources.³² Therefore, activities, such as screening, are likely not to be considered a priority.

The unpredictable nature of ED work means that nurses may be reluctant to settle down to an activity, such as SBI. The nurse participants' drive to provide assistance to patients and gain rapport may also have been a limiting factor on the number of screens they administered, due to the conundrum of completing a screen and then not having enough time to follow through with the brief intervention. During interviews, it was acknowledged that some did not like to lead a patient to disclose harmful substance use and then not follow this up. The nurses themselves, therefore, may have been reluctant to initiate the process when, in fact, they may have had the time to complete it.

Despite a genuine willingness to provide SBI, there was a notable decline in screening instances after day 2 of the study period (Fig. 1), suggesting that the levels of enthusiasm may strongly affect the number of screenings nurses are willing to administer. Generating and sustaining motivation among the nursing staff may be an important factor in implementing a meaningful and lasting programme of SBI. Fahy *et al*¹⁸ found initial uptake of SBI in an Australian ED was poor (percentage not specified). One of the methods they used to successfully counter poor uptake was institution of an "SBI Champion," a member of the nursing team whose role was to encourage, motivate, and support their colleagues in provision of SBI. Other variables collected in this study about the nurse participants (ie, nursing role, ED experience, and confidence) were not helpful in determining traits that would be valuable in terms of increasing screens. The very small sample size should be noted.

A number of issues unrelated to time pressure are also important to consider when determining the feasibility of undertaking SBI in the ED. First, an important barrier to SBI administration, was the lack of privacy in the ED,

primarily due to curtained cubicles. Many patients will disclose the use of illegal drugs and, consequently, involvement in criminal activity, to medical staff because they know staff are obliged to keep the information confidential.³³ The perception that they may be overheard, along with the possible presence of police officers, may stifle disclosures. Second, certain areas of the ED are more or less conducive to conducting SBI than others. For example, in this study the majority of SBI was conducted in the consultation area, with the fewest in the monitored area, where patients may be acutely unwell. Third, there was the suggestion that certain nursing roles may be more suitable for screening than others, such as the discharge coordinators (Table 1); and fourthly, patient-nurse rapport was acknowledged as a factor that was important in relation to the initiation of SBI administration.

Limitations

A critical limitation of this study was the reliance on the nurse participants to record vital data that could then be extracted from the longsheets by the researcher (K.A.T.). For example, it is not known with certainty how many more eligible participants were invited, but declined. Nurse participants may not have documented a decline in the longsheel, rendering data collection impossible. Similarly, informal screening, interventions, or referral may have occurred without being recorded, and the eligibility status of patients was not always clearly documented. Undoubtedly, however, the nurse participants did their utmost to support the study and their busy work schedules are wholly acknowledged.³⁴

CONCLUSIONS

The nurse participants in this study were positive about the benefits of SBI in the ED, not just for patients and their families, but also for nurses, the ED itself and society in general. Dealing with the consequences of substance misuse takes up a lot of time in the ED.³⁵ Patients who present intoxicated can be uncooperative, violent,

and accident-prone in the ED.³⁵ The harmful effects of substance misuse on individuals, families, and communities are far-reaching and contribute significantly to ill-health, injury, and violence in New Zealand.³⁶ Reducing this burden would benefit hospital staff and the taxpayer. Consistent with our results, the literature suggests that SBI executed by clinical ED staff has been found to be highly acceptable by patients and staff, and the constraining factors are also similar.¹⁷ Unfortunately, many feasibility studies have not published the percentage of total patients screened for SBI (eg,¹⁷⁻¹⁹) making it difficult to draw meaningful comparisons between these studies the levels of screening found here.

The acceptability and feasibility of screening for alcohol and drug misuse in hospital EDs in New Zealand may be contentious if viewed from a staffing and budgetary angle, but there are practical solutions to the barriers identified here without increasing frontline staff numbers. Consideration should be given to recruiting a group of enthusiastic nurses who are passionate about the benefits of brief intervention, using an effective “champion” who is able to execute brief interventions and sustain motivation via the implementation of a programme of retraining, and establishing a private setting to conduct the SBI.

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REFERENCES

1. Connor J. The health impacts of the way we drink in New Zealand. *Alcohol NZ*. 2013;3:12-18.
2. Ministry of Health. *Annual Update of Key Results 2014/15: New Zealand Health Survey*. Wellington: Ministry of Health; 2015.
3. Slack A, Nana G, Webster M, et al. Costs of harmful alcohol and other drug use. *BERL Econ*. 2009; 40:1-175.
4. Cunningham RM, Harrison SR, McKay MP, et al. National survey of emergency department alcohol

- screening and intervention practices. *Ann Emerg Med.* 2010;55:556–562.
5. Nilsen P, Baird J, Mello MJ, et al. A systematic review of emergency care brief alcohol interventions for injury patients. *J Subst Abuse Treat.* 2008;35:184–201.
 6. National Acad of Sciences, Institute of Medicine, United States of America. Broadening the base of treatment for alcohol problems. 1990.
 7. Wilk AI, Jensen NM, Havighurst TC. Meta-analysis of randomized control trials addressing brief interventions in heavy alcohol drinkers. *J Gen Intern Med.* 1997;12:274–283.
 8. Mdege ND, Watson J. Predictors of study setting (primary care vs. hospital setting) among studies of the effectiveness of brief interventions among heavy alcohol users: a systematic review. *Drug Alcohol Rev.* 2013;32:368–380.
 9. Kaner EF, Dickinson HO, Beyer F, et al. The effectiveness of brief alcohol interventions in primary care settings: a systematic review. *Drug Alcohol Rev.* 2009;28:301–323.
 10. Ockene JK, Reed GW, Reiff-Hekking S. Brief patient-centered clinician-delivered counseling for high-risk drinking: 4-year results. *Ann Behav Med.* 2009;37:335–342.
 11. Woodruff SI, Eisenberg K, McCabe CT, et al. Evaluation of California's alcohol and drug screening and brief intervention project for emergency department patients. *West J Emerg Med.* 2013;14:263–270.
 12. Woodruff SI, Clapp JD, Eisenberg K, et al. Randomized clinical trial of the effects of screening and brief intervention for illicit drug use: the life shift/shift gears study. *Addict Sci Clin Pract.* 2014;9:1–11.
 13. Copeland J, Swift W, Roffman R, et al. A randomized controlled trial of brief cognitive-behavioral interventions for cannabis use disorder. *J Subst Abuse Treat.* 2001;21:55–64.
 14. Lang E, Englander M, Brooke T. Report of an integrated brief intervention with self-defined problem cannabis users. *J Subst Abuse Treat.* 2000;19:111–116.
 15. Babor TF, McRee BG, Kassebaum PA, et al. Screening, Brief Intervention, and Referral to Treatment (SBIRT) toward a public health approach to the management of substance abuse. *Subst Abuse.* 2007;28:7–30.
 16. Humeniuk R, Ali R, Babor T, et al. A randomized controlled trial of a brief intervention for illicit drugs linked to the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) in clients recruited from primary health-care settings in four countries. *Addiction.* 2012;107:957–966.
 17. Hungerford DW, Pollock DA, Todd KH. Acceptability of Emergency Department-based Screening and Brief Intervention for alcohol problems. *Acad Emerg Med.* 2000;7:1383–1392.
 18. Fahy P, Croton G, Voogt S. Embedding routine alcohol screening and brief interventions in a rural general hospital. *Drug Alcohol Rev.* 2011;30:47–54.
 19. Darker CD, Sweeney BP, El Hassan HO, et al. Brief interventions are effective in reducing alcohol consumption in opiate-dependent methadone-maintained patients: results from an implementation study. *Drug Alcohol Rev.* 2012;31:348–356.
 20. Zatzick D, Donovan DM, Jurkovich G, et al. Disseminating alcohol screening and brief intervention at trauma centers: a policy-relevant cluster randomized effectiveness trial. *Addiction.* 2014;109:754–765.
 21. Banta JE, Montgomery S. Substance abuse and dependence treatment in outpatient physician offices, 1997–2004. *Am J Drug Alcohol Abuse.* 2007;33:583–593.
 22. Smith PC, Schmidt SM, Allensworth-Davies D, et al. A single-question screening test for drug use in primary care. *Arch Intern Med.* 2010;170:1155–1160.
 23. Kool B, Smith E, Raerino K, et al. Perceptions of adult trauma patients on the acceptability of text messaging as an aid to reduce harmful drinking behaviours. *BMC Res Notes.* 2014;7:2–25.
 24. Martín-Sánchez FJ, Fernández AC, Gil GP. Key points in healthcare of frail elders in the Emergency Department. *Med Clin (Barc).* 2013;140:24–29.
 25. Ali R, Meena S, Eastwood B, et al. Ultra-rapid screening for substance-use disorders: the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST-Lite). *Drug Alcohol Depend.* 2013;132:352–361.
 26. Humeniuk R, Henry-Edwards S, Ali R, et al. World Health Organization. The Alcohol, Smoking and Substance involvement Screening Test (ASSIST): manual for use in primary care. 2010.
 27. Humeniuk R, Dennington V, Ali R. *The Effectiveness of a Brief Intervention for Illicit Drugs Linked to the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) in Primary Health Care Settings: A Technical Report of Phase III Findings of the WHO ASSIST Randomized Controlled Trial.* Geneva: World Health Organization; 2008.
 28. Newcombe DA, Humeniuk RE, Ali R. Validation of the world health organization Alcohol, Smoking and Substance Involvement Screening Test (ASSIST): report of results from the Australian site. *Drug Alcohol Rev.* 2005;24:217–226.
 29. Newcombe D, Galea S, Rethfeldt S, et al. How can I “ASSIST”? Screening and brief intervention for substance use problems in mental health settings—the ASSIST-Lite-MH. *Drug Alcohol Rev.* 2015;34 (Suppl 1):47.
 30. Mdege ND, Lang J. Screening instruments for detecting illicit drug use/abuse that could be useful in general hospital wards: a systematic review. *Addict Behav.* 2011;36:1111–1119.
 31. Tracy SJ. *Qualitative Research Methods: Collecting Evidence, Crafting Analysis, Communicating Impact.* Chichester, West Sussex, UK: Wiley-Blackwell; 2012.
 32. Wong J, Gott M, Frey R, et al. What is the incidence of patients with palliative care needs presenting to the Emergency Department? A critical review. *Palliat Med.* 2014;28:1197–1205.
 33. Lothen-Kline C, Howard DE, Hamburger EK, et al. Truth and consequences: ethics, confidentiality, and disclosure in adolescent longitudinal prevention research. *J Adolesc Health.* 2003;33:385–394.
 34. Potter C. To what extent do nurses and physicians working within the emergency department experience burnout: a review of the literature. *Australas Emerg Nurs J.* 2006;9:57–64.
 35. Cherpitel CJ, Ye Y. Drug use and problem drinking associated with primary care and emergency room utilization in the US general population: data from the 2005 national alcohol survey. *Drug Alcohol Depend.* 2008;97:226–230.
 36. Huriwai T. Re-enculturation: culturally congruent interventions for Māori with alcohol- and drug-use-associated problems in New Zealand. *Subst Use Misuse.* 2002;37:1259–1268.