

SECTION I

Consensus Recommendations

**PRODCEEDINGS FROM THE
NATIONAL WORKSHOP ON
RESEARCH INTO EARLY/BRIEF
INTERVENTION FOR DRUG &
ALCOHOL PROBLEMS**

Jacqueline Carless & Wayne Hall
NDARC Monograph No. 9



Monograph 9

**Proceedings From The National Workshop
On Research Into Early/Brief Intervention
For Drug & Alcohol Problems**

Edited by

Jacqueline Carless
and
Wayne Hall

National Drug and Alcohol Research Centre
University of New South Wales
PO Box 1
Kensington NSW 2033

Sponsored by Research Into Drug Abuse Advisory Committee (RIDAAC)

Monograph No. 9

**National Workshop On Research Into Early/
Brief Intervention
For Drug & Alcohol Problems**

Papers from a Workshop held at the National Drug & Alcohol
Research Centre, University of New South Wales, February
12th-13th, 1990.

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Contents	Page No.
Section I: Consensus Recommendations	i
Section II: Papers Presented	
Introduction to the Workshop <i>Nick Heather</i>	1
Early Intervention for Harmful Alcohol Consumption <i>John Saunders & Stephen Hanratty</i>	5
Early and Brief Intervention for Tobacco Smoking: Current Knowledge and Research Priorities in Australia <i>Erol Digiusto</i>	13
A Survey of Australian Research on Early and Brief Interventions for Drug and Alcohol Problems <i>Wayne Hall</i>	29
Early and Minimal Intervention: Barriers to Implementation <i>Rene G. Pols</i>	35
Section III: Rapporteur's Reports	
Early and Brief Interventions in General Practice Settings <i>Rapporteur: Wayne Hall</i>	43
Early/Brief Intervention in Hospital Settings <i>Rapporteur: Ilse Blignault</i>	47
Early/Brief Interventions in Drug and Alcohol Problems within Legal and Corrective Services <i>Rapporteur: Robert Ali</i>	51
Early/Brief Interventions in Community Settings <i>Rapporteur: Tim Stockwell</i>	55
Work Setting and Early/Brief Intervention <i>Rapporteur: Steve Allsop</i>	61
Appendices	67

SECTION I

Consensus Recommendations

National Workshop On Research Into Early/Brief Intervention For Drug & Alcohol Problems: Consensus Recommendations

1. Early and/or brief intervention provides one of the best opportunities for reducing the harm associated with drug and alcohol use in Australian society.

2. It is essential that research continue to play a major part in developing, evaluating and refining early/brief intervention.

3. The direction that research should mainly take depends on the setting in which early/brief interventions are applied:

a) In medical settings, both general practice and general hospital, there is adequate evidence of effectiveness in reducing harm from tobacco and alcohol use. While ways of improving this effectiveness should continue to be investigated, the main focus of research should be shifted towards studies of barriers to the implementation of existing knowledge, and the development of methods to ensure that early/brief interventions are more easily translated into practice.

b) In other settings in the community (e.g. schools, the workplace, the correctional system), there is a need for more basic research exploring the suitability of such settings for early intervention, developing brief intervention methods, and evaluating their effectiveness.

4. In judging the suitability of a particular type of setting for early/brief intervention, the following public health criteria should be used:

a) Is harmful or hazardous drug and alcohol use of sufficient prevalence to justify screening?

b) Is the intervention likely to be effective?

c) Will the intervention have sufficient penetration to affect the prevalence of harmful or hazardous use?

d) Is the setting a credible and legitimate place for such intervention?

Attention should also be paid to ethical issues, such as confidentiality and consent, in all settings.

5. Since the absence of methodological rigour and the diversity of measuring instruments employed have been obstacles to cumulative knowledge in this area, the time has come for attempts to require minimum standards for the conduct of outcome studies evaluating the effectiveness of early/brief interventions.

The workshop recommends that RIDAAC commission a report to advise on minimum methodological standards for:

(a) sample size and statistical power;

(b) length of follow-up period;

(c) minimum rate of follow-up at retention;

(d) the use of randomization and other design features.

The report should also advise on standardized instruments for use in:

(a) screening;

(b) assessment prior to intervention and at follow-up; and

(c) the measurement of motivation to change.

The minimum standards and recommendations arising from this report should be widely advertised, research funding should be awarded on their basis, and findings should be adequate to enable these minimum standards to be met.

6. In the case of research in medical settings, it is timely to consider the funding of multicentre trials of early/brief intervention. The advantages of doing so are as follows:

a) Multicentre studies make it easier to accumulate the substantial sample sizes often required to provide adequate statistical power to detect the benefits of brief interventions;

b) The use of multiple research sites and centres would increase the generalizability of findings and this may encourage the wider adoption of interventions in settings similar to those engaged in the multicentre trial;

c) It would encourage the development of a national collaborative network of research in the area, and promote training and the raising of research standards generally.

However, funding bodies should be mindful that multicentre trials require extensive development and that funds may need to be allocated to develop protocols and explore the feasibility of such trials in pilot projects.

7. Almost all research on early and brief intervention to date has focussed on the licit drugs, alcohol and tobacco. Although there are good reasons for this focus, there is now a need to begin exploring the feasibility of developing screening and brief intervention methods for both prescribed drugs (e.g. minor tranquillizers) and illicit drugs (e.g. heroin). General medical practice is an obvious setting for the former while correctional settings offer an opportunity

for the latter.

8. In addition to outcome studies of early/brief intervention, there is also a need for studies designed to test hypotheses regarding underlying processes responsible for the success or failure of particular interventions. Such process studies may lead to improvements in the rate of successful response.

9. As well as outcome and process studies, there is also a need for research on the most efficient means of recruiting, training and maintaining the involvement of professional groups (e.g. medical practitioners, social workers etc.) in early/brief interventions of proven effectiveness.

10. Researchers should be encouraged to develop flexible and sensitive intervention programmes for particular purposes. Factors which should be considered include the typical stage of change of the target population, the numbers reached, the cost of delivery, and the degree of training required.

11. Researchers should also be encouraged to undertake adequate cost-benefit analyses, possibly with the assistance of an expert consultant, of methods of intervention for which there is evidence of effectiveness.

12. In terms of immediate priorities for research into early/brief interventions, the workshop recommends the following:

(a) Research on improving the implementation of early/brief interventions in medical settings;

(b) Basic research into the effectiveness of early/brief interventions in other community settings;

(c) Research into the secondary prevention of harmful or hazardous drug and alcohol use by means of early/brief intervention with special populations, particularly adolescents.

SECTION II

Papers Presented

National Workshop on Early Intervention in Drug and Alcohol Problems: Introduction to the Workshop

Nick Heather

National Drug and Alcohol Research Centre
University of New South Wales
NSW 2033

The idea for a National Workshop on Research into Early/Brief Intervention for Drug and Alcohol Problems arose from independent observations by Bruce Flaherty and Rene Pols that there was a burgeoning amount of research in this area in Australia, but no clear conception of how this research effort should be coordinated to avoid duplication and ensure that the most important research questions were being addressed. RIDAAC then suggested that NDARC organize a Workshop to discuss these matters and a proposal for funding from Bruce Flaherty and Wayne Hall was approved. An Organizing Committee was formed consisting of Wayne Hall (Chair), Erol Digiusto, Bruce Flaherty, Nick Heather, Rene Pols and John Saunders.

The Workshop was originally scheduled for 22 September, 1989 but, after two postponements due to the airline pilots' dispute, eventually took place over a day and a half on Monday and Tuesday, 12/13 February, 1990.

It was decided to make the Workshop "by invitation only", to confine participation to researchers, clinicians and administrators with special expertise and/or a particular interest in the field of early intervention, and to restrict numbers to about 30. The disadvantage of this kind of selective policy is that it is virtually impossible to avoid offending some members of the research and treatment community who

believe, probably in many cases with justification, that they should have been invited. On the other hand, these restrictions on participation were essential if the Workshop was to achieve its aim of producing a consensus document within the space of one and a half days.

Objectives of the Workshop

It was planned that the Workshop should address the following objectives:

- (1) the identification of the outstanding research issues in early or brief interventions for drug and alcohol problems, e.g. what is (are) the optimal setting(s) for early interventions?; how "early" or "brief" should they be?; what are the most effective components of such interventions?; at what specific problems should they be targeted?;
- (2) a description of current Australian research activity in the area;
- (3) an analysis of common research problems and suggested solutions;
- (4) a statement of priorities for future research, including ways of encouraging existing services to adopt effective forms of early and brief intervention.

The last of these objectives has been met by the list of recommendations contained in Section I of this Monograph. The others will be commented on in various parts of the document.

Structure of the Workshop

The first morning of the Workshop was devoted to introductory papers intended to "prime" the rest of the meeting. These are reproduced in this Monograph as Section II. These papers were precirculated to all those attending in order to expedite the progress of the Workshop towards its goals. The actual presentation of papers consisted merely in a highlighting of the major points, with an elaboration or clarification of certain issues, as the speaker thought necessary, on the assumption that the audience had already absorbed the contents of the precirculated papers. Each presentation was followed by 15 minutes discussion during which participants asked questions and raised particular issues relevant to the conclusions of the paper.

Following words of welcome from Margaret Hamilton on behalf of RIDAAC, the morning began with an Introduction by Nick Heather. This was intended to set the scene by attempting definitions of terms, describing the limits of the Workshop's focus and in other ways. It is included here in Appendix III.

The forms of addictive behaviour for which early/brief interventions were identified as being relevant in the Workshop were excessive alcohol consumption, cigarette smoking and illicit drug use. However, it was made clear that there was no reason why other substances, such as benzodiazepines, should not find a place on the agenda. But much more is known about the effectiveness of early and brief interventions in the alcohol and smoking fields than for other substances and it was therefore likely that the nature of the conclusions reached would reflect this imbalance. There therefore followed two papers giving overviews of the internationally available evidence on the effectiveness of early and/or brief interventions with respect to alcohol consumption and cigarette smoking.

These were delivered by Stephen Hanratty (on behalf of John Saunders and himself) and Erol Digiusto and will be found in Section II.

Objective 2 above - the description of current research activity in Australia - was addressed by a survey, organized by Wayne Hall, of workers in the field. A questionnaire was mailed to researchers whom we knew to be involved in this type of work, plus heads of medical schools, directors of State drug and alcohol authorities and a variety of other sources, with the request that they pass on a copy of the questionnaire to anyone they believed to be doing research in this area. It should be stressed that the survey does not claim to be exhaustive of all research into early/brief interventions in Australia, and includes only the work of those researchers we were able to identify and who responded to the questionnaire. The results of the survey were presented on the first morning of the Workshop and are included here in Section II.

In addition to a consideration of the research effort itself, the Workshop also discussed the relationship between research and service provision - in particular, ways of encouraging agencies in the field to incorporate findings from research into early or brief interventions in the services they provide (see Objective 4 above). A paper by Rene Pols addressing this topic was considered at the Workshop and is included in Section II.

The morning ended with a general discussion of what had been learned so far, but this has not been reproduced here.

The Working Parties

The afternoon session began with five short presentations, on a range of relevant topics, given by people who took a particular interest in the topic in question. These topics were synonymous with the titles of the five working parties which followed and represented the range of settings in which early/brief interventions could be applied. The main purpose of the short presentations beforehand was to stimulate discussion in each of the working parties by

providing a list of headings and special issues that might be taken up by working party participants. However, the presentations were given to the plenary group in order to encourage a cross-fertilization of ideas across working parties.

The organizers took the liberty of allocating participants to working parties, rather than allowing a free choice in this regard. This was done to ensure an equal distribution of participants over the five groups and also to aim for an even spread of different types of expertise and experience. The composition of the working parties is given in Appendix 1.

Each working party had been given a rapporteur, whose task it was to record the main points of agreement and disagreement among participants, and an outline of the group's conclusions. On the evening of the first day of the Workshop, the rapporteurs prepared typed draft reports, with the assistance of the NDARC secretariat, for distribution the following day. These reports were read and discussed during the first session on the second morning in the plenary group. The finalized Working Party Reports are included as Section III of this Monograph.

The final session of the Workshop aimed to integrate the material from the five Working Party Reports in order to arrive at a consensus in terms of the four objectives of the Workshop set out above. The recommendations that emerged are set out as Section I of the Monograph. However, because these recommendations may be too numerous to all be taken up or funded immediately, the final recommendation contains the three areas of research accorded the highest priority at the Workshop. Researchers interested in more specific areas may also find ideas and inspiration in the reports of the Working Parties in Section III.

Finally, our American guest at the Workshop, Professor W.R. Miller of the University of New Mexico, pointed out that the National Institute of Medicine in Washington DC had recently produced a report on the effectiveness of treatment for alcohol problems, one chapter of which dealt specifically with brief intervention. For the information of readers of this Monograph, this chapter is included here as Appendix 2, with the kind permission of the US National Institute of Medicine.

Early Intervention for Harmful Alcohol Consumption

John Saunders and Stephen Hanratty

Centre for Drug and Alcohol Studies

Royal Prince Alfred Hospital

Camperdown 2050

Early intervention represents a major conceptual shift from the traditional approach to the management of alcohol problems (Babor et al., 1986; Saunders et al., 1988). It is essentially an outreach activity which, firstly, seeks to identify individuals whose drinking is hazardous or beginning to cause difficulties. Following this, a brief form of therapy is offered, typically at the point of first contact. There is now considerable evidence for the efficacy of early intervention techniques and this paper will summarise the current status of this approach.

Historical background

Before describing the techniques, it is appropriate to review the main reasons for the change in emphasis (see also Saunders, 1989). Until the late 1970s treatment for problem drinking usually involved admission to an in-patient programme, where a combination of educational sessions, individual psychotherapy, group therapy, and occupational therapy was provided in a protective environment. Such programmes were aimed at persons with an established physical dependence on alcohol, typically middle-aged men, who were usually divorced or separated, with major physical sequelae such as liver disease and neuropathy, and employment prospects that would be precarious to say the least. The treatment goal was abstinence in the vast majority of cases. Apart from these programmes, there was the self-help fellowship of Alcoholics Anonymous but relatively few other options.

At this time there were several influential cri-

tiques of treatment. Emrick (1975) reviewed 384 published studies of "psychologically oriented alcoholism treatment". From the 72 studies using random assignment or matching with comparison groups, he concluded that "differences in treatment methods did not significantly affect long-term outcome". He also examined abstinence rates amongst those receiving "intensive" and "minimal or no treatment" and concluded that any differences were "of no practical significance" (p. 97). This seems to be overstating the case as the rates were 28% and 14% respectively. Nonetheless, the main conclusion drawn from Emrick's critique was that treatment was poorly effective. He stated that "the findings suggest that alcoholics are, in a practical sense, as likely to stop drinking completely for six months or longer when they have no or minimal treatment as when they have more than minimal treatment".

Edwards and colleagues (1977), who had previously shown no advantages of in-patient treatment over an outpatient programme, reported a trial which compared "an average package of help which a well-supported treatment center anywhere in the Western world would today offer" with a single session of advice. They reported no difference in outcome between the two groups after one year. Subsequent analysis indicated that among those with more severe dependence, intensive treatment seemed to confer some benefit in terms of longer periods of abstinence and better social functioning. There are numerous claims that treatment programmes which incorporate an A.A. philosophy have a

lower immediate relapse rate. Nonetheless, the overall sense was one of disappointment at the limited impact of in-patient treatment and great concern about its cost-effectiveness.

A second line of reasoning was also emerging. Epidemiological studies were showing that there were far more alcohol-related problems in the community than were accounted for by the small group of chronic alcoholics. Most harm seemed to be experienced by persons who had not reached the stage of physical dependence. This was a much larger group than the alcoholics, and although their individual experience of harm was much less, their alcohol-related problems were numerically greater.

The assumption that intensive treatment was essential for recovery from a drinking problem was also thrown into question by natural history studies. Even among those with physical dependence, a significant proportion achieved abstinence without receiving formal treatment - so-called "spontaneous remission". Among those with a drinking problem of lesser degree the natural remission rate was much higher (Saunders & Kershaw, 1979; Vaillant, 1983).

In 1979 the World Health Organization initiated a review of treatment for problem drinking (WHO Technical Report No. 650). The Committee expressed concern that many countries were adopting the model of specialist in-patient care as their only treatment modality. For many developing countries such programmes would rapidly absorb all the available funds for alcohol problems. The Committee commented that it was hardly surprising that this model was being adopted because "there is a dearth of knowledge about the management of harmful alcohol consumption at an early stage." They concluded that there was an urgent need for the exploration of methods of detecting and treating persons with harmful alcohol consumption before dependence becomes established and disability irreversible, and to apply such methods in primary contact settings.

In 1983 a WHO-coordinated multicentre study was commenced with the twin aims of devising

simple screening instruments and evaluating brief therapies, that would be suitable for primary health care settings, to reduce harmful alcohol consumption. Royal Prince Alfred Hospital is the Australian centre in this programme and the findings to date will be described.

Procedures for early detection

An essential component of an early intervention strategy is a simple procedure for case detection. Consumption of alcohol may be hazardous for years without that fact being appreciated by either the individual or the attending doctor (or health care worker). Physical symptoms and psychosocial problems may not be attributed to drinking alcohol or may be ignored. It is usual for only 20-30% of problem drinkers to be so recognised by their general practitioners (Reid et al., 1986). Several approaches have been explored for the early detection of persons with hazardous or harmful consumption (Saunders & Conigrave, 1990). The best established is the administration of a questionnaire. Several questionnaires are available to screen for alcoholism. The prototype is the Michigan Alcoholism Screening Test ("MAST"), introduced in 1971 by Selzer. Other alcoholism questionnaires include the "CAGE" and the MacAndrew scale. These instruments were derived on the basis of their ability to distinguish chronic alcoholics from normal individuals or patients receiving psychiatric or medical treatment for other disorders. Their performance in this regard is good, in that 95% or more of chronic alcoholics are identified as such. In recent years there has been a need for instruments that can detect persons with less severe drinking problems, and the MAST and its derivatives are less satisfactory in this role.

The first two instruments specifically designed to detect persons with hazardous or harmful alcohol consumption are the core screening instrument derived from the WHO Collaborative Study, now termed the Alcohol Use Disorders Identification Test ("AUDIT") (Saunders et al., 1990) and the Canterbury Alcohol Screening Test ("CAST"). The ten questions that comprise

AUDIT represent the three major conceptual domains of intake, dependence, and problems. They were selected from the findings in six countries on the basis of their representativeness for these domains, on their ability to distinguish persons with hazardous or harmful consumption from harm-free drinkers, and on the perceived usefulness of the questions as a framework for intervention. Alcoholics were excluded from the sample from which the data were obtained. AUDIT has been found to have a sensitivity of 92% and a specificity of 94% in detecting the target group.

The CAST (Elvy & Wells, 1984) is a 24-item questionnaire which similarly aims to detect non-dependent problem drinkers. Its focus is on specific social consequences of alcohol consumption. Its sensitivity in detecting problem drinkers is also over 90%.

A second approach to case detection is the use of clinical examination findings. This technique was introduced by a French occupational physician, Le Go. He identified signs such as facial telangiectasia, conjunctival injection and coating of the tongue as strongly suggestive of alcoholism and formulated the "Le Go grid" as a screening procedure (Le Go, 1976). These and other physical findings were examined in the WHO Collaborative Study. They proved to be sensitive in detecting alcoholics but less so in identifying the hazardous/harmful consumption group. A "Clinical Screening Procedure", comprising the five most accurate pointers, has been devised as an adjunct to AUDIT.

Biological markers of alcohol intake were identified in the early 1970s. They include serum gamma glutamyltransferase (GGT), aspartate and alanine aminotransferase, HDL-cholesterol, uric acid and mean cell volume (Chick et al., 1981; Bernadt et al., 1982). The most widely used test is the serum GGT. This is elevated in 60-80% of alcoholics admitted to general hospitals, though only in 30-50% of those surveyed in general practice or psychiatric hospitals. The other generally available laboratory tests are less sensitive: for example, an elevated mean cell volume is found in only 5-20% of alcoholic

patients in psychiatric units. The value of these tests in detecting persons with hazardous/harmful consumption is correspondingly lower: in the WHO Collaborative Study near-zero correlations were found between the level of alcohol intake and the transaminases, uric acid and mean cell volume in most centres. Newer markers, including carbohydrate-deficient transferrin and antibodies to acetaldehyde-protein adducts, offer better prospects for early detection but are mainly confined to research laboratories at present.

The most sensitive and convenient method of detecting the early problem drinker remains the questionnaire (Bernadt et al., 1982; Babor et al., 1989). Although questionnaires depend on self-report data which may not always be accurate, studies have shown repeatedly that they have a greater diagnostic yield than the alternatives. They have been used as the principal, and sometimes only, screening procedure in the early intervention trials reported to date.

Controlled trials of brief therapies

The therapies employed in early intervention programmes have generally been short, usually of 10-30 minutes' duration. They involve a combination of motivational interviewing and counselling in problem solving strategies, and have been designed with the general practitioner or primary health care worker in mind. Pharmacological therapy is generally not part of the approach, though studies incorporating both serotonergic drugs and behavioural strategies are underway. Although therapy has been offered at the initial contact in most studies, some have involved referral to outside agencies for counselling or an appointment made at a later date specifically for therapy.

The pioneering study of early intervention was undertaken in the Swedish city of Malmö by Kristenson and colleagues (1983), and was an offshoot of the Malmö Preventive Medicine Programme, a secondary prevention programme aimed at reducing coronary heart disease. Subjects completed a questionnaire and had blood samples taken for biochemical investigations. Problem drinkers were identified on the basis of

their responses to questions on drinking practices and two successive abnormal GGT results. Those who had a history of alcoholism or were currently having treatment for a drinking problem were excluded from further study. Those remaining were randomly assigned to one of two conditions, namely, advice about the need to reduce or stop drinking and appointments for further counselling, or simply feedback that they had an abnormal blood test result that might be due to their drinking. All subjects were followed up for five years. Over this time the number of days of hospitalisation was 61% lower in the group who had received active treatment than in the control group. The mortality rate in the former group was half that of the latter (Kristenson & Hood, 1984).

During the conduct of the WHO Collaborative Study, in which the present authors are investigators, further studies of early intervention techniques were reported. Chick and colleagues (1985) screened male medical ward patients, and randomised those who reported an alcohol intake exceeding 60g per day or problems associated with drinking, to receive counselling or no intervention. Patients who had received active treatment reported fewer alcohol-related problems after one year than did subjects in the control group, and there was a significant decline in serum GGT activities in the actively treated group but not in the controls.

Elvy and colleagues (1988) also screened general hospital patients using a questionnaire but adopted a different approach to therapy. Instead of having therapy immediately after being diagnosed as problem drinkers, subjects who drew the active treatment condition were referred to a counsellor. Their general practitioners were also notified of the referral. In comparison with the control group, subjects who were referred for help were less likely one year later to report problems because of drinking, fewer marital difficulties, a more satisfactory work record, less depression and greater satisfaction with their drinking behaviour.

A major study of early intervention in general practice was reported by Wallace and colleagues

(1988). Their study was conducted in 47 general practices throughout Great Britain and involved the recruitment of 909 patients. As in the above studies, there were two conditions, a no-treatment control, and active therapy which involved a session of counselling by the patient's general practitioner, with an option for further sessions if mutually agreed. When subjects were re-interviewed a year later, 44% of men who had received counselling had reduced their alcohol intake to below the target level of 350g per week, compared with 26% of those in the control group, a statistically significant difference. The validity of this finding was supported by a greater reduction in serum GGT activities in the actively treated group compared with the controls. There was a lesser treatment effect among females and no difference in biochemical results between the treatment and control groups. The study is impressive for the large number of general practices that participated and the sample size, which allowed sufficient power to analyse the sexes separately and to examine for confounders such as age.

A similar study has been undertaken by Anderson (in press), also in Great Britain. Patients attending eight general practices in Oxfordshire underwent screening using a questionnaire. Those who fulfilled the inclusion criteria of drinking 280g+ alcohol per week (males) or 170g+ per week (females) were randomised to (i) follow-up only, (ii) comprehensive assessment without specific therapy, or (iii) assessment followed by advice to reduce consumption to below a specific target level and counselling in strategies to achieve this. In preliminary analyses Anderson has reported significantly greater reductions in alcohol intake in men receiving active treatment compared with the two control groups. There was no such treatment effect in women.

A study also conducted in British general practices by Heather and colleagues (1987) reported no significant effect of intervention. These investigators recruited 104 patients in eight general practices (16 practitioners). At the end of a year there were no differences in levels of consumption or alcohol problem scores in those

who received the DRAMS package (Drinking Reasonably And Moderately with Self-control), or simple advice by the general practitioner to "cut down", or the no-treatment condition. Serum GGT was reduced more in the DRAMS group compared with the advice only group.

WHO early intervention trial

The WHO early intervention trial is the largest such study conducted to date and has involved ten centres in countries as diverse as Australia, Bulgaria, Zimbabwe, the Soviet Union, the USA, and Costa Rica (Babor et al., 1987; Saunders et al., 1988). The basic experimental design involves the random allocation of subjects fulfilling the inclusion criteria into one of four conditions:

(1) a no-treatment control group; (2) simple advice (5 minutes); (3) simple advice followed by brief counselling and problem-solving strategies (20 minutes); and (4) simple advice and counselling followed by three booster sessions to allow monitoring of progress including feedback of laboratory results (120-150 minutes over the four sessions).

Subjects have been recruited primarily on the basis of a hazardous level of alcohol consumption, which is defined as 350g+ alcohol per week (men) or 225g+ (women). Additional inclusion criteria are drinking to intoxication (10 drinks in a single session for men, or six for women) once monthly or more frequently, and expressing concern about drinking and/or wishing to cut down. Like other studies, subjects with symptoms of physical dependence on alcohol are excluded, as are those with concurrent major psychiatric disorders. In addition, pregnant women, those using major psychotropic drugs, persons who have received advice from a doctor or other health professional to completely abstain from drinking, individuals who state that they have been admitted to a hospital for alcohol-related problems, and those without residential stability have also been excluded. Following scrutiny of the screening questionnaire potential subjects undergo a confirmatory assessment before random assignment

to the treatment or control conditions.

The simple advice component is essentially a strategy to induce motivation to change drinking behaviour. It involves feeding back the level of alcohol consumption, the risks associated with this intake, and any evidence of physical or psychosocial harm that has emerged in the interview. Comparison is made with the intake of the general population and the subject is told his drinking places him in the hazardous drinking category. A target intake is suggested (with different safe limits of consumption for males and females) and the therapist aims to reach agreement with the subject that the target is necessary and feasible.

Brief counselling begins with an identification of situations that would place the individual at high risk of drinking heavily. These might be locations, particular situations (e.g. meeting friends after work) or mood states (boredom, frustration, anger). Alternative activities to drinking are explored and advice is given about sensible drinking practices. Good reasons for reducing consumption are discussed with the patient and it is suggested that he or she enlists the aid of a "helper". The subject is asked to complete drink-diary cards and is provided with a self-help problem solving manual which covers the essentials of the intervention. In the fourth treatment condition, "monitoring", subjects attend three further sessions at one, three, and six months respectively. At these times their drink-diary cards are reviewed and the situations at which any heavy drinking took place are examined. The therapist suggests techniques for dealing with these situations when they arise in the future. Results of laboratory investigations are made available to the subjects and their significance with respect to the individual's drinking behaviour is explained.

In the Australian arm of the study subjects have been recruited from a number of sites including (i) medical and surgical out-patient clinics in Royal Prince Alfred Hospital (RPAH), (ii) physical rehabilitation services within the hospital, (iii) the RPAH Emergency Department, (iv) Medichcek, a multi-phasic health screening

and counselling programme based in Sydney, (v) twelve general practices in Sydney, and (vi) the medical and orthopaedic wards of Royal Darwin Hospital, Northern Territory. The Sydney sample amounts to 564 subjects, both men and women, aged 17-70 years. A further 118 subjects were recruited at Royal Darwin Hospital.

Preliminary results of the analysis indicate a positive effect of treatment. Men who are assigned to the simple advice condition have a significantly greater reduction in mean daily intake than control subjects. More intensive treatment (i.e. counselling in problem solving strategies or monitoring) does not at present seem to confer additional benefit. For women it appears that benefit is greatest among those receiving counselling or counselling with monitoring. Further analysis is being undertaken at the time of writing and the substantive results will be available shortly.

Treatment outcome is clearly a major focus of these analyses, but the process of incorporating early intervention into different health care settings is a crucial issue. Recruitment was most expeditious at Medichack, intermediate in hospital clinics, less good in general practice and slowest in the Emergency Department. Early intervention appeared to be most congruent with the objectives and organization of the health screening programme, Medichack, of all the sites at which the study was based.

Several more early intervention studies are under way at the present time. One is "Alcoholscreen", which is designed as a programme for general practitioners and is based on the "Smokescreen" model of smoking cessation programme. It involves personalising the effects of alcohol use on health and social well-being, and counselling over 4-6 sessions with the aim of reducing alcohol consumption to non-hazardous levels.

Conclusions

Early intervention represents one of the most promising developments in the alcohol field in recent years. There are a variety of screening

tests to allow the early identification of persons with hazardous alcohol consumption and brief therapies that can be offered by generalist health workers at the point of first contact. There is a growing body of evidence that these therapies are effective in helping a significant proportion of persons to reduce their alcohol intake to non-hazardous levels.

Inevitably in an overview such as this, several conceptual and methodological issues have had to be glossed over. Early intervention research is in the first phase of what may well be a 20-year programme of work. The term "early intervention" itself is not properly inclusive: perhaps only a minority of subjects recruited into the controlled trials described above would have progressed to alcohol dependence in the normal course of events. Many would have reduced their drinking without any intervention, others would have continued to drink similar quantities and perhaps suffered harm intermittently. There may well be a differential response to intervention of these three groups: at the present time we do not know. In many ways "brief intervention" is a more appropriate term, though in nearly all the studies reported so far, persons with alcohol dependence have been excluded from consideration.

Several of the studies can be criticised on methodological grounds. There are inadequate sample sizes, unclear descriptions of the screening process and the degree of attrition before random assignment, differences in the number of interventions in the treatment groups and a relative paucity of objective data such as biochemical and haematological analyses. Some of these issues are being addressed in the trials underway at the time of writing. Notwithstanding these strictures, there is a growing consensus that early intervention is an effective approach and certainly a much greater feeling of optimism about the value of treatment than has been the case in the alcohol field for many years.

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Early and Brief Intervention for Tobacco Smoking: Current Knowledge and Research Priorities in Australia

Erol Digiusto
Quit Clinic
Drug & Alcohol Unit
Westmead Hospital
Westmead 2145

Introduction

A very large number of Australians smoke tobacco. Recent surveys have found that the percentage who smoke daily increases from 4% at age 12 to 24% by age 17 (Chapman & Homel, 1987), and up to around 31% among adults (Pierce, 1989). It has been estimated that smoking is responsible for 20% of ALL deaths, and for 11% of ALL prematurely lost years of life (Holman and Shean, 1986). As well, tobacco is responsible for 81% percent of all drug-related deaths, and 50% of all drug-related years of life lost (Commonwealth Dept of Community Services and Health, 1988). Unsurprisingly, therefore, the costs associated with cigarette smoking in Australia are enormous (Goldstein, Reznik, Lapsley & Cass, 1986; Holman & Shean, 1986). A recent estimate puts the total cost at over three billion dollars per year, consisting of around a two billion dollar cost of lost future earnings associated with smoking-attributable premature deaths, a 600 million dollar cost of treating smoking-related conditions, and a further 400 million dollar cost of smoking-related disability (Shultz, Holman, Novotny & Rice, 1990).

On the positive side, the potential dollar cost of preventing at least some of this health damage seems quite reasonable, at least in comparison with other health-maintaining activities which the community supports. A recent American

study compared the cost-benefit of brief anti-smoking counselling by general practitioners with the cost-benefits of other common medical interventions (Cummings, Rubin & Oster, 1989). This study found, for example, that the cost per year of life which could be saved by GPs counselling their patients to stop smoking was only 3% of the cost of saving years of life by treating mild hypertension.

Among adult smokers, dependence on the psychoactive properties of nicotine is usually an entrenched aspect of personality, with most adult smokers lighting a cigarette every 30-60 minutes, a period comparable to the half-life of nicotine (Russell & Feyerabend, 1978). This situation exists in spite of the fact that the majority of smokers say that they would like to quit smoking, (Sorensen & Pechacek, 1987), and do regularly try to quit, mostly without long-term success (Pierce, Dwyer, Frape, Chapman, Chamberlain & Burke, 1986). It has been estimated that 35-40% of American smokers try to quit smoking during any one month, but that less than 2% are able to abstain continuously for a month, and only around 0.5% are able to do so for a year (Flay, 1987).

Hundreds of evaluation studies have amply demonstrated that structured behavioural treatment programmes are helpful in terminating the smoking of a significant proportion of those

who participate, with 12 month abstinence rates of around 40% being achieved by the more-intensive programmes (Glasgow & Lichtenstein, 1987).

However, only a very small percentage of smokers actually attend specialist smokers' clinics. For example, in 1984 the NSW Quit For Life project established five hospital-based "Quit Centres" throughout Sydney, and promoted these with an intensive, half-million dollar television and print media campaign. In spite of heavy promotion, a total of less than two in every thousand Sydney smokers attended these clinics (NSW Department of Health, 1986). Because of the large numbers of people who smoke, and their unwillingness to attend specialised treatment clinics, it has been argued that such clinics have little potential to reduce smoking prevalence in the community (Stachnik & Stoffelmayr, 1981; Chapman, 1985).

Attention has therefore turned away from studies designed to improve existing intensive interventions, to studies of interventions which have potential to affect large numbers of smokers, even at the expense of lower percentage abstinence rates. There has also been a great deal of research conducted into strategies for delaying or preventing the initial establishment of the smoking habit in adolescence. This area is particularly important in view of evidence that smoking provides an entry point to the use, and thus possible abuse, of alcohol, marijuana and prescribed medications (Fleming, Leventhal, Glynn & Ershler, 1989).

The present paper will provide an overview of research conducted on the effects of early interventions targeted at adolescent smokers, and of relatively brief intervention strategies which have been developed to reduce smoking prevalence among adults. The setting for virtually all adolescent interventions has been schools, while for adults a range of settings and types of professional service-providers have been involved. This literature review is not intended to be exhaustive, but rather, to provide representative examples to illustrate the points which are made.

"Early" Interventions

Most people who use alcohol use it only occasionally, do not become dependent, easily tolerate periods of abstinence, and suffer little or no health damage as a result of their drinking. In contrast, most people who ever smoke more than a few cigarettes subsequently become and remain daily smokers of more than 10 cigarettes per day, with significant long-term health consequences (Leventhal & Cleary, 1980; Hansen, 1983; Flay, Ryan, Best, Brown, Kerseu & Zauna, 1985).

It has been reported that as early as school grade nine, many smokers already believe that smoking helps to relax them and to relieve their boredom (Lotecka & Lasseben, 1981). Further, a British study has found that, of students who smoked 3 or more cigarettes per day, 62% believed that they would be unable to quit smoking if they tried (Bynner, 1969). These latter findings have been replicated in a survey of smokers conducted in grades 7-10 in two Sydney schools (Digiusto, Roche & Short, 1990). This study asked smokers how hard it would be to stop smoking permanently, without help, if they tried, and found that 60% of students who smoked more than three cigarettes per day answered "Impossible" or "Very Hard". Thus, if an "early" intervention is regarded as one which takes place before dependence is established, it follows that such intervention must be targeted at smokers very early in their smoking careers, generally during adolescence.

Smoking Prevention Programmes

A recent study of students in Grades 6 to 12 found that half of those who had ever tried smoking subsequently became used to it, with girls adapting more quickly than boys (Ershler, Leventhal, Fleming & Glynn, 1989). Reflecting the significance of this phenomenon, nearly all of the research into adolescent smoking has concentrated on school-based smoking prevention programmes.

These programmes have generally been concentrated on school grades five to seven, and have involved between four and twenty sessions in which material about the health consequences of smoking, stress management, and relevant social and decision-making skills have been taught to entire classrooms. Evaluations of these programmes, often involving thousands of subjects, have shown them capable of reducing the rate of initiation of smoking by up to 50% (Johnson, Hansen, Collins & Graham, 1986; Lloyd, Alexander, Calcott, Dobson, Hards, O'Connell & Leeder, 1983; Pederson, Baskerville & Lefcoe, 1981; Botvin, Renick & Baker, 1983; McCaul & Glasgow, 1985; Best, Thomson, Santi, Smith & Brown, 1988). As most followups have been limited to periods of one or two years, the evidence at this stage is best interpreted as indicating that these programmes delay, rather than actually prevent, the initiation of regular smoking (Severson & Lichtenstein, 1986). There are, of course, benefits involved even in simply delaying smoking.

The majority of evaluated prevention programmes have concentrated their activity in one school year and have focussed solely on smoking. However, a particularly ambitious approach has been employed in a few large-scale studies, involving comprehensive health education about diet, physical activity, smoking and other health issues delivered at school over a period of several successive years, and supported by community and mass-media activity. Two randomised studies have examined the effectiveness of this approach, and have reported some of the strongest effects in preventing smoking in the literature. In one study, two years of such intervention was associated with a 42% lower prevalence of monthly smoking than in controls (Pentz, MacKinnin, Flay, Hansen, Johnson & Dwyer, 1989), while in the other study, six years of intervention led to a 73% reduction in initiation of smoking (Walter, 1989). It is quite clear that "one gets what one pays for".

Several long-term followups of prevention interventions are now in progress (Murray, Davis-Hearn, Goldman, Pirie & Luepker, 1988). These are indicating, not surprisingly, that the effects

of antismoking education delivered in Grade 5 or 6 mostly wears off by Grade 12. Long-term followup of large samples of adolescents is an extremely resource-intensive exercise, particularly if the high contact rate which is necessary for avoiding bias is to be achieved (Pirie, Thomson, Mann, Peterson, Murray, Flay & Best, 1989). Given that several such studies are nearing completion in the US, it would be difficult to justify Australian replications of these evaluations. As well, the actual content of smoking prevention programmes themselves is now so well developed (Glynn, 1989; Silvestri & Flay, 1989) that there also seems little to be gained from testing new variations on the theme, at least as far as interventions targeted at the mid-school grades are concerned. There has been relatively little activity in relation to programmes suitable for students below fifth grade or above ninth grade, however, and this area warrants further exploration in Australia. In terms of the minimum age in particular, there is no reason why interventions should not begin in pre-school. However, such programmes have only just begun to be tested (Nishijima, Sakaguchi & Kubo, 1990).

Effects of Prevention/Health Promotion Programmes on Existing Smokers

Many prevention programmes, especially the early ones, have been evaluated by means of anonymous, cross-sectional surveys. The consequent inability to match individuals' pre-treatment and post-treatment data has therefore made it impossible to measure the effect of these programmes in inducing cessation by individual students who were already smoking at baseline. Other prevention studies have specifically excluded smoking students from their samples (e.g., Botvin, Eng & Williams, 1980; Botvin, Renick & Baker, 1983). Finally, since prevention programmes have mostly been conducted in Grades five to seven, usually only 2-3% of participants have been smokers of more than one cigarette per week prior to intervention (Flay, Ryan, Best, Brown, Kerseu & Zauna, 1985; Gilchrist, Schinke, Bobo & Snow, 1986). This has resulted in such studies having generally lacked sufficient statistical power to detect

significant treatment effects on regular smokers (Botvin, Renick & Baker, 1983; Flay et al., 1985). Thus, little is known about the effects of prevention strategies in encouraging and assisting adolescents who are regular smokers to quit. A number of prevention studies have found that the rate of transition to regular smoking by adolescents who are still only experimenting with smoking can be reduced by training in social and self-control skills (Johnson, Hansen, Collins & Graham, 1986; Gilchrist et al., 1986). For example, the Waterloo prevention programme involved a six week core curriculum, consisting of health education, and training in decision-making and social skills in Grade 6, followed by a further five treatment sessions during grades 7 and 8 (Flay et al., 1985). Of experimental smokers, 67% in the treatment group, compared with only 23% in the control group, had quit at followup. Five of six so-called "regular" smokers in the treatment group had also quit.

In a study of ninth grade students allocated to either a control condition, or a treatment condition involving six sessions of role-playing and discussion about aspects of smoking, 13 of the 22 regular smokers (59%) in the treatment group were abstinent at a five month followup, compared with only 1 of 10 smokers (10%) in the control group (Jason, Mollica & Ferrone, 1982). However, this programme failed to affect any of the four participants who had been smoking more than 10 cigarettes per day. Another study took the unusual approach of examining the effect of a combined prevention/cessation programme on classes of tenth grade students. In this study, control subjects received three lectures on the long-term health effects of smoking during health education classes. Experimental subjects were actively involved in a four session programme which focused on immediate effects of smoking, cigarette advertising techniques, cognitive self-instruction and a range of standard smoking cessation techniques (Perry, Killen, Telch, Slinkard & Danaher, 1980). A four month followup found that the prevalence of self-reported daily smoking had dropped 10% in the control condition and 40% in the experimental condition. These results, while only

short-term, suggested that it would be worthwhile to explore further the concept of combining specific cessation strategies with prevention strategies for adolescents beyond the usual grades 6 and 7.

Another, conceptually broader, randomised study of 1447 tenth grade students exposed around half of them to 20 classroom sessions designed to reduce levels of several cardiovascular risk-factors, including smoking (Killen, Robinson, Telch, Saylor, Maron, Rich & Bryson, 1989). In this study, a two-month followup found that treatment was associated with a higher quitting rate among experimental smokers (those smoking monthly or less) and a lower rate of transition from experimental to regular (weekly or more) smoking. However, of students who had been smoking weekly or more at baseline, 9% of untreated controls compared with only 4% of students in the intervention condition reported having quit, a statistically nonsignificant difference in the wrong direction.

Specific Cessation Programmes For Adolescent Smokers

If effective adolescent smoking cessation programmes were available, they would also be likely to have some preventive effect, since the major factor leading to initiation of smoking in adolescence is peer pressure from existing adolescent smokers (Flay et al., 1985). Unfortunately, there are very few published reports of programmes specifically designed to encourage and assist adolescents who are already smoking to quit (Weissman, Glasgow & Biglan, 1987). In a single group study, 33 grade 9-12 smokers attended a quit-smoking programme which included health information, discussion, cognitive-behavioural treatment strategies and incentives for abstinence (Lotecka & Lassleben, 1981). Not even one of the smokers was found to abstain for more than four weeks. Another study randomly assigned 82 Grade 10 smokers to one of six treatments conditions, each involving three 60 minute treatment sessions (Perry, Telch, Killen, Burke & MacCoby, 1983). A two month followup found a somewhat more promising overall abstinence rate of 23%, but no signifi-

cant differences between treatments. Finally, an imaginative study included 84 eighteen year old undergraduate university student smokers (Goldberg & Gorn, 1982). These 18 year-olds were involved as "consultants" in developing and conducting a smoking prevention study which they were led to believe was targetted at 13 year old students. A three month followup found that 20% of the consultant smokers had quit, compared with none of an uninvolved control group of undergraduate smokers. A study of spontaneous attempts to quit involving 98 adolescent smokers found that while 53% had relapsed within a month, 23% were successful for at least six months (Ershler et al., 1989). Although smokers who quit spontaneously are probably different in many ways from those who engage in formal treatment, the abovementioned short-term abstinence rates achieved by treatment should still be considered unimpressive.

A remarkable paucity of relevant research means that much is unknown about what are effective strategies for facilitating smoking cessation among adolescents. We know little about which treatment strategies are most appropriate for smokers of different ages, genders and intensities of smoking habit, and in particular whether, even at this early age, treatments which include the use of nicotine replacement (e.g. Nicorette) would be appropriate for those adolescents who are already significantly nicotine-dependent. It is also not known whether adolescents' families should be recruited to help with their attempts to quit smoking, nor whether it would be helpful to coerce students who are caught smoking at school into treatment, rather than simply to punish them in some way, as is common practice at present. This issue is of practical as well as theoretical concern, since schools regard smoking as a significant disciplinary problem, and since the punishment of students caught smoking appears to have little benefit (Pentz, Brannon, Charlin, Barrett, MacKinnon & Flay, 1989). It is also unclear whether cessation interventions should focus narrowly on smoking, or more widely on all abused drugs, particularly alcohol and marijuana. We also don't know whether printed self-help materials, brief indi-

vidual counselling or even simple incentive schemes, such as quit-and-win competitions, would be more "cost-effective" than the traditional, group-based type of intervention.

Lastly, we are ignorant of whether there are "side-effects" of conducting cessation programmes at school. This is far from being a trivial question, yet it has received scant attention. It is conceivable that delivering the message that quitting smoking requires specialist help may actually inhibit spontaneous attempts to quit. Such an iatrogenic effect could be even greater if the majority of smokers who participated in cessation programmes actually failed to quit smoking. There is evidence that an adolescent's self-definition as a smoker may follow from unsuccessful attempts to quit, at which point it may be realised that smoking is not under his or her control (Ershler et al., 1989). Furthermore, the learned helplessness literature is substantial in supporting the view that such failure would inhibit participants' future attempts to quit, as well as generating highly salient models of failure which may also discourage those smokers who have not themselves attended treatment.

In a study which is in progress at Parramatta Hospital, it has been observed that 12% of Year 9-12 students who smoke were prepared to enrol in a six-meeting behavioural cessation programme conducted at lunch times, while around 40% of smokers enrolled in programmes which were conducted during school time. Unfortunately, out of a total enrolment of 226 students in this project, only 8% managed to abstain from smoking for the first week after the programme "quit-date" (Digiusto et al., 1990). There is clearly a market for adolescent cessation programmes, but much remains to be done to develop cessation strategies which are effective.

"Brief" Interventions for Adults

Printed Self-help Materials

A number of studies have examined the effectiveness of printed booklets or manuals containing behavioural self-help strategies in assisting

smokers to quit. One such study involved 1206 smokers attending a chest x-ray clinic, half of whom were given a 13 page booklet containing information about the health effects of smoking and strategies for quitting (Campbell, Hansford & Prescott, 1986). At a 12 month followup there was a nonsignificant difference between conditions, with 4% of the booklet group and only 3% of the control group being found abstinent.

A novel study recently conducted in Victoria involved smokers identified in random household and telephone surveys. These people were offered a 28 page booklet containing sections appropriate for smokers who were at each of Prochaska and Diclemente's (1983) "stages of change" (Borland, Lee & Scollo, 1990). Of 271 smokers offered the booklet, 87% accepted it and 65% read some or all of it. A short-term followup found that, in comparison with controls who were interviewed but not offered a booklet, those who accepted a booklet were more likely to say that they wanted to quit, and that they felt confident about being able to do so. However, the proportions of the control and booklet groups which actually had quit were essentially identical, at 4.5% and 4.4%, respectively. A single-group, uncontrolled study conducted in South Australia and involving 80 smokers who picked up a similar booklet from health centres found a comparable abstinence rate of 5% at a three month followup (Hare & Watts, 1990).

These three studies suggest that no significant, specific, effect on smoking behaviour is achievable by the kind of brief, printed self-help materials which many Australian agencies freely distribute.

Another study involved 1237 smokers who requested self-help materials, and who were randomly assigned to be given either a set of leaflets, a cessation manual or both a cessation ("Freedom From Smoking in 20 Days") and a nonsmoking maintenance manual which are distributed by the American Lung Association (Davis, Faust & Ordenlich, 1984). The ALA manuals are much more substantial in size and

content than the pamphlet-type booklets referred to earlier, and are regarded by many as the "gold standard" in self-help materials. A twelve month followup found that 12% of smokers who had been given leaflets, 15% who had used the cessation manual only, and 18% of those who had used both manuals claimed to have been abstinent during the week prior to followup contact. However, only between 2% and 5% claimed that they had actually maintained continuous abstinence for the entire 12 month period.

Another study recruited 1895 smokers over a 15 month period (Cummings, Emont, Jan & Scian-dra, 1988b). These smokers were randomly assigned to receive a behavioural cessation manual in one of four formats, or a control booklet about the health effects of smoking. At a six month followup, between 10% and 17% of the cessation manual groups were found to have abstained for the previous week, none of which differed significantly from the 15% rate found in the control group. Between 3% and 7% had been abstinent for the entire six month period, again with no differences between groups.

An intriguing finding in the latter study was that there was virtually no difference in the incidence of a range of behaviours relevant to either preparing to quit smoking, or to maintaining abstinence, between those who had received manuals containing explicit instructions about these behaviours and those who had received the control booklets without such instructions. This lack of difference was in spite of the fact that 89% of subjects had read at least half of the booklet which they had been sent.

The failure of these self-help studies to show substantial "specific benefits" may be partly explained by an earlier study which evaluated the effects of two commercially produced self-help manuals (Glasgow, Schafer & O'Neill, 1981). In this study, the cessation programmes contained in the manuals were either self-administered by individual smokers, or were delivered and explained by counsellors to small groups of smokers during eight weekly meetings. A six month followup found that 20% of

the counsellor-administered group were abstinent, compared with only 4% of the self-administered group. It was also found that contact with the therapist was associated with completion of significantly more of the recommended programme activities. The authors suggested that this difference may have been due to the likelihood that behavioural treatment strategies are conceptually complex, and require clarification, demonstration and encouragement on a face-to-face basis in order to be effective. Others have argued, at a more basic level, that such materials are written by technically-minded people in their own language and are simply too difficult for the target audiences to read. A review of 49 smoking education brochures found that they had a median reading level of Grade 10.5, far above the median reading ability of people exposed to such materials, which was found to be Grade 6 (Meade & Byrd, 1989).

The role of interpersonal support in facilitating use of self-help materials has been directly examined in another large-scale study involving the American Lung Association's cessation manual (Flay, Gruder, Warnecke, Jason & Peterson, 1989). A total of 1828 obtained a manual from one of three types of location (hardware stores, health maintenance centres and workplaces) and were able to watch televised news segments explaining the manual's use over 20 successive days. Participants at health maintenance centres and half of the workplaces were additionally offered opportunities to attend group discussions. A 12 month followup found that 10% of those in the manual + television group had been continuously abstinent, which was double the percentage reported in a previous study (mentioned above) for a manual-alone group (Davis et al., 1984). While there were initially large difference between participants who were offered additional face-to-face support, these differences were no longer significant at 12 months.

In summary, it appears that behavioural strategies which are effective when delivered and explained on a face-to-face basis have only limited value when smokers are exposed to them only in printed form, and are expected to under-

stand and comply with them in the absence of interpersonal reinforcement. In view of their low cost, there is an important role for clear, easily-understood printed materials which are provided as a part of interventions which include some social support. A relatively small amount of support, either face-to-face or via mass media, seems to determine their specific long-term effectiveness. A large amount of support can further improve short-term effectiveness, but this is an acute effect only, which mostly wears off in time.

Brief Counselling by General Practitioners

A large proportion of smokers can potentially be influenced by interventions delivered in general practice settings. Surveys of physicians have found that about two-thirds claim that they advise all patients who smoke to quit. However, a smaller percentage actually counsel patients on HOW to quit, or provide ongoing support for quit attempts (Ockene, 1987; Orleans, George, Houtt & Brodie, 1985). For example, an Australian study, conducted in Newcastle, found that doctors detected 56% of smokers passing through their practices, and "treated for smoking", presumably with brief counselling, only 39% of those detected, an overall treatment rate of 22% of all smokers (Dickinson, Wiggers, Leeder & Sanson-Fisher, 1989).

One of the earliest trials of GP counselling (and still the most widely-cited) involved over 2000 smokers, and found a 5.1% abstinence rate at 12 months among subjects who were advised to stop smoking, given printed materials and warned that they would be followed up. In contrast, only 0.3% of an untreated control group was abstinent at the 12 month followup (Russell, Wilson, Taylor & Baker, 1979). A recently-reported replication of this approach conducted in South Australia produced similar results of 7.5% abstinence in a brief advice/printed materials condition compared to 3.2% in a control condition at a six month followup (Wilson, Wakefield, Steven, Rohrsheim, Esterman & Graham, 1990).

A meta-analysis of smoking cessation interventions conducted in medical practice settings

reviewed 39 controlled trials (Kottke, Battista, De Friese & Brekke, 1988). This review concluded that the best predictor of outcome was the number of times that subjects were in contact with the intervention process. The mean difference between these studies' intervention and control conditions ranged from 3% for one treatment occasion, up to 14% when the intervention involved more than eight treatment occasions. Most other predictors of differential outcome also related to the intensiveness of intervention. Unfortunately, these comparisons are difficult to interpret, since they confound treatment intensiveness with a likely smoker self-selection bias. That is, it may be that mainly only smokers who are highly motivated to quit are willing initially to involve themselves in an intensive treatment, and that mainly those who find themselves making good progress subsequently remain in treatment without dropping out. Thus, the finding in many studies that smokers who attend more of the available treatment sessions have a better outcome cannot be interpreted as meaning that the extra sessions were actually therapeutically useful.

The best known GP intervention in Australia is undoubtedly the Smokescreen programme, developed by Richmond and Webster (1985). Presently under revision, this programme has, to date, involved smokers being counselled during up to six visits, depending on attendance, over a period of six months. A three-year followup of a group of 100 smokers who were recruited into this programme found an abstinence rate of 36%, compared with 8% in a group of 100 control smokers, results which surpass most others in the literature (Richmond, Austin & Webster, 1986). Subsequent to that study, approximately 2,500 general practitioners have attended two-hour workshops in order to be taught how to conduct the intervention.

A recently published field evaluation of the Smokescreen programme conducted in Queensland involved 38 doctors who attended a training workshop (Copeman, Swannell, Pincus & Woodhead, 1989). This study found that these doctors recruited only an estimated 7% of their adult patients who smoked, of whom 24% re-

ported having quit. Ignoring any patients who may have quit without actually being recruited into the programme, this represents a quit-rate of around 2% of initially-smoking patients who had passed through the GP's offices. Copeman et al., suggested that the low recruitment rate appeared to have been due to selective use of the programme by the GPs, and to a lack of response by most patients to whom it was offered. The 7% recruitment rate was lower than the 22% detection/brief counselling rate reported by Dickinson et al., (1989) for another group of Australian doctors. As well, the 2% quit rate achieved by the doctors in the Copeman study was lower than the 7.5% achieved by brief counselling in the Wilson et al., (1990) study mentioned above. These results suggest that relatively intensive interventions may not be appropriate in the Australian general practice setting, although further data on the subsequent smoking intervention activity of doctors who have attended Smokescreen workshops would be helpful here.

Many studies have found that doctors preferentially counsel smokers who are already experiencing smoking-related illnesses, thereby limiting the preventive value of these interventions (Dickinson et al., 1989). Smokers generally see their GPs about acute health symptoms, which are readily treated successfully, rather than to obtain advice regarding their smoking. A low success rate in assisting smokers to quit may lead many doctors to feel that their professional time is better spent on patients whose problems CAN be effectively treated (Ockene 1987; Dickinson et al., 1989). Conceivably, some doctors may also feel that "harassing" their smoking patients to quit may drive them away to other doctors (Hill & Borland, 1989), in a health system which is not short of general practitioners. As well, taking time to counsel smoking patients to quit may directly reduce doctors' incomes, by reducing the number of patients seen each day. Identifying and focussing on smokers with a high probability of success, that is, the more highly motivated and less dependent smokers, may help to overcome these barriers. However, these are the smokers who are most likely to quit on their own in due course, and who are least in

need of counselling.

Most of the research in this area has concentrated on strategies for inducing and, to a lesser extent maintaining, change in the behaviour of patients who smoke. However, there have also been several investigations of methods for motivating doctors to engage in this type of intervention. Two studies have found that reminders attached to patients' charts significantly increase the likelihood of doctors addressing the smoking issue with patients, and the amount of time spent on it (Cohen, Christen, Katz, Drook, Davis & Smith, 1987; Lindsay, Wilson, Best, Willms, Singer, Gilbert & Taylor, 1989). Copeman et al.'s (1989) study of doctors who attended Smokescreen workshops found that a group of doctors who were "supported" by telephone and personal contacts following the workshops actually recruited significantly fewer patients than a group of doctors who were not supported. Two studies have examined the effect of attendance at a one-day training workshop on doctors' antismoking counselling behaviour (Lindsay et al., 1989; Kottke, Brekke, Solberg & Hughes, 1989). Both studies found that workshop attendance led to doctors seeking commitments to quit, and obtaining such commitments, from significantly more patients. However, only one of these studies found that attendance increased the rate of patients' actual attempts to quit, and the percentage of patients who were abstinent at followup (Lindsay et al., 1989).

Brief Counselling by Other Health Professionals

In contrast with an extensive literature on the effectiveness of counselling by general practitioners, there has been very little research reported relating to the effectiveness of other health professionals. In a study reported by Sutton and Hallett (1988), half of the smokers who had attended a screening of a smoking-and-health video at their workplace were invited to attend four individual consultations with an occupational health nurse, lasting a total of one hour. Six percent of the invited group, compared with 2% of those not invited were absti-

nent at 12 months, a nonsignificant difference. However, 16% of those who actually attended at least one meeting were abstinent, an effect which did differ significantly from the control condition. When the intervention was repeated in another workplace, a 12 month followup found that 12% of participants (or 8% of all those invited) were abstinent, compared with a significantly lower 1% of non-participants and 2% of an uninvited control group. These results are comparable to those which can be achieved by general practitioners.

Other health professionals whose effectiveness in antismoking intervention has been under-investigated include dentists (Cohen, Christen, Katz, Drook, Davis, Smith, Stookey et al., 1987), hospital-based nurses (Goldstein, Hellier, Fitzgerald, Stegall & Fischer, 1987) and pharmacists. As dentists and nurses, in particular, are in a position to spend more time with smokers than doctors are, and as dentists already have a well-established role in prevention, this is undoubtedly an area worthy of immediate research attention in Australia.

To date, there do not seem to have been any studies which have examined the possibility of health professionals (including general practitioners) focussing on EX-smokers, and providing the brief advice and encouragement which may help them to maintain their ex-smoking status. This is another topic which warrants at least one demonstration project.

Nicotine Replacement (Nicorette)

Several smokers' clinic-based studies have established that Nicorette is useful for a significant proportion of the smokers who attend such clinics. However, the specific pharmacological effects of Nicorette mainly benefit smokers who are relatively highly-dependent on nicotine, with the likelihood of low-dependent smokers succeeding in quitting smoking being only minimally determined by whether they receive Nicorette or a placebo (Fagerstrom & Schneider, 1987).

Several randomised controlled trials have also

examined the usefulness of Nicorette chewing tablets in general medical settings, usually as part of brief interventions. One such study involved nearly 2000 smokers randomised to three conditions: No Intervention, Advice to Quit + Booklet, or Advice + Booklet + Nicorette (Russell, Merriman, Stapleton & Taylor, 1983). Abstinence rates at a 12 month followup were 4%, 4% and 9%, respectively. In this study, which did not include a placebo condition, the offer of a Nicorette prescription appeared to be mainly one of motivating more people to try to stop smoking. Percentages who stated that they had tried to quit were 37%, 46% and 61%, respectively, in the three conditions. Two large, controlled studies have established that, in general medical settings, Nicorette acts mostly as a placebo. One of these studies compared four conditions, Advice, Advice Plus Booklet, or Advice Plus Booklet Plus either Placebo or Nicorette (British Thoracic Society, 1983). Long-term abstinence rates ranged from 9% to 11%, with no significant differences between conditions. Similar results, of 10% and 8% abstinence rates at 6 months post-treatment in Nicorette and Placebo groups, respectively, were reported in another large study (Jamrozik, 1984).

Screening/Advice to Quit in Workplaces

Like general practice-based strategies, interventions conducted in the workplace have the potential to reach a much larger proportion of smokers than has been found to attend smokers' clinics.

A Belgian study involved screening of males aged 40-59 (Kornitzer, Dramaix, Kittel & De Backer, 1980). In the intervention group of workplaces, 84% of workers voluntarily participated in an initial screening, while in control workplaces only 10% were invited for screening. A two year followup of random samples from both types of workplace found that screening alone had no specific effect, with smoking prevalence having reduced 8% in both types of workplace. However, in a sub-study, smokers at the intervention workplaces who were identified as being at high risk (top 20%) of cardiovascular disease were given individual advice about

risk-factor reduction twice per year by a physician. The two-year followup found that 19% had quit, which was significantly more than the 12% of high-risk smokers who had quit in the control workplaces.

A French study involved cardiovascular screening of male civil servants, half of whom were assigned to an intervention involving printed materials and advice about reducing risk factors delivered during three medical examinations over a 12 month period. One year after the last medical, 23% of smokers in the intervention group, compared with a significantly lower 14% of untreated controls, were abstinent (Cambien, Richard, Ducimetiere, Warnet & Kahn, 1981). A more recent study involved shipyard workers with a history of asbestos exposure randomly allocated to one brief occasion of either physician advice to quit smoking, or advice plus detailed counselling on how to quit (Li, Kim & Ewart, 1984). An 11 month followup found that 4% of the advice-only, compared with 8% of advice + counselling smokers had quit, a difference which was statistically significant.

While the above data are encouraging, conflicting results were reported from an Australian study which involved voluntary risk factor screening for public servants (Edye, Mandryk, Frommer, Healey & Ferguson, 1989). In this study, the control condition involved two medical examinations, while the intervention condition added four 20 minute sessions of individual counselling about risk factor reduction over a three month period. A three year followup found that smoking prevalence in the control subjects was 5.1% lower than at baseline, compared with 5.6% lower in the intervention subjects, a nonsignificant difference.

In summary, screening alone appears to have little specific effect on smoking behaviour. However, it seems useful in identifying smokers who are then exposed to one or more brief counselling sessions. In these circumstances, effects comparable to those obtained in the general practice setting can be achieved. In Australia, there is now a widespread trend towards workplaces becoming smoke-free. In this

context, many smokers are interested in quitting, and it would obviously be useful to evaluate the effectiveness of already-available brief counselling strategies in helping them do so.

Video-Based Interventions

Another low-contact strategy for encouraging smokers to quit involves exposing them to one or more sessions of relevant material on video. This area has not been subjected to very much attention by researchers. However, one study involved a series of six 10 minute video sessions about how to quit smoking (Sutton & Hallett, 1987). In two workplaces, one group of smokers were shown the first two of these sessions, and advised to watch the remainder when they were broadcast on television soon after. Another group of smokers saw two control videos and were NOT advised to watch the broadcast programmes. At a 12 month followup, 3% of control and 11% of experimental subjects were abstinent, a difference which was not statistically significant. In a subsequent study by the same authors, smokers at four workplaces were invited to view one of several control, or smoking-and-health-related videotapes in small groups (Sutton & Hallett, 1988). A total of 603 smokers, approximately 35% of those at the workplaces, voluntarily attended these sessions, and those who watched the smoking tapes were also given a booklet containing advice on how to quit. At a 12 month followup, this study found that approximately 5% of both experimental and control subjects had quit smoking, compared with 2% of smokers who had chosen not to participate, with none of the differences being statistically significant. These results are not encouraging but further research in this area is probably needed before this approach is ruled out.

Quit-smoking Contests

A relatively new smoking-reduction strategy involves the provision of monetary incentives in the form of "quit-and-win" competitions for smokers. All reported interventions of this type have required participants to make one initial

verified as a "real" smoker, with no subsequent interpersonal assistance being provided (apart from followup).

In one workplace study, smokers who enrolled and remained abstinent for two weeks were offered a chance at a \$250 prize, with a chance at a further \$500 prize for three months' abstinence (Cummings, Hellman & Emont, 1988). An estimated 13% of smokers enrolled, and 36% of these were abstinent at the three month followup. Another study used television, radio, press and poster promotion to induce registration by 1044 smokers, representing an estimated 2.5% of the smokers in the community in which the study was conducted (Glasgow, Klesges, Mizes & Pechacek, 1985). In this study, one month's abstinence qualified registrants for a chance at one of a range of donated prizes. Of the initial registrants, around 35% were found to be abstinent at one month. A similar study conducted as part of the Stanford Five-City Project also reported recruiting 2% of the smokers in the community (King, Flora, Fortmann & Taylor, 1987). In this project, eligibility for a chance at prizes was based on a minimum two week period of abstinence, and a 12 month followup indicated an abstinence rate of 15%. Finally, another quit-and-win competition was conducted in the context of a community-based heart-health programme (Elder, McGraw, Rodrigues, Lasater, Ferreira, Kendall, Peterson & Carleton, 1987). In this project, smokers who attended risk-factor screenings and festivals were registered and provided with printed self-help materials. By abstaining for up to 10 weeks, participants became eligible for a chance at a range of prizes. A six month followup found 14% reporting abstinence.

Unfortunately, there has not yet been a report of a controlled study of the quit-and-win strategy, and we therefore do not know whether this is any more than an elaborate and gimmicky strategy for recruiting (and taking credit for) smokers who were about to quit smoking anyway. It is also possible that this type of intervention may be iatrogenic. Challenging smokers to gamble, in a very public way, on their ability to quit may

participate, and in those who participate but fail, a belief that they are unable to achieve abstinence. This may directly inhibit future spontaneous attempts to quit smoking.

Conclusions

Many brief intervention strategies have been developed which, in a range of settings, can produce small, but non-trivial, reductions in the prevalence of smoking in the populations which are exposed to them. Most of these interventions embody a few already well-developed set of components which do not need to be "re-invented" in Australia. Our effort in terms of local research should be concentrated on relatively small-scale, well-conducted demonstrations of the value of existing basic strategies in novel settings so as to facilitate their widespread local acceptance and implementation. As well, local barriers to the implementation of these strategies should be investigated, with a view to their being overcome.

However, established cigarette smoking is a complex behaviour, maintained by a range of factors and, consequently, brief interventions affect only a small percentage of smokers. Unfortunately, a substantial body of research has shown that most such interventions, including quit-smoking contests (Cummings, Hellman & Emont, 1988), cardiovascular risk-factor screening programmes (Kornitzer et al., 1980), and counselling by general practitioners (Richmond, Austin & Weber, 1988; Jackson, Stapleton, Russell & Merriman, 1986; Pederson, Wanklin & Baskerville, 1984), and self-help materials mainly influence those smokers who are better educated, relatively highly motivated to quit, confident about their ability to quit, and whose smoking rates and levels of nicotine dependence are relatively low. Of course, these are precisely the smokers who are most likely to quit smoking on their own in due course, and whose health is least at risk.

Furthermore, since most studies have involved followup periods of only 12 months or less, it is not even certain that these interventions don't simply speed up cessation somewhat in a se-

lected subgroup of smokers who may have quit without any direct assistance within the next few years.

As a consequence of these effects, while smoking prevalence itself has decreased over the past 20 years, an increasing proportion of all smokers are "heavy" smokers - i.e. smoking at least 25 cigarettes per day, having a high level of nicotine dependence, and thus exposed to a major part of the total health risk from smoking (Pechacek & Erickson, 1990). Regardless of whether they are exposed to relatively intensive treatments, brief interventions, or no intervention at all, a majority of such smokers simply cannot quit. This situation does not, however, provide justification for allocating Australian research funding for the further improvement or evaluation of intensive treatments for adult smokers. Such interventions have been the subject of substantial investigation in the past and are therefore already well-developed. More importantly, however, smokers' reluctance to attend them, as well as their cost, make them an unrealistic option for reducing community smoking.

In considering priorities for investigation, we should maintain our perspective and also consider smoking reduction strategies which involve no interpersonal contact at all. These include the sudden large tax increases on cigarettes, introduction of smokefree workplace policies, and sustained mass-media campaigns, which, in motivating spontaneous quitting, may well be the most cost-effective of all. As well, mass-media activity has a fundamentally important role in "legitimising" certain interventions, such as smoke-free workplace policies, and encouraging smokers to participate in other interventions, such as attempts by health professionals to counsel them. As well, a published review of the effectiveness of mass-media "self-help clinics" found that their effectiveness for those smokers who viewed them was comparable to the best available printed self-help materials for smokers who requested these materials (Flay, 1987).

Locally, an evaluation of the Quit For Life

media campaign (which has been conducted in New South Wales since 1983) found that during its first year it produced a net reduction in smoking prevalence of 2.8% in comparison with the rest of Australia (Dwyer, Pierce, Hannam & Burke, 1986). This represented an estimated 83,000 fewer smokers at a cost-per-quitter of around \$7.00. Whilst this kind of comparison is difficult, \$7.00 is much less than the total unit cost to the community (i.e. per person who actually quits) of providing printed self-help materials (Davis, Faust & Ordentlich, 1984), or of brief counselling by a general practitioner (Cummings, Rubin & Oster, 1989).

Finally, although many researchers would be reluctant to concede this point, we do, in fact, already know quite a lot about what can be done to reduce smoking prevalence. A major problem is that the proportion of the total Australian health budget which is made available for health promotion, less than 1% of recurrent health expenditure, is simply not sufficient to permit the widespread and continued implementation of available intervention strategies. Perhaps some of our research funding should be used to develop strategies for inducing sustained attitude and behaviour change in politicians and health administrators, such that more resources are diverted away from the treatment of ill health and towards its prevention.

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A Survey of Australian Research on Early and Brief Interventions for Drug and Alcohol Problems

Wayne Hall

National Drug and Alcohol Research Centre
University of New South Wales
NSW 2033

Introduction

During the planning for the National Early Intervention Workshop, the Organizing Committee decided to compile a list of recent and current Australian research on early and/or brief interventions to reduce drug and alcohol use. Rather than simply compile research which had been completed and published, the Committee decided to conduct a survey of currently active researchers with the intention of learning about research that had been completed but was as yet unpublished, as well as research that was currently underway or which had been proposed or planned.

Method

A questionnaire was designed to gather the following information on early/brief intervention research projects: the principal investigators, the host institution, the source of funding, the target population and setting, the duration of the project, the screening instruments, the nature of the interventions, the research design, the occasions of assessment, the instruments used to assess outcome, the findings (if any), and any problems encountered in the research design or conduct.

The questionnaire was distributed to all persons whom members of the Organizing Committee had identified as engaged in such research. It was also sent to Directors of Drug and Alcohol

Services in each of the States and Territories, and to University Departments where such research was likely to be undertaken. To increase the chances of learning about research by persons unknown to the Committee, the covering letter asked recipients to pass on copies of the questionnaire to persons whom they knew to be engaged in early and/or brief intervention research.

Results

In all 44 questionnaires or other responses (e.g. letters) were received within a week of the return date. Four of these replies described research studies which did not strictly fall within the survey's definitions of early and/or brief intervention (namely, an intervention requiring up to two hours of time which was delivered to individuals identified as having a drug and alcohol problem, or at risk of developing such a problem).

These ineligible replies described: a randomized controlled trial of more intensive forms of psychotherapy for smoking and problem drinking; a survey of drug and alcohol agencies for young people; an evaluation of community-based prevention programs; and a brief intervention program for compulsive gamblers.

A further two letters contained suggestions about the content of the workshop. One suggested that the program should include

caffeine as a drug worthy of early and/or brief intervention, and the other suggested that the workshop should include a discussion of brief interventions to reduce needle sharing in intravenous drug-users. The remaining 38 replies were classified into the following categories: studies of screening (12 replies), and studies of brief or minimal intervention (26 replies). The screening studies were further subdivided according to the drug of interest into alcohol only (7 replies) and alcohol plus other drugs (5 replies). The intervention studies were subdivided into three groups: those with cigarette smoking as the target of intervention (13 replies); those with alcohol as the target of intervention (10 replies); and those with multiple drug targets, such as tobacco, alcohol, prescription and illicit drugs (3 replies). All States were represented in the replies to the questionnaire as shown in Table 1 which summarises the replies within each of these categories by the State in which the research had been done, or was in the process of being undertaken or planned.

The survey also succeeded in gathering information on projects that were underway or in the process of being planned. Fourteen of the 38 replies dealt with projects which had been completed, although not all of these had been

published as yet. The remaining 24 replies concerned projects which were underway or in an advanced state of planning (see Table 1).

Screening Studies

The majority of the screening studies (9/12) were concerned with excessive alcohol use among patients of general hospitals. In all such studies excessive users were given an intervention (which usually consisted of pamphlets and feedback about their drug use) but in none of these studies was there any evaluation of the intervention. Rather, the focus of the research was on screening.

The purposes of these studies were varied. Some were designed to evaluate the usefulness of particular screening methods (e.g. liver enzymes). Others were intended to identify the extent of excessive alcohol use in the hospital population, either as a prelude to a controlled study, or as a step on the way to introducing screening and intervention as a part of the clinical services provided by the hospital.

The general hospital and other medical settings were the location for the majority of the screening studies of alcohol and other drugs (4/5). One

Table 1: Type of study by State of origin

	Screening Study	Intervention Study		
		Alcohol	Tobacco	Multiple
NSW	1	2	8	1
VIC	2	1	2	2
QLD	0	1	1	0
SA	5	1	0	0
WA	3	3	2	0
TAS	1	0	0	0
NT	0	1	0	0
Completed	4	3*	6	1
Underway	8	7	7	2
TOTAL	12	10	13	3

* An additional study was conducted in New Zealand by a researcher who is now resident in Australia.

such study provided computerised versions of commonly used screening tests, such as that of Chick and his colleagues, and evaluated their acceptability to staff and patients in general practice, general hospitals, and community health centres. It also compared their performance to existing paper and pencil tests. Three of the screening studies were conducted in novel settings, two in the workplace, and one with drinkers referred by the courts.

Most studies used multiple instruments to screen for the problem of excessive drug use. The CAGE and the instrument of Chick and his colleagues were the most commonly used (each in the three studies), followed by the MAST (2 studies), with each of the following instruments being used in one study: CAST, Mortimer-Filkins, WHO, self-identification, and the researcher's own instrument.

Most of these studies were still in progress at the time of the survey. Of those which had been completed, the results were mixed. A study of liver enzymes had failed to replicate earlier results. A study of hazardous alcohol consumption in an orthopaedic ward indicated that 16% of patients were problematic users, and that the WHO scale was the most sensitive screening instrument. Only one in three of the patients identified by the screening instruments were identified as problem drinkers by the staff. The study of the computerised assessment methods suggested that it was acceptable to staff and patients, and that it was as good as existing methods in detecting excessive alcohol consumption. The work-based study demonstrated that the Mortimer-Filkins scale of alcohol problems predicted accidents in the workplace over the subsequent 12 months. The majority of the screening studies (7/12) were funded by the institutions (usually hospitals) in which the study was carried out. Two each were funded by RIDAAC (total amount \$82,000), two by NH and MRC (total amount \$225,000), and one by the Australian Associated Brewers (\$3,000).

The major problems identified by the respondents were difficulties in obtaining approval for studies (e.g. from ethics committees or trade unions) and difficulties in getting the cooperation of nursing

staff.

Intervention Studies

Tobacco

The most common type of study in this category comprised randomised controlled trials of minimal interventions delivered by General Practitioners to encourage cigarette smokers to quit (5/13). The interventions usually consisted of one or more consultations in which the GP advised smokers to quit and provided advice and pamphlets (and sometimes nicorette gum) to assist in doing so. These were usually studies conducted on substantial sample sizes (200 or more) with assessments at 6 and 12 month follow up. There was also one study in a General Hospital setting.

Five studies were conducted in non-medical settings: two in the workplace, two in schools, and one in the community. The workplace studies involved evaluating the impact of non-smoking policies in the workplace on the prevalence of cigarette smoking, and comparing the effectiveness of hospital-based and workplace-based quit smoking programs. The school programs involved a seven year follow-up of a minimal intervention designed to prevent students taking up smoking, and a novel program which identified adolescent smokers and helped them to quit. The community program was an 18 month follow-up study of persons who had contacted a telephone counselling quit smoking program. Screening in all cases was either by self-identification, or by GP inquiries about the patient's smoking habit.

The GP intervention studies generally demonstrated that GP interventions were superior to minimal interventions (advice only), and to self-treatment. Two studies of the extent to which GPs continued to use these interventions after training produced seemingly different results. One study found a much higher rate of continued use (80%) than the other (50%). The difference in outcome can be explained by differences in intensiveness of training GPs received and in the extensiveness of their experience with the program. In the first study, for example, the GPs had

participated in the intervention trial, whereas those in the second study had attended a single workshop.

The funding for these projects came from a variety of sources, with some of the larger projects having multiple sources of funds. Seven studies were funded by the host institutions. The remainder received funding from the following sources, in order of amounts: RIDAAC (\$187,000), Chest Hospital Anti-Tuberculosis Association (\$90,000), Glaxo (\$78,000), National Heart Foundation (\$60,000), Eastern Sydney Area Health Service (\$60,000), New South Wales Directorate of the Drug Offensive (\$20,000), and the NH and MRC (amount unknown). In the school setting the major problems were getting Education Department approval for the study (because of the complication of requesting student consent to participate in the absence of parental consent for those smokers whose parents did not know they smoked), and fitting the intervention program into the schools' schedules. In the general practice setting the problems reported were: a lack of validated scales of dependence and motivation to quit; difficulty recruiting sufficient subject numbers; the General Practitioners varying the assigned interventions; and problems locating subjects at follow up. In the workplace study, the major problem was the workers' hostility to the recently introduced policy of non-smoking in the workplace, much of which was directed towards the program.

Alcohol

There were ten replies received that reported on evaluations of early interventions for problem drinking. Nine were randomised controlled trials and one a pre- post-program comparison. Eight were situated in a medical setting: six in a general hospital, and two in general practice. One was in a courtroom setting with drink-driving offenders, and one was located in shopping centres where shoppers were invited to submit to a screening of their alcohol consumption.

The intervention in most cases consisted of a combination of an assessment of alcohol consumption, advice on safe levels of consumption, and pamphlets to take away which contained advice on how to reduce consumption. The control

interventions were either minimal advice or no intervention. The screening instruments which were used included: the CAGE (three studies), a quantity frequency measure of alcohol consumption (three studies), the WHO screening instrument (two studies), and the CAST, Random Breath Testing, and the researchers' own instrument (one study each).

The results of the completed studies were mixed. One large published study reported a benefit of the intervention (referral to a specialist drug and alcohol treatment service) which was maintained at 12 months. The other smaller study failed to show any benefit of intervention but the sample size was smaller than originally planned because of difficulties in recruiting sufficient numbers of subjects.

Four of the studies were funded by the host institutions. The remainder were funded by a variety of sources, namely, NCADA (\$380,000), NH and MRC (\$206,000), Community Health and Anti-Tuberculosis Association (\$105,000), and Australian Associated Brewers (\$36,000).

The problems identified by the respondents included the following: the selection of a suitable screening instrument; recruiting sufficient subjects to provide adequate statistical power for the comparison of different interventions; the selection of appropriate methods of data analysis; ethical issues involved in withholding an intervention from drinkers identified by the instrument; and problems in following up clients after the intervention.

Alcohol and Other Drugs

There were only three studies in this category, one of which had been completed, one of which was underway, and the other of which was still at the planning stage. The completed study was a retrospective analysis of compulsory referral for treatment of offenders coming before the court with a drug or alcohol problem. The outcome assessed was whether or not the individual remained in treatment. The results indicated that clients with alcohol problems did better than those with drug and alcohol or other drug problems in terms of

remaining in treatment. No information was collected on the effect of the intervention on drug use or subsequent rates of offending.

The study in progress was an evaluation of four types of intervention in the workplace which aimed to change a wide variety of cardiovascular risk factors, most particularly cigarette smoking and hazardous alcohol use. The study in planning was designed to screen for all hazardous drug use (tobacco, alcohol, prescribed and illicit drugs) and to intervene with those so identified. It was at the stage of selecting appropriate screening instruments and of deciding how potential subjects would be sampled.

The completed project had been funded by the Law Foundation of Victoria. The study in progress was being funded jointly by the Commonwealth Department of Health and Community Services, the New South Wales Directorate of the Drug Offensive, and the New South Wales Ambulance Service. The study in planning did not identify a funding source.

The problems identified by the respondents included: possible contaminations of different interventions in the same workplace setting; loss of clients between intervention and follow up; the selection of suitable screening instruments for illicit and other drug use; the choice of control conditions; and the issue of how to screen non-English speaking clients in a general hospital setting.

Summary

The survey results indicate three major areas of research activity in early and brief interventions for problem drug use:

- (1) screening for alcohol problems in general hospital settings;
- (2) brief interventions to increase smoking cessation in General Practice; and
- (3) brief interventions to reduce alcohol consumption in General Hospital patients.

A small number of studies have begun to explore the effectiveness of screening and intervention in the workplace, schools and the community. As yet, there has been little attention to screening and intervention for hazardous use of prescription and illicit drugs.

The problems encountered in research to date have varied with the setting. The selection of a suitable screening instrument for problem or excessive alcohol use has been a common problem in all settings. So too have been difficulties in recruiting subjects into intervention studies, and in keeping in contact for the purposes of follow-up assessments. Ethical issues in withholding interventions from problem users, and practical problems in securing the cooperation of hospital and other staff have also been reported.

Early and Minimal Intervention: Barriers to Implementation

Rene G. Pols

Department of Psychiatry
Flinders University
South Australia 5042

Introduction

The review of early intervention strategies by Babor, Ritson and Hodgson (1986), gathered considerable evidence supporting the efficacy of early intervention strategies in primary health care settings. Since that time, a number of other reports have strengthened the view that intervention is indeed effective (Saunders, Burns & Reznik, 1988; Heather, Whitton & Robertson, 1986).

Furthermore, a number of other screening methods have also been reported (Saunders et al., 1988; Davidson & Raistrick, 1986; Elvy & Wells, 1984; Litt, 1988; Skinner, 1985), and some of these have been shown to be potentially useful in primary care (Litt, 1988; Skinner, 1985) or hospital settings (Saunders et al., 1988; Skinner 1985; Haine & Wallace, 1985; Chick, Lloyd & Crombie, 1985). It appears that it is only as a result of the studies by Elvy that the research has been transposed into systematic screening for alcohol problems as a routine practice (Elvy, 1987).

The existence of a lag period between the demonstration of the efficacy of a new procedure and its more general use is to be expected. However, within the area of alcohol- and drug-related problems, the lag appears to be particularly prolonged. This paper aims to explore some of the obstacles to the dissemination of research information and the application of the body of knowledge in the drug and alcohol area by general health workers for whom this new knowledge is

most applicable.

It is argued that the delay in the application of this new knowledge in the drug and alcohol area is related to conceptual issues and the nosology of drug-related problems; societal, economical, political and cultural factors; the fragmentation and internecine conflicts between specialist health care professionals concerned with drug-related problems; the health care systems providing specialist services for persons with drug-related problems and the lack of training for health care workers in this area (Pols & Henry-Edwards, 1988).

Conceptual Issues

Nomenclature

The language which is used in this specialist area is of considerable interest. In the WHO paper on nomenclature (World Health Organisation, 1981), the expert group described four levels of definition for the word "drug." They indicated that "in the present context, our concern is primarily with those entities that we can define as non-medically-used psychoactive drugs that are likely to be self-administered." Whilst such a definition includes most drugs of dependence, it also excludes many of the substance-related disorders, (e.g. analgesic nephropathy), simply the misinformed use of chemical substances, (e.g. vitamins), or the medical complications of prescribed drug use. Whilst clinical substance use which results in phenomena associated with neuroadaptation,

presents specific clinical problems, the use of the chemical substance remains the essential behaviour which results in problems.

In focussing on the chemical substance there is a shift away from the primary focus of this specialist body of knowledge. The central issue is in fact, the personal use of chemical substances. Such a description does not depend upon the pharmacology of the substance, the society in which it is used, the frequency of use or neuroadaptive potential; it is a simple non judgmental description. Such use can be clearly described by defining the type of substance; quantity, frequency and pattern of use; the legal status of the use and any socio-economic, psychological or medical problems resulting from use, acutely or in the long term. Judgments can also be made in terms of the degree of hazard which is posed, the degree of neuroadaptation which is present (WHO, 1981), the degree of priority which the user is giving to the use of the substance (Drew, 1986) and whether the user has any motivation to change the behaviour.

Clinically, the history of the use of the chemical can also be described in terms of social and individual predisposing, precipitating and perpetuating variables. In my view, the use of such terms as "drug," "addiction," "alcoholism," "dependence," "abuse," obscure the multivariate causality of personal chemical substance use and contaminate objective clinical information with value-laden, misinformation. "Drug" has come to be a value-laden term. Perhaps we need a new terminology, e.g. "chem-use" or "chem-probs" which tries to avoid the value judgments.

Causal Models

Another conceptual issue in the area is that of a causal model. Again the WHO Expert Group provided a complex social learning model which could accommodate important biological variables (WHO, 1981) and which was endorsed by the British Psychological Society (Robertson, Hodgson, Orford & McKechnie, 1984). Within it, there is room for an elaboration of the notion of "drug use." There is little doubt that persons who habitually use chemical substances in spite

of repeated and serious harmful consequences, are in an existential dilemma. As indicated by Drew in a series of papers "they have dug a hole for themselves and cannot get out of it" without reviewing their priorities and making decisions to change their lifestyle and often their value system (Drew, 1986, 1986b, 1987). Such a perspective is also a part of recent psychological research concerning motivational counselling (Miller, 1983) and decision theory (Mann & Janis, 1987).

The motivation for persons using chemicals to change to a different set of personal priorities is the central issue in contracting with seriously neuro-adapted clients. It is also at the heart of the notion that "alcoholics" or "addicts" have to "hit rock bottom" before the decision to change can or will be made. This clinical aphorism, more than any other, is reinforced repeatedly for general health workers who only recognise end stage problems related to chemical use. It results in pessimistic, half hearted, negative and judgmental approaches to clients and referral on to experts who are perceived to be ineffectual because the same clients return time and again with increasing problems. The only feedback to the general health system consists of those clients who are perceived or actual therapeutic "failures."

The information about behavioural change and decision making about health risk factor reduction, is not generally perceived to be important when personal chemical use is discussed. Yet the parallel between the two areas is real and the close relationship between early intervention in substance-related problems and general health promotion needs to be further explored.

Societal and Cultural Factors

There are considerable social and cultural factors which are obstacles to change. They include cultural norms and values, the structure of the health, welfare and educational systems and economic issues.

Cultural norms and values

These are best seen when the use of alcohol is examined. Pols & Hawks (1987) described some

of these in the NH & MRC discussion paper on responsible drinking. They identified attitudes, drinking in association with sport, "shouting," drinking as celebration and the traditions surrounding heavy alcohol consumption by groups of workers, as all being involved in setting the Australian norm of excessive male alcohol consumption, the sanction of relatively minor problems and the collusion to hide those with serious problems.

Health and welfare workers share such norms. The diagnostic process is one which is designed to detect deviations from the norm. Because the norm for consumption is too high, hazardous consumption is not recognised. Because the norm is to ignore all but the most serious problems only the most serious or end stage problems are recognised or acted upon. Because the norm is to be a heavy drinker who "can hold his liquor" the person with problems is judged as "weak" and inferior, an object of derision. These attitudes in health workers have all been documented (Jurd & Lee, 1989; Wechsler & Rohamn, 1982; Wechsler, Levine, Edelson, Rohman & Taylor, 1983), and as a result pessimism abounds (Pols & Henry-Edwards, 1988) and new information is ignored or dismissed. The impact of new information upon health workers' attitudes and clinical behaviour could be further examined.

The structure of the health and education systems

In an interesting analysis of responses to problems related to the personal use of chemicals, Pols and Henry-Edwards (1988) identified a series of stages in the response to problems in Australia. Initially, in the 50s and 60s individual clinicians saw the need to provide services for clients with end stage problems, usually within the main stream health system or in the voluntary or private sectors. This was followed by a period during the 60s and 70s where the mental health system was perceived as having the clinical expertise. As this system progressively came to be more a part of mainstream health services, the mental health system extruded services for persons with problems related to chemical use into statutory authorities or special departments.

It is only in very recent times (1982 onwards) that

there has been somewhat of a move of these clinical services back into the mainstream of the health system (Pols & Henry-Edwards, 1988). Along with this extrusion of clinical services for clients with problems related to the use of chemicals, there was a loss of significant clinical expertise from the mainstream. That problem has created a further obstacle to the dissemination of new knowledge. The education and training of the bulk of health and welfare professionals is primarily of an apprenticeship nature. Most of this training occurs in general teaching hospitals or in welfare agencies. The most competent clinicians in the treatment of clients with drug-related problems are often located outside these systems.

Adequate role models for junior clinicians are absent, out of date, inaccurate information and knowledge are presented, and, as Sanson-Fisher (1986) has demonstrated, negative learning results. At the same time, otherwise competent, caring and thorough clinicians behave in a paradoxical way as they do not intervene in the early stages of problem behaviours in spite of the very high prevalence of the hazardous or harmful use of chemical substances, presenting in all clinical situations. This is contrary to their clinical training and emphasis on early intervention in other health areas (Pols & Henry-Edwards, 1988; Pederson, 1982; O'Neill, 1983).

The major NCADA report reviewing the education and training of professional and non-professional workers in this area (National Campaign Against Drug Abuse, 1987) also addressed some of these issues. It echoed the workshop on professional education held by AMSAD in 1982 and 1985 (AMSAD, 1985; SAPMEA, 1987) and the joint NH&MRC, AMSAD and NSW Drug and Alcohol Authority conference on Medical Education in Sydney in 1985 (Saunders & Forcier, 1986). The paucity of undergraduate education and training for medical practitioners is clear. It has resulted in an educational initiative in medical schools (Saunders, 1986). The same lack of education has been recognised for nurses and other professionals. This has led to the development of the Nurse Education Project at Royal Prince Alfred Hospital, courses at Macquarie and Curtin Universities and at the Hunter and Lincoln Colleges of Advanced

Education. These responses are a long way from being generally available for the education of all health and welfare professionals. Thus a further block to the dissemination of new information to general health workers is the fact that there are very few opportunities for formal education in this area of clinical practice. Perhaps the processes of education and training are also potential areas for research.

Political and economical issues

Some \$6.8 billion was spent on the purchases of tobacco and alcohol in 1982. In 1983 governments collected \$2.63 billion in revenue from the sale of alcoholic beverages alone (Pols & Henry-Edwards, 1988). The size of such expenditures and revenues in themselves, imply a large underlying economic system of production, manufacture, distribution and sales. This is so, quite apart from the related service and secondary industries (including the health, welfare and correctional industries) which create and maintain substantial employment surrounding the personal use of chemicals.

Saunders sees it as a paradox that "governments make the greatest noise about those drugs that cause the least harm" (Saunders, 1989). Such a paradox is a consequence of the complex relationship of costs and benefits in economic and social terms when the personal use of chemicals is considered. Politically also, it is a minefield because to make changes to the regulations regarding chemical use affects the norms and values of people, and political change usually follows the change in community norms and values rather than preceding them. This inherently conservative process is yet another block to the dissemination of new knowledge.

Fragmentation of health workers

Problems related to the personal use of chemicals are clinically ubiquitous. They present to general practitioners, nurses, parole officers, psychologists, police, physicians, social workers, psychiatrists, occupational health workers and surgeons. Voluntary agencies have a large investment in the area. There is no clearly

acknowledged professional group or institution which provides authentic and authoritative leadership in the area. The unique body of knowledge pertaining to the area is truly multidisciplinary. This situation has resulted in leadership coming from a variety of areas. New knowledge in one area may not be communicated or understood in another. The integration of new information from various areas is slow.

This has led to competition between professional groups or subgroups as to their individual influence in policy and planning, the establishment of appropriate models of causality and intervention and curriculum content. The importance of this process of inter-professional rivalry and conflict has been underestimated and is also a major obstacle to the devolvement of new information.

Research Issues

There has been little research on the process of change in the area of personal chemical use. Australian cultural norms, although anecdotally described, have not been investigated in any great detail. The whole area of cost-benefit analysis and the economics of the personal use of chemicals has been little studied in Australia. Although a glossary of terms has recently been produced, it would seem that there is room for a study of the language surrounding the personal use of chemicals. Systems of health care delivery, curriculum content analysis, policy development and change, information systems research; all these areas are valid areas of research which impact upon the use of the new knowledge which is developing. An updated version of the WHO expert group paper exploring nomenclature and causal models could be useful. There are clearly many other areas of research which could be done to examine the social processes of change in this area.

Summary

Some of the obstacles to the use of new information by general health workers have been discussed. Essentially it would seem that researchers and clinical experts in the area of personal chemical use are a divided group who in the main, are

located outside the mainstream of clinical practice and the educational and training systems. The terminology used maintains cultural norms which are distorted by the considerable misinformation it conveys. These factors perpetuate irrational and late responses to problems.

Whilst on one level Saunders' paradox 5 is true, i.e. that "In terms of the prevention of alcohol problems the behaviour of our politicians may not be of much concern" (Saunders, 1989) on other levels it is clearly an important obstacle or facilitation of the use of new information, e.g., NCADA. All these issues need to be considered and addressed by researchers, if new early intervention activities are to be used in the system from which clinicians expert in the management of drug-related problems, have mostly been extruded.

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SECTION III

Rapporteur's Reports

Early and Brief Interventions in General Practice Settings

Rodger Brough
Wayne Hall (Rapporteur)
John Litt
Robyn Richmond

Introduction

Although the group recognised that different types of drug use were suitable for GP intervention (e.g. alcohol, tobacco, prescription drugs, over-the-counter medications, and perhaps illicit drugs in practices located in high risk areas), it focussed its discussion on alcohol and tobacco because these are the most prevalent drugs used by patients in general practice, and they are the most extensively investigated as subjects for intervention in this setting.

Tobacco

The prevalence of tobacco smoking is 33% among men and 28% among women, and so a substantial proportion of the GP's clientele will be cigarette smokers.

There is no need for elaborate methods of screening for cigarette smoking: whether or not a person is a smoker can be readily determined by asking them. Objective indicators of smoking, such as cotinine and carbon monoxide are not necessary to validate self-report (certainly not on screening, and arguably not even for follow-up), although they may be useful for research purposes in assessing a change in level of smoking.

There is a need for better methods of assessing nicotine dependence. The Fagerstrom scale is unsatisfactory for this purpose; Russell's scale is better but far from perfect. It is also desirable to develop measures that predict commitment to change with a view to better matching

interventions to patients.

Suitable models of GP intervention for smoking exist, e.g. the revised Smokescreen program which enables intensity of intervention to be better matched to patients. Such programs have been shown to be more effective than control conditions involving simple advice to stop smoking.

Research has begun on the cost-effectiveness of GP intervention for smoking cessation. There are good reasons for believing that such interventions are more cost-effective than doing nothing but more research is necessary to explore this issue, particularly if health administrators are to be persuaded to fund such GP interventions.

The major barriers to implementation that were identified as requiring more research attention were:

- more effective ways of disseminating the findings of such research to GPs and to funding authorities; ways of reducing disincentives to the adoption of such methods (e.g. health insurance rules, perceived ineffectiveness).

The major outstanding research issues were, in order of priority:

- research on the cost-effectiveness and cost-benefits of GP interventions for smoking;
- research into better matching of patients to treatment (especially the patient's stage of

change and level of dependence to the intensity of the intervention);

- process research on the relevance of stage of change to patients' responses to intervention;
- the application of relapse prevention methods to reduce the erosion of the benefits of interventions over time;
- better ways of disseminating research findings to GPs and administrators.

A number of methodological problems were identified which need to be addressed in research on GP interventions for smoking. These were:

- recruitment of GPs into studies, e.g., addressing disincentives such as health insurance, time demands on the GP, cooperation of practice staff (especially receptionists);
- recruitment of patients, e.g. varying GP enthusiasm, dealing with the law of diminishing returns in patient recruitment within a practice;
- ensuring that GPs comply with the treatment protocol;
- assessing the extent of patient compliance with the intervention.

Alcohol

The prevalence of drinking problems and levels of alcohol consumption that pose a health hazard is estimated to be around 20% in the general community. Consequently, GPs are likely to encounter a substantial number of such patients in their practices. Evidence indicates, however, that GPs are not very good at identifying such patients because they are inclined only to notice patients who have severe alcohol-related health problems and symptoms of severe alcohol dependence.

There is a lack of suitable screening instruments for use in general practice with the result that researchers have fallen back upon the CAGE

and MAST, or simple measures of quantity and frequency of drinking.

There are a number of good candidate models for suitable interventions for problem drinkers in general practice, (e.g. the WHO Collaborative study, Wallace and Haines, Peter Anderson), and others are in an advanced state of development and testing (e.g. Alcoholscreen). The evidence for the effectiveness of these interventions in reducing consumption and problems is promising, although replication and extension of these findings is desirable. At this stage of research there have been no studies of cost-effectiveness.

Research Issues

A general problem with intervention is our lack of good information on the community prevalence and natural history of alcohol use and problems in Australian society. General practice interventions would be better informed if more such information was available.

There are urgent needs for better instruments measuring alcohol consumption, alcohol-related problems, and alcohol dependence in general practice settings, and for the standardisation of criteria for intervention for each of these (allowing that the NH and MRC recommended levels may be sufficient in the case of consumption).

More attention needs to be paid to the sensitivity and specificity of screening instruments. The use of criteria that are too "low" produces problems with false positive rates, with attendant dangers of patients being incorrectly labelled as problem drinkers. Conversely, setting higher levels of consumption and/or problems for intervention substantially increases the number of general practice patients who need to be screened to generate a sufficiently large sample size to adequately evaluate the effectiveness of interventions.

A high research priority must be the rationalization and validation of the available intervention models, i.e. identification of the

minimum effective ingredients of the interventions, and dissection of the processes that underly effective intervention. A desirable end-product of such research would be a hierarchical stepped set of interventions tailored to the severity of patients' problems and responses, or lack thereof, to simpler forms of intervention.

More attention needs to be paid in outcome studies to extending the period of follow-up beyond 12 months, and to providing validation of self-report measures to enhance the credibility of findings among medical practitioners.

There will be major barriers to the successful implementation of the findings of such research.

A major one worthy of investigation is how to change the views of alcohol-related problems and problem drinking which GPs share with the wider community, viz, that "alcoholism" is a disease of the minority which has a poor outcome with or without treatment; and that NH and MRC recommended levels of safe drinking are too low.

Research will also need to address effective ways of identifying and rectifying GP's skill deficits in interviewing, identifying readiness to change, and in counselling patients about their drinking.

Early/Brief Intervention in Hospital Settings

James Bell
 Ilse Blignault (Rapporteur)
 Elizabeth Chalmers
 Stephen Hanratty
 John Price
 Ivor Shaw

What is known about prevalence

Alcohol

- Countless studies show an over representation of persons with hazardous and harmful levels of alcohol consumption among patients in general and psychiatric hospitals, especially in some wards and units (e.g. orthopaedic ward, accident and emergency unit). Actual figures depend on criteria used. Standardisation (of instruments, cut off points etc) would assist future research and clinical practice. NH & MRC consumption levels should be treated as “gold standard”.
- Less is known about the prevalence of use of drugs other than alcohol.

Tobacco

- There is probably a reasonable body of data on use of tobacco among hospital patients, indicating greater use than in the general population.

Illicit drugs

- Few data are available and would be extremely difficult to obtain in this setting as a result of confidentiality, reliability issues etc., and the likely low number of such cases.

Prescription drugs (benzodiazepines specified)

- Few data are available, but it would not necessarily be difficult to collect some, given the likely reasonable numbers of cases.

Polydrug Use

- Polydrug use is common so it would be helpful to look at different drugs at the same time.

What is known about instruments for identifying problematic use

Alcohol

- Many instruments are available. There is a need for standardisation or at the very least agreement on the core instruments to be used, along with other instruments of researcher's choice, including perhaps a quantity-frequency index. Separate questions are needed about average or usual use (to tap regular use and dependency) and heavy use (to tap intoxication). Researchers need to report on distribution of consumption levels and/or problem scores for their samples.

Tobacco

- Any use of tobacco is defined as problematic. It can be ascertained by simple enquiry, including quantity-frequency data.

Illicit drugs

- Instruments are available, including urine screens. One can also simply ask about use and related problems, but it is unlikely that good data will be obtained in this setting.

Prescription drugs

- Blood and urine screening are possible, while for overdoses, clinical assessment is probably best.

Suitable models

- The initial response was that there do exist suitable models for early/brief intervention for alcohol and probably for tobacco, but there is little or nothing for other drugs. Subsequently, after much discussion of what was meant by “early/brief intervention” and “suitability” (e.g. Earlier than what? Briefer than what? What makes a model suitable for application in hospital settings?) It was agreed that there was little substantive knowledge available, although some of the general health/medical literature, including literature on compliance, may provide pointers. However, it needs to be remembered that “addictions” are a special area. With respect to alcohol, a package of identification, assessment and intervention, or identification and referral seems most widely used. For tobacco, identification is usually followed by simple advice, while for prescription and illicit drugs identification may be followed by referral to a specialist agency.

Evaluation, results, cost effectiveness

- The group was unable to say much about evaluation, results and cost effectiveness given the limited evaluation. Results are

encouraging, and it looks like such interventions will be cost effective.

- Barriers to implementation of what is known: the nature of the hospital setting, the “bio-medical paradigm of acute care medicine”, and a “technological solution to every problem”.
- Ethical issues - confidentiality, relevance of inquiry (identification) and intervention may be questioned, eg. for patient presenting with sore toe.
- Subject/patient recruitment : who refuses screening and/or intervention, who is in and who is out, and what happens to these people?
- Uncertainty as to who is the “change agent” i.e., the person responsible for implementing the interventions, and the exact nature of their role.
- Uncertainty about the best screening instruments and interventions.

Staff resistance

- Staff attitudes can be quite negative, often pessimistic and sometimes hostile. There is a need to develop ways of altering these attitudes or, at the very least, reducing their impact on the intervention programs.
- Staff often work with the stereotype of “dirty old man on park bench”. We need to dispel such stereotypes, and to increase staff knowledge and skills.
- Staff do not regard dealing with alcohol and other drug problems as part of their brief (issues of role desirability and legitimacy).

What needs to be known

- What do alcohol and drug counsellors in hospitals currently do?
- Role definition - who will be the “change agent” - a specialist or a non-specialist?

- Do nurses make the best “change agents”?
 - Training of alcohol and drug counsellors to work in this setting: what expertise is required to effectively perform the role?
 - What exactly is the impact of an alcohol and drug counsellor in the hospital? We need to create a model of a hospital with all its components and look at the effect of altering the various components - i.e. we need systems analysis and modeling.
 - How can research best inform services provision?
 - What aspects of a research or pilot project can be sustained for a continuing service? We need to be careful that the research paradigm does not overwhelm clinical service. We must keep sight of the need for the alcohol and drug history to be done routinely and we must be careful not to separate alcohol and drug issues from other hospital issues.
 - How do intervention programs in hospitals influence or tie in with professional education on alcohol and drug issues?
 - How important is modelling for other staff?
 - Which patient groups do we target, what do we want to achieve with these groups, and what is the best means of doing this?
 - How does early/brief intervention fit in with general hospital policy regarding alcohol and other drugs and with staff education?
 - Which is the best approach for selling early/brief interventions to hospital staff - a narrow, alcohol and drugs focussed approach, or a broader, general health approach?
- e.g. teaching hospitals, community hospitals and psychiatric hospitals.
- Researchers need to tolerate a little "messiness"; it is not an ideal world.
 - A point intervention is difficult to achieve in this setting.
 - The separation of research and service provision evaluation is not always built into clinical service.
 - The “take home” message from research is not always clear for alcohol and drug counsellors, never mind for non-specialist staff.
 - Confusion and uncertainty about early/brief interventions.
 - Poor research methodology e.g. issues of sample size, power, allocation to groups etc. and lack of standardisation.
 - Incomplete or limited reporting in journals which focus on outcome rather than process.
 - There is a need to appoint a statistical consultant for major research projects, and to report qualitative information where it will be helpful.

Highest priorities

- Research on how hospital settings may be made more receptive and responsive to early/brief interventions for alcohol and other drugs, especially for alcohol and tobacco.
- Research on prevalence of use of prescription drugs among hospital patients, and assessment of problematic use of these drugs.
- In general, methodologically sound research focussing on process as well as outcome.
- Standardisation of measures of alcohol and other drug use and related problems e.g. agreement on core measures.

Methodological obstacles to improving knowledge

- Lack of data pertaining to generalisation of intervention program's impact across settings

- Attention to accident and emergency departments where there has been little research to date other than the collection of prevalence data.
- Attention to special groups such as women, migrants, Aboriginals, youth and the elderly.

Early/Brief Interventions in Drug and Alcohol Problems Within Legal and Corrective Services

Robert Ali (Rapporteur)

Nick Heather

Keith Powell

Gregory Whelan

Preamble

Currently, programs exist which aim to intervene with individuals who enter the legal/corrective system. It would appear that the majority of these programs have failed to undertake evaluation research to determine their efficacy.

The working party recognises there are considerable difficulties associated with the undertaking of research within corrective institutions. However, we feel that the risks associated with prison life make it imperative for future researchers to be supported in their endeavours. This is of particular relevance with respect to Human Immunodeficiency Virus (HIV) transmission.

We recognised the appropriateness of gaining prisoner involvement in the development of programs aimed at effecting behavioural change in this target group.

The working party recognised the reluctance of some jurisdictions to implement programs based on overseas research. It was felt that locally based demonstration projects would reduce this concern.

Initiatives described in this document are specifically intended to enable early interventions or ration limited resources through the use of brief strategies.

Two perspectives appear important when discussing alcohol and drug use in relation to the prison setting. Firstly, the attributable cause of both licit and illicit substances in the sentencing of individuals is far from clear. Previously, there has been research undertaken in both Australia and overseas which has pointed to the "criminogenic" effects of alcohol. These studies have pointed to an association between intoxication and engaging in criminal activities. This has been particularly evident with respect to major crimes.

In more recent times, law enforcement officials have pointed to an escalation of individuals imprisoned as a result of intravenous drug use. Unlike those individuals who commit an alcohol-related crime, it would appear that the majority of these individuals are not under the influence of drugs at the time of committing the offence. As a consequence, the association of the offence with drug use will not be recorded in the sentencing of the individual. This represents a failed opportunity to use all the information that is available through the judicial process. To our knowledge currently there are no studies examining means of harnessing this information to assist in the detection of prisoners who would be suitable for future interventions while within the correctional system.

The second perspective relates to the prevalence of drug use by individuals while they are within

the correctional system. There have been relatively few studies that have looked at this issue in detail. In particular most studies appear to have concentrated on whether an individual has "ever used" intravenous drugs while in prison, rather than the frequency and circumstances surrounding the use.

Additionally, little attention has been paid to the unique environmental factors of the prison setting and their impact on the likely exposure to the risk of communicable diseases.

With regard to both these issues, we feel it is vital that concerted efforts be made to improve the quality of information available so that informed decisions may be made when determining future management initiatives by correctional services.

Screening Instruments

As mentioned previously, the working party noted that alcohol or drug involvement which resulted in imprisonment could be used to detect individuals at risk of an alcohol and/or other drug-related disability. However, not uncommonly, health care workers in the correctional system were not advised of the relationship, between the offence and the individuals substance use. This represents a failed opportunity to use information which is available.

We recommend that a demonstration project be established aimed at implementing a notification system for individuals who commit a crime that is associated with alcohol or other drug use. Currently there is no agreed systematic way in which this can occur. Additionally, there appear to be differences in counting rules and no responsibility by the courts to transmit this information. These issues make cross jurisdictional comparisons difficult.

It would appear that the majority of alcohol and other drug related offences are heard in the Magistrate's Court. In view of this we would recommend the establishment of the demonstration project occur in this area. In the

interest of promoting early interventions, we would recommend a similar system be operationalised in the Children's Court.

There appear to be significant problems associated with the use of established screening instruments aimed at detecting prisoners who use illicit drugs. These problems include issues related to confidentiality, harassment and lack of trust. At this stage we are pessimistic with regard to their utility within the prison setting.

Similar problems do not appear to exist with respect to screening for licit substances. To our knowledge, within the prison setting, no particular advantage is afforded to any of the screening instruments that are currently available.

The working party is aware that correctional services in at least one jurisdiction are contemplating the introduction of urinary drug screening. This will be introduced in an attempt to reduce the prevalence of drug use within prisons. The focus will be on deterring and punishing individuals who wish to continue using illicit substances.

However, it may well be that through the escalation of risk of detection, there will be an increase in the frequency of unsafe practices. For instance, the most commonly used illicit drug in prisons appears to be marijuana. Due to its relatively long biological half-life it is a substance that is easily detected through urinary drug screening. This may act as an incentive for individuals to use other substances whose half-life by comparison is short. This is of particular relevance given the AIDS epidemic and its potential impact within correctional systems. We believe it is essential for the consequences of such policy changes to be formally evaluated.

Suitable Models of Early/Minimal Intervention

There would appear to be a relative paucity of work undertaken in this area. Scant attention has been directed towards determining the

intensity of interventions required to facilitate behavioural change. Additionally, there do not appear to have been many attempts to intervene early with respect to modifying risks associated with prison life. The working party believe these issues should be central to any further research in this area.

A future project in this area could look at the efficacy of a "survival kit" designed for first time admissions to the correctional system. This program would be of a brief nature and would target intravenous drug use and sexual practices occurring in the prison setting.

Of equal interest would be a project designed to skill pre-release prisoners with respect to reducing the likelihood of relapse into drug use following discharge. The working party is aware that the constituent ingredients of these two projects will need to relate to these vastly differing environments. Further, we suspect that "brief" interventions for prisoner groups may need to be relatively more intensive due to the need to develop trust.

We are aware of the work, undertaken by Dr J. Barber, which is using computerised methods to effect behavioural change. This project is currently undergoing a formal evaluation. The potential for using computer aids to gain accurate information with regard to personal drug use may be of future benefit.

Evaluation

The working party is unaware of any completed evaluative process with regard to minimal/early interventions in the correctional system.

Cost-effectiveness

The working party is unaware of any cost effectiveness studies in this area.

Court Diversionary Systems

Currently, at least two jurisdictions have court diversionary systems in place for illicit drug users. These systems have been introduced

based on the belief that court diversionary systems offer a rehabilitative focus. However, the working party believes it would be useful to research the efficacy of the systems.

In Scotland there currently exists a diversionary system for individuals who are charged with alcohol-related crimes. This process involves a brief intervention of a cognitive behavioural design. The working party believes it would be desirable for a demonstration project of a similar type to be undertaken in those States where public intoxication remains an offence.

Judicial Reviews

The assessment of recidivist drink drivers was initiated during a time when the courts believed a dichotomous relationship existed with respect to alcohol dependency. This belief fuelled the expectation that taking away the licences of alcoholics would reduce road trauma associated with alcohol.

In more recent times strong evidence has emerged to support the notion of a continuum between non-dependent and dependent use. Additionally, beyond dependency there has been increasing interest in the adverse effects of alcohol associated with intoxication and regular use. Bearing these issues in mind, the assessment of drink drivers represents an ideal opportunity for early/brief interventions.

Recidivist drink drivers are referred to expert clinics for assessment by the court system in at least two jurisdictions. The timing of this assessment and the nature of the intervention is different. In one jurisdiction the assessment is undertaken prior to sentencing. The intervention that follows is of a brief nature given on an individual basis. In the other jurisdiction the assessment occurs prior to licence reinstatement and the intervention occurs at a group level. The working party believes the relative efficacy of these initiatives should be compared.

The working party is aware that scant attention has been paid to the development of brief

interventions for first offender drink drivers. Unfortunately those initiatives that do exist have not been formally evaluated. This important area should be further investigated.

Barriers to Research

General

- Confidentiality issues
- Need for both client and authority consent
- Migration within the prison system
- Lack of trust
- Prevalence data of questionable quality
- Lack of definition of the stage of an individual's motivation for change
- Release from prison without prior notice
- Loss to follow up
- Values of correctional staff

Methodological Obstacles

- Controlled trials are difficult to initiate in this setting
- Access to client group may be restricted
- Referral of appropriate clients from judicial system may be inadequate
- Follow up issues
- Ethical issues relating to a captured population

Research Priorities

Prisons

The development, trial and evaluation of a "survival kit" directed towards novice prisoners. This kit should aim to reduce the risk of exposure to HIV while in prison.

The development of a cognitive behavioural intervention aimed at minimising the risk of relapse following discharge from the correctional setting. A comparison of various program duration should be undertaken to determine the optimal intensity to effect behavioural change.

Assessment of the direct and indirect consequences of urinary drug screening. Particular attention should be paid to the individuals's exposure to HIV.

Determine whether an improved judicial reporting system of alcohol and other drug related crime improves the management of these individuals while in prison.

Court Diversionary System

Evaluation of the utility of court diversionary programs currently in existence within Australia. Demonstration project of a court diversion program for alcohol-related offences. This project should be based upon a system that has been developed in Scotland.

Judicial Reviews

Evaluate the relative utility of individual versus group interventions for recidivist drink drivers. Controlled study to improve the constituent ingredients of interventions which are directed towards first offender drink drivers.

Early/Brief Intervention In Community Settings

Andy Butlin
Erol Digiusto
Margaret Hamilton
Lineke Spooner
Tim Stockwell (Rapporteur)

The Community

Definitions

For the purposes of this discussion the potential target group for minimal interventions delivered “in the community” was deemed to be the entire population of persons experiencing harm associated with the use of psychoactive substances, and those “at risk” of future harm.

The settings considered were all those not specifically covered under other headings in this report. It was thought that the following might be promising areas for the application of minimal interventions (MIs):

- Educational institutions - primary, secondary and tertiary
- Community Health Centres
- Shopping centres and other public places
- Welfare services, adoption agencies, marriage guidance, child and family services
- Religious organisations
- Pharmacies
- Licensed premises

- Sport and other recreational clubs/societies
- Alcohol and drug advisory services
- Telephone counselling services

It was thought to be more fruitful to target problem behaviours (e.g. needle sharing, drinking and driving) in some cases, as opposed to aiming to reduce use of particular drugs. It was also recognised that most people use more than one kind of drug and that research and treatment efforts should not be too substance specific.

Prevalence

It was agreed that we are relatively knowledgeable about the prevalence of drug use and most types of drug-related harm for the community as a whole. There is a continuing need to update this information and to take account of changing trends in the types of drugs used and the methods of their administration. However, there are many gaps in our knowledge with regard to the prevalence of drug-use and harm among populations encountered in the specific community settings listed above. One exception is the use of drugs by children of school age, particularly those attending school. While comprehensive studies have been performed with students of tertiary institutions in Western Australia, the

generalisability of these findings to other States is unclear. It was also felt that more needs to be known about the drug-use of minority ethnic groups.

In addition to establishing prevalence of drug-use and drug-related harm, it was also thought to be important to ascertain the extent to which drug users are prepared to change across these various settings. Such information would help determine the feasibility of introducing MI in these settings. It should be noted that a high prevalence of drug-related harm among individuals accessed through a particular setting does not guarantee such feasibility; other factors such as ease of identification, ease of implementation of MI and responsiveness to this need to be taken into account also.

Are there suitable instruments for identifying problematic use of these types of drugs?

It was noted that there exist a great number of instruments for identifying problematic drug-use. These include questionnaires, assessment interviews, computer-assisted assessments and, in some instances, physical methods, e.g. analysis of breath, blood and urine samples. These measures may be used singly or in combination in order both to identify problem drug users and to monitor their subsequent progress. Some members of the group felt that self-report measures alone were adequate for most screening and follow-up purposes. A dissenting view was that multiple tests (e.g. the Chick Questionnaire plus blood tests or self-reported cigarette consumption plus expired CO) provided optimal sensitivity and specificity for both these purposes. It was agreed, however, that the reliability and validity of particular instruments needs to be continually reviewed - especially with regard to their application in novel settings. The CAGE questionnaire, for example, is both widely used and widely vilified by various alcohol experts around Australia. Thus, there is a lack of consensus as to the most appropriate instruments even in medical settings - let alone in other community settings.

It was felt that efforts need to be made to adapt

existing instruments for use by people of non-English speaking backgrounds and for those with literacy problems. The possibility that instruments assessing drug-related problems are biased towards those reported by males was raised as an issue for future research.

A criterion for assessing the suitability of assessment instruments for most community settings was brevity - especially as a precursor to a brief intervention. Thus the ten item WHO alcohol screening instrument was thought to hold promise.

The importance of measuring "preparedness to change" or "the stage of change" in drug users was stressed. A valid, reliable and simple to use instrument was vital if MIs were to be tailored and adapted to individuals at different stages of preparedness to change.

Are there suitable 'models' available for MI?

This question was interpreted in two ways:

- i) do we have appropriate strategies for conducting MI in these settings?
- ii) do we have an understanding of the mechanisms and processes whereby MI is effective for some people in some settings?

In both cases it was felt that it was too early to be sure of this since it is unclear if models which appear to have been successful in medical settings will generalise elsewhere. Will they generalise to drugs other than alcohol and tobacco? To the various "special" sub-groups of problematic drug users? For example, will methods developed with mainly adult patients apply to school children and students?

The importance of an adequate theoretical understanding of the processes whereby MI can be effective was stressed. This is particularly important if MI is to be introduced flexibly and creatively in a wide variety of novel settings. The principles of motivating drug-users to change as described by W.R. Miller (1983, 1989) were recommended as the basis for developing novel

strategies to be tested in new settings.

Have they been evaluated? With what results?

Current Australian research is underway in which the effectiveness of MI is being evaluated in a shopping centre (Bartu et al., 1990) for at-risk drinkers, and as delivered by peers in a school-based quit smoking program.

The group were unaware of any research in Australia or overseas in which MI had been systematically implemented and evaluated by a community-based alcohol and drug agency. Some such agencies send out self-help material and provide single sessions of assessment and advice (e.g. Stockwell & Clement, 1989; Ruzek, 1987) but the effectiveness of these procedures has not been evaluated in these settings. However, both Miller et al (1980) and Heather et al (1986) provide suggestive evidence that "bibliotherapy" (or self-help booklets!) can assist some problem drinkers to cut down to harm-free levels of intake.

In general, there is often resistance from specialised drug and alcohol agencies to offer MI programs - or any program with a harm reduction/controlled drinking approach.

Are they cost effective?

Needless to say it is impossible to establish cost effectiveness in advance of establishing any treatment effectiveness. However, evidence of any effectiveness of some brief procedures will almost certainly imply cost-effectiveness, e.g. computer assisted MI in shopping centres which appears to reach many at-risk users with very minimal running costs (Bartu et al., 1990).

Establishing cost-effectiveness will be raised as a major priority in extending MI programs into other community settings.

What are the barriers to the implementation of MI in community settings?

Barriers to the implementation of the promising MI findings in traditional health-care settings to

other community settings were identified as residing within both the research and 'therapeutic' communities, and also in the relationship between the two.

The research community needs to ensure that positive results with new interventions are disseminated in ways accessible to service planners and providers. In particular, face-to-face methods of communicating new findings are likely to be more effective than the written word. It is also still beholden on the research community to demonstrate that MI can be effective in a wide range of community settings, when delivered by various kinds of personnel to different populations of drug users.

There are a number of other special problems inherent in applying the findings of large, high-profile research projects to routine clinical practice, e.g., many of the procedures were dictated by the needs to evaluate MI - how do we know whether the research procedures themselves were not responsible for superior efficacy (perhaps in combination with elements of the treatment package per se)? Furthermore, delivering MIs to many people who mostly subsequently fail can be a very demanding and dispiriting process - what can maintain the enthusiasm of the service deliverer in the absence of the prestige associated with a well-funded research project? This latter point also raises the general issue of barriers to implementation arising from the possibly intrinsically unrewarding nature of delivering MI routinely to a group who are mainly unprepared to change. Failure to adapt procedures and expectations of reasonable outcomes for such individuals may be behind this problem. Adoption of Prochaska and Di Clemente's model of the Stages of Change is thought by many (e.g. Miller, 1989), to offer hope for overcoming this problem. Other interventions such as supplying support, consultancy and educational services to general health and primary care workers may also serve to sustain their flagging enthusiasm (Clement, 1987).

A more general obstacle to implementation was seen to be the inherent conservatism of traditional

direct treatment agencies for people with drug and alcohol problems. Specialisation in such services may become an impediment to the widespread adoption of MI procedures by:

- a) implying that the treatment of the problems associated with drug use is a specialised business which is time-consuming and can only be carried out by highly trained experts; and
- b) the need to protect professional specialisms out of self-interest.

What needs to be known?

The main focus of research should be to establish the feasibility of MI in the wide range of community settings noted above. This would involve preliminary studies of the prevalence of drug use among populations using these settings, the ease with which harmful or potentially harmful patterns of use can be identified in these settings and the knowledge and attitudes of the potential service deliverers. MI methods will need to be developed which are appropriate both in content and intensity to each of these settings. The extent to which these need to be embedded within a general health promotion or prevention framework if they are to be widely adopted also requires investigation.

It will also be important to discover the degree to which various populations at-risk of drug-related harm display different degrees of preparedness to change. Similarly, it is important to establish what sorts of procedures and goals are appropriate for individuals at these different stages. At the simplest level, harm-reduction strategies may be more appropriate for those least prepared for long-term change, whereas strategies aimed at enabling use-reduction may be more appropriate for those contemplating or decided upon such a course.

It will also be valuable to discover how the following factors influence the success of MI procedures:

- the discipline and personal qualities (e.g.

empathy, status) of service deliverers

- the severity of the drug problem itself in terms of extent of use, dependence and related problems.

Studies of cost-effectiveness will be needed to convince both potential service providers and funders of the viability of MI in new settings. These will need to take account of the cost-effectiveness of directly competing activities.

A related question concerns whether there exists a "prevention paradox" in relation to drugs other than alcohol. That is to say, do the less severe forms of drug problem (which are particularly amenable to MI) in fact contribute the most to the overall costs (in human and monetary terms) resulting from drug use by virtue of their wider prevalence? (Kreitman, 1986). This would be further support for the wider uptake of MI.

Field application and program evaluation needs to be conducted as rigorously as assessing for therapeutic effectiveness. This will often necessitate qualitative investigations into the constraints under which agents in different community settings are operating, e.g. lack of management support for giving priority to alcohol and other drug problems.

Priorities

Target Groups

MI for persons under 18 has been almost entirely neglected: it is suggested that this should be rectified. MI approaches for IV drug-users and those dependent upon benzodiazepines also require development. However, MI for problems related to alcohol and tobacco should still be given top priority in recognition of their far wider prevalence and overall cost to Australia.

Settings

Community health centres would be settings in which most populations of drug users could be

accessed. More research should be diverted towards MI adapted for settings in which drug and alcohol use occurs, e.g. server intervention

training for bar staff. The role of pharmacists could be usefully extended in relation to many drug related problems - or at least the viability of this explored.

Barriers to Implementations

Identifying these should be regarded as a research priority. What are the perceptions of potential service deliverers and their clients which may be impediments? These are likely to vary widely across different settings.

Cost-Effectiveness

This is important to establish if widespread use of MI is to be encouraged. Health economists may need to be recruited to the field for this purpose.

Preparedness to Change

Measures of this require development and validation. They promise many advantages, e.g. matching intensity and type of intervention to most appropriate clients, reducing disenchantment of service providers.

Funds for Research

An adequate and coordinated program of research may require funds to be raised by direct taxation on licit drugs or from assets seized from illicit drug dealers.

Training and Engaging Non-Specialists

The benefits of MI to a service need to be identified in order to encourage its uptake. The intensity of training and subsequent support required needs investigating - and also who the best trainers are for different agents.

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Work Setting and Early/Brief Intervention

Steven Allsop (Rapporteur)
 Ian Kronborg
 Adrian Reynolds
 Gloria Webb

Very little information is available about early/brief intervention in the worksetting. An exception to this broad statement is that a number of studies have been conducted into smoking and these generally report significant treatment effects (see Digiusto, this volume). The implication is that early/brief intervention has potential for responding to other drug-related problems in the worksetting.

Prevalence

Very little is known about prevalence of alcohol/other drug problems in the worksetting. There are a number of studies at an international level but very few with an Australian focus. Information may be gathered on a number of levels, e.g., assessment of behaviour in given worksettings (such as screening; assessment of behaviour in a setting similar to the one under review; translation of community prevalence rates into the worksetting).

It is likely that the more specific and accurate the method, the more intrusive and unattractive it will appear to employers, employees and labour organisations. Any attempt to assess prevalence will therefore need to pay attention to sensitivities in the worksetting, and a compromise between accuracy and acceptability is likely to be the order of the day.

The following represent specific issues discussed under this heading.

- Information on prevalence rates is limited. More information is available on tobacco and alcohol (in that order) than on described over-the-counter and illicit drugs. Special reference was made to the very limited knowledge about minor tranquilliser use in the worksetting.
- Therapeutic/recreational levels of alcohol and/or other drug use may increase toxicity and/or other risk of some workplace chemicals. Investigations of alcohol/other drug use in the worksetting should include some focus on these risks.
- What patterns of alcohol and other drug use are most likely to result in harm in the worksetting?
- Any investigation of alcohol and other drug prevalence rates in the worksetting might include a cost estimate - this may be more influential in encouraging employers to adopt constructive responses.
- Given the probable resistance of employers/unions and employees to the assessment of prevalence rates in any given worksetting, it is preferable that several methods/tools be designed so that reluctance to use one method can be met with the suggestion of an alternative.
- It would be relevant to have a summary of

knowledge on specific worksettings/ occupational groups and relative risk. This would include an assessment of environmental factors that may initiate and/or maintain harmful use of alcohol and other drugs. This is relevant in that certain contexts/ environments may be more conducive to early/ brief intervention than others.

Instruments for Identification

Different strategies and/or instruments may be needed for each target drug and/or different settings. Some instruments may be more acceptable than others in some settings. Any instruments would need to be:

- acceptable (this will be influenced by who controls and delivers; for example, perceptions will differ when an instrument is used by management personnel vs medical personnel);
- specific/accurate;
- reliable;
- confidential;
- cost-effective.

It is likely that the employment of any such instrument will still be controversial in many worksettings. It is probable that the more accurate and reliable an instrument the greater the perception of intrusiveness. Therefore, some compromise may have to be reached on accuracy/ reliability vs acceptability. It may also be decided that such instruments be left out of some worksetting projects.

The following represents discussion of specific issues under this heading.

- Instruments for identifying tobacco and alcohol use appear to be more readily available than for other drugs. However, in the main, these have not been developed specifically for use in the worksetting. It was agreed that it would be appropriate to either test the reliability of

instruments developed for other settings or develop specific instruments for the worksetting. However, in some worksettings none may be acceptable to employers, unions and employees.

- What other methodologies could be employed in the worksetting to identify patterns of use and consequences?

Suitable Models

It was agreed that brief/early intervention strategies are appropriate for application in the worksetting. However, apart from initiatives relating to tobacco, there are few, if any descriptions of the employment of brief/early intervention (as defined in this workshop) in the worksetting aimed at other drugs. The experience of brief/early intervention relating to stopping smoking, the constraints of time and resources in the worksetting, the likelihood of a large target group who are relatively intact with low dependence and the relative ease of delivery of early/brief intervention would suggest the appropriateness of these strategies in the worksetting.

On the basis of the above, a number of research questions were proposed:

- What is the natural history of problems in the worksetting?
- When is it appropriate to intervene in the worksetting, i.e., when is it legitimate?
- What factors differentiate the worksetting from other contexts and how might these facilitate/hinder brief/early intervention?
- What are the characteristics of worksettings that are conducive to early/brief intervention?
- Which methods of early/brief intervention are appropriate for which setting?
- How might sex and ethnic/cultural factors impact on the effectiveness of brief/minimal intervention?

Have They Been Evaluated?

Early/brief intervention methods for tobacco use have been applied and evaluated in the worksetting. The results of these evaluations are encouraging (see Digiusto, this volume).

However, in relation to other drugs, early/brief intervention as defined in this workshop has rarely been applied in the worksetting and rarely, if at all, evaluated. Programmes tend to be intensive and attract severe/chronic problem users. Those evaluations that do exist are inadequate in that they -

- do not have adequate control groups;
- do not include process evaluation;
- are often conducted by those with a self-interest (e.g., those selling a service), with inherent problems of bias in methodology and interpretation.

As one participant noted, there is a 'dramatic lack of randomised control trials' generally and a specific absence of such trials on early/brief intervention. Therefore an obvious priority is the design and application of sound research methodologies to evaluate early/brief intervention in the worksetting. The methodologies used in worksetting 'stop smoking' programmes are likely to be relevant in this regard.

Are They Cost Effective?

Some studies of worksetting intervention lay claim to cost-effectiveness, but often these programmes do not fit the workshop definition of early/brief intervention and the methodology of assessing cost-effectiveness is poor.

The experience of 'stop-smoking' programmes implies that they can be mounted for low cost and the high cost of labour suggests that even a small impact of intervention would be very beneficial. However, this falls short of a demonstration of cost-effectiveness.

Information would be needed on:

- cost to industry of allowing employee/client to leave workplace to attend an intervention programme.
- cost of developing/implementing program vs. cost of doing nothing.
- measures of cost may be found in: productivity, accidents, general health of workforce, efficiency, absenteeism (on and off the job) and timekeeping.

Behavioural analogy methods may also be useful. For example, a laboratory task similar to the work task would be designed and the subject/employee tested (time and efficiency as dependent variables) before and after the drug is consumed.

Any measures will need to be relevant to the worksetting in general, possibly to individual worksettings, and even refined to specific occupational categories (e.g. skilled vs unskilled).

General Discussion Points

A number of issues/questions were raised which did not neatly fit into any of the above sections. These include:

- Informal mechanisms of responding to alcohol/other drug-related problems in the worksetting. A survey of how some worksettings personnel have responded to alcohol/other drug related problems may indicate potential programmes for adoption in the worksetting.
- Are there different outcomes for disciplinary/case identified referrals compared to self referred? What are the implications for intervention and cost-effectiveness of delivery of the service?

It was also concluded that there is a need for more process research rather than simply outcome evaluation in order to determine why a program 'succeeds' or 'fails'.

Barriers to Implementation

A number of factors were identified as potential barriers to implementation of early/brief interventions in the worksetting. These include:

- There will be some difficulty in generalising any results: for example, an investigation of alcohol use and early/brief intervention in a bank may have no relevance in a mining operation.
- For various reasons, including some of the above, there is likely to be some resistance to the implementation of a program. Even if, for example, a union and management agreed to a program of intervention, in order to protect their own or their members' interests, they may strongly resist any attempt to evaluate the programme. One possible avenue of research, therefore would include the development of methodologies to identify sources of support and hindrance to the implementation and evaluation of programmes. Protocols on overcoming these barriers might then be determined.
- Another problem relates to the 'hard to reach employee'. Many of those who are in high risk occupations are self-employed, isolated and/or do not belong to formal organisations or work in clearly identified worksettings. What is the best method of reaching and delivering a service to these target groups?
- Lack of baseline data on prevalence. It is difficult to effectively develop methods of intervention when there is only a limited conception of the problems.
- Limited knowledge (excluding smoking intervention) of the relevance of early/brief intervention approaches to the worksetting. However, the experience of 'stop smoking' programmes would suggest these methods are appropriate.
- It is likely that employers, labour organisations, employees, the community at large, and government are uninformed about the

level of harm related to alcohol and other drug use in the worksetting and the potential of intervention in this context. Negative attitudes, and the lack of clear rewards/legal requirements to act militate against the adoption of any intervention.

It was concluded that there is also a need to focus on a broad range of issues, not just intervention. That is, how we can help develop a context conducive to change?

The Working Party recommends that:

1. A report be commissioned to identify what intervention programmes have been conducted in the worksetting in Australia. This report should specifically identify the potential of early/brief intervention in this context.
2. Studies be commissioned to gather relevant baseline data, particularly on patterns of use and prevalence of related harm in the worksetting. Researchers may have to develop specific methodologies and instruments for application in this setting, with due regard to ethics and issues of confidentiality and acceptability to employers and labour organisations. Some emphasis would need to be placed on data about drugs other than alcohol and tobacco, given the relative lack of information about the former.
3. On the basis of information gathered from the implementation of recommendations (1) and (2), research should be commissioned to evaluate the application of early/brief intervention in the worksetting. This would include assessing different methods of applying a programme: for example, identifying all 'at risk' cases and targeting these for intervention versus specific case identification. Emphasis was placed on the need for process evaluation to enable identification of impact of specific components and improvements in delivery and effectiveness. It is also important that the context of delivery be described in order that environmental and other influences be identified - some settings will be more conducive to the application and effectiveness of early/brief intervention than others.

SECTION IV

Appendices

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Appendix 3

Setting the Scene

Nick Heather

National Drug and Alcohol Research Centre

Definition of Terms

Without intending to pre-empt any conclusions of the Workshop, this introduction will now attempt to provide definitions for some of the basic terms of the discussion. The first issue it is necessary to clear up is the distinction between “early” and “brief” interventions. In fact, the Workshop is aimed at both of these forms of intervention and has been called the National Workshop on Early Intervention in Drug and Alcohol Problems only for convenience. Where appropriate, for “early interventions”, read “early/brief interventions”. Also, there is considered to be no difference between “brief” and “minimal” interventions and these terms may be used interchangeably.

However, “early” and “brief” interventions are not interchangeable terms; early interventions need not necessarily be brief and brief interventions need not necessarily be early. For example, the type of early intervention for alcohol problems in a general hospital setting described by Elvy, Wells & Baird (1988) is clearly not always “brief” since it involves referral to a specialist treatment agency. On the other hand, advice to quit smoking given by a general practitioner, of the type pioneered and evaluated by Russell, Wilson, Taylor & Baker (1979), is certainly brief but is by no means necessarily “early”, since many of those given advice would have reached an advanced level of nicotine dependence. In a majority of cases, the interventions of interest in the Workshop will be both early and brief but it is important to retain the distinction between the two terms (Heather, 1988).

In earlier correspondence regarding the

Workshop, we gave a working definition of early intervention as follows: “..... any intervention that is designed to prevent the later complications of alcohol or drug abuse by detecting persons who are using such drugs in a potentially hazardous manner and encouraging and assisting them to discontinue (e.g. in the case of cigarette smoking) or to moderate their use (e.g. in the case of alcohol)”. It should perhaps be added that the manner of use could be actually, as well as potentially, harmful but to a relatively lesser degree than among those seen in conventional, specialist treatment. It must also be admitted that the assumptions about the goals of intervention made in this definition may not be universally shared. But there is unlikely to be too much disagreement now that abstinence should be the goal in the case of cigarette smoking or that abstinence is usually counterproductive as a goal in the context of early intervention for excessive alcohol consumption. However, the goals of early interventions cannot be taken for granted in all instances.

We defined minimal (or brief) intervention as follows: “..... any intervention that involves a minimum of expensive professional time in an attempt to change drug use any intervention requiring a total of between five minutes and two hours, on one occasion or spread over several visits”. The latter stipulation is admittedly arbitrary but will serve until there are any strenuous objections to it. In this context, “intervention” should be taken to include the assessment process. The main qualification that needs to be made to the definition is that brief intervention need not involve any expensive professional time at all - if, for example, delivered by trained para-professionals or, as in the case of self-help manuals, with no personal contact with

helping agents (Heather, 1986b).

It may also be necessary to define what is meant by an "intervention" in the context of the Workshop. In planning stages, some time was spent discussing where exactly to draw the line between brief interventions and mass media campaigns of various kinds directed against excessive drinking or smoking - or, indeed, whether such mass media campaigns should be included in the remit of the Workshop. Eventually it was agreed to exclude them and to distinguish them from brief interventions per se by insisting that the latter must have an individual focus of attention. In other words, a brief intervention is one which attempts to change the behaviour of the individual person to whom it is directed rather than try to change behaviour by conveying information or advice to the population at large. To make this clearer, this would imply that a brief intervention would always be accompanied by some attempt at identification of "at risk" individuals and would always include some provision, however elementary, for tailoring the intervention to the particular characteristics or needs of the at-risk individual.

Variations among Early/Brief Interventions

Early or brief interventions may differ among themselves in many ways and it may be helpful here to enumerate some of the main dimensions of this variation (see also Heather, 1986a).

1. Contents of the intervention..

The main distinction here is between interventions that are based on some theoretical perspective (in current practice this usually means some form of condensed cognitive-behavioural treatment) and those that simply contain relatively straightforward advice and exhortation to change behaviour (Heather, 1989). As might be expected, the former have been developed and applied mainly by psychologists but it should be noted that there is as yet no convincing evidence that this relatively sophisticated behavioural technology is superior in effecting desirable changes to simple advice.

2. Medium of the intervention.

The principal medium of intervention is, of course, personal contact between helper and helped but there is also a range of alternatives, including telephone contact, self-help books, audiotapes, videotapes and interactive computer programmes such as those currently being developed and explored by Jim Barber at La Trobe University. Many brief interventions will consist of a mixture of these media.

3. Means by which targets are identified.

The targets for early/brief interventions may be identified in a number of ways, including, in a medical context, clinical examination, medical history, laboratory tests and questionnaires given out on an opportunistic basis or sent through the mail. Advertisements may be placed in the press or on radio or TV. Some targets may be identified as, by definition, being members of a certain at-risk group, such as those convicted of drunk-driving offences or some other types of offence involving alcohol or drugs. Individuals may also self-select for interventions by purchasing, or picking up free, self-help books.

4. Personnel who deliver the intervention.

As implied earlier, in addition to the professional groups who may be involved in the delivery of early/brief interventions (e.g. physicians, psychiatrists, general practitioners, ward or community nurses, clinical psychologists, social workers, probation officers, teachers etc.), they may also be delivered by paraprofessional personnel who have received special training to do so. Relatives and friends of target individuals may also be enlisted. One of the major problems in research and application of early/brief interventions is in ensuring the full interest and co-operation of the groups who have been designated to deliver them.

5. The stage of change of the target of intervention.

In more theoretical terms, early/brief interventions may differ in terms of the stage in the process of change which the target individual is assumed to have reached, using Prochaska and DiClemente's (1986) increasingly popular model of the change process for this purpose

(i.e. Precontemplation, Contemplation, Action and Maintenance stages). Assumptions regarding the stage of change will have important implications for the contents and mode of delivery of the intervention.

6. Level of seriousness of problems and dependence of the target of intervention.

It should not be assumed that the targets of early/brief intervention programmes, even within the confines of a single substance, are a homogeneous group with respect to the seriousness of drug-related problems or level of drug dependence. For example, for excessive drinking, interventions may be aimed at "hazardous drinkers" who have not yet incurred any obvious harm from their drinking (and who may need to be persuaded that a potential problem exists) or at "harmful drinkers" who already show evidence of alcohol-related impairment, although to a lesser degree than those who would traditionally be termed "alcoholics". Similarly, they may be directed at drinkers who show only minimal levels of alcohol dependence or at those with moderate levels, although still within the range for which brief interventions are considered appropriate. Thus, early, brief interventions should be thought of as constituting a range of interventions adjusted to the needs of their targets in terms of degrees of impairment and dependence. Of these two variables, it is presumably the degree of dependence that is most relevant to the design of the intervention, since this will determine how difficult it is for the individual to change. On the other hand, the degree of harm experienced will be relevant to motivational issues which may affect the optimal type of intervention.

Justification for interest in early/brief interventions

To end this introduction, a few remarks on the justification for early/brief interventions may be appropriate. The main justification for early interventions is self-evident - that they promise to reduce the burden of harm and suffering caused by drug abuse in the individual case. Added to this, however, is the fact that, in the

most general terms, results of treatment for advanced drug-related problems are poor compared with treatments for other behavioural disorders. A reasonable assumption is that this has to do with the intractable nature of drug dependence itself. Thus, the further assumption is that drug dependent individuals are more likely to recover if they can be helped before dependence has reached levels that make conventional treatment difficult. Although there is some evidence in the alcohol field that degree of dependence is related to outcome of conventional treatment (Hodgson & Stockwell, 1986), it must be candidly stated that this key assumption remains largely untested.

The justification for brief interventions rests on some of the same evidence concerning the poor effectiveness of conventional treatment. Here, however, the point is that several reviews and outcome studies have shown that conventional treatment of a relatively intensive type produces no better results than brief assessment and advice, the most well-known of these studies being by Orford and Edwards (1977). Although this is by no means an unambiguous conclusion (see Heather, 1988), and very few commentators would suggest that conventional treatment should therefore be abandoned, the accumulated evidence has resulted in a strong case for the application of brief interventions in terms of cost-effectiveness. Indeed, their higher cost-effectiveness in a situation of limited national resources for treatment services is one of the main reasons why brief interventions have attracted so much attention. Note that the cost-effectiveness argument may well apply just as much to the treatment of advanced problems as to those at less serious levels. However, a move to promote brief interventions for advanced problems on a widespread scale would be highly controversial; when combined with the justification for early intervention given above, there are likely to be few rational objections to it.

A further justification for brief interventions has to do with fundamental changes in our understanding of alcohol and drug dependence. One of the consequences of the demise of the

disease theory of dependence is that there is no longer a rationale for restricting treatment attention to just those with high levels of drug dependence and related problems - the "alcoholics" and "drug addicts" of the disease theory. Rather, any problems caused by excessive or inappropriate drug consumption become potentially legitimate targets for intervention. Related to this is the discovery by Kreitman (1986) of "the preventive paradox". This states that, in the case of alcohol consumption, if it is desired to reduce the aggregate number of problems in a society, then it is more profitable to focus attention on the large number of individuals with relatively few problems than on the small number with many problems. In short, the disease perspective of drug and alcohol problems is being replaced by a public health perspective and, provided "public health" is construed in the widest possible sense as involving all the many forms of harm drugs can cause, brief interventions are a logical and essential component of the new approach.

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Composition of Working Parties

General Practice

Rodger Brough	VIC
Wayne Hall	NSW
John Litt	SA
Robyn Richmond	NSW

Other Medical Settings

James Bell	NSW
Ilse Blignault	WA
Elizabeth Chalmers	NT
Stephen Hanratty	NSW
John Price	QLD
Ivor Shaw	QLD

Prisons

Robert Ali	SA
Nick Heather	NSW
Keith Powell	ACT
Gregory Whelan	VIC

Community

Andy Butlin	ACT
Erol DiGiusto	NSW
Margaret Hamilton	VIC
Lineke Spooner	ACT
Tim Stockwell	WA

Workplace

Steven Allsop	WA
Ian Kronborg	VIC
Adrian Reynolds	QLD
Gloria Webb	NSW

Appendix 2

PREVENTION AND TREATMENT OF ALCOHOL PROBLEMS: RESEARCH OPPORTUNITIES

Report of a Study by a Committee of the
INSTITUTE OF MEDICINE
Division of Mental Health and Behavioral Medicine

EARLY IDENTIFICATION AND TREATMENT

Since 1980, increased attention has been given to the identification and treatment of individuals early in their development of alcohol problems. Indeed, people who are unlikely to meet the diagnostic criteria for alcohol dependence actually experience the largest proportion of society's alcohol problems (Moore and Gerstein, 1981). Like many other health problems, alcohol problems may be treated more easily and successfully if they are detected early. The growth of employee assistance programs, student assistance programs, and health maintenance organizations has increased access to populations within which early identification and intervention are feasible. This identification effort represents an overlap of "treatment" with "secondary prevention" of alcohol problems.

To implement a public health approach to the secondary prevention of alcohol-related problems, programs are now under way in several countries to link a new generation of screening technologies to low-cost early intervention strategies (Babor, Ritson, and Hodgson, 1986). Part of the impetus for these programs comes from a broader public health concern with the relationship between life-style-related behavioral risk factors and disease prevalence (IOM, 1982). Because life-style risk factors such as heavy or intensive drinking are often amenable to behavioral interventions, a number of innovative clinical trials, demonstration projects, and early intervention programs have been initiated. An underlying assumption of such efforts is that regular drinking and frequent alcohol intoxication increase substantially the risk of social, medical, and psychological problems (Babor, Kranzler, and Lauerma, 1987). Promising research opportunities in this domain are noted as questions to be investigated.

CONTROLLED TRIALS AND PROGRAM EVALUATIONS

During the 1970s there were a number of research reports evaluating the effectiveness of behavioral treatments for problem drinkers who were recruited from the community rather than from traditional treatment settings (Miller, 1983). In general, the early studies of less dependent problem drinkers were encouraging, with success rates at the one-year follow-up point averaging between 60 and 70 percent (Miller and Hester, 1980). The broad-spectrum treatment methods used in some of these early studies, however, were time-consuming, sometimes requiring as much as 45 hours per client. Studies reported in the 1980s have tended to employ less time-consuming approaches that can be grouped under the heading of behavioral self-control training (see Chapter 9). Such an approach typically includes specific behavioral goal setting, self-monitoring, modulation of the rate of consumption, functional analysis of drinking behavior, self-reinforcement training, and the learning of alternative behavioral competencies to substitute for previous functions of drinking (Miller and Munoz, 1982).

One unexpected finding that emerged from the research of Miller and his colleagues was that a self-help manual may be as effective as self-control training provided by a therapist (Miller and Taylor, 1980; Miller, Taylor, and West, 1980; Miller, Gribskov, and Mortell, 1981). Subsequently, several research teams have systematically investigated the effectiveness of minimal treatment interventions using self-help manuals, simple advice, and

brief time-limited counseling (Babor, Ritson, and Hodgson, 1986). The effectiveness of manual-based self-help approaches has been supported in several recent controlled trials (Buck and Miller, 1981; Heather, 1986; Heather et al., 1986). These findings suggest that low-cost interventions based on a manual or brief counseling may be appropriate and effective as a first attempt to intervene with the large number of people who drink heavily but show little or no dependence on alcohol.

The results of several other studies support this conclusion. Kristenson and his colleagues in Malmo, Sweden, studied a group of 529 middle-aged men who had been identified as at-risk drinkers during a general community-wide health screening project (Kristenson, Trell, and Hood, 1982; Kristenson et al., 1983). Men with an elevated liver enzyme (gamma-glutamyl transpeptidase, or GGT) were randomly allocated either to a brief counseling group or to a control group. Although the GGT scores of both groups decreased significantly over the six-year follow-up period, the group given the brief intervention showed greater reductions in absenteeism, sick days, and days hospitalized.

A related Scottish study was conducted at the Royal Edinburgh Infirmary to assess the impact of brief counseling and a self-help manual on socially stable problem drinkers who had been identified in a general hospital (Chick, Lloyd, and Crombie, 1985). Screening was conducted by a trained nurse using a 10-minute interview covering drinking habits, medical history, and social background. Although both the counseled and the control group reported significantly less alcohol consumption at the one-year follow-up point, the group that was given a single brief intervention showed fewer alcohol-related problems, greater reductions in GGT values, and better performance on a global outcome measure. Elvy and colleagues (1988) similarly reported a significant impact of a brief referral intervention with alcohol-impaired patients treated on orthopedic and surgical wards.

Perhaps the most ambitious program of early intervention with heavy drinkers was initiated in France as part of a national policy to deal with alcohol problems in specialized outpatient clinics rather than in primary care settings and hospitals. Beginning in 1970, the French Health Ministry established a system of outpatient clinics as part of a national program to prevent alcohol problems. These clinics respond to the needs of habitual excessive drinkers who do not have serious psychological problems (LeGo, 1977). More than 140 Centers of Nutritional Hygiene have now been established, reaching every major city in France. Although a randomized clinical trial has not been conducted, two critical reviews (Babor et al., 1983; Chick, 1984) concur that this program merits careful attention because of its low cost (relative to inpatient treatment), widespread accessibility, and apparent effectiveness in reaching large numbers of problem drinkers.

BRIEF INTERVENTIONS AND TREATMENT RESEARCH

Current data indicate that brief interventions are superior to no treatment or to waiting list status. The assumption is made that some proportion of those on a waiting list would respond favorably to a brief intervention and not require treatment, leaving a subpopulation that was more in need of therapeutic assistance. The apparent effectiveness of certain brief interventions also suggests a more feasible alternative to no-treatment controls in experimental designs. Justification for the use of an alcoholism treatment method could be based on its ability to exceed the effectiveness of a well-implemented brief intervention. The use of research-supported brief intervention comparison groups can avert some of the ethical concerns regarding refusal of treatment to control groups.

Alternatively, a brief intervention can be used to remove from a clinical population those individuals who respond to simpler strategies. Such a design provides a reasonable analogue to a procedure sometimes used in drug research, whereby "placebo responders" are first removed from a population before the specific effect of a drug is tested. Although a true placebo therapy is difficult if not impossible to achieve, those individuals who respond to brief intervention can be successfully treated and then removed from the sample, leaving a subpopulation that is not responsive to minimal intervention. Such a subpopulation may be particularly useful in evaluating the true specific impact of particular treatment interventions.

A variety of brief intervention strategies have emerged in recent efforts to encourage behavior change in at-risk drinkers (Hodgson and Miller, 1982; Miller and Munoz, 1982; Skinner and Holt, 1983; Miller, 1985; Babor, Ritson, and Hodgson, 1986; Berg and Skutle, 1986; Heather, 1986; Heather, Whitton, and Robertson, 1986). As evaluation research and program planning become more sophisticated, it is important to develop a more systematic understanding of the common processes that underlie effective brief interventions. It appears at present that the more promising approaches use a combination of intervention strategies that address various aspects of problems and resistance (Miller, 1985; Miller and Sanchez, in press).

The following questions represent opportunities for research on brief interventions:

- What brief intervention procedures effectively reduce the probability and severity of future alcohol abuse? How much reduction in drinking and related problems can be accomplished through brief interventions?
- How do brief intervention procedures compare, in absolute impact, with more intensive treatment alternatives?
- What kinds of drinkers respond best to brief intervention programs? Do persons who fail to respond to brief intervention show more receptiveness to further treatment? Do they achieve more favorable outcomes when treated subsequently with more intensive approaches?
- Are there identifiable pretreatment characteristics (e.g., family history, sociopathology, depression) that are prognostic of poor response to brief interventions and that justify more intensive initial treatment?
- What are the key ingredients of an effective brief intervention strategy? Are there unique contributions of screening, assessment, feedback, and advice elements of brief intervention programs?

RESEARCH ON INTERVENTIONS WITH PREGNANT WOMEN

Interest in brief and early intervention has also increased because of concerns regarding the effects of alcohol on the fetus when pregnant women drink (see the discussion of this problem in Chapter 2). Research on the prevention of fetal alcohol effects has developed during the last 15 years following the reports of Jones and Smith (1973) and Jones and colleagues (1973). These authors reported on eight children born to alcoholic mothers, all of whom displayed a similar pattern of craniofacial, limb, and cardiovascular defects that were associated with growth deficiency and developmental delay. They called this constellation of abnormalities the fetal alcohol syndrome (FAS). In 1980, minimal criteria were established for the diagnosis of FAS (Rosett and Weiner, 1985).

Prevention of FAS and of less serious but possibly significant fetal effects of maternal drinking has focused heavily on reductions in alcohol intake by pregnant women. Prevention has taken the form of educational activities, social support, and efforts to identify problem drinkers among pregnant women.

As with the findings from studies of early intervention with problem drinkers, there are some grounds for optimism regarding the prevention of adverse fetal alcohol effects. Two programs have reported successful impacts--one at Boston City Hospital (Rosett et al., 1983) and the other in Sweden (Larsson, 1983). Each program systematically evaluated all pregnant women who attended the prenatal clinic, checking for excessive alcohol intake by means of interviews and questionnaires. The women in the study by Rosett and colleagues (1983) were told that they had a better chance of having a healthy baby if they abstained from alcohol use during pregnancy. Supportive therapy with a psychiatrist or counselor was provided one to four times a month in conjunction with prenatal visits. Treatment stressed a positive approach to reducing heavy drinking while avoiding the induction of guilt. About two-thirds of the women who participated in at least three sessions appeared to have stopped heavy drinking before the third trimester. The five cases of FAS diagnosed in this population were all associated with women who continued to drink heavily.

Larsson (1983) implemented a similar program with 464 women at four maternal health centers in Stockholm. Alcohol abuse was identified in 4 percent of these women, according to criteria established by Rosett and coworkers (1983). Rosett's counseling intervention was offered to all women (not only those identified as problem drinkers) who attended the centers. Reduction in alcohol use was observed for all women classified as excessive drinkers, and for 78 percent of those diagnosed as showing alcohol abuse. More infants from mothers classified as excessive drinkers or abusers (33 percent) were placed in the intensive care nursery than were infants born to mothers who were social drinkers (12 percent). The two babies born to mothers who continued to drink heavily exhibited significant growth retardation, and one was diagnosed as having FAS.

The following questions represent opportunities for research on intervention to prevent fetal alcohol effects:

- What interventions are effective in suppressing drinking behavior among pregnant women?
- Do drinking-focused interventions with pregnant women yield significant reductions in risk for their infants?
- Is it warranted and effective to include family members or significant others in interventions designed to reduce alcohol-related fetal risk?

RESEARCH ON NONABSTINENCE OUTCOMES AND GOALS

The development of the prevention and early intervention efforts discussed in this chapter implies that the reduction of alcohol consumption to low-risk levels is a worthwhile goal within certain contexts and populations. Achieving this goal necessitates a more careful examination of nonabstinence outcomes and goals in addressing alcohol problems.

The occurrence of moderate and problem-free drinking outcomes following treatment is a complex, emotionally charged, and highly controversial issue within the alcohol treatment

community (Miller, 1983). Total abstinence from alcohol and other drugs of abuse has been the consensus goal of most treatment personnel. Nevertheless, it has become normative in the 1980s for outcome studies to report alcohol consumption and its sequelae among individuals who continue to drink after treatment. A majority of studies likewise now employs such data to classify various proportions of nonabstinent outcomes as "improved," "controlled," "moderate," or "asymptomatic."

An important research development in the 1980s has been the emergence of new data regarding the long-term stability of nonabstinent outcomes. Many of the studies relevant to this issue are epidemiological or natural history studies rather than treatment outcome studies. Helzer and colleagues (1985), for example, evaluated 5- to 7-year outcomes among alcoholics who received unspecified treatment at medical and psychiatric facilities. They reported that 15 percent were totally abstinent for at least the 3 years prior to the interview, 1.6 percent sustained moderate drinking for that period, 4.2 percent were mostly abstinent with occasional moderate alcohol consumption, 12 percent were drinking heavily but without evidence of problems, and 66 percent continued heavy drinking with alcohol-related problems. A 15- to 32-year prospective study (Nordstrom and Berglund, 1987) reported that, among 55 alcoholics evidencing good social adjustment (by Swedish public health records), 11 (20 percent) were abstainers, 21 (38 percent) were drinking without problems, and 23 (40 percent) showed continuing evidence of alcohol abuse. Alford (1980) studied 56 (of 68) alcoholics who completed inpatient treatment based on Alcoholics Anonymous and were discharged with staff approval. At the 2-year follow-up point, 15 percent were reported to have sustained moderate drinking for the previous year, and 51 percent were reported to have been "essentially abstinent" (no more than two slips) during the same period. Two older reports of moderation outcomes were subjected to independent retrospective follow-ups at 10 years (Pendery, Maltzman, and West, 1982) and 29 to 34 years (Edwards, 1985). Both provided evidence that questioned the stability of controlled drinking outcomes in the cases studied.

New data likewise have appeared regarding long-term outcomes following treatments with a goal of moderation. Research teams have reported long-range outcome data for behavioral self-control training programs after two years (Miller and Baca, 1983; Sanchez-Craig et al., 1984), five to six years (Foy, Nunn, and Rychtarik, 1984), and five to eight years (Miller, Leckman, and Tinkcom, 1988). These studies reported that between 10 and 37 percent of individuals who were treated in a program with a goal of moderation sustained moderate drinking at long-term follow-up intervals. All of the controlled studies thus far in which problem drinkers have been allocated at random to abstinence versus moderation goal conditions have reported no differences in outcome based on the assigned goal (Sanchez-Craig, 1980; Stimmel et al., 1983; Sanchez-Craig et al., 1984; Orford and Keddle, 1986b; Graber and Miller, 1988).

The verification of self-reports of moderation is a concern that has been addressed thus far through the use of collateral reports, serum chemistries, and neuropsychological assessment (e.g., Babor, Kranzler and Lauerma, 1989). More aggressive verification procedures (e.g., daily breath or urine testing) have not been used in studies to document either moderation or abstinence goals.

In some outcome studies, treated individuals who showed stable abstinence and those who evidenced stable, problem-free drinking outcomes have constituted groups of roughly equal size (Booth, Dale, and Ansari, 1984; Helzer et al., 1985; Rychtarik et al., 1987); in other studies, however, either abstainers (Taylor et al., 1985; Chapman and Huygens, 1988; Miller, Leckman, and Tinkcom, 1988) or moderate drinkers (Bernadou et al., 1981, cited by Babor

et al., 1983; Gottheil et al., 1982; Nordstrom and Berglund, 1987) have been more numerous. In any event, the assessment of a full spectrum of alcohol use outcomes following treatment (from abstinence through moderation to excessive drinking) is now clearly accepted in practice as an important element of alcoholism treatment evaluation (Gottheil et al., 1982).

With the recognition that some individuals do sustain moderate and problem-free drinking after treatment, another important question has been the focus of a number of studies: What differentiates these people either from those who sustain abstinence or from those who remain unremitted? This question has been addressed within programs that emphasize a goal of abstinence (Finney and Moos, 1981; Polich, Armor, and Braiker, 1981; Edwards et al., 1983) and in treatment programs with a goal of moderation (Maisto, Sobell, and Sobell, 1980; Miller and Baca, 1983; Miller, Leckman, and Tinkcom, 1988). Although findings have not been wholly consistent (Elal-Lawrence, Slade, and Dewey, 1987a,b), U.S. studies generally indicate stable moderation to be most likely for those with less severe alcohol problems and dependence, whereas those with more severe problems are most likely to succeed in abstinence. Several European studies, however, have reported no relationship between the severity of dependence and different outcome patterns (Orford and Keddle, 1986a,b; Nordstrom and Berglund, 1987). Peele (1987) has speculated that this discrepancy may be attributable to cross-cultural differences in beliefs about alcoholism. Two studies (Booth, Dale, and Ansari, 1984; Miller, Leckman, and Tinkcom, 1988) reported individual goal preference to be predictive of outcome (abstinence versus moderation). Other investigators have pointed to a relationship between outcome type and the individual's beliefs about alcoholism (Pfrang and Schenk, 1985; Orford and Keddle, 1986b), although Watson and coworkers (1984) found no such relationship. Ogborne (1987) reported that alcohol abusers who self-select a moderation goal resemble the profile of optimal responders to this treatment approach. The general picture is one of a continuum of severity of alcohol problems, with moderation being most feasible toward the lower end, abstinence most vital toward the upper end, and a large gray area in between. Contraindications for specific treatment goals remain an important area for future research (cf. Miller and Caddy, 1977).

The following questions represent opportunities for research on abstinence outcomes and goals:

- What are the characteristics of individuals who sustain moderate and problem-free drinking over extended spans of time after treatment? How do they differ from those who successfully sustain abstinence or who fail to show improvement?
- Are there significant differences between stable abstainers and stable moderate drinkers on other important outcome dimensions (e.g., neuropsychological functioning, physical health, family and social adjustment)?
- With less dependent problem drinkers, what are the positive or negative effects of openly negotiating the treatment goal, as compared with permitting only a goal of total abstinence?
- What treatment or prevention procedures are effective in establishing stable, moderate, and problem-free drinking outcomes among less dependent problem drinkers?

SCREENING, RECRUITMENT, AND IMPLEMENTATION

Although the concepts of brief intervention and secondary prevention are attracting widespread interest, the development of effective, inexpensive, early interventions is still in the beginning stages. Programs to date have been experimental or demonstration projects. Some have not been evaluated with sufficient rigor to provide more than a suggestion of their efficacy. The only major long-term clinical trial to date (Kristenson et al., 1983) produced highly encouraging results on the ability of early intervention to reduce alcohol-related morbidity and mortality. Other program evaluations have indicated that modest but reliable effects on drinking behavior and related problems can follow from brief interventions, especially among less severe problem drinkers. Before these findings can be applied to the design of large-scale secondary prevention programs, however, further research is needed to clarify the behavioral processes that underlie the effectiveness of such programs and the barriers that may limit widespread initiation of early intervention. Specific research needs include further exploration of screening, recruitment, and implementation processes.

Screening

Screening is designed to differentiate among apparently well people, separating those who probably have the condition of interest from those who probably do not. It is equally applicable either to conditions that are categorical entities (i.e., conditions that are present versus not present) or to conditions that exist on a continuous scale of severity. The latter requires an operational threshold for a "case," that is, the point on the continuum at which treatment becomes preferable to no treatment.

Implicit in the concept of screening is the assumption that the health and well-being of the individual will benefit significantly from early detection of the condition. Screening is thus conceptually different from "detection" or "case finding," although these terms are sometimes used interchangeably. The aim of case finding is to identify active cases that have already developed a diagnosable disorder.

A variety of assessment procedures have been developed in recent years to facilitate the early identification of persons with harmful or potentially harmful alcohol consumption. Job performance criteria are used in industry, blood alcohol concentrations are employed in the courts, biochemical tests and brief questionnaires are used in health settings, and population surveys are conducted in the community. Although most of these procedures have been developed to identify active cases of alcohol dependence or "alcoholism," many are useful for early identification as well. These procedures include self-report instruments like the Michigan Alcohol Screening Test (MAST) and the CAGE questions, objective blood tests like those for GGT and mean corpuscular volume (MCV), and clinical examinations (Babor and Kadden, 1985). Because verbal report methods such as the MAST and CAGE can be falsified easily by defensive individuals, there has been strong interest in the development of biological markers that reflect recent heavy drinking or the early onset of physical consequences. Measures of GGT and MCV have been used for both screening and confirmatory diagnosis, but their values are affected by substances other than alcohol, as well as by physical conditions that are not related to drinking; furthermore, they are not invariably elevated in heavy drinkers. Serum transferrin and new immunological tests that have been developed to measure acetaldehyde bound to hemoglobin show promise as more specific markers of heavy drinking, but further research is needed to confirm their

usefulness in routine screening. The use of such markers could identify problem drinkers during visits to physicians and thus point out those who might benefit from some level of intervention. The ideal marker would be one that is even more accurate and able to identify gradations of recent alcohol use. Such a precise indicator is not yet available. As markers are found that indicate genetic vulnerability to alcohol abuse (see Chapter 3 and also IOM, 1987), they might also become part of a screening program.

Because screening procedures based on biological, clinical, and verbal report methods all have limitations that affect their sensitivity and specificity, there has been renewed interest in the use of screening procedures that combine these domains. Two such combined screening approaches are the World Health Organization's Alcohol Use Disorders Identification Test (AUDIT) and the Alcohol Clinical Index (Saunders and Aasland, 1987; Skinner et al., 1986). Although these new screening tests have not been sufficiently studied, the use of combined procedures presently offers substantial promise for early identification. The choice of an optimal screening procedure will depend on the resources available, the goals of the screening and intervention, and the nature of the drinking problems within the target population.

One assumption implicit in many screening procedures has been that there is a distinct clinical entity called alcoholism that is either present or absent and can be detected at early stages of development. Although alcohol dependence follows a predictable course in many individuals, evidence of the progressive nature of alcohol-related problems is not compelling when all types of problem drinkers are considered as a heterogeneous group (Babor, Kranzler, and Kadden, 1986). Many problem drinkers appear to mature out of their harmful drinking practices. Early identification should, therefore, assume the less ambitious and more practical task of identifying specific types of alcohol problems within specific groups of problem drinkers, without making undue assumptions about etiology and natural history. This approach suggests the need for screening procedures that are capable of identifying a broad range of alcohol problem dimensions rather than the simple presence or absence of an assumed syndrome. Such dimensions include quantity and frequency of consumption, severity of alcohol dependence, number and intensity of alcohol-related social and health problems, and extent of family history and childhood risk factors for alcohol problems (Babor, Kranzler, and Lauerma, 1989).

The following questions represent opportunities for research questions on screening:

- Which of the many available biochemical, clinical, and self-report screening procedures are best suited to the identification of alcohol problems in primary care clinics, through community surveys, or in employment and criminal justice settings? What are the optimal combinations of such measures?
- Are there biological or biochemical markers, or sets of markers, with sufficient sensitivity and specificity to identify adults and adolescents at risk for future alcohol-related health problems?
- What are the relative validity and cost-effectiveness of verbal report screening methods (interviews, questionnaires, computer-assisted tests) compared with clinical and laboratory procedures? How can the accuracy of such measures be improved? Under what conditions are verbal report methods most or least accurate for the purpose of early identification?
- Can childhood factors that indicate enhanced risk of later alcohol problems (see Chapter 3) provide useful information when incorporated into routine screening tests?

Recruitment

Once individuals at risk have been identified, how can they be engaged in an intervention that is intended to reduce risk? The motivation for, and the involvement of, problem drinkers in the change process pose major challenges (Miller, 1985). The results of the Kristenson et al. (1983) study are encouraging, perhaps because this research group took full advantage of the prestige and resources of the Swedish national health service. The use of coercive recruitment methods by the courts, schools, and industry poses special ethical dilemmas that need to be considered, along with the possibility that "constructive coercion" may yield significant benefits. One procedure that has been found to attract large numbers of heavy drinkers who are likely to be motivated to change is recruitment through the media (Berg and Skutle, 1986; Heather, Whitton, and Robertson, 1986).

The success of media recruitment is apt to be affected by the nature and duration of the interventions that are offered. Programs that require only a brief counseling session and the use of a self-help home study manual may reach a wider (literate) audience than programs that demand regular participation in a series of counseling or educational sessions. The goals of the intervention are likely to affect recruitment as well (Miller, 1987). Almost all of the successful programs reviewed in this chapter recognized the need for flexibility in setting personal goals, with moderation rather than abstinence being the preferred initial option for most individuals. Another common characteristic of early intervention programs to date has been a careful avoidance of labeling. The terms alcoholic and alcoholism are deemphasized in favor of less stigmatizing concepts: heavy drinking, hazardous alcohol use, personal risk, and alcohol-related problems (Miller, 1983).

Recent reports have suggested that the information collected during screening can be used as feedback to motivate an individual's engagement in change programs (Kristenson et al., 1983; Miller, 1985; Miller and Sanchez, in press). Miller, Sovereign, and Krege (1988) reported modest decreases in alcohol use and increased helpseeking among a population of problem drinkers given a "drinker's checkup" that involved feedback regarding personal impairment related to alcohol use.

The following questions represent opportunities for research on recruitment:

- What kinds of recruitment approaches (e.g., voluntary versus coercive; media solicitation versus initiation by a health worker) provide the best chances for engaging high-risk drinkers in an early intervention program?
- What are the characteristics of personnel and procedures that are most optimal for engaging heavy drinkers in intervention programs?
- How can screening information (e.g., lab tests, alcohol consumption estimates, clinical examination findings) be used to increase an individual's motivation for, and engagement in, efforts to change?
- How can public attitudes toward health habits and life-style behavioral risk factors be mobilized to engage more drinkers in intervention programs? Is there a positive relationship among health beliefs, perceptions of risk, fear of harm, and motivation for change?

Implementation

Even when effective screening, recruitment, and intervention strategies have been defined, there remain a number of logistical, technical, and professional issues that must be addressed before promising findings are likely to be applied in clinical practice and public health settings (Miller, 1987). More research attention should be devoted to the evaluation of low-cost, rapid, reliable screening procedures that can be used routinely by primary care practitioners in a variety of health settings. No matter how sophisticated a biochemical test or how reliable a self-report questionnaire, neither may be implemented in routine clinical practice if they lack face validity, ease of use, or affordability. Research is needed to identify common barriers to effective screening that may arise once such technologies have been developed.

One of the reasons alcohol-related problems are ignored or underdiagnosed in primary care settings is that nurses and physicians do not feel responsible for--or competent to intervene in--a situation in which a drinking problem has been identified (Clement, 1986). With the development of screening and early intervention procedures that are effective and easy to use, this reluctance no longer seems warranted. Two areas worthy of research include the training of health care professionals in screening and brief intervention and the development of continuing education materials for health professionals and other groups such as employee assistance program personnel and school counselors. In addition, the reimbursement policies for early intervention should be examined to determine their effect on the delivery of this kind of preventive health service. The Kristenson study indicated that early intervention may have significant long-term effects on morbidity and mortality, which would suggest that remuneration for such services could be highly cost-effective in health care delivery systems.

The following questions represent opportunities for research on program implementation:

- What are the principal barriers to implementation of effective screening, recruitment, and intervention strategies once they have been identified?
- What methods are optimally effective in disseminating and implementing effective brief intervention strategies?
- What are the effects on long-term health care costs of implementing brief interventions for alcohol-related problems? Does reimbursement for such services have a tangible effect on their implementation and consequently on long-term outcomes?

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