

**EVALUATING CLIENTS AND TREATMENT:
Proceedings from the Fourth National Drug
& Alcohol Research Centre Annual
Symposium, Sydney, November, 1990.**

Julie Hando (Ed.)

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Edited by

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PREFACE

Julie Hando

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This monograph is a collection of papers presented at the National Drug and Alcohol Research Centre's 1990 Annual Symposium entitled "Evaluating Clients and Treatment" which was held in November 1990 at the University of New South Wales. The symposium examined issues and procedures relevant to the assessment of clients and treatment in the drug and alcohol field. Presenters who were drawn from a number of treatment and research settings in Australia addressed issues of measurement which were seen to be relevant to both clinicians and researchers alike. Topics thus ranged from the evaluation of clinical services, to the use of statistical methods in making clinical decisions about treatment. The symposium was intended to facilitate the communication and dissemination of information concerned with these issues, with the ultimate aim of improving the quality of drug and alcohol treatment services currently provided in Australia. The development of standardised ways of measuring client and treatment characteristics is central to any improvements, as is a firm link between practice and theory. The symposium also provided a forum for discussing ideas for future research relevant to treatment issues.

The morning session of the symposium examined methods used in evaluating different types of drug use including alcohol, nicotine and opiates, in clinical and research settings. Dr Stephen Hanratty, from the Western Sydney Area Health Service, opened the discussion by examining common practices used when screening for hazardous alcohol use in clinical settings. Unfortunately Dr Hanratty was unable to provide us with a copy of this paper.

Associate Professor Tim Stockwell from the National Centre for Research into the Prevention of Drug Abuse in Western Australia, provided a discussion of the merits of several major questionnaires used in the assessment of alcohol dependence, and the benefits of using these in treatment. He argued that three available measures of alcohol dependence, the Severity of Alcohol Dependence Questionnaire (SADQ), the Severity of Alcohol Dependence Data (SADD), and the Alcohol Dependence Scale (ADS), provided a useful adjunct to making informed clinical decisions about issues such as goals of treatment, the form that treatment might take, the additional use of other forms of interventions such as stress management, and the management of alcohol withdrawal.

Mr Erol Digiusto from the Drug and Alcohol Unit at Westmead Hospital provided a discussion on the nature of smoking cessation treatments. He noted that a review of the research highlighted the need to identify predictors of treatment outcome in order to match clients to make treatment more effective and cost effective. Mr Digiusto discussed problems associated with some of the features of smoking cessation treatments, including matching clients to treatments, the typically brief nature of the treatment, and the use of group programmes. Finally, he suggested that treatment should include components which are relevant to the majority of clients, and take into account various organisational and time constraints.

Dr Shane Darke and his colleagues from the National Drug and Alcohol Research Centre and St Vincent's Hospital in Sydney, set out to address two difficulties

¹Thanks go to Wendy Swift, Jenny Tebbutt, Wayne Hall, Alison Bell, Andrew Baillie and others for their help in organising the symposium, and to Megan Synnott, Wendy Swift and Jenny Tebbutt for help with producing this monograph.

identified in comparing the outcomes of treatment for opiate users. Namely, the unavailability of standardized instruments, and the use of assessment instruments of unknown validity and reliability. They have developed a new instrument, the Opiate Treatment Index (OTI), which addresses six treatment outcome domains: Drug Use, HIV Risk Taking Behaviour, Social Functioning, Crime, Health, and Psychological Adjustment. Results of psychometric analyses show that the instrument is reliable and valid for research applications.

The remainder of the symposium focussed on the evaluation of treatment interventions. Associate Professor Robyn Richmond from the National Drug and Alcohol Research Centre and School of Community Medicine, University of New South Wales, discussed the evaluation of interventions for smokers in general practice. This included an examination of the role and effectiveness of the general practitioner in smoking interventions, a review of the Smokescreen programme over the last ten years, matching smokers to particular interventions in general practice, and barriers to smoking cessation interventions. Several benefits of smoking interventions by GPs have been found, and future directions for research in general practice were suggested.

Dr James Bell from the Drug and Alcohol Unit at Prince of Wales Hospital and Associate Professor Wayne Hall from the National Drug and Alcohol Research Centre, present results from a study which evaluated the impact of methadone maintenance on the criminal convictions of opioid users. They compared the rate of convictions after methadone assessment for those who were accepted for methadone and those who failed to enter methadone. They also examined the relationship between duration in methadone treatment and the rate of convictions after methadone assessment. The author's found high rates of convictions prior to the assessment period among persons applying for methadone treatment, and this was influenced by age, sex and age of first conviction. Interesting-

ly, people who did not enter methadone treatment had lower crime rates in the post-assessment period than persons who entered treatment. However, for those who eventually entered treatment (which included half of those initially refused entry to methadone), the rate of convictions decreased with increasing duration of methadone treatment.

Ms Jan Stewart from the National Drug and Alcohol Research Centre outlined her study which evaluated a specialist drug and alcohol treatment service for women. There has been little research conducted on the topic of drug and alcohol treatment for women to date. In this study, Ms Stewart examined client characteristics and treatment outcomes of women attending a specialist women's drug and alcohol service compared with women attending a traditional mixed-sex programme. Several issues relevant to the treatment needs of women were highlighted, including psycho-social factors such as self-esteem and depression, previous life experiences, and drug and alcohol history. Recommendations for improved outreach services, programme design and referral services were made in order to better address the special needs of women seeking treatment.

Finally, Ms Margaret Hamilton concluded the symposium with a discussion on what she has termed "good enough" programme evaluation. Presenting material from her recent Handbook *Evaluating treatments for alcohol and other drugs*, she explored a utilisation based notion of evaluation, encouraging agencies to develop their own approach to evaluation which was useful to them (and others) and practical. Ms Hamilton and her colleagues offered guidelines to help agencies perform such evaluative research.

It is hoped that the following contributions will help extend and enhance our understanding of evaluative practices in the drug and alcohol field, and that this debate along with consequent improvements will continue.

USES AND ABUSES OF QUESTIONNAIRE MEASURES OF ALCOHOL DEPENDENCE : SUGGESTED GUIDELINES FOR PRACTITIONERS

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Introduction

It has long been a basic tenet of clinical practice that no investigation or test should be conducted unless it will inform or assist in the treatment of an individual. It will be argued in this paper that some of the available questionnaire tests for assessing degree of alcohol dependence can usefully inform important treatment decisions. While no mere pencil and paper test can substitute for an in-depth clinical interview, I will suggest that questionnaires can be useful adjuncts to a comprehensive drinking history and, in particular, may assist with the following management decisions:

1. The viability of a goal of controlled or reduced drinking;
2. The necessity for a period of preliminary abstinence from alcohol before attempting to achieve controlled drinking and the length of such a period that may be advisable;
3. The extent to which anxiety or stress management procedures may be required in addition to alcohol-focused interventions;
4. The extent to which special management procedures may be necessary to assist an individual withdraw from alcohol.

The relative merits of three major questionnaires designed for the assessment of degree of alcohol dependence will be discussed in terms of the extent to which they may assist with the above decisions. First of all, however, I wish to give a brief overview of the origins of the concept of alcohol dependence. I will suggest that degree of alcohol depend-

or indicator of the extent to which a drinker has learned to use alcohol in response to a range of cues, notably to alcohol related cues.

Concept of alcohol dependence

For the purposes of this presentation I will assume a degree of familiarity with the concept of the alcohol dependence syndrome. For those wishing to refresh their memories or to gain a better background into the thinking behind the concept of dependence, I can recommend no better source than Chapter 2 of Griffith Edwards' book *The Treatment of Drinking Problems : A Guide for the Helping Professions* (Edwards, 1982). The first formal account of the alcohol dependence syndrome appeared in 1976 (Edwards & Gross, 1976), presented as a provisional description of a syndrome which further research and clinical observation would be required to validate. Since that time the syndrome concept has enjoyed a rapid rise to the centre stage in discussions of the nature of alcohol problems and has largely ousted that tired old term "alcoholism" from the official language of such august bodies as the World Health Organisation (Edwards, Gross, Keller, Moser & Room, 1977) and from major systems for classifying diseases (American Psychiatric Association, 1987). One of the stated aims of introducing the concept in the late 1970s was to aid communication between different disciplines at a time when the traditional disease model of alcoholism was coming under fire both empirically and theoretically.

Edwards and Gross' (1976) original provisional description was of a syndrome comprising seven clinically recognisable elements, each of which was capable of varying

1. Narrowing of drinking repertoire, or the idea that with increasing dependence drinking behaviour becomes more stereotyped;
2. Salience of drink seeking behaviour, or the extent to which drinking comes to be valued over other competing activities;
3. An increased tolerance to alcohol;
4. The experience of repeated withdrawal symptoms;
5. Drinking to minimise, or stave off, such withdrawal symptoms;
6. Subjective awareness of a compulsion to drink alcohol and, in particular, that a few drinks may increase desire for more;
7. A more rapid reinstatement of the above elements after a period of abstinence in individuals who have developed a severe degree of dependence.

In a subsequent WHO Memorandum concerned with the nature of drug dependence (Edwards, Arif & Hodgson, 1982) it was proposed that essentially identical syndromes occurred in connection with the use of drugs other than alcohol. In addition, the following essential features of dependence syndromes were outlined:

1. The syndrome may be recognised by the clustering of the above elements. However, not all elements need always be present in the same degree but, as with increasing severity, the syndrome is likely to show increasing coherence.
2. Unlike the concept alcoholism or drug addiction, a dependence syndrome is conceived of as ranging across a continuum of severity.
3. At any level of dependence an individual's pattern of alcohol use will be strongly shaped by the influence of both personality and culture. For example, a severely dependent drinker may exhibit a binge drinking pattern or a pattern of continuous alcohol use as a consequence of these factors.
4. An important distinction is made between

alcohol or drug related problems on the other. Thus, to experience alcohol related problems does not necessarily imply the experience of severe dependence on alcohol and vice versa.

The importance of the dependence syndrome concept is testified to by a veritable mountain of research that has sought to test both its basic validity and practical value. It has also spawned a whole generation of alcohol screening and measurement instruments designed to assess severity of alcohol dependence (Davidson, 1987). However, the alcohol field is not noted for the ease with which consensus is achieved on fundamental questions, and so it should be no surprise that the syndrome concept has also attracted much critical attention (e.g. Shaw, 1979; Robertson, 1986). In essence, the critics of the dependence syndrome have suggested that it retains all the old assumptions inherent in the disease model of alcoholism and that furthermore, it has little practical relevance to the treatment of problem drinking. These issues have been debated more fully elsewhere (Edwards, 1986; Stockwell & Saunders, 1990). However, since this issue has particular relevance to the treatment of problem drinking, I would like to dwell on one common criticism, which is that the dependence syndrome is essentially a biological concept and has little to do with learned behaviour.

Alcohol dependence as a learned behaviour

The charge that the alcohol dependence syndrome is essentially a disease model has been made by my colleague at Curtin University, Bill Saunders, along the following lines (Stockwell & Saunders, 1990):

1. Descriptions of the dependence syndrome focus excessively on tolerance and physical withdrawal phenomena which are best viewed as mere consequences of a pattern of heavy drinking rather than motivations for that drinking;
2. That nowhere in Edwards' writings is it stated that learning is an important process underpinning dependence phenomena.

Edwards' actual views on the importance of

dependence is well illustrated by one of his 1971 papers which he later describes as the origin of a dimensional view of alcohol dependence (Edwards, 1986):

Withdrawal symptoms are not envisaged as being-and-essence of dependence, but as providing a mechanism which allows the building of much stronger *operant conditioning* than can usually come from a primary euphoria alone. Dependence is not then seen as an all or none phenomenon: the severity of dependence is to be judged by the strength of a *conditioning process* (italics added). (Edwards, Hensman & Peto, 1971).

That the assessment of dependence syndromes is not merely classification and diagnosis for the sake of it, but an attempt to assess the extent to which a dynamic process has come to express itself in the drinking of a particular individual, is also illustrated in the 1982 WHO memorandum (Edwards *et al.*, 1982). A schematic presentation is given for a model of alcohol dependence in which learning processes, notably avoidance and appetitive learning, are seen as central driving forces fuelling the dependence process. It should be acknowledged, however, that in many of his writings Edwards is highly circumspect about the likely causal mechanisms underpinning the presentation of dependence syndromes. For example, in the first formulation it was stated that no assumptions were made as to the nature of any "pathology", while it was merely suggested that learning explanations were likely to be important (Edwards & Gross, 1976). However, it is also stated elsewhere that tolerance and withdrawal symptoms do not comprise dependence if these do not result in "drug taking, or at least the desire to take drugs" (Edwards *et al.*, 1982). The example is given of surgical patients who have been given opiate substances therapeutically and subsequently experience withdrawal symptoms but have no desire to continue taking drugs. It is also significant that when advising on assessment of degree of dependence it is recommended that clinicians focus on symptoms experienced by drinkers first thing in the morning upon waking rather than the classic full blown withdrawal syndrome of *delirium tremens* (Edwards, 1982). The

morning anxiety and tremulousness associated with minimal withdrawal may be experienced daily and hence, if relieved by drinking first thing in the morning, constitute the basis of a powerful learning process.

I have argued elsewhere (Hodgson & Stockwell, 1985; Stockwell, 1990) that dependence is best seen as an altered responsiveness to alcohol related cues comprising an increased disposition to drink in response to these cues, as a consequence of the individual's past experiences and consequent expectations with regard to drinking in response to such cues.

While the early formulations of the dependence syndrome only hint at the importance of learning to drink in response to withdrawal distress, a thorough learning analysis of drinking behaviour suggests that increased disposition to drink will also be acquired or learned in response to such antecedents as an "opportunity" to drink alcohol, perhaps signalled by the sight and smell of a preferred drink, in response to cues associated with mild intoxication where this has repeatedly preceded the experience of higher levels of intoxication.

It will be argued shortly that one of the main instruments devised by the Maudsley School to assess degree of alcohol dependence, the Severity of Alcohol Dependence Questionnaire (Stockwell, Hodgson, Edwards, Taylor & Rankin, 1979; Stockwell, Murphy & Hodgson, 1983), is restricted in its clinical value by only focusing on one of the main ways in which dependence upon alcohol is learned, viz. drinking to relieve or avoid alcohol withdrawal. However, it should be apparent that this omission cannot be taken as evidence that the alcohol dependence syndrome is essentially a biological concept. The strengths and weaknesses of this instrument and other alcohol dependence questionnaires will now be evaluated.

Instruments for the assessment of alcohol dependence

Davidson (1987) has written an excellent and comprehensive overview of five alcohol dependence questionnaires currently in use. He

Alcohol Dependence Questionnaire or SADQ (Stockwell *et al.*, 1983), the Severity of Alcohol Dependence Data or SADD (Raistrick, Dunbar & Davidson, 1983) and the Alcohol Dependence Scale or ADS (Skinner & Allen, 1982) as having accumulated the most evidence in support of their validity. Before I give a brief account of the evidence supporting these three questionnaires, I would like to issue a warning to potential consumers to beware of imitations. The American Psychiatric Association's widely regarded *Diagnostic and Statistical Manual of Mental Disorders* or *DSMIII-R* (American Psychiatric Association, 1987) recommends that clinicians assess degree of alcohol dependence in terms of the **presence or absence** of nine signs. This approach to the assessment of degree of alcohol dependence departs significantly from its original conception in the following ways:

1. At least two of the chosen signs require the individual drinker to have experienced an alcohol related problem. For example, one item is concerned with whether drinking has rendered them incapable of fulfilling important role obligations, and another that substance use has persisted despite the experience of problems. This contradicts the original formulation that alcohol dependence was to be seen as distinct from the experience of alcohol related problems.

2. Assessing for the mere presence or absence of such signs as withdrawal symptoms or relief drinking is almost tantamount to traditional "all or none" conceptions of alcoholism.

3. No attempt is made in this system to assess for either the rapidity of reinstatement of dependence signs after a period of abstinence, or for narrowing of drinking repertoire.

It would appear, therefore, that it can be easier to change terminology, i.e. from "alcoholism" to "alcohol dependence", than it is to change old habits of thinking.

Severity of Alcohol Dependence Questionnaire (SADQ)

The SADQ was the first self-report ques-

dependence syndrome. In its current form the SADQ has 20 items, each of which is rated on a 4-point frequency scale, resulting in a total dependence score of between 0 and 60. The 20 items are further divided into five sections corresponding to:

1. Physical symptoms of withdrawal
2. Affective symptoms of withdrawal
3. Drinking to relieve withdrawal symptoms
4. Typical daily consumption of alcohol
5. Rapidity of reinstatement after a period of abstinence.

Davidson (1987) describes the SADQ as the most widely used "second generation alcoholism assessment scale" and as having generated a considerable amount of data, attesting to both its reliability and validity. It has been shown that when subjects are re-tested two weeks after first completing the questionnaire that very similar scores are obtained, as evidenced by a high and significant test re-test coefficient (Stockwell *et al.*, 1983). Furthermore, a factor analysis yielded a significant single major factor which accounted for 53% of the total variance, which is consistent with a view that alcohol dependence is unidimensional (Stockwell *et al.*, 1979).

The validity of the SADQ has also been demonstrated by two studies which show that SADQ scores correlate highly with the blind clinical ratings made by experienced clinicians (Stockwell *et al.*, 1979; Meehan, Webb & Unwin, 1985). The SADQ has also been shown to demonstrate predictive validity in terms of variously predicting severity of alcohol withdrawal during detoxification (Stockwell *et al.*, 1983), rapidity of reinstatement following relapse (Opham, 1983), scores on the Eysenck Personality Inventory (Rankin, Stockwell & Hodgson, 1982) and degree of phobic anxiety (Smail, Stockwell, Canter & Hodgson, 1984). The authors note that three elements, namely "narrowing of drinking repertoire", "salience of drink seeking behaviour" and "subjective awareness of compulsion to drink", are not tapped by this instrument due to difficulties in operationalising them. The authors state that the questionnaire

However, SADQ scores have been shown to correlate well with a measure of "narrowing drinking repertoire" administered by interview (Stockwell *et al.*, 1979). Nonetheless, the SADQ has been criticised for failing to attempt to measure all seven elements of the alcohol dependence syndrome (e.g. Raistrick *et al.*, 1983).

Severity of Alcohol Dependence Data (SADD)

The SADD was also explicitly based on the concept of the alcohol dependence syndrome as originally formulated. Its authors claim that it succeeds in covering the full range of the alcohol dependence syndrome including those elements omitted from the SADQ. It comprises 15 items, each using 4-point frequency scales ("never", "sometimes", "often" and "nearly always"), resulting in a maximum total score of 45. It has been demonstrated to have both good test re-test reliability with an inter-test interval of one week, and also very good split half reliability (Jorge & Masur, 1985). Construct validity has been amply demonstrated with highly significant and positive correlations shown to occur between SADD score and alcohol intake, and SADQ score and clinical ratings based on the Edinburgh Alcohol Dependence Scale (Chick, 1980).

That there may be little to choose between the SADD and SADQ in practice is suggested by the order of correlation obtained between them ($r=0.83$, $p<.001$). Although the SADD certainly includes items which attempt to measure additional elements than does the SADQ, it is acknowledged even by one of its authors that these items may not actually tap the elements they intended to. For example, Davidson (1987) points out that the item "Do you drink in the morning, afternoon and evening?" is difficult to interpret and may not necessarily be a good measure of "narrowing of drinking repertoire". Furthermore, there is one item "Do you go drinking and the next day find you have forgotten what happened the night before?" which is included as a measure of tolerance but it is conceded that tolerance and amnesia may each be "the end experience of a number of different psychophysiological paths". It might also be noted that the order of correlation between

often quite low (Raistrick *et al.*, 1983), which again raises questions about its success in assessing the full range of elements described in the original formulation of the alcohol dependence syndrome.

Alcohol Dependence Scale (ADS)

The ADS is interesting in that it was derived from a larger 147 item Alcohol Use Inventory (Horne, Wanberg & Foster, 1974) prior to the first description of the alcohol dependence syndrome. It is a 25 item forced choice scale derived from a factor analysis of the original larger questionnaire, and comprises four circumscribed areas of dependence:

1. Loss of control
2. Psychophysical withdrawal symptoms
3. Psychoperceptual withdrawal symptoms
4. Obsessive-compulsive drinking style.

Skinner and Horn (1985) argue that this scale bears a close resemblance to the alcohol dependence syndrome although it should be noted that several of the items would seem to be discrepant. For example, the item "When you drink do you stumble about, stagger and weave?" which seems to be more related to the effect of acute intoxication rather than dependence. Furthermore, there are a number of other items relating to serious withdrawal symptomatology, i.e. *delirium tremens* and seizures, despite the fact that Edwards (1978) has made the point that such dramatic and infrequent events are not helpful in assessing degree of dependence. In common with the SADQ, the ADS can be criticised for failing to include more subjective and behavioural elements such as "narrowing of drinking repertoire", and "salience of drink seeking behaviour". However, it might also be argued that the failure of items resembling these to appear in the factor structure may also indicate the inherent difficulty in operationalising these elements in a self-report format.

There is scant data on the validity of the ADS, but there is substantial evidence for its reliability evidenced by exceptionally high internal consistency (alpha coefficient of

ents. An additional attraction of the ADS is that it is well presented and is accompanied by a clear and concise manual which summarises various standardisation studies and information on its administration.

Clinical utility of alcohol dependence questionnaires

During my years of clinical practice, when working with problem drinkers, I have almost invariably incorporated an alcohol dependence questionnaire into my assessment procedures. In more recent years I have construed this practice as being a motivational interviewing strategy (Miller, 1983), since the collection of objective data about drinking behaviour and feeding this back to the client is an important part of this approach. It can be useful to invite a client to assist in collecting this objective information in order to ascertain how their drinking and its consequences compares with that of norms for various populations, i.e. both the community at large and clinical populations. As might be expected, I have tended to use the SADQ for this purpose since means have been established for this instrument for a variety of populations in the UK, such as patients attending a liver unit (Wodak, Saunders, Ewusi-Mensah, Davis & Williams, 1983), patients attending a clinic at a general hospital (Potamianos & Papadatos, 1987), clients attending a community alcohol service (Stockwell, Bolt, Milner, Young & Pugh, 1990) and also a detoxification unit (Stockwell *et al.*, 1983). It should be noted, however, that Skinner presents norms for the ADS in a Canadian clinical population, in a more detailed way than has been documented for the SADQ, so that it is possible to determine on what percentile an individual has scored (Skinner & Horn, 1985). It would clearly be useful, for this purpose, to establish such detailed norms for clinic populations in Australia for one or more of the available dependence questionnaires. I have also used scores on dependence questionnaires in order to inform discussions with clients about a number of important issues relating to their tackling their drinking problem since, as I will now attempt to outline, the research evidence suggests that degree of dependence is an important consideration.

The choice between abstinence or controlled drinking

The idea that degree of dependence may predict the probability of an individual subsequently achieving a goal of controlled drinking has been termed by Orford and Keddle (1986) as the "dependence hypothesis". The research evidence with regard to this hypothesis at the present time appears to be mixed, with some early studies apparently supporting it, while latter ones, which relied mainly on questionnaire assessment of dependence, failing to support it.

Orford, Oppenheimer & Edwards (1976) reported on the two year outcome of a group of 100 married male alcoholics given either intensive outpatient treatment or a single session of advice. One of the intake assessments was the number of the following "dependence symptoms": early morning drinking, morning tremors, morning nausea, loss of control over amount drunk, passing out when drunk, secret drinking, and hallucinations when drinking. They found that drinkers who had reported four or more such symptoms were significantly more likely to abstain, while those with three or fewer were more likely to be controlled drinkers. However, it must be acknowledged that this scale can only be regarded as an approximation to degree of dependence.

Support for the dependence hypothesis was also provided by one of the most comprehensive studies of alcoholism treatment ever conducted. This has become known in alcoholism circles as the "Rand Report" and involved an assessment of the treatment and four year follow-up of 2,330 male alcoholics drawn from 44 alcoholism treatment centres across the United States (Polich, Armor & Braiker, 1980). In this study a very crude measure of alcohol dependence was employed comprising the following elements: tremors, morning drinking, loss of control, blackouts, missing meals or continuous drinking for 12 hours or more. They found significant differences between low levels of such dependence symptoms as opposed to high levels, with the low levels significantly favouring the maintenance of a "normal drinking" goal. It should be noted that degree of dependence was in some cases overridden by age and marital

status so that highly dependent individuals, who were also young and unmarried, were in fact more likely to relapse if they chose abstinence than if they chose normal drinking. However, older, married and highly dependent men had a much poorer prognosis with normal drinking than for abstinence. Interestingly, one of the greatest differences in relapse rates was reported for young, unmarried men with low dependence on alcohol, who were ten times more likely to relapse with a goal of abstinence than with a goal of normal drinking. Polich *et al.* (1980) conclude that the overall pattern of their results supports Edwards' contention that degree of dependence predicts type of treatment outcome.

Two studies have found that SADQ scores predict the likelihood of a controlled versus an uncontrolled drinking outcome. In the first of these, Edwards, Duckitt, Oppenheimer, Sheehan & Taylor (1983) identified eight subjects who met strict criteria for having achieved a goal of controlled drinking 12 years after they were initially seen at the Maudsley Hospital. The SADQ was administered to all subjects in the follow-up sample in a retrospective fashion and the subjects were instructed to complete it for their "worst ever" period of drinking. It was found that only one of the eight subjects had a maximum SADQ score of over 30, i.e. in the range previously found to correspond to clinical ratings of severe dependence. In fact this single individual was only drinking at low levels since he had lost his tolerance to alcohol to the extent that he became incapacitated after drinking only a few pints of beer. More recently Sitharthan and Kavanagh (in press) found that SADQ but not ADS scores were significantly correlated with reported weekly consumption at six month follow-up of 60 individuals who had attended a controlled drinking programme at a general hospital.

While, to my knowledge, no prospective study has been done employing other questionnaire tests of dependence in relation to the achievement of drinking goals, Skinner and Horn (1984) report that clients' ADS scores significantly correlate with their beliefs as to whether controlled drinking or abstinence would be attainable goals for

In all, three studies have appeared in the literature which have failed to find a relationship between SADQ score and subsequent achievement of a goal of abstinence or controlled drinking (Heather, Rollnick & Winston, 1983; Elal-Lawrence, Slade & Dewey, 1986; Orford & Keddle, 1986). I have argued elsewhere that none of the above studies can be regarded as sound tests of the dependence hypothesis, since they either fail to assess degree of dependence adequately or employ very loose criteria for the attainment of controlled drinking (Stockwell 1988).

A particular problem with the latter three studies is that they concern individuals attending predominantly abstinence orientated treatment agencies, and so it should not be assumed that the less dependent subjects will be more likely to achieve controlled drinking rather than abstinence. One of these studies does provide a separate analysis of the levels of dependence for individuals who achieved a goal of controlled drinking as opposed to those whose outcomes were considered to be uncontrolled (Heather *et al.*, 1983). They found that while SADQ failed to significantly discriminate between these two outcomes, which may in fact have been due to the small numbers of subjects involved in the risk comparison, a subjective scale in which the subjects were required to rate their confidence in achieving controlled drinking and their recent experiences of being able to control their drinking was a highly significant predictor of such an outcome. It is interesting to note that Sitharthan and Kavanagh (in press) also found that measures of self-efficacy were superior to the SADQ in predicting controlled drinking outcomes, although it should be noted that his subjects had a very low mean SADQ and limited range of scores (10.4, s.d.=6.7).

The failure of the SADQ to predict controlled drinking outcomes in some of the above studies should not only be attributed to design problems - it is also likely that the SADQ has certain deficiencies. It has been noted earlier that the SADQ fails to tap those elements of alcohol dependence relating to impaired control over drinking, such as might have been tapped by the subjective scale employed by Heather *et al.* (1983) in the above study. Other weaknesses of the

drinking may lie in its failure, along with other questionnaire measures, to assess use of other drugs which may substitute for alcohol, and also its limited focus on a single month's recent heavy drinking (Stockwell, 1988). Early experimental studies which demonstrated a very close link between degree of alcohol dependence and impaired control over drinking (Hodgson, Rankin & Stockwell, 1979; Stockwell, Hodgson & Rankin, 1982) employed a far stricter definition of severe alcohol dependence, requiring that subjects had drunk alcohol to relieve withdrawal symptoms almost every day for at least six months.

To summarise so far, the evidence to date suggests that with increasing severity of dependence an individual is less likely to be able to achieve a goal of controlled drinking. Clearly, the decision as to which type of drinking goal an individual opts for will be determined by many other factors than degree of dependence, such as social support for alternative goals, the client's physical condition and, perhaps most important of all, the client's own wishes. Furthermore, a questionnaire test of alcohol dependence can only be regarded as a partial assessment or indicator of the extent to which an individual has developed dependence. In the light of my own clinical experience, and the above findings, I would recommend that alcohol dependence questionnaire scores are used as one piece of information to assist a drinker to decide on the most appropriate drinking goal for them. This information should be supplemented, perhaps by formal assessment of their perception of the degree to which their control over alcohol is impaired (e.g. Heather *et al.*, 1983), and also by the length of time over which an individual may have consistently drunk in the morning to relieve early morning withdrawal symptoms. There is accumulating evidence that a severely dependent individual may achieve a goal of controlled drinking provided that they have first managed to abstain completely from drinking for a considerable period of time (Chick, 1986; Booth, 1990; Stockwell, 1990). This would suggest that it is advisable to recommend clients achieve such a period of abstinence prior to attempting controlled drinking, particularly when they are at the upper levels of dependence. It is not possible,

recommended preliminary period of abstinence for various degrees of dependence. For mildly dependent subjects the optimum period may be only one or two weeks; for severely dependent subjects between several months, and, for some, even several years.

Clearly, much further research is required to test the dependence hypothesis and, in particular, the relative merits of the various questionnaire tests available for predicting treatment outcome. Such studies should include the following design features:

- (a) A control for client's choice of drinking goal and the availability of therapeutic support for their chosen goal;
- (b) A comprehensive assessment of dependence incorporating duration of dependent pattern of drinking, withdrawal relief drinking and also impaired control;
- (c) Drinkers exhibiting the full range of dependence severity.

In the meantime there is modest evidence supporting the utility of the SADQ, in particular, as a predictor of the possibility of achieving controlled drinking provided that this is supplemented by other clinical assessments.

The management of phobic anxiety stress

Considerable evidence has accumulated to the effect that heavy drinking and, in particular, a dependent style of drinking may create or exacerbate such phobic anxiety states as agrophobia and social-phobia (Stockwell and Bolderston, 1987). The symptoms of alcohol withdrawal can be viewed as the psychophysiological concomitants of an anxiety state and, indeed, the experience of subjective anxiety the morning after a heavy drinking session is often experienced prior to the development of tremors or nausea (Edwards, 1982). It has been found that SADQ scores closely correlate with severity of phobic anxiety states (Smail *et al.*, 1984). A score on a dependence questionnaire indicating even a mild degree of dependence should alert the practitioner of the likelihood that alcohol dependence has fuelled a phobic anxiety state, where both problems present

that the client be advised to abstain completely, or at least substantially cut down on their drinking, and/or symptoms of phobic anxiety should be monitored prior to instituting time-consuming and expensive anxiety management or pharmacological treatment (Stockwell & Town, 1989).

Skinner and Horn (1985) have also reported that ADS scores correlate with self-completion questionnaires concerned with other psychopathology. It is likely that both the ADS and SADQ may be used in a similar way to the SADQ for alerting the practitioner to appropriate management of anxiety related disorders.

Management of alcohol withdrawal

It has been shown that SADQ scores predict severity of alcohol withdrawal in a detoxification unit as rated by an experienced clinician (Stockwell *et al.*, 1983). The level of correlation between these was in fact modest, but this may have been due to the fact that alcohol withdrawal symptomatology was masked by high levels of medication used to assist patients withdrawing from alcohol in this study. I would not recommend that any alcohol dependence questionnaire be used as the sole criterion for deciding whether a formal detoxification programme should be instituted, whether as an inpatient, outpatient or at home. However, such scales might be used as screening devices so that, even if mild or moderate levels of dependence are indicated by scores, such patients are assessed carefully to establish the level of support they may require to withdraw from alcohol should this be indicated.

Summary and conclusions

I have attempted to argue that the notion of alcohol dependence is most usefully seen, from the practitioner's point of view, as being the coming together of a number of learning processes involving drinking in response to alcohol related cues. Key learning processes involve repeated drinking to high levels of intoxication following intake of a modest amount of alcohol (impaired control) and persistent drinking to relieve or avoid the experience of alcohol withdrawal. At the present time, the available alcohol depend-

tap the extent to which such learning has occurred. While much further research is required to refine these assessment instruments, it has been argued that provided they are supplemented with additional clinical information, each may be valuable in assisting the practitioner to develop appropriate treatment strategies for individual clients.

References

- American Psychiatric Association. (1987). *Diagnostic and Statistical Manual of Mental Disorders*. (3rd edition - revised). Washington DC.
- Booth, P.E. (1990). Maintained controlled drinking following severe alcohol dependence - A case study. *British Journal of Addiction*, 85, 323-328.
- Chick, J. (1980). Alcohol dependence: Methodological issues in its measurement; Reliability of the criteria. *British Journal of Addiction*, 75, 175-186.
- Chick, J. (1987). Controlled drinking - Two empirical questions. *British Journal of Addiction*, 82, 240-243.
- Davidson, R. (1987). Assessment of the alcohol dependence syndrome : A review of self-report screening questionnaires. *British Journal of Clinical Psychology*, 26, 243-256.
- Edwards, G. (1978). The alcohol dependence syndrome: Usefulness of an idea. In G. Edwards & Grant (Eds.), *Alcoholism, medicine and psychiatry: New knowledge and new responses*. Croom Helm Ltd., London.
- Edwards, G. (1982). *The treatment of drinking problems*. Grant McIntyre, Oxford.
- Edwards, G. (1986). The alcohol dependence syndrome : A concept as stimulus to enquiry. *British Journal of Addiction*, 81, 171-184.
- Edwards, G., Arif, A. & Hodgson, R. (1982). Nomenclature and classification of drug and alcohol related problems: A shortened version of a WHO memorandum. *British Journal of Addiction*, 77, 3-20.
- Edwards, G., Duckitt, A., Oppenheimer, M.A., Sheehan, M. & Taylor, C. (1983). What happens to alcoholics? *Lancet*, 2, 269-271.

- Edwards, G. & Gross, M.M. (1976). Alcohol dependence: Provisional description of a clinical syndrome. *British Medical Journal*, 1, 1058-1061.
- Edwards, G., Gross, M.M., Keller, M., Moser, J. & Room, R. (1977). *Alcohol-related disabilities*. WHO Offset Publication No. 32, World Health Organisation, Geneva.
- Edwards, G., Hensman, C. & Peto, J. (1971). Drinking problems among recidivist prisoners. *Psychological Medicine*, 1, 417-429.
- Elal-Lawrence, G., Slade, P.D. & Dewey, M.E. (1986). Predictors of outcome type in treated problem drinkers. *Journal of Studies on Alcohol*, 47, 41-47.
- Heather, N., Rollnick, S. & Winston, M. (1983). A comparison of objective and subjective measures of alcohol dependence as predictors of relapse following treatment. *British Journal of Consulting Psychology*, 22, 11-17.
- Hodgson, R., Rankin, H. & Stockwell, T. (1979). Alcohol dependence and the priming effect. *Behavioural Research Therapy*, 17, 379-387.
- Hodgson, R. & Stockwell, T. (1985). The theoretical and empirical basis of the alcohol dependence construct. In N. Heather *et al.* (Eds.), *The Misuse of Alcohol: Current Issues in Dependence, Treatment and Prevention*. Croom Helm Ltd., London.
- Horne, J.L., Wanberg, K.W. & Foster, F.M. (1974). *The Alcohol Use Inventory*. Colorado: Centre for Alcohol Abuse Research and Evaluation.
- Jorge, M.R. & Masur, J. (1985). The use of the short-form Alcohol Dependence Data Questionnaire (SADD) in Brazilian alcoholic patients. *British Journal of Addiction*, 80, 301-306.
- Meehan, J.P., Webb, M.G. & Unwin, A.R. (1985). The Severity of Alcohol Dependence Questionnaire (SADQ) in a sample of Irish problem drinkers. *British Journal of Addiction*, 80, 57-63.
- Miller, W.R. (1983). Motivational interviewing with problem drinkers. *Behavioural Psychotherapy*, 11, 147-172.
- Orford, J. & Keddle, A. (1986). Abstinence or controlled drinking in clinical practice: A test of the dependence and persuasion hypotheses. *British Journal of Addiction*, 81, 495-504.
- Orford, J., Oppenheimer, E. & Edwards, G. (1976). Abstinence or control: The outcome for excessive drinkers two years after consultation. *Behavioural Research Therapy*, 14, 409-418.
- Polich, J.M., Armor, D.J. & Braiker H.B. (1980). *The course of alcoholism four years after treatment*. Santa Monica: Rand Corporation.
- Potamianos, G. & Papadatos, Y. (1987). The 'ACCEPT' Community Programme for problem drinkers: A comparison with general hospital care. In T. Stockwell & S. Clement (Eds.), *Helping the problem drinker: New initiatives in community care*. London: Croom Helm.
- Raistrick, D., Dunbar, G. & Davidson, R. (1983). Development of a questionnaire to measure alcohol dependence. *British Journal of Addiction*, 78(1), 89-96.
- Rankin, H., Stockwell, T. & Hodgson, R. (1982). Personality and alcohol dependence. *Personality & Individual Differences*, 3, 145-151.
- Robertson, I. (1986). A modest statistical phenomenon of little theoretical coherence. *British Journal of Addiction*, 82, 190-193.
- Shaw, S. (1979). A critique of the concept of the alcohol dependence syndrome. *British Journal of Addiction*, 74, 339-348.
- Sitharthan, T. & Kavanagh, D. (in press). *Role of self-efficacy in predicting outcomes from a program for controlled drinking. ???*
- Skinner, H.A. & Allen, B.A. (1982). Alcohol dependence syndrome : Measurement and validation. *Journal of Abnormal Psychology*, 91, 199-209.
- Skinner, H.A. & Horn, J.L. (1984). *Alcohol Dependence Scale (ADS): User's Guide*. Toronto: Addiction Research Foundation.
- Smail, P., Stockwell, T., Canter, S. & Hodgson, R. (1984). Alcohol dependence and phobic anxiety states. I: A prevalence study. *British Journal of Psychiatry*, 144, 53-57.
- Stockwell, T. (1988). Can severely dependent drinkers learn controlled drinking? Summing up the debate. *British Journal of Addiction*, 83, 149-152.

- Stockwell, T. (1990). Psychological and social basis of drug dependence: An analysis of dependence as learned behaviour. In G. Edwards & M. Lader (Eds.), *The nature of alcohol dependence*. Oxford University Press.
- Stockwell, T. (1990). An old chestnut well cracked. *British Journal of Addiction*, 85, 315-322.
- Stockwell, T. & Bolderston, H. (1987). Alcohol and phobias. *British Journal of Addiction*, 82, 971-980.
- Stockwell, T., Bolt, E., Milner, I., Young, I. & Pugh, P. (1990). Home detoxification for problem drinkers: Outcome at 60 days and acceptability to clients, relatives and GPs. *British Journal of Addiction*, 85, 61-70.
- Stockwell, T.R., Hodgson, R.J., Edwards, G., Taylor, C. & Rankin, H. (1979). The development of a questionnaire to measure severity of alcohol dependence. *British Journal of Addiction*, 74, 79-87.
- Stockwell, T., Hodgson, R. & Rankin, H. (1982). Alcohol dependence, beliefs and the priming effect. *Behavioural Research Therapy*, 20, 513-522.
- Stockwell, T., Murphy, D. & Hogson, R. (1983). The Severity of Alcohol Dependence Questionnaire: Its use, reliability and validity. *British Journal of Addiction*, 78(2), 145-155.
- Stockwell, T. & Saunders, B. (1990). Alcohol and drug dependence: Syndrome, strong attachment or everyday behaviour? *Drug and Alcohol Review*, 9, 103-110.
- Stockwell, T. & Town, C. (1980). Anxiety and stress management. In W.R. Miller & R. Hester (Eds.), *Comprehensive handbook of alcoholism treatment approaches*. Sydney and New York: Pergamon Press.
- Topham, A. (1983). *Alcohol dependence and craving*. Unpublished PHD thesis, Institute of Psychiatry, University of London.
- Wodak, A.D., Saunders, J.B., Ewusi-Mensah, I., Davis, M. & Williams, R. (1983). Severity of alcohol dependence in patients with alcoholic liver disease. *British Medical Journal*, 287, 1-420-1422.

ASSESSING SMOKERS: MATCHING TO TREATMENTS

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It has long been known that once a person has been a regular smoker for a while, he or she learns (without realising it) to automatically use the effects of nicotine to "wake up" in the morning, to keep alert during the day, to avoid feelings of boredom, depression or tiredness, to help cope with stress and tension, and to partly counteract the depressant effects of alcohol when drinking. Over time, the act of smoking becomes strongly associated with many such situations, emotions and "signals". This emotional dependence usually becomes a deeply-entrenched part of the smoker's personality. Quitting smoking is therefore a very complex problem for most smokers to solve.

The treatment outcome literature published over the last 20 years reflects a progressive increase in recognition of this complexity, with treatments having become either increasingly more complex themselves, or else much briefer. The complex programmes reflect problem complexity, while the brief programmes acknowledge that, since a very large number of people smoke, there is a large number that can easily be encouraged to quit with minimal input, even though 90-95% of smokers will not be able to quit in this way.

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% in the case of one treatment occasion, up to 14% when the intervention involved more than eight treatment occasions. Reflecting the

more of the barriers to cessation can be dealt with, this meta-analysis found that most other predictors of differential outcome were also related to treatment intensiveness.

In theory, cessation interventions could be both more effective and more cost-effective if predictors of treatment outcome were identified and were used to direct smokers into treatments of just-adequate intensiveness, and into treatments matched individually to smokers' needs. Over the past 20 years, research reports about smoking treatments, as well as reviews of these reports, have repeatedly suggested the importance of developing strategies for matching smokers to treatments. One of the earliest references to this notion was made by Paul (1967) who suggested that "the question towards which all outcome research should ultimately be directed is: **what** treatment by **whom** is most effective for **this** individual with **that** specific problem, and under **which** set of circumstances". In an early review of the smoking treatment literature, Bernstein & McAlister (1976) suggested that a great deal of work would need to be done to learn the ways in which treatment could be individualised in the light of relevant subject variables. In a subsequent review, Leventhal & Cleary (1980) noted that virtually none of the studies reviewed had bothered to examine the impact of the intervention on particular smoking subgroups. At around the same time, Costa, McCrae & Bosse (1980) suggested that the poor performance of most treatment programmes may in part have been due to a neglect of individual smoking style variables in planning interventions.

In spite of such recommendations, most intervention research to date has involved

basically similar in nature, and that therefore one "optimal" treatment, or one treatment for each intervention setting, can be developed to deal with the problem. However, cessation treatment outcome is determined by three types of factors:

1. Treatment factors,
2. "Subject factors" relating to the personal qualities, aptitudes and lifestyles of individual smokers, and
3. Interactions (i.e. matches and mismatches) between subject factors and treatment factors.

There are large individual differences in outcome response to any therapy process - some clients improve greatly, others are unaffected, while some may actually get worse, presumably at least partly because of client-treatment mismatch. For example, self-control strategies are often employed in cessation programmes on the unstated assumption that anyone should be able to understand and implement them.

Failure of the smoker to implement treatment strategies is thus described in terms of "noncompliance", and assumed due to stubbornness, laziness, stupidity or lack of adequate motivation. However, a more realistic view involves the acceptance that an ability and predisposition towards exercising self-control effectively is learned throughout life, to individually different degrees. Furthermore, even in those who are adequately skilled, there will be situational and interpersonal factors which may preclude effective utilisation of self-control strategies at a particular point in time.

An example of the quite remarkable lack of effort which has been put into research on the issue of matching smokers to treatments may be seen in the Reasons-For-Smoking Scale, published by Ikard, Green & Horn in 1969. This scale, and variations of it which are still widely used, consisted of 23 items which related to six proposed "types of smoking", namely addictive, habitual, negative affect, relaxation, stimulation and manipulation. In their 1969

findings raised the question of whether the effectiveness of a certain method of quitting depended on the kind of smoker who tried it.

A number of studies have subsequently investigated the characteristics of this scale. The most recent, reported by Tate & Stanton (1990) involved undergraduate student subjects being asked to complete the scale and subsequently to self-monitor for a period of time the smoking-related behaviours which are included in the scale. Initial self-report data was found to correlate very poorly (r 's = 0.18 - 0.50), indicating subjects' generally low level of insight at the time of completing the initial questionnaire. Studies involving "real" clinical populations have reported even lower validity coefficients (Shiffman & Prange, 1988). Tate & Stanton (1990) suggested that "From a therapeutic standpoint, the most useful validity test will be the prediction of differential outcome in smoking cessation treatment ... Research into this question represents the next logical step". That is, twenty-one years later, the same recommendations are being made, and the "next step", which was obvious in 1969, still has not been taken!

Numerous factors affect the probability that a given smoker will (a) attempt to stop smoking, (b) participate in some kind of cessation treatment, and (c) be able to stop smoking, either with or without the "benefit" of intervention.

These factors may be considered in four broad groupings, namely:

1. Factors which act to promote continued smoking by an individual,
2. Factors which motivate cessation of smoking,
3. Factors which affect the likelihood that the smoker will actually be able to engage in treatment, and
4. Factors which determine whether the smoker will be able to understand the requirements of treatment and be able to implement these requirements in practice.

Most of these factors are, in principle, modifiable or adaptable-to. This kind of framework therefore provides a basis for matching interventions both to the needs and aptitudes of individual smokers, and to the practical limitations imposed by the various settings in which smokers might be recruited to participate in such interventions.

The fact that no treatment has been found which is effective for all smokers has led, over time, to the development of increasingly intensive, complex multicomponent "treatment packages". Accordingly, most face-to-face cessation programmes which are currently available are conducted on a small-group basis, and consist of a collection of components which are intended to address the range of issues relevant to the heterogeneous collection of people likely to form the group. Thus, clients are exposed to all strategies, and then "comply" to varying degrees with those which are seen as useful, possible, and worth the effort.

Common strategies include:

1. Information and discussion about the effects of smoking on health, and the advantages of quitting, in printed, verbal and/or video forms, to maximise participants' motivation to stop smoking.
2. A common "Quit Date" for all participants, allowing time to prepare to quit smoking, and to practice new self-control and coping skills before trying to quit.
3. A procedure of gradually, switching cigarette brands down to a low-nicotine brand by the time of the quit date, in order to reduce physical dependence on nicotine.
4. Several social support strategies, including letters to be signed and handed out to friends stating participants' commitments to stopping smoking, distribution of posters and smoke-free-zone signs, and instructions for a "helper" at home.
5. Training in relaxation and stress-management skills.
6. Identification of situations in which

and advice regarding strategies for coping with these.

7. Nicotine chewing tablets (Nicorette).

8. The setting of abstinence goals, and the writing of formal "contracts", involving planned rewards for nonsmoking.

9. Advice, and possibly structured assistance, with minimising the weight gain which usually follows smoking cessation.

An example of a treatment component to which smokers should be matched is **Nicorette tablets**.

Most smokers light a cigarette every 30-60 minutes, a period comparable to the half-life of nicotine, in order to maintain a reasonably constant blood nicotine level. Some smokers are so nicotine-dependent that they awake from sleep several times during the night to smoke, and even smoke while showering.

If a dependent smoker suddenly stops smoking, he or she will begin to experience withdrawal symptoms within a few hours. These symptoms may include craving to smoke, increased appetite, tiredness, headache, irritability, restlessness, difficulty concentrating, and difficulty sleeping. Heavy smokers report more severe symptoms when they try to abstain than light smokers do (Cummings, Giovino, Jaen & Emrich, 1985). Such symptoms, and the biochemical changes which accompany them, can persist for weeks after cessation of smoking (West, Hajek & Belcher, 1987), and are among the most frequently mentioned reasons for early relapse (Cummings, Jaen & Giovino, 1985).

Placebo-controlled studies have established that, in a general medical setting, nicotine replacement in the form of Nicorette tablets acts mainly as a placebo, with an effect of simply encouraging some smokers to attempt to quit (British Thoracic Society, 1983; Jamrozik *et al.*, 1984). In contrast, studies conducted in smoking cessation clinics involving smokers who were fairly highly motivated to quit, have generally provided strong evidence for the efficacy of

lar, the effectiveness of Nicorette tablets in alleviating nicotine withdrawal symptoms is well-established (Schneider & Jarvik, 1984; Nemeth-Coslett & Henningfield, 1986). A published meta-analysis of clinic-based trials found that the averaged 12-month abstinence rate of 23% achieved in Nicorette groups was statistically significantly superior to the rate of 13% observed in Placebo groups (Lam *et al.*, 1987).

It has also been established that the specific pharmacological effects of Nicorette mainly benefit smokers who are relatively highly-dependent on nicotine. In the relevant studies, dependence has generally been measured by the Fagerstrom Tolerance Scale, which contains eight questions which appear relevant to assessing nicotine dependence. When dependence is defined in terms of a median split on the total scale score (at a cutoff of 6 or 7 points), the likelihood of low-dependent smokers succeeding in quitting smoking has been found to be almost unaffected by whether they receive Nicorette or placebo. In contrast, highly-dependent smokers are more likely to succeed in quitting if they use Nicorette, especially the stronger 4mg preparation (Fagerstrom & Schneider 1989; Hajek, 1987).

Unfortunately Nicorette has side-effects, including irritation of the mouth and throat, nausea, hiccups, unpleasant taste, and soreness of jaws. These side-effects, as well as Nicorette's cost, contribute to the resistance shown by many smokers towards using the gum (Nemeth-Coslett & Henningfield, 1986). These considerations make Nicorette an ideal treatment component for matching: high-dependent smokers need it, use it and are only minimally deterred by its side-effects; low-dependent smokers do not need it and do not like it.

It would seem, therefore, that the Fagerstrom Scale should be quite useful in identifying individual smokers who need Nicorette. However, the scale has psychometric shortcomings which greatly limit its usefulness in identifying individual smokers who will need Nicorette. In particular, most of its items have low predictive validity, and the scale overall has low internal consistency (Fagerstrom & Schneider 1989).

What makes matching so difficult?

A range of problems, probably insurmountable problems, exist in relation to developing a process for matching smokers to treatment components. Some of these are outlined briefly below.

Can we actually offer treatments which differ from each other?

For matching to be feasible, treatment components must be deliberately designed so as to interact with relevant individual differences exhibited by smokers. Components therefore need to be both **effective**, and **different** from each other in underlying mechanism of operation, with little overlapping content. However, much of the effect of any cessation strategy (or combination of strategies) is due to placebo and non-specific factors which characterise almost any treatment, rather than to a theory-based, hypothesised "active ingredient". That is, even treatment components which have different names generally have much in common in terms of underlying process (Stiles, Shapiro & Elliott, 1986).

A meta-analysis by Bowers & Clum (1988) considered this issue in relation to therapy outcome studies generally, and concluded that more than a quarter of the effect of psychological treatments was due to placebo effects. In relation to smoking, these effects include the smoker investing time, money and effort in participating in treatment; being able to discuss the problem with a concerned therapist or with other smokers in a group setting; the fact that dealing with smoking becomes, for a brief time, a focus of thought and activity; and the smoker's belief in the likely value of treatment. Additional non-specific effects include those attributable to spontaneously occurring social support from friends and family, and to increased self-awareness which results from self-monitoring of smoking related behaviours.

Furthermore, there is actually little solid evidence available regarding the construct validity of most specific cessation treatment components: that is, whether they actually do what they are labelled as doing (McCaul & Clum, 1985). Annotated edition, some

such evidence exists in relation to Nicorette, but where is the evidence that rapid smoking treatment works primarily by inducing a lasting aversion to smoking? Are the effects of hypnosis restricted to smokers who are hypnotically-susceptible? Does cognitive self-control training actually significantly increase clients' actual day-to-day cognitive self-control ability? To what extent does stress management training really substantially improve clients' ability to minimise their exposure to stress? This list of questions could easily be extended!

One obvious dimension on which treatments can be readily made to differ is **intensiveness** - that is, the amount of time/money/resources involved in treating each smoker. However, at a given level of intensiveness, it is, in fact, quite difficult to generate treatment components which are actually very different from each other. Furthermore, matching almost requires treatments to be developed in mirror-image pairs. If, for example, one is matching smokers to components on the basis of a measure of self-control ability, one needs a treatment component which is appropriate for high self-control smokers and another component, of comparable length, which is appropriate for those with low self-control.

Is assessment of individual differences really feasible?

There are so many individual-difference variables which act to determine the outcome of cessation treatment, that matching smokers to treatment on the basis of just one or two of these is unlikely to confer substantial advantage in terms of efficacy or cost-effectiveness. Variables which are easily measured, such as age and gender, for example, are unlikely to substantially interact to a clinically-useful degree with different treatment components. Variables which are likely to be important are difficult to measure validly and reliably: even such an apparently relevant and straightforward a variable as nicotine dependence has proven remarkably difficult to measure adequately.

Being able to assess smokers in order to match them to treatments necessarily re-

of insight into the factors which maintain their smoking and who understand, or can be efficiently led to understand, the nature of available treatment components. However, many smokers are probably not in a position to make such informed, optimal choices: if they were, they would probably not need professional treatment at all.

Most smokers who seek treatment do so on the basis that they are unable to solve the quitting problem for themselves. Their pessimism is such that, given choices, they will either assign themselves to a "novel" treatment which simply sounds promising, or to one which appears to require little personal effort, or to an unnecessarily intensive treatment, "just to make sure".

For example, in 1983 the NSW Department of Health established a temporary Quit Centre at Sydney Hospital which was attended by over 3500 smokers (Bittoun & Clarke, 1985). Of six treatments which were offered, by far the most popular treatment (attended by 47% of smokers) was "hypnosis-assisted therapy", which had by far the poorest outcome (7% end-of-treatment abstinence). In contrast, the least popular treatment "Self-Control", was attended by only 5% of smokers, but had a clearly better outcome, with a 25% end-of-treatment abstinence rate.

Is comprehensive assessment warranted, given constraints on treatment?

In recent years, attention in the drug and alcohol field has turned away from intensive interventions towards "brief" interventions which have potential to affect large numbers of smokers, even at the expense of lower percentage abstinence rates. Increasingly, anti-smoking interventions need to be justified in cost-benefit terms (Cummings, Rubin & Oster, 1989) and in terms of their real potential for reducing smoking prevalence at a community level (Stachnik & Stoffelmayr, 1981; Chapman, 1985).

Smokers are not interested in participating in long treatments. Everytime a smoker tries to avoid cigarettes, he or she generally experiences punishment in the form of

to quit for attempting to exercise self-control over smoking. A history of such experiences leads the smoker to believe that self-control is useless and doomed to failure. Because of this pessimistic attitude, the smoker no longer tries very hard to control his or her smoking. If a smoker expects to fail "no matter how hard he or she tries", little real effort will be put into quitting. Such helplessness contributes to most smokers being unwilling to enter treatment at all, particularly treatments which appear at the outset to be expensive in terms of the time, money and effort which are likely to be required.

Thus, smoking cessation treatments are generally brief in comparison with treatments for other emotional and behavioural problems. For example, group smoking cessation programmes rarely exceed six sessions in length. In contrast, treatments for other clinical problems often involve 10-20 sessions, and are even then often not effective in relieving their target problems.

Unfortunately, this means that realistic smoking treatments do not have time to implement their components effectively. If the "sub-problems" which maintain smoking for most smokers were dealt with on this basis, smoking cessation programmes would be 20-40 sessions long for many smokers! Thus, although complex assessment and treatment packages may theoretically be able to provide improved effectiveness, such packages would accordingly be those which would have the least potential to benefit large numbers of smokers.

Furthermore, cessation programmes are generally conducted in groups, making individualisation much more difficult in practice, since a group will consist of a heterogeneous collection of individuals. It would theoretically be possible to assess smokers and direct them to one of a number of different group programmes, each designed for a particular subgroup of smoker. However, as indicated earlier, there are so many mediating factors involved that the number of different types of groups required would be prohibitive in practice.

To end on a positive note, however, even

individual smokers, there is certainly value in assessing individual settings in which smoking interventions are conducted. Interventions can, and should, be designed to take account of (a) the practical (time and organisational) limitations which are imposed by the setting, and (b) the issues which are relevant to the typical smoker passing through the setting.

Beyond this, one should deliberately exclude treatment components which will apply to only a minority of clients. One should also avoid addressing issues which cannot be dealt with adequately in the treatment time available. Realistically, such issues will generally include most of the complementary lifestyle changes which are suggested to smokers, such as establishing a regular pattern of exercise, learning to manage stress more effectively, and significantly changing dietary habits and preferences. There is more to be gained by making cessation interventions more relevant to real-life and more widely available in practice, than more effective only in theory.

References

- Bernstein, D.A. & MacAlister, A. (1976). The modification of smoking behaviour: Progress and problems. *Addictive Behaviours*, 1, 89-102.
- Bittoun, R. & Clarke, J.C. (1985). Experience with a large-scale smoking cessation clinic. *Australian Alcohol/Drug Review*, 4, 165-168.
- Bowers, G. & Clum, G.A. (1988). Relative contributions of specific and non-specific treatment effects: Meta-analysis of placebo-controlled behaviour therapy research. *Psychological Bulletin*, 103, 315-323.
- British Thoracic Society. (1983). Comparison of four methods of smoking withdrawal in patients with smoking-related diseases. *British Medical Journal*, 286, 595-598.
- Chapman, S. (1985). Stop-smoking clinics: A case for their abandonment. *Lancet*, April 20, 918-920.
- Costa, P.T., McCrae, R.R. & Bosse, R. (1980). Smoking motive factors: A review and replication. *International Journal of the Addictions*, 15, 527-540.

- Cummings, K., Giovino, G., Jaen, C.R. & Emrich, L.J. (1985). Reports of smoking withdrawal symptoms over a 21 day period of abstinence. *Addictive Behaviours*, 10, 373-381.
- Cummings, K.M., Jaen, C. & Giovino, G. (1985). Circumstances surrounding relapse in a group of recent ex-smokers. *Preventive Medicine*, 14, 195-202.
- Cummings, S.R., Rubin, S.M. & Oster, G. (1989). The cost-effectiveness of counselling smokers to quit. *J.A.M.A.*, 261, 75-79.
- Fagerstrom, K.O. & Schneider, N.G. (1989). Measuring nicotine dependence: A review of the Fagerstrom Tolerance Questionnaire. *Journal of Behavioural Medicine*, 12, 159-182.
- Hajek, P. (1987). *2mg and 4mg nicotine chewing gum in smoking cessation: Who prefers which?* Paper presented at the 6th World Conference on Smoking and Health, Tokyo.
- Ikard, F.F., Green, D.E. & Horn, D. (1969). A scale to differentiate between types of smoking as related to the management of affect. *International Journal of the Addictions*, 4, 629-639.
- Jamrozik, N., Fowler, G., Vessey, M., Wald, N., Parker, G. & Van Vunakis, H. (1984). Placebo-controlled trial of nicotine chewing gum in general practice. *British Medical Journal*, 289, 794-797.
- Kottke, T.E., Battista, R.N., DeFries, G.H. & Brekke, M.L. (1988). Attributes of successful smoking cessation interventions in medical practice. *J.A.M.A.*, 259, 2882-9.
- Lam, W. *et al.* (1987). Meta-analysis of randomised controlled trials of nicotine chewing gum. *The Lancet*, July 4, 27-30.
- Leventhal, H. & Cleary, P.D. (1980). The smoking problem: A review of the research and theory in behavioural risk modification. *Psychology Bulletin*, 88, 370-405.
- McCaul, K.D. & Glasgow, R.E. (1985). Preventing adolescent smoking: What have we learned about treatment construct validity? *Health Psychology*, 4, 361-387.
- Nemeth-Coslett, R. & Henningfield, J.E. (1986). Effects of nicotine chewing gum on cigarette smoking and subjective and physiological effects. *Clinical Pharmacology and Therapeutics*, 39, 625-630.
- Paul, G.L. (1967). Strategies of outcome research in psychotherapy. *Journal of Consulting Psychology*, 31, 109-118.
- Schneider, N.G. & Jarvik, M.E. (1984). Nicotine vs placebo gum in the alleviation of withdrawal during smoking cessation. *Addictive Behaviours*, 9, 149-156.
- Shiffman, S. & Prange, M. (1988). Self-reported and self-monitored smoking patterns. *Addictive Behaviours*, 13, 201-204.
- Stachnik, T.J. & Stoffelmayr, B.E. (1981). Is there a future for smoking cessation programs? *Journal of Community Health*, 7, 47-56.
- Stiles, W.B., Shapiro, D.A. & Elliott, R. (1986). Are all psychotherapies equivalent? *American Psychologist*, February, 165-180.
- Tate, J.C. & Stanton, A.L. (1990). Assessment of the validity of the reasons for smoking scale. *Addictive Behaviours*, 15, 129-135.
- West, R.J., Hajek, P. & Belcher, M. (1987). Time course of cigarette withdrawal symptoms during four weeks of treatment with nicotine chewing gum. *Addictive Behaviours*, 12, 199-203.

ASSESSING OPIATE USERS: THE OPIATE TREATMENT INDEX¹

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Introduction

One of the major theoretical and methodological problems of opiate treatment evaluation research has been the non-comparability of research findings. Studies vary in both the domains selected as outcome variables, and in the criteria for "success" within these domains. For example, some major outcome studies concentrate exclusively on drug use and criminality as outcome variables (e.g. DeLeon, 1986; DeLeon, Wexler & Jainchill, 1986), whereas others regard factors such as employment and psychiatric status as also constituting relevant outcome domains (Hubbard *et al.*, 1983; McLellan, Luborsky, O'Brien, Barr & Evans, 1986; Simpson & Marsh, 1986). Even when variables are comparable between studies, the manner in which these variables are measured renders comparability impossible. The area of drug use provides the most salient example of this. In a great many studies complete abstinence is used as the criteria for success, and what is reported is the percentage of clients who achieve abstinence (e.g. DeLeon, 1986). Other studies report frequency of use of substances (e.g. Hubbard, Rachel, Craddock & Cavanaugh, 1986), while still others report time to relapse (Fisher & Anglin, 1987; Simpson, Joe & Bracy, 1982). The result of these discrepancies in methodology is the virtual impossibility of comparisons between studies.

Clearly, one of the reasons for the non-comparability described above is the differing beliefs of various researchers regarding the relevant goals of treatment. However, a major contributor to the present situation has been the relative absence of standardised instruments in the area of opiate treatment outcome research. Researchers have, on the whole, employed questionnaires unique to their studies, which are of unknown validity and reliability.

One exception to the above are the studies which employ the Addiction Severity Index (ASI) (McLellan, Luborsky, Woody & O'Brien, 1980). The ASI is a structured clinical interview that examines problem severity in seven drug related domains. Problem severity is scored on a 0-9 scale for each outcome domain. There is considerable evidence for the reliability and validity of the ASI (McLellan *et al.*, 1980; McLellan *et al.*, 1985). Thus, unlike the instruments employed in the majority of outcome studies, the ASI may be considered a standardised instrument.

There are, however, problems with the ASI which indicate the need for the development of new assessment instruments. The first major problem with the instrument concerns the subjectivity of ASI scoring procedures. Severity scores are determined on the basis of the estimates of the interviewer and client

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regarding current problem severity, rather than on the basis of an objective scale score. Even the calculations for ASI "composite" scores, designed for objective research purposes rather than for clinical purposes, include the subjective impressions of the client. The ASI, particularly in the areas of family/social and employment is oriented towards the American situation, and in many areas is not applicable to the Australian scene. Finally, the ASI was constructed prior to the AIDS pandemic, and as such does not address risk-taking behaviour in this area.

The present paper presents data on the reliability and validity of a new instrument for treatment evaluation: the Opiate Treatment Index (OTI). The authors considered that in constructing a comprehensive evaluative tool a number of criteria should be met.

1. The primary consideration of the authors in constructing such a comprehensive treatment outcome index is that it should be multi-dimensional in nature. Clearly, the aims of opiate treatments extend beyond the cessation or reduction of drug use. Opiate use is associated with a broad range of health, legal, and social problems. Furthermore, there is substantial evidence that the problems associated with opiate use are relatively independent (McLellan, Luborsky, Woody, O'Brien & Kron, 1981). An assessment instrument should reflect this in its structure.

2. The instrument should be based upon objective data, rather than on the impressions of interviewers. This is to avoid the problems engendered by the differing criteria for "success" employed by different researchers. What such scales would provide is data on the recent behaviour of clients in a number of outcome domains. Obviously the interpretation of the data regarding success or failure will depend upon the ideology of the researcher. This would, however, be independent of data collection.

3. The variables employed should be continuous if possible, rather than categorical in order to maximise the sensitivity of the instrument to actual behaviour change.

instrument should have both clinical and research applications. The scales should provide information which is of interest to clinical staff, as well as providing global research data.

5. To be of use in clinical settings, an assessment instrument must be relatively brief, and easy to administer. The instrument must be able to be employed by both medical and non-medical personnel, given the diversity of staff engaged in both the clinical and research aspects of opiate treatment.

6. Such an instrument should be of proven reliability and validity.

The OTI was constructed to meet these criteria.

Method

Subjects

The subjects were 261 opioid users. The sample included 201 subjects who were currently enrolled in a form of opiate treatment (methadone maintenance: 187, Narcotics Anonymous: 6, drug free counselling: 8), as well as 60 subjects not currently enrolled in treatment who had been recruited from needle exchanges. All subjects were volunteers who were paid A\$20 for participation in the study. Subjects were recruited by means of signs advertising the project placed in the waiting rooms of the agencies involved in the study. The participating agencies included methadone maintenance units, drug advisory services, and needle exchanges in the inner, eastern, northern and western suburbs of Sydney. Subjects had a mean age of 29.7 years (SD 5.3; range 17-45), and a male to female ratio of approximately 2:1. The demographics of the sample are comparable with Australian (Morlet, Darke, Guinan, Wolk & Gold, 1990; Wolk, Wodak, Morlet, Guinan & Gold, 1990) and international studies (Power, Hartnoll & Daviaud, 1989; Skidmore, Robertson, Robertson & Elton, 1990).

Construction of the OTI

The OTI consists of six independent outcome domains. The domains chosen to reflect the dimensions of treatment outcome were: Drug Use, HIV, Risk taking, Behaviour, Social

Functioning, Criminality, Health Status, and Psychological Adjustment.

Drug Use: It is axiomatic that drug use constitutes the major outcome domain of opiate treatment. The drug use domain, like the other treatment outcome domains, examines the reported recent behaviour of the client. Thus, it does not rely on the client making quantity/frequency estimates of their recent "average" use, a methodology which is known to grossly under-report consumption (Gregson & Stacey, 1980). Rather, recent behaviour is examined by collecting information on the last three use days for each drug category. This is an adaptation of a methodology originally employed in alcohol research (Gregson & Stacey, 1980, 1982). The intervals between use days, and the amount consumed on these days are used to estimate recent consumption. Data are obtained on recent use in eleven drug categories: heroin, other opiates, alcohol, cannabis, amphetamines, cocaine, tranquillizers, barbiturates, hallucinogens, inhalants, and tobacco.

HIV Risk-taking Behaviour: Given that intravenous drug users (IVDU) are the second major HIV risk group (e.g. Des Jalais, Friedman & Casriel, 1990), any comprehensive treatment outcome index must include a measure of current risk-taking behaviour. The HIV Risk-taking Behaviour Scale (HRBS) consists of 11 items, each item being chosen to address a specific HIV risk-taking behaviour. The scale was structured so that separate sub-scale scores for injecting and sexual risk-taking behaviour could be derived, as well as a global risk-taking score (Darke, Hall, Heather, Ward & Wodak, 1990).

Social Functioning: The social functioning scale is a 12 item scale which addresses social adjustment (e.g. employment, housing), social support (e.g. number of close friends), and drug culture involvement (e.g. proportion of acquaintances who are users).

Criminality: The relationship between opiate use, treatment, and criminality is well documented (e.g. Ball, Schaeffer & Nurco, 1983; Dobinson & Ward, 1985, 1986; Nurco, Cisin & Balter, 1981). The crime scale focuses on the frequency of recent criminal behav-

drug dealing, fraud, and crimes involving violence. The frequency of behaviour in each area is ascertained independently. Thus, it is the actual occurrence of recent criminal behaviour which is measured.

Health: Given the well known medical problems associated with opiate use (e.g. Webster, Waddy, Jenkins & Lai, 1977), a global measure of current health status was considered to be an appropriate outcome domain. The health scale consists of a checklist of symptoms covering each of the organ systems, as well as items relating specifically to injecting behaviour.

Psychological Adjustment: An extensive literature exists relating psychopathology, opioid use and treatment outcome (e.g. Rounsaville, Kosten, Weissman & Kleber, 1986; Swift, Williams, Neill & Grenyer, 1990; Woody, McLellan & O'Brien, 1990). The aim of this domain is to provide a global measure of current psychological adjustment. In order to obtain such a measure, it was decided to incorporate the General Health Questionnaire-28 (GHQ-28) into the OTI. The GHQ-28 provides a global measure of non-psychotic psychopathology, and has excellent reliability and validity (Goldberg & Williams, 1988).

In all scales, the higher the obtained score, the greater the degree of dysfunction. With the exception of the Social Functioning section, all questions concern behaviour in the month prior to the day of interview. This period was selected to gain a measure of a subject's current behaviour, and to maximise the accuracy of recall. The Social Functioning scale covers the preceding six months. This was considered appropriate to the subject matter of this domain. The index was designed for interviewer administration as pilot testing had indicated that IVDU had difficulty in self-administration of scales. Interviewer administration was also thought to enhance the collection of accurate information by allowing for the clarification of the subject's responses.

Procedure

Members of the research team attended the various treatment agencies and needle ex-

volunteered for participation in the study by approaching a member of the research team. They were assured that all information provided was strictly confidential, and that the researchers were not in any way connected with the agency from which the subjects had been recruited. The administration of the OTI was conducted in private by one of the research team and generally took between 25 and 30 minutes. Subjects were paid A\$20 upon completion of the interview. Reliability and validity were tested by a series of sub-studies.

(i) Reliability

Test-retest/Inter-rater reliability: Fifty subjects were retested on the OTI a week after the initial interview. Half of the retest interviews were conducted by the interviewer who conducted the initial interview, and half by a different interviewer.

Internal reliability: Coefficient alpha (Cronbach, 1951) was calculated in order to ascertain the internal consistency of the individual scales.

(ii) Validity

Correlations with the Addiction Severity Index: One hundred subjects were administered the composite items from the ASI in addition to the OTI.

Collateral interviews: The sexual partners of 50 subjects were interviewed independently, and were paid A\$10 for the interview. Participating sexual partners were questioned regarding the subject's recent behaviour in the outcome domains of drug use, HIV risk-taking behaviour, social functioning, and criminality.

Health scale medical examinations: To further test the validity of the health scale, 31 subjects were given a full medical examination by qualified physicians, followed by an independent administration of the OTI.

Urinalysis results: The urinalysis results of 50 subjects for the month preceding interview were compared to their self-reported

drug use over that period. The urinalyses were conducted at Oliver Latham Laboratories using Thin Layer Chromatography. Drug classes tested for at this laboratory are opioids, amphetamines, cocaine, tranquillisers, and barbiturates.

Criminal records: To further test the validity of the criminality scale, the conviction records of 37 subjects were compared to their self-reported convictions.

All interviews were conducted by SD or researchers trained to use the OTI, and occurred between March 1989 and October 1990.

Results

(i) Reliability

Test-retest reliability

Subjects who were retested on the OTI a week after their initial interview had a mean age of 31.4 years (SD 5.5; range 20-42), and 60% were male. Forty-eight of the subjects were in methadone treatment, and two were non-treatment subjects. Pearson product-moment correlation coefficients were calculated between the total scores on the OTI scales obtained from subjects at the two interviews. The obtained correlation coefficients are presented in Table 1.

Internal reliability

Coefficient alpha for each of the scales to date are as follows:

HIV Risk-taking Behaviour	0.70
Social Functioning	0.58
Criminality	0.38
Health	0.76
Psychological Adjustment (GHQ)	0.83

Coefficient alpha was not calculated for poly-drug use, as it was not considered appropriate to combine the drug use data into a single scale score. The provision of use data for each category and a poly drug use total are considered to be the appropriate means of presenting this domain.

Table 1: Test-retest reliability of OTI scales

Scale	All subjects	Same inter-viewer	Different interviewer
(N)	(50)	(25)	(25)
Poly-drug use	0.88	0.92	0.81
HIV Risk-taking behaviour	0.86	0.87	0.85
Social functioning	0.88	0.89	0.85
Criminality	0.96	0.86	0.99
Health	0.86	0.86	0.86
Psychiatric status (GHQ)	0.88	0.78	0.93

(ii) Validity*Correlations with the Addiction Severity Index*

Subjects administered both the ASI and the OTI had a mean age of 30.4 years (SD 5.0; range 18-45), and 60% were male. The correlations between the OTI scale and the relevant ASI scales are presented in Table 2.

With the exception of the legal section, the correlations with the ASI are all signifi-

cant ($p < .005$). However, the ASI legal section is primarily oriented towards convictions, whereas the OTI crime section is oriented towards reported recent criminal behaviour. When the ASI question on number of crime days in the last month is correlated with the OTI crime scale the correlation is 0.54 ($p < .005$). It should be noted that the OTI crime scale detected 29% of subjects as having committed some crime in the preceding month, whereas the less detailed ASI, answered by the same subjects, detected only 19%.

Table 2: Correlations of OTI and ASI scales (N=100)

Scales	Correlations
OTI Health/ ASI Medical	0.57
OTI Alcohol/ ASI Alcohol	0.70
OTI Poly-drug/ ASI Drug	0.43
OTI Social/ ASI Social	0.42
GHQ/ ASI Psychiatric	0.70
OTI Crime/ ASI Legal	0.02
OTI Crime/ ASI Crime Days	0.54

Collateral validation

Subjects whose sexual partners were interviewed had a mean age of 30.2 years (SD 5.4; range 20-42), and 52% were male. All of the subjects whose sexual partners were contacted were in methadone treatment. Percentage agreement between the responses of

subjects and their collaterals on the recent behaviour of subjects are presented in Table 3. Agreement was defined as concordance on any occurrence of the behaviour referred to in an item. As can be seen from the table, there were high levels of agreement between subjects and their sexual partners regarding their reported recent behaviour.

Table 3: Agreement between subjects' self-report and collateral report

Section I: Drugs			
	% Agreement		% Agreement
Heroin	92	Tranquillizers	90
Other opiates	92	Barbituates	100
Alcohol	88	Hallucinogens	90
Cannabis	82	Inhalants	100
Amphetamines	96	Tobacco	100
Cocaine	86		
Section II: Injecting and Sexual Practices			
	% Agreement		% Agreement
No. of hits	94	Shared after other	86
How many shared before self	88	Passed on used needle to other	86
Cleaned before re-use	88	Cleaned with bleach	76
No. of sexual partners	96	Used condom with partner	90
Paid sex	100	Anal sex	100
Section III: Social			
	% Agreement		% Agreement
No. of houses lived in	94	How much time employed	88
Had conflict with partner	88	Lived with heroin user	96
Hangs around with heroin user	86		
Section IV: Crime			
	% Agreement		% Agreement
Property crime	76	Dealing	84
Fraud	90	Violent crime	94
Past convictions	88	Current charges	94

Health Scale medical examinations

The mean age of subjects participating in the health validation study was 28.9 (SD 5.0, range 17-45), and 80% were male. The mean Health Scale total of these subjects was 12.6 (SD 8.6, range 0-31), which is virtually identical to that of the sample as a whole: 12.5 (SD 7.3, range 0-42). The correlation between the health scale totals and the number of signs and symptoms detected in the independent medical examination was 0.84 ($p < .005$). The correlation between the health scale totals and the global health rating made by the physicians was 0.69 ($p < .005$).

Urinalysis results

The mean age of subjects was 30.5 (SD 5.5), and 54% were male. All subjects were currently in methadone treatment. The overall agreement between self-report and urinalysis results for all drug classes tested was 88.7%. Agreement for individual drug classes is presented in Table 4. It should be noted that of the instances where discrepancies existed between self-report and urinalysis results, 73.5% involved reported self use not being detected in the urinalysis results. Thus, overall, in only 3% of instances was use denied but detected by urinalysis.

Criminal records

The mean age of these subjects was 30.4 (SD 4.1). Of these subjects, 35.1% reported hav-

ing had committed a crime in the preceding month. This is comparable to the 29% of subjects in the entire sample who reported having committed a crime in the month preceding interview. It should also be noted that 79.4% of these subjects reported having had criminal convictions. The overall agreement between self-reported convictions and conviction records was 82.4%. Agreement was defined as concordance between the presence or absence of convictions in each crime area. Specifically, the agreement for the four crime areas was as follows:

Property crime convictions	78.4%
Drug convictions	78.4%
Fraud convictions	83.8%
Violent crime convictions	89.2%

Structure of the OTI

A principal components analysis with varimax rotation was conducted on the results of 205 complete OTIs. The results are presented in Table 5. As can be seen, two factors emerged from the analysis. Factor I may be conceptualised as "drug using life-style" (32.56% of the variance). The drug use, HIV risk-taking, criminality, and social functioning scales loaded upon this factor. Factor II may be described as "health and well-being" (26.55%), comprising the health scale and the GHQ. The two rotated factors accounted for 59.11% of the variance.

Table 4: Agreement between subjects' self-report and urinalysis results (N=50)

Drug Class	% Agreement
Heroin	86
Other opiates	96
Amphetamines	88
Cocaine	90
Tranquillizers	74
Barbiturates	98
All classes	89

Table 5: Factor structure of the OTI

	Factor I	Factor II
HIV Risk-taking	0.81	-0.09
Drug use	0.76	0.11
Criminality	0.63	0.14
Social functioning	0.54	0.29
Health	0.10	0.86
GHQ	0.11	0.85
Eigen Values (sums of latent roots)	1.95	1.59

Discussion

The results of the present study indicate that the OTI has excellent psychometric properties. Test-retest reliabilities of all scales in the instrument are high, and were maintained in both the same interviewer and different interviewer conditions. The internal reliability coefficients of the scales were also respectable.

The data also indicates the validity of the instrument. Collateral validation reports of regular sexual partners of subjects show high levels of agreement regarding the self-reported behaviour of subjects in the recall period, indicating that the OTI scales are capable of obtaining accurate self-report information regarding the recent behaviour of IVDU in all the specified outcome domains. The significant correlations of scales with the appropriate ASI sub-scales is further evidence of the instrument's validity, as are the correlations between medical reports and the health scale, reported convictions and official records, and the urinalysis results and drug scales.

The scale is relatively brief, taking approximately 30 minutes to administer, and can be employed for both clinical and research purposes. Clearly the major utility of the instrument would be in longitudinal studies of treatment clients to evaluate treatment efficacy. However, other clinical and research applications would include the comparison of different treatment modalities, and the

modality. Given that the OTI is a multi-dimensional instrument, the relative outcome patterns of different interventions could also be examined. Finally, any implementation of the instrument will provide clinical information independent of its research applications.

It has been stressed throughout this paper that the OTI was designed to have both clinical and research applications. It can be seen, however, that issues arise in the clinical administration of any assessment instrument which do not arise in a research setting (which guarantees anonymity). These include issues of confidentiality, and perceived consequences of responses. Where clinical staff are administering an instrument such as the OTI, the quality of information obtained will depend upon the rapport developed between the interviewer and the client. Clearly, these issues will be more salient in areas such as drug use and criminality, rather than health or social functioning. The authors are currently conducting a comparative study of clinician and researcher administered interviews.

In summary, the OTI provides a valid and reliable instrument for assessing opiate treatment outcome across a broad range of drug related problems. The use of objective, continuous outcome variables in the instrument enhances the possibility of cross-study comparability. The instrument provides a comprehensive assessment tool with both clinical and research applications.

References

- Ball, J.C., Shaffer, J.W. & Nurco, D.N. (1983). The day-to-day criminality of heroin addicts in Baltimore. A study in the continuity of offence rates. *Drug and Alcohol Dependence*, 12, 119-142.
- Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334.
- DeLeon, G. (1986). Therapeutic community research. Overview and implications. In G. DeLeon, & J.T. Zeigenfuss (Eds.), *Therapeutic communities for addictions. Readings in theory, research and practice*. Springfield: Charles C. Thomas.
- DeLeon, G., Wexler, H.K. & Jainchill, N. (1982). The therapeutic community: Success and improvement rates 5 years after treatment. *International Journal of the Addictions*, 17, 703-747.
- Des Jalais, D.C., Friedman, S.R. & Casriel, C. (1990). Target groups for preventing AIDS among intravenous drug users: The "hard" data studies. *Journal of Consulting and Clinical Psychology*, 58, 50-56.
- Dobinson, I. & Ward, P. (1985). *Drugs and crime. A survey of NSW prison property offenders*. NSW Bureau of Crime Statistics and Research.
- Dobinson, I. & Ward, P. (1986). *Drugs and crime - Phase II. A study of individuals seeking drug treatment*. NSW Bureau of Crime Statistics and Research.
- Fisher, D.G. & Anglin, M.D. (1987). Survival analysis in drug program evaluation. Part I. Overall program effectiveness. *International Journal of the Addictions*, 22, 115-134.
- Gregson, R.A.M. & Stacey, B.G. (1980). Distribution of self-reported alcohol consumption in New Zealand, 1978-1979. *Psychological Reports*, 47, 159-170.
- Gregson, R.A.M. & Stacey, B.G. (1982). Self-reported alcohol consumption; A real psychophysical problem. *Psychological Reports*, 50, 1027-1033.
- Goldberg, D. & Williams, P. (1988). *A User's Guide to the General Health Questionnaire*. Berkshire: NFER-Nelson.
- Hubbard, R.L., Allison, M., Bray, R.M., Craddock, C.G., Rachel, J.V. & Ginzburg, H.M. (1983). An overview of client characteristics, treatment services, and during-treatment outcomes for outpatient methadone clinics in the Treatment Outcome Prospective Study (TOPS). In J.R. Cooper, F. Altman, B.S. Brown & D. Czechowitz. (Eds.), *Research on the treatment of addiction. State of the art*. Maryland: U.S. Department of Health and Human Services.
- Hubbard, R.L., Rachel, J.V., Craddock, S.G. & Cavanaugh, E.R. (1986). Treatment Outcome Prospective Study (TOPS): Client characteristics and behaviours before, during, and after treatment. In F.M. Tims, & J.P. Ludford. (Eds.), *Drug abuse treatment evaluation: Strategies, progress, and prospects*. NIDA Research Monograph 51.
- McLellan, A.T., Luborsky, L., Cacciola, J., Griffith, J., Evans, F.K, Barr, H.L. & O'Brien, C.P. (1985). New data from the Addiction Severity Index. Reliability and validity in three centres. *Journal of Nervous and Mental Diseases*, 173, 412-423.
- McLellan, A.T., Luborsky, L., O'Brien, C.P., Barr, H.L. & Evans, F. (1986). Alcohol and drug abuse treatment in three different programs: Is there improvement and is it predictable? *American Journal of Drug and Alcohol Abuse*, 12, 101-120.
- McLellan, A.T., Luborsky, L., Woody, G.E. & O'Brien, C.P. (1980). An improved evaluation instrument for substance abuse patients. *Journal of Nervous and Mental Diseases*, 168, 26-33.
- McLellan, A.T., Luborsky, L., Woody, G.E., O'Brien, C.P. & Kron, R. (1981). Are the "addiction-related" problems of substance abusers really related? *Journal of Nervous and Mental Diseases*, 169, 232-239.
- Morlet, A., Darke, S., Guinan, J.J., Wolk, J. & Gold, J. (1990). Intravenous drug users who present to the Albion St (AIDS) Centre for diagnosis and management of human immunodeficiency virus infection. *Medical Journal of Australia*, 152, 78-80.
- Nurco, D.N., Cisin, I.H. & Balter, M.B. (1981). Addict careers. II. The first ten years. *International Journal of the Addictions*, 16, 1327-1356.

- Power, R., Hartnoll, R. & Daviaud, E. (1988). Drug injecting, AIDS, and risk behaviour: Potential for change and intervention strategies. *British Journal of Addiction*, 83, 649-654.
- Rounsaville, B.J., Kosten, T.R., Weissman, M.M. & Kleber, H.D. (1986). Prognostic significance of psychopathology in treated opiate addicts. *Archives of General Psychiatry*, 43, 739-745.
- Simpson, D.D., Joe, G.W. & Bracy, S.A. (1982). Follow-up of opioid addicts after admission to treatment. *Archives of General Psychiatry*, 39, 1318-1323.
- Simpson, D.D. & Marsh, K.L. (1986). Relapse and recovery among opiate addicts 12 years after treatment. In F.M. Tims & C.G. Leukefeld (Eds.), *Relapse and recovery in drug abuse*. NIDA Research Monograph 72.
- Skidmore, C.A., Robertson, J.R., Robertson, A.A. & Elton, R.A. (1990). After the epidemic: Follow-up study of HIV seroprevalence and changing patterns of drug use. *British Medical Journal*, 300, 219-223.
- Swift, W., Williams, G., Neill, O. & Grenyer, B. (1990). The prevalence of minor psychopathology in opioid users seeking treatment. *British Journal of Addiction*, 85, 629-634.
- Webster, I.W., Waddy, N., Jenkins, L.V. & Lai, L.Y.C. (1977). Health status of a group of narcotic addicts in a methadone treatment programme. *Medical Journal of Australia*, 2, 485-491.
- Wolk, J., Wodak, A., Morlet, A., Guinan, J.J. & Gold. (1990). HIV-related risk-taking behaviour, knowledge, and serostatus of intravenous drug users in Sydney. *Medical Journal of Australia*, 152, 453-458.
- Woody, G.E., McLellan, A.T. & O'Brien, C.P. (1990). Research on psychopathology and addiction: Treatment implications. *Drug and Alcohol Dependence*, 25, 121-123.

EVALUATING INTERVENTIONS FOR SMOKERS IN GENERAL PRACTICE

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Introduction

In this paper the following areas are discussed:

- * The role of the general practitioner in advising patients to stop smoking.
- * The effectiveness of smoking interventions administered by general practitioners.
- * Smokescreen in general practice: A decade of experience.
- * Matching smokers to particular interventions in general practice.
- * Public health implications of GP interventions.
- * Dissemination of interventions to GPs and uptake in general practice.
- * Barriers to implementing smoking cessation interventions.
- * Future directions for research in general practice.

The role of the general practitioner in advising patients to stop smoking

General practitioners (GPs) are in a prime position to assist patients to stop smoking because of their high rate of contact with the general public. Each year in Australia over 80% of the adult population aged 16 to 65 years visit their GP (Bridges-Webb, 1987). There are a number of reasons why the GP should assist patients to change high-risk lifestyle behaviours. The doctor and patient have frequently built a long-standing rapport over many years and the

GP is regarded as a trusted confidant (Richmond & Heather, 1990), respected for his/her training and knowledge of health matters (Check, 1979). GPs frequently find themselves in the "teachable moment" when they can present their patient with objective evidence of organ damage at a time when the "captive" patient is likely to be receptive to the message (Ahmed & Hilton, 1982; Baumgartner, 1982; Richmond & Webster, 1985). Smokers suffer more ill health than others and make more than average use of health facilities (Babor, Ritson & Hodgson, 1986). Continuity of care enables the GP the opportunity to deliver multiple preventive services and continued follow-up of these services (Nutting, 1986; Glynn & Manley, 1989). This is important: as most smokers take three or four serious quit attempts before they stop smoking, the GP can continue to treat the problem as part of routine medical practice. Furthermore, patients consider their doctor as the relevant person to take an interest in counselling about lifestyle (Check, 1979; Richmond & Webster, 1985; Weinberg & Andrus, 1982; Donahue & Capshaw, 1977; Green, 1979; Wallace & Haines, 1984; Wallace, Brennan & Haines, 1987).

Doctors who model the principles they advocate are a highly credible source of influence (Better Health Commission, 1986; Lichtenstein, Ransom & Brown, 1981), and they have the lowest smoking prevalence of most occupations in the western world (Magnus, 1989; Glynn, 1988).

These factors, when added to doctors' high contact rate with the general community, clearly indicate general practice as a vehicle of enormous potential for inducing changes in smoking prevalence (Heather, 1988).

The effectiveness of smoking interventions administered by general practitioners

Numerous randomised trials have evaluated the effects of various GP administered smoking cessation interventions. Russell and his colleagues (Russell, Wilson, Taylor & Baker, 1979) conducted the first trial in general practice for smokers and showed that GPs can be successful in assisting patients to stop smoking. From his work were spawned a number of clinical trials using GPs as the channel for delivering interventions for smokers.

Richmond and Heather (1990) report that it is difficult to make direct comparisons between outcome studies in general practice owing to different follow-up intervals (6, 12 and 36 months), different criteria for abstinence (point prevalence or continuous), whether self-reports of quitting were validated by biochemical measures, different methods for estimating abstinence rates (subjects lost to follow-up regarded as treatment failures or discounted in the analysis), and criteria for entry to the trial (all smokers or only those thought to be well-motivated to stop) (Heather, 1989).

Most studies have generally found a superiority of GPs' brief advice over non-intervention and other control conditions (Russell *et al.*, 1979), although there are some notable exceptions (eg. Russell, Stapleton, Jackson, Hajek & Belcher, 1987; Slama, Redman, Perkins, Reid & Sanson-Fisher, 1990; Russell, Merriman, Stapleton & Taylor, 1983; Stewart & Rosser, 1982). Generally, the greater investment of the GPs' time, greater intensity of the intervention and counselling were worthwhile in producing higher abstinence rates among smokers (Glynn, 1988; Heather, 1989; Schwartz, 1987; Ockene, 1987; Ockene, 1987; Glynn, 1988; Kottke, Battista, DeFries & Brekke, 1988). Schwartz (1987) reviewed 28 major physician-based smoking cessation trials in the USA and Canada and divided them into brief advice and more intensive intervention. Patient quit rates at one year after receiving brief advice alone were 3% to 13%, while those that provided more intensive intervention produced success rates of

reviewed, Schwartz concludes that simple advice to stop smoking from the doctor is far better than no advice at all and that, as the intensity of the intervention increases, so does the smoking cessation rate among patients.

There are a variety of methods used to validate self-reports of abstinence in order to estimate deception rate. As deception rate is so variable (0-58%), it is essential to biochemically verify self-reported abstinence in clinical trials (Richmond & Heather, 1990). Russell *et al.* (1987) state that "our results highlight the need for biochemical validation in the evaluation of smoking behaviour and cast doubts on studies that rely solely on self-reports" (p1243). Others have also criticised self-reports as inaccurate as subjects underestimate level of cigarette consumption (Haley & Hoffman, 1985; Luepker, Pallonen, Murray & Pirie, 1989; Murray & Perry, 1987; Windsor & Orleans, 1986; Stookey, Katz, Olson, Drook & Cohen, 1987). Types of verification used in research are urinary cotinine (Russell *et al.*, 1987; Slama *et al.*, 1990; Jamrozik, Vessey, Fowler, Ward, Parker & Van Vunakis, 1984), salivary nicotine or cotinine (Russell *et al.*, 1979; Richmond, Austin & Webster, 1986; Wilson *et al.*, 1988), expired carbon monoxide (Russell *et al.*, 1983; Fagerstrom, 1984; Richmond, Makinson, Giugni & Webster, 1990), salivary thiocyanate (Wilson *et al.*, 1988), and collaterals (Richmond *et al.*, 1990). All the biochemical assays used are sensitive and specific to tobacco smoking (Projer *et al.*, 1984) and so adjustment can be made with some confidence to overestimations of self-reported abstinence (Wilson, Wood, Johnston & Sicurella, 1982).

The evidence supporting the effects of follow-up on cessation rates is equivocal (Wilson *et al.*, 1988). Marshall and Raw (1985) found non-significant trends for greater success rates among those patients offered follow-up for 3 months compared with those who were not. However, other studies have reported that higher abstinence rates are strongly associated with the number of follow-up visits attended by smokers (Richmond *et al.*, 1986; Fagerstrom, 1984; Richmond *et al.*, 1990; Wilson *et al.*, 1982; Wilson *et al.*, 1987).

This "dose-response" effect may be due to a synergistic effect of repeated visits as well as greater motivation on the part of patients who self-selected to return to the GP. In a study of smoking interventions (Richmond *et al.*, 1990), those who fully attended the follow-up visits were significantly more likely to be abstinent at six and 12 months than partial attenders, although motivation to quit was similar on entry to the study.

Some studies have incorporated adjuncts to GP advice and counselling such as nicotine chewing gum, self-help materials, education based on personalising health effects, and using additional agents for advice or follow-up. Nicotine chewing gum as an adjunct to GP brief advice has been shown to have variable effectiveness in general practice. Abstinence rates are increased when supportive follow-up visits are offered (Russell *et al.*, 1983; Jamrozik *et al.*, 1984; Fagerstrom, 1984; Marshall & Raw, 1985; Hughes, 1984) and appears to be most effective in the short-term, in the first three months after GP intervention (Richmond *et al.*, 1990). Personalising the health effects has been shown to enhance successful outcome in smokers using test results for carbon monoxide (Stewart & Rosser, 1982), and cotinine and lung function (Richmond *et al.*, 1986). A meta analysis of 39 controlled smoking cessation trials of 108 interventions in medical practice conducted by Kottke *et al.* (1988) reported that cessation rates at six months were associated with personalised smoking cessation advice that employed both physicians and non-physicians in an individualised face-to-face effort, the number of reinforcing sessions and the duration of these sessions. They recommend that patient support be continued until the patient is a non-smoker as "withdrawing reinforcement contributes to relapse" (p2889). However, additional interveners such as a health visitor did not enhance GP advice (Jamrozik *et al.*, 1984), and practice nurse intervention following an invitation by the GP to make an appointment had only minimal effect (Sanders *et al.*, 1989) with only one quarter of patients keeping the appointment. Promising results have been reported when brief

smokers' clinic, which significantly enhanced outcome results achieved by GP brief advice or the GPs' usual care (Russell *et al.*, 1987).

When assessing the applicability of interventions to general practice, there are three basic research questions which should be looked at quite separately (Richmond & Anderson, in prep.):

1. Does the intervention work in general practice under optimum conditions?
2. Does the intervention work widely in general practice?
3. What is GPs' uptake and compliance with different levels of interventions?

Frequently when answering question 1 we also want to answer question 2. According to the theory of the diffusion of innovations (Rogers, 1983) one of the key reasons that new ideas are incorporated into social systems is the extent to which an innovation has been trialled properly by others and can be seen to work in that context. Most GPs are not pioneers and are not interested in research. Although inviting participation of GPs across a wide area will have greater external validity when generalising the results to wider use in general practice (question 2), there is also a greater likelihood that the research protocols and interventions may not be maintained, and so question 1 may not be adequately addressed.

Perhaps we should separate out those GPs who are interested to try new ideas and treatments in research. Heather (1988) suggests that when conducting research in general practice, a small select group of GPs who are interested in research and prepared to keep to the protocols is more advantageous in giving us information about whether interventions work under optimum conditions. The results from these trials can be used to encourage others to take up the interventions and then we can investigate the wider applicability in general practice and GPs' uptake of various

Summary

At the end of a decade of research in general practice for smokers:

* Most doctors believe that they should help patients stop smoking (Richmond & Webster, 1985; Glynn, 1988).

* Around a half routinely offer advice to patients (Glynn, 1988; Dickinson, Wiggers, Leeder & Sanson-Fisher, 1989).

* But only 3% of GPs say they are successful in helping patients stop smoking (Wechsler *et al.*, 1983; Wells, Ware & Lewis, 1984; Wells *et al.*, 1986).

* Interventions used in general practice include giving advice, counselling, personalising the health effects, nicotine chewing gum, follow-up contacts and support agents, duration of doctor-patient contact, physical assessments, self-help materials, monitoring smoking behaviour.

* Brief advice from the GP yields patient quit rates of 5% to 10% (Schwartz, 1987). Equivocal results on comparisons of brief advice compared with control group (Russell *et al.*, 1987; Slama *et al.*, 1990; Schwartz, 1987; Pojer *et al.*, 1984).

* More involved interventions produce higher success rates of between 20% to 36% (Schwartz, 1987; Ockene, 1987; Glynn, 1988; Richmond *et al.*, 1986).

* Follow-up contact after intervention produces more abstainers (Wilson *et al.*, 1988; Fagerstrom, 1984; Wilson *et al.*, 1982; Marshall & Raw, 1985).

* Nicotine chewing gum is effective when used as an adjunct to GP advice and when clear instructions are given (Russell *et al.*, 1983; Wilson *et al.*, 1988; Fagerstrom, 1984; Jamrozik *et al.*, 1984).

Smokescreen in general practice: A decade of experience

Professor Webster and myself have gained a great deal of information and some insights into smoking cessation interventions

conducted three clinical trials of the Smokescreen programme during the 1980s (Richmond & Heather, 1990; Richmond & Webster, 1985; Richmond *et al.* 1986; Richmond & Webster, 1985), have trained over 2,500 GPs in the programme in Australia and New Zealand, and have run focus groups of GPs (n=30) during 1989 and 1990 to find out about smoking interventions - what works and what GPs would like.

Interventions

1. The Smokescreen programme in the 1980s was a structured behaviour change intervention and consisted of:

* GP support and interest over time and advice to stop smoking.

* Use of a structured programme in a kit (GP manual, flipover, patient cards).

* Self-monitoring of smoking in a day diary for one week.

* Personalising the health effects of smoking using cotinine and lung function test results.

* Self-management and skills training using the patient book - *Become a Non-Smoker* (Richmond & Webster, 1988).

* Patient responsible for change.

* Nicotine chewing gum as an adjunct.

* Alternatives and substitutes.

* Follow-up booster visits.

This programme was compared with a non-intervention control group in the first trial, and in the second study, with a group that received brief advice.

2. Brief advice consisted of:

* 2 to 3 minutes was the study protocol, but was on average 11 minutes with a range of 2-35 minutes.

* Booklet from the NSW Cancer Council.

Findings

We have found that a structured behaviour change intervention (Smokescreen) is substantially more successful than no GP intervention (36%:8% at three years, study 1) (Richmond & Heather, 1986) and also tends to produce more abstainers (19%) than brief advice plus gum (18%:12% at one year, study 2) (Richmond *et al.*, 1990; Richmond, Makinson, Kehoe, Webster & Guigni, submitted). We experienced severe problems with GPs maintenance of the brief advice protocol of 2 to 3 minutes as only 4% of the patient consultations timed, received the stipulated time with a mean time spent of 11 minutes. As more time was spent with patients giving brief advice, they were more likely to be abstainers at one year. This second controlled trial with 26 participating GPs enabled us to investigate the way GPs use the interventions in practice. Our experience conducting this trial shows that the participating GPs had great difficulty giving 2 to 3 minutes of advice. Both studies used a repeated measures design which enabled us to chart smoking status and relapse over time (at end of treatment, 5 weeks, 3, 6 and 12 months) for the intervention groups.

Correct use of nicotine gum was very beneficial in the short-term over the first three months when compared with non-users or misusers. We report the category misuse, which is chewing and smoking at the same time; half of the patients misused the gum. Misuse was higher among patients receiving brief advice when compared with the structured behaviour change programme during which the GP had more time to discuss the correct use of the gum.

Patients' compliance with attending the required visits of the interventions is variable. A proportion of patients attended all six visits of the Smokescreen programme in both studies (36% in study 1; 43% in study 2) (Richmond *et al.*, 1986; Richmond *et al.*, submitted). From a clinical point of view those who fully participated in the Smokescreen interventions of study 2 showed significant differences in abstinence rates at one year follow-up (33%; 28%) compared with brief advice (14%).

Smokescreen programme significantly enhanced successful abstention compared with partial attendance (57%:23% at 3 years in study 1; 33%:13% at one year in study 2). Motivation to quit on entry to the study was similar among full and partial attenders of the follow-up visits. So motivation does not appear to be a contributing factor leading to attendance at follow-up, although motivation to quit was a part of the patient education which all patients experienced in visit 2. One of the interesting findings we reported was that continuing smokers who state that they reduce cigarette intake by up to 30%, significantly increased their tobacco analytes per cigarette. They do this by compensating for lower doses of nicotine by inhaling more deeply and puffing more on each cigarette in order to maintain their blood concentration, otherwise they experience withdrawal. We have translated this research finding to clinical practice, and recommend to GPs at training workshops that they advise smoking patients to quit completely, and not to reduce cigarette consumption.

In our third trial in general practice we evaluated the extent to which GPs were using the Smokescreen programme six months after attending a training workshop of two hours duration. After the workshop 168 GPs were randomly allocated to either follow-up contact or no contact. Follow-up contact was conducted by a medical practitioner who made a visit to the practice three weeks after the training workshop to discuss use of the Smokescreen programme and made follow-up telephone calls at 5 weeks and 3 months. A second medical practitioner conducted the follow-up. Ongoing support produced greater GP utilisation rates of the Smokescreen programme (84%) at six months compared with no contact after the training workshop (52%) (Richmond & Anderson, in prep.; Richmond & Webster, in press). Utilisation rates of individual components of the kit were high. GPs were inconsistent in maintaining the "master sheet" which only required them to add each patient who joined the Smokescreen programme. In the first three months GPs recruited between 2 and 50 patients per week. Exact patient recruitment numbers (mean and range), cannot be

the master sheets were not able to recall all the names of patients recruited.

Russell *et al.* (1987) also report that less than a half of the GPs in their study had available notes with smoking state recorded. This highlights a major problem for studies conducted in the general practice setting: it is problematic to rely on GPs to record vital study data. These difficulties in maintaining research and intervention protocols by GPs and patients in the three clinical trials reflects the difficulties as well as the practical realities of conducting research in the general practice setting. Those of us who have conducted clinical trials in general practice appreciate the administration required, unexpected problems encountered, and long-term commitment needed to complete such projects.

Matching smokers to particular interventions in general practice

In the 1980s, interventions developed for use by general practitioners were based on the assumption that most GPs were prepared to engage in preventive activities and that all patients if approached by their GP, would be prepared to stop smoking. One lesson we have learnt from our research experience and information gained from conducting focus groups of GPs in 1989 and 1990 is that only a small proportion of patients and GPs are ready for action and respond to this shotgun approach (Richmond & Anderson, in prep.). A framework which has great promise in the smoking area is the Stages of Change Model (Prochaska & DiClemente, 1986) in which smokers are matched to their stage of readiness to change. Prochaska (1990) has reported that among smokers, only 10% are ready to stop smoking (Action), 30% are ambivalent about their smoking (Contemplators), and 60% are not thinking about stopping smoking (Pre-contemplators).

The Smokescreen Programme for the 1990s has been substantially revised and expanded in accordance with our previous trials and extensive discussions with GPs. The programme is based on the recognition that smokers are at different stages of readiness

Pre-contemplators, some are Contemplators, and others are in Action. The cornerstone of successful treatment is the GPs' identification of the correct stage of change of smoking patients, so that the appropriate intervention may be given (Richmond, Webster, Elkins, Mendelson & Rollnick, 1990). The Smokescreen programme targets each group specifically with a different intervention according to each patients' readiness for change. The GP is provided with two levels of brief intervention, and a menu of options within each method.

In research the desired goal of intervention studies is validated cessation. We recommend that this notion of success be expanded to include patients who progress from one stage of readiness to change to the next. This may boost the confidence of the GP and enhance self-efficacy for smoking interventions.

The Smokescreen Programme for the 1990s has two separate kits:

1. The Self-Help Kit

2. The more comprehensive but flexibly designed **Smokescreen Programme for GPs**. The kit comprises: GP manual, leaflet, booklets, flipover, stickers, poster. A self-training video is also available.

This programme is designed to fit into the routine consultation structure of everyday clinical practice, and has a positive focus, emphasising the benefits of smoking cessation (Richmond *et al.*, 1990). It incorporates components of the Smokescreen programme of the 1980s: patient education, use of objective tests, alternatives to smoking, and ongoing support and follow-up.

Public health implications of GP interventions

There is a view commonly cited that if all GPs engaged in a few minutes brief advice, then this would have potential public health impact. Many researchers who investigate interventions in general practice extrapolate their findings to the community. There are a number of issues we need to consider before we generalise

ability to general practitioners and patients.

Firstly, will GPs be prepared to **adopt** brief interventions with success rates ranging from 5% to 10% (Russell *et al.*, 1979; Russell *et al.*, 1983; Schwartz 1987). Our experience conducting training workshops for over 2,500 GPs has shown that some GPs need to be convinced even of three year abstinence rates of 36%, and are even less impressed with more modest success rates achieved with less involved programmes. A practising GP claims that: "an intervention with a modest success rate is unlikely to inspire widespread confidence in GPs" (Mendelsohn, 1990) to learn the new skill.

Secondly, from a clinical perspective, the more time GPs are prepared to spend with patients, the greater likelihood of successful long-term behaviour change. As a proportion of GPs may not be prepared to engage in more involved interventions, they should be encouraged to practice minimal interventions. However, a low success rate with smokers may work against GPs engaging in **continued use** of brief interventions (Richmond & Anderson, in prep.). There is **no** evidence to suggest that brief advice with low success rates will be used by more GPs and thus have a greater public health impact. On the contrary, repeated failures and a low rate of success with smokers affect GPs' confidence and motivation (Ockene, 1987; Orleans, George, Houtp & Brodie, 1985), and make them pessimistic about smoking interventions. If GPs do not see patients who have successfully changed behaviour as a result of their intervention, then they may abandon such health promotion activities (Glynn & Manley, 1989; Orleans *et al.*, 1985). Indeed, Russell *et al.* (1987) report that GPs' compliance with administering brief interventions fell during the year of his study. A practising GP says that: "Seeing positive results with patients from an intervention is an important element in determining whether it will continue to be offered and the commitment with which it is delivered" (Mendelsohn, 1990).

As a consequence of conducting three clini-

1980s, Russell *et al.* have substantially modified their earlier views on the potential of brief advice delivered by GPs. In 1979 Russell and his colleagues said that: "A method with a low but proven success rate, achievable with minimal effort, and readily applicable to large numbers of smokers, could be more useful in terms of public health than a time-consuming intensive method with a far higher success rate" (p1782). By 1987, Russell *et al.* had changed their view about the public health impact of minimal intervention by GPs. They state: "Brief intervention given without the support and back-up of the local smokers' clinic had no detectable advantage over general practitioner's usual care" (p1248).

Evaluation of the potential public health impact of GP cessation packages is difficult because clinical trials have generally not reported the number of doctors still using them at the one year follow-up. More involved GP interventions which have higher success rates could be utilised more by doctors in the long-term and thus result in a greater net public health benefit. However, GPs need to start practising prevention, and if they want to initiate this activity, then brief advice is a good starting point.

Dissemination of interventions to GPs and uptake in general practice

There are a variety of methods used to implement interventions in general practice, for example, by post or training in workshops. Fowler and his colleagues (Fowler, Mant, Fuller & Jones, 1989) in the United Kingdom tried disseminating through the post the booklet "Help your patient stop". They found it had limited recall: about half of the GPs remembered receiving it, a quarter had read it, and only 8.8% could write down any of the three essential activities of smoking cessation promoted in the booklet. An explanation for the "disappointing" recall may be related to the booklet being sent with other literature. GPs receive a great amount of mail and the booklet may have become lost on the doctor's desk, or the receptionist may have thrown it away with the accom-

A study investigating the recruitment of doctors to deliver smoking cessation interventions (Kottle *et al.*, 1990) found that the least effective method was by direct mail and the most effective was the personal approach of repeated face-to-face contact at the doctor's surgery and collaborating with a health organisation that already held contacts with the doctor.

Training of doctors in workshops is recommended rather than providing "reach down" intervention packages (Heather, 1988). Doctors who undergo training are more likely to engage in smoking cessation activities, make more follow-up appointments with patients, and have higher patient abstinence rates after one year, than those who do not receive training (Wilson *et al.*, 1988; Cummings *et al.*, 1989). Training time ranges from two hours to two days and includes: a description of findings from previous studies, role playing, use of video tapes, use of nicotine gum, relapse prevention techniques, surgery reminder systems, and self-help booklets (Richmond & Heather, 1990; Glynn, Manley & Pechacek, in press). GPs are encouraged to use the programme soon after attending the training workshops for greatest likelihood of success and to build confidence in using the new skill (Richmond & Heather, 1990).

Training of doctors generally ignores follow-up contact to reinforce medical education about lifestyle interventions. Ewart *et al.* (Ewart, Li & Coates, 1983) report in their randomised trial of continuing education, that provision of stop smoking advice deteriorated soon after training but can be maintained if doctors are monitored and receive corrective feedback on performance changes. Richmond & Webster found in their field study of follow-up contact by a medical practitioner after a training workshop that ongoing support produced significantly greater utilisation rates of the Smokescreen smoking cessation programme (84%) at six months by 84/168 GPs, than no contact after the training workshop (52%) (Richmond & Anderson, in prep.; Richmond & Webster, in press). However, provision of low-intensity follow-up to 19/38 doctors did not enhance use of this programme after a training workshop (Copeman, Swannell,

Undoubtedly preventive skills should be liberally taught throughout the undergraduate medical course starting in the pre-clinical years. Skills for preventable problems (smoking, alcohol, nutrition) are taught in several years of the medical course at the University of New South Wales. However, such efforts are limited if not carried over to the intern and residency programmes. Ockene (1987) developed a training programme for resident doctors which enabled smoking cessation skills to be carried over into their practice of medicine.

A useful framework which has guided Richmond and Webster's efforts in implementing the Smokescreen programme in general practice is the Theory of Innovations developed by Rogers (1983). When encouraging adoption of a new idea there are five main factors which should be taken into account.

1. Relative advantage - the extent to which GPs think that they get something out of engaging in preventive activities, e.g., financial, help patients.
2. Compatibility - the extent to which interventions fit in with current medical practice.
3. Simplicity - the extent to which interventions can easily be learnt and adopted.
4. Trialability - the extent to which other GPs have used the intervention and reported success.
5. Observability - the extent to which positive outcomes are observed after using interventions.

Barriers to implementation of smoking interventions in general practice

Many general practitioners are concerned about the health of smoking patients (Kottke *et al.*, 1988), yet they considerably underutilise opportunities to identify and enquire about smoking (Wallace *et al.*, 1987; Dickinson *et al.*, 1989; Wechsler *et al.*, 1983). GPs detect about half of their smoking patients (Dickinson *et al.*, 1989),

about stopping smoking (Cumming, Barton, Fahey, Wilson & Leeder, 1989). There are a number of identifiable barriers to implementing smoking cessation interventions in general practice.

Many GPs do not believe they can change the smoking behaviour of their patients (Glynn & Manley, 1989; Wechsler *et al.*, 1983; Wells *et al.*, 1984; Wells *et al.*, 1986). Repeated failures and low rate of success with smokers can affect GPs' confidence and motivation, and make them pessimistic about engaging in smoking interventions. Because of the relatively low success rate of even the most effective programmes, the benefits from the intervention may not be perceptible to GPs and they may not receive enough immediate reinforcement for their efforts (Richmond & Heather, 1990).

As most doctors lack training in smoking cessation counselling and skills, there is a danger that pessimistic views can become self-fulfilling prophecies, leading them to avoid health promotion activities (Glynn & Manley, 1989; Orleans *et al.*, 1985). Until recently Australian medical schools focused on the high technology approach to treatment of disease, at the expense of saving lives before illness was diagnosed, using preventive medicine approaches (Richmond & Heather, 1990). So GPs may feel reluctant to intervene opportunistically with smokers, particularly when the patient does not present with a related medical problem.

A pragmatic barrier to implementation of smoking cessation interventions is lack of adequate financial reimbursement. In general practice in Australia, short consultations are remunerated better than long consultations which are required for counselling patients for behaviour change. Currently the Health Insurance Commission does not rebate for preventive medicine activities. Lack of reimbursement for time and effort is an economic disincentive to engage in preventive practices, however worthwhile the GP may view them (Richmond & Heather, 1990).

Some GPs are concerned that if they are pro-active in advising smoking cessation,

where for their medical care (Richmond & Heather, 1990). Thus some GPs may think that engaging in preventive activities may lead to a loss of income. These GPs prefer to await passively and react only to expressed concern from patients.

Another barrier to implementing health promotion activities in general practice is the frequent lack of awareness of advances in the behaviour change area (Richmond & Heather, 1990).

Future directions for research in general practice

There are a number of areas and new directions in general practice requiring research. In the 1980s research in general practice focussed mainly on outcomes. In the 1990s, three areas that show great promise are matching smokers according to the Stage of Change Model (Prochaska & DiClemente, 1986), motivational interviewing (Rollnick & Bell, in press), or cue exposure. A future project should evaluate the **relative effectiveness of these approaches** compared to skills-based and patient education programmes. A costing of these interventions per abstainer is important.

The 1990s will also see more process evaluations. An area for future research is GPs' **uptake and continued compliance with different levels of intervention** (Richmond & Anderson, in prep.) and the ways they modify the interventions to suit their needs. We also need to know the best methods of **disseminating interventions among GPs**. The **long-term effect of teaching undergraduate medical students or resident medical officers** practical techniques to use with smoking patients should be a project of future research.

A project might look at **GP intervention in collaboration with a smokers' clinic**, an area which seems to show promise (Russell *et al.*, 1987).

Longitudinal studies of the outcome of interventions which exceed more than one year is desirable, as up to 40% of ex-

abstinence (Pierce, Fiore, Novotny, Hatziandrew & Davis, 1989).

The use of the **nicotine containing patch in general practice** is an area for future investigation, especially as the patch regulates the amount of nicotine absorbed in the blood, and has minimal side effects. Most smoking studies have focussed on English speaking people. In the 1990s there should be **interventions targeted to people of non-English speaking backgrounds** which will be culturally and linguistically specific.

We have focussed in the 1980s on the characteristics of interventions and have paid insufficient attention to characteristics of therapists and smokers. Miller (1990) has said that: "The age of 'horse race' studies is coming to an end. It no longer makes sense to compare treatment methods against each other without also attending to qualities of the therapists delivering them and the clients receiving them" (p4). Therapist characteristics may be much stronger predictors of client drop-outs and failures than either treatment or client variables (Miller & Sovereign, 1989). In this decade we should also turn our attention to **therapist and client characteristics and intervening social and personal events** that may encourage relapse to smoking.

Another area of research is **brief community interventions** which are multi-channelled (doctors, dentists, schools, workplaces, taxi drivers, hairdressers etc.), multi-pronged (brief advice, more involved interventions, media, booklets, notices, posters, etc.) and multi-sited (match towns and communities across Australia).

Conclusion

From a public health perspective, smoking cessation treatments by the GP are a cheap compliment to population approaches for smoking control. To change a complex behaviour like smoking involves a multi-factorial community approach. This includes social control measures such as an increase in tobacco taxation and legislation to abolish all types of tobacco promotion, increasing support of research into smoking

smoke-free workplaces, the encouragement of grass roots community actions, and the development and expansion of interventions conducted in smoking cessation clinics, workplaces, schools and general practitioners' surgeries. From a clinical perspective, patients have continuing contact with their GP and therefore have a unique opportunity to improve their chances of achieving and maintaining abstinence. With the awareness that 40% of ex-smokers relapse after one year of not smoking (Pierce *et al.*, 1989), there should be a refocussing of public polity to encourage the development of support programmes to help ex-smokers maintain abstinence. The way is open in the 1990s for innovative outcome and process studies. This should also include evaluation of the dissemination of effective treatments into practice.

References

- Ahmed, M.B. & Hilton, T.F. (1982). How to help patients stop smoking. *American Family Physicians*, 25, 133-136.
- Babor, T., Ritson, E. & Hodgson, R. (1986). Alcohol-related problems in the primary health care setting: A review of early intervention strategies. *British Journal of Addiction*, 81, 23-46.
- Baumgartner, K. (1982). Smoking cessation: Physician makes a stand. *Canadian Medical Association Journal*, 126, 101-102.
- Better Health Commission. (1986). *Looking forward to better health. Vol 1.* Canberra: AGPS.
- Bridges-Webb, C. (1987). General practitioner services. *Australian Family Physician*, 16, 898.
- Campbell, I.A., Lyons, E. & Prescott, R.J. (1987). Stopping smoking: Do nicotine chewing gum and postal encouragement add to doctors advice. *The Practitioner*, 231, 114-117.
- Check, W.A. (1979). Doctors let's stop dragging (our feet). *J.A.M.A.*, 26, 2831-2832.
- Copeman, R.C., Swannell, R.J., Pincus, D.F. & Woodhead, K.A. (1989). Utilization of the "Smokescreen" smoking-cessation progra-

- mme by general practitioners and their patients. *Medical Journal of Australia*, 151, 83-87.
- Cumming, R.W., Barton, G.E., Fahey, P.P., Wilson, A. & Leeder, S.R. (1989). Medical practitioners and health promotion: Results from a community survey in Sydney's western suburbs. *Community Health Studies*, 8, 294-300.
- Cummings, S.R., Coates, T.J., Richard, R.J., Hansen, B., Zahnd, E.G., Vander Martin, R., Duncan, C., Gerbert, B., Martin, A. & Stein, M.J. (1989). Training physicians in counseling about smoking cessation: A randomized trial of the "Quit for Life" program. *Annals of Internal Medicine*, 110, 640-647.
- Dickinson, J.A., Wiggers, J., Leeder, S.R. & Sanson-Fisher, R.W. (1989). General practitioners' detection of patients' smoking status. *Medical Journal of Australia*, 150, 420-426.
- Donahue, F.J. & Capshaw, V. (1977). The great smoking survey. *American Lung Association Bulletin*, 63, 2-5.
- Ewart, C.K., Li, V.C. & Coates, T.J. (1983). Increasing physicians' anti-smoking influence by applying an inexpensive feedback technique. *Journal of Medical Education*, 58, 468-473.
- Fagerstrom, K.O. (1984). Effects of nicotine chewing gum and follow-up appointments in physician-based smoking cessation. *Preventive Medicine*, 13, 517-527.
- Fowler, G., Mant, D., Fuller, A. & Jones, L. (1989). The "help your patient stop" initiative. Evaluation of smoking prevalence and dissemination of WHO/UICC guidelines in UK general practice. *The Lancet*, June 3, 1253-1255.
- Glynn, T. (1988). Physicians and a smoke-free society. *Archives of Internal Medicine*, 148, 1013-1016.
- Glynn, T.J. (1988). Relative effectiveness of physician-initiated smoking cessation programs. *Cancer Bulletin*, 40, 359-364.
- Glynn, T.J. & Manley, M.W. (1989). Physicians, cancer control and the treatment of nicotine dependence: Defining success. *Health Education Research*, 4, 173-187.
- Glynn, T.J., Manley, M.W. & Pechacek, T.F. (in press). Advances in Cancer Control, In P. Engstrom *et al.* (Eds). New York: Alan R. Liss.
- Green, D.E. (1979). *Teenage smoking: Immediate and long-term patterns*. Washington DC: US Government Printing Office.
- Haley, N.J. & Hoffman, D. (1985). Analysis for nicotine and cotinine in hair to determine cigarette smoker status. *Clinical Chemistry*, 31, 1598-1600.
- Heather, N. (1988). Lessons from a controlled evaluation of a general practice minimal intervention for problem drinking. *Australian Drug and Alcohol Review*, 7, 317-328.
- Heather, N. (1989). Psychology and brief interventions. *British Journal of Addiction*, 84, 357-370.
- Hughes, J.R. (1984). Nicotine gum to help stop smoking. *J.A.M.A.*, 252, 2855-2858.
- Jamrozik, K., Fowler, G., Vessey, M. *et al.* (1984). Placebo controlled trial of nicotine chewing gum in general practice. *British Medical Journal*, 298, 794-797.
- Jamrozik, K., Vessey, M., Fowler, G., Ward, N., Parker G. & Van Vunakis, H. (1984). Controlled trial of three different anti-smoking interventions in general practice. *British Medical Journal*, 288, 1499-1503.
- Kottke, T.E., Battista, R.N., DeFriese, G.H. & Brekke, M.L. (1988). Attributes of successful smoking interventions in medical practice: A meta-analysis of 39 controlled trials. *J.A.M.A.*, 9, 2883-2988.
- Kottke, T.E., Solberg, L.I., Conns, S., Maxwell, P., Thomasberg, M., Brekke, M.L. & Brekke, M.J. (1990). A comparison of two methods to recruit physicians to deliver smoking cessation interventions. *Archives of Internal Medicine*, 150, 1477-1481.
- Lichtenstein, E., Ransom, C.C. & Brown, R.A. (1981). Effects of counsellor smoking status, experience level, and treatment modality on the credibility of smoking cessation programs. *Journal of Drug Education*, 11, 361-367.
- Luepker, R.V., Pallonen, U.E., Murray, D.M. & Pierce, J.P. (1989). Validity of telephone

- veys in assessing cigarette smoking in young adults. *American Journal of Public Health*, 79, 202-204.
- Magnus, P. (1989). Cigarette smoking and the Australian medical profession. *Medical Journal of Australia*, 150, 477-441.
- Marshall, A. & Raw, M. (1985). Nicotine chewing gum in general practice: Effects of follow-up appointments. *British Medical Journal*, 290, 1395-1398.
- Mendelsohn, C. (1990). Which anti-smoking programme? *Medical Journal of Australia*, 153, 501.
- Miller, W.R. (1990). The effectiveness of treatment: Is more really better? *Centre Lines*, 2, 34.
- Miller, W.R. & Sovereign, R.G. (1989). The check-up: A model for early intervention in addictive behaviors. In T. Loberg, W.R. Miller, P.E. Nathan & G.A. Marlatt (Eds.), *Addictive behaviors: Prevention and early intervention* (pp219-231). Amsterdam: Swets and Zeitlinger.
- Murray, D.M. & Perry, C.L. (1987). The measurement of substance use among adolescents: When is the "bogus pipeline" method needed? *Addictive Behaviour*, 12, 225-233.
- Nutting, P.A. (1986). Health promotion in primary medical care: Problems and potential. *Preventive Medicine*, 15, 537-548.
- Ockene, J.K. (1987). Physician-delivered interventions for smoking cessation: Strategies for increasing effectiveness. *Preventive Medicine*, 16, 723-737.
- Ockene, J.K. (1987). Smoking interventions: The expanding role of the physician. *American Journal of Public Health*, 77, 782-783.
- Orleans, C.D., George, L.K., Hout, J.L. & Brodie, K.H. (1985). Health promotion in primary care: A survey of US family practitioners. *Preventive Medicine*, 14, 636-647.
- Pierce, J.P., Fiore, M.C., Novotny, T.E., Hatzidimitriou, E.J. & Davis, R.M. (1989). Trends in cigarette smoking in the United States: Projections to the year 2000. *J.A.M.A.*, 261, 231-235.
- Poer, R., Whitfield, J.W., Poulos, V., Eckhardt, J. & Richmond, R.L. & Heather, N. (1990). Carboxyhaemoglobin, cotinine and thiocyanate assay compared for distinguishing smokers from non-smokers. *Clinical Chemist*, 30, 1377-1380.
- Prochaska, J. (1990). *From recruitment to recovery: A stage analysis of smoking cessation*. Paper presented at the Conference, Brief Interventions for Smokers: An International Perspective, Sydney.
- Prochaska, J.O. & DiClemente, C.O. (1986). Towards a comprehensive model of change. In W.R. Miller and N. Heather (Eds.), *Treating addictive behaviors: Process of change*. New York: Plenum Press.
- Richmond, R.L. & Anderson, P. (in preparation). Lessons from conducting research in general practice for smokers and excessive drinkers in Australia and the United Kingdom.
- Richmond, R.L., Austin, A. & Webster, I.W. (1986). Three year evaluation of a programme by general practitioners to help patients to stop smoking. *British Medical Journal*, 292, 803-806.
- Richmond, R. & Heather, N. (1990). General practitioner interventions for smoking cessation: Past results and future prospects. *Behavioural Change*, 7, 110-119.
- Richmond, R.L., Makinson, R., Giugni, A. & Webster, I.W. (1990). A tale of two studies: Ten years of Smokescreen, a smoking cessation programme for GPs. *Proceedings of the Seventh World Conference on Tobacco and Health*. Perth.
- Richmond, R.L., Makinson, R., Kehoe, L., Webster, I.W. & Guigni, A. (submitted). One year evaluation of three smoking cessation interventions administered by general practitioners.
- Richmond, R. & Webster, I. (1988). *Become a Non-Smoker*. 2nd Edition. Melbourne: Octopus Books.
- Richmond, R. & Webster, I. (1985). Evaluation of general practitioners' use of a smoking intervention programme. *International Journal of Epidemiology*, 14, 396-401.
- Richmond, R.L. & Webster, I.W. (1985). A smoking cessation programme for use in general practice. *Medical Journal of Australia*, 142, 190-194.

- Richmond, R.L. & Webster, I.W. (in press). Which smoking intervention in general practice? (Letter). *Medical Journal of Australia*.
- Richmond, R., Webster, I., Elkins, L., Mendelsohn, C. & Rollnick, S. (1990). *Smokescreen for the 1990s: A stop smoking programme for use by general practitioners*. Sydney: University of New South Wales.
- Rogers, E.M. (1983). *Diffusion of innovations*. (3rd ed.). New York: Free Press.
- Rollnick, S. & Bell, A. (in press). Brief motivational interviewing for use by the non-specialist. In W.R. Miller & S. Rollnick, *Motivational interviewing: Preparing people for change*. N.Y.: Guilford.
- Russell, M.A.H., Merriman, R., Stapleton, J. & Taylor, W. (1983). Effect of nicotine chewing gum as an adjunct to general practitioners' advice against smoking. *British Medical Journal*, 287, 1782-1785.
- Russell, M.A.H., Stapleton, J.A., Jackson, P.H., Hajek, P. & Belcher, M. (1987). District programme to reduce smoking: Effect of clinic supported brief intervention by general practitioners. *British Medical Journal*, 295, 1240-1244.
- Russell, M.A.H., Wilson, C., Taylor, C. & Baker, C.D. (1979). Effect of general practitioners' advice against smoking. *British Medical Journal*, 2, 231-235.
- Sanders, D., Fowler, G., Mant, D., Fuller, A., Jones, L. & Marzillier, J. (1989). Randomized controlled trial of anti-smoking advice by nurses in general practice. *Journal of the Royal College of General Practice*, 39, 273-276.
- Schwartz, J.L. (1987). *Review and evaluation of smoking cessation methods: United States and Canada, 1978-1985*. Bethesda, Maryland: National Institutes of Health, NIH Publication No. 87-2940.
- Slama, K., Redman, S., Perkins, J., Reid, A.L.A. & Sanson-Fisher, P.W. (1990). The effectiveness of two smoking cessation programmes for use in general practice: A randomised clinical trial. *British Medical Journal*, 300, 1707-1709.
- Stewart, P.J. & Rosser, W.W. (1982). The impact of routine advice on smoking cessation from family physicians. *Canadian Medical Association Journal*, 126, 1051-1054.
- Stookey, G.K., Katz, B.P., Olson, C.A., Drook, C.A. & Cohen, S.J. (1987). Evaluation of biochemical validation to measures in determining smoking status. *Journal of Dental Research*, 66, 1599-1601.
- Wallace, P.G., Brennan, P.J. & Haines, A.P. (1987). Are general practitioners doing enough to promote healthy lifestyle? Findings of the Medical Research Council's general practice research framework study on lifestyle and health. *British Medical Journal*, 294, 940-942.
- Wallace, P.G. & Haines, A.P. (1984). General practitioners and health promotion: What patients think. *British Medical Journal*, 289, 534-536.
- Wechsler, H., Levine, S., Idelson, R.K. et al. (1983). The physician's role in health promotion: A survey of primary care practitioners. *New England Journal of Medicine*, 308, 97-100.
- Weinberg, A. & Andrus, P.L. (1982). Continuing medical education: Does it address prevention? *Journal of Community Health*, 7, 211-214.
- Wells, K.B., Lewis, C.E., Leuke, B. et al. (1986). The practices of general and subspecialty interests in counselling about smoking and exercise. *American Journal of Public Health*, 76, 1009-1013.
- Wells, K.B., Ware, J.E. & Lewis, C.E. (1984). Physicians' attitudes in counselling patients about smoking. *Medical Care*, 22, 360-365.
- Wilson, D.M.C., Lindsay, E.A., Best, J.A., Gilbert, J.R., Willms, D.G. & Singer, J. (1987). A smoking cessation intervention program for family physicians. *Canadian Medical Association Journal*, 137, 613-619.
- Wilson, D.M., Taylor, D.W., Gilbert, J.R., Best, J.A., Lindsay, E.A., Willms, D.G. & Singer, J. (1988). A randomized trial of a family physician intervention. *J.A.M.A.*, 260, 1570-1574.
- Wilson, D., Wood, G., Johnston, N. & Sicurella, J. (1982). Randomized clinical trial of supportive follow-up for cigarette smokers in a family practice. *Canadian Medical Association Journal*, 126, 127-129.

- Windsor, R.A. & Orleans, C.T. (1986). Guidelines and methodological standards for smoking cessation intervention research among pregnant women: Improving the science and art. *Health Education Quarterly*, 13, 131-161.

EVALUATING THE IMPACT OF METHADONE MAINTENANCE ON THE CRIMINAL ACTIVITY OF OPIOID ADDICTS¹

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Introduction

Opioid users have high rates of criminal convictions for property offences and high rates of self-reported criminal acts; they are over-represented among persons convicted of property and drug offences; and over their drug using careers there is a strong relationship between their level of opioid use and their rate of self-reported criminal activity (e.g. Ball, Shaffer & Nurco, 1983; Dobinson & Ward, 1984, 1987; Hammersley, Forsyth, Morrison & Davies, 1989). It is not surprising, then, that one of the major aims of methadone maintenance has been the reduction of the high rate of criminal activity among opioid users.

In evaluating the impact of methadone treatment on criminal activity it would be ideal to compare the criminal activity among opioid addicts who had been randomly assigned to receive methadone or no treatment. Random assignment would ensure the approximate equality of persons in each form of treatment, and the use of a no-treatment control would provide an estimate of the specific contribution that methadone maintenance made to any observed improvement (Newman, 1987). For a variety of reasons, however, randomized controlled trials have not proved suitable for the evaluation of methadone (Hall, 1984).

Studies of the impact of methadone on

criminal activity have most often compared rates of criminal behaviour in opioid addicts before and during methadone treatment. The results have been conflicting. Several studies have found impressive reductions in the amount of crime committed by addicts while in treatment (e.g. Hunt, Lipton & Spunt, 1984; Simpson & Sells, 1981) while other studies have reported no decrease in the rate of crime during periods of methadone treatment (Wiepert, D'Orban & Bewley, 1979; Blumberg, 1976). Even when the results are positive it is difficult to disentangle the therapeutic effects of methadone from the natural history of opioid addiction in the absence of comparison groups (Woody & O'Brien, 1986).

The interpretive problems can be partly overcome by quasi-experimental studies which compare the criminal activity of addicts who enter methadone programmes with that of addicts who do not. The opportunity to undertake such a comparative evaluation arose in 1986 when a centralized assessment service was established at Westmead Hospital. All persons who wished to enter government methadone programmes in the Western Metropolitan Health Region were assessed at Westmead Hospital. A substantial number of persons who applied for methadone treatment failed to enter treatment, either because they were rejected as unsuitable, or be-

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cause they failed to complete the assessment process.

In this paper we will focus upon the impact of methadone treatment on criminal convictions by: (1) comparing the rate of convictions in the post-assessment period among persons who were accepted for methadone and those who failed to enter methadone; and (2) by examining the relationship between duration in methadone and rate of convictions in the post-assessment period.

We will address the following questions:

1. What were the characteristics of persons who did and did not enter methadone treatment?
2. What were the predictors of involvement in property and drug-related crime prior to assessment for methadone maintenance?
3. What was the rate of property and drug-related convictions in the two year period after application for admission to methadone maintenance among persons who did and did not enter methadone treatment?
4. What was the relationship between the length of time spent in methadone and the rate of property and drug-related convictions in the two year period following application for admission to methadone maintenance?

Method

Subjects

Subjects were 320 opioid addicts who applied to enter methadone treatment between March 1986 and June 1987. This represented all 72 applicants who in that period were approved and referred to clinic 1, all 164 approved applicants referred to clinic 2, and 84 subjects who either failed to complete assessment ($n=26$) or were rejected as unsuitable ($n=58$) on the grounds of not having a sufficiently severe drug dependence problem. Because of missing data, the analyses of the impact of methadone on post-assessment convictions

Measures

All subjects were assessed at Westmead Hospital by a clinical interview in which information was obtained on the subjects' social and personal history, their history of drug use and experience with treatment, and their self-reported criminal convictions. The self-reported information on treatment history and criminal convictions was supplemented by official records.

After providing assurances that the confidentiality of information would be protected, and that the data would be used only for research purposes, we were given access to Police Department records of arrests and convictions, and to Health Department records of treatment up to January 1989. Only the data from the official records will be reported because the self-reported convictions understated the number of recorded convictions (Hall, Bell & Carless, 1990).

Convictions were classified into 6 categories: drug offences (e.g. possession and use, selling), property offences (theft, break, enter and steal, shop-lifting, and fraud), offences against persons (offensive behaviour, assault), traffic offences (speeding, driving while intoxicated, dangerous driving), technical offences (such as "fail to appear", "breach parole"), and soliciting for the purposes of prostitution.

The measure of each individual's "criminal activity" was his or her rate of convictions for property and drug offences pre- and post-assessment for methadone. The rates of convictions pre-assessment were calculated by dividing the number of convictions in each category of offence by the number of years between the first recorded criminal conviction and the person's age at assessment. The rates of conviction post-assessment were calculated by dividing the number of convictions recorded post-assessment by the number of months between the application for entry to methadone and January 1989.

Statistical analysis

Poisson regression (as implemented in the statistics package GLIM 3.77) was used in

dicted criminality pre-assessment, and in the analysis of the impact of methadone on the rate of convictions post-assessment. The contribution of each variable to prediction was assessed by the statistical significance of the change in deviance produced by adding or deleting that variable from the model. The strength of the relationships between the predictor variables and the rates of conviction were assessed by relative risk. Ninety-five per cent confidence intervals were calculated around each of these risk ratios.

The following variables were explored as predictors of rates of conviction pre-assessment: age, sex, age at first drug use, age at first conviction, current and past use of alcohol and hypnotosedatives, level of education, employment status, and extent of drug abuse treatment.

Two sets of Poisson regression analyses were undertaken to explore the impact of methadone on criminal activity. The first set of analyses examined the relationship between acceptance or rejection for methadone maintenance and the rate of criminal activity in the post-assessment period. The second set of analyses examined the relationship between the length of time spent in methadone maintenance, and the rate of

criminal activity in the post-assessment period. In both sets of analyses the following variables were used as covariates: age, sex, age at first opiate use, and the rate of convictions in the pre-assessment period.

Results

Sample characteristics

Seventy-two percent of the cohort was male and the mean age was 26.3 years (see Table 1). Only 16% of applicants had been in full-time employment during the six months prior to assessment, and a further 10% had worked for part of that time. Two-thirds (68%) of applicants had left school without completing the school certificate, and the majority (82%) were receiving some form of social security.

On average, subjects in the sample had been using heroin for 5 years, and 77% reported that the majority of their social contacts were with other drug users. Forty-five percent of subjects had either a current or a past alcohol problem, and 80% reported either a past history or a current problem with the use of benzodiazepines. More than half of the sample (62%) had received treatment in a detoxification or rehabilitation centre.

Table 1: Personal characteristics of persons applying for entry to methadone, and persons who did and did not enter methadone.

	Persons who entered methadone	Persons who did not enter methadone	All persons
Mean age	26.7	25.2	26.3*
% Males	72.3	71.8	72.2
% Employed	17.4	12.8	16.3
% Left before SCE	67.2	71.8	68.4
Age first opioid use	18.1	18.1	18.1
Median months opioid use	62.5	48.0	60.0*
% Daily opioid users	62.0	38.2	56.1*
% One or more admissions	67.4	47.4	62.4*
% Imprisoned	48.1	34.6	44.7*

* Differences significant at $p < 0.05$ SCE = School Certificate Exam

Three-quarters of the sample derived at least some of their income from illegal activities, and 38 out of 86 women had earned money from prostitution. According to police records, 76% of the sample had convictions for one or more opioid offences, and 78% had convictions for one or more property offences. The 312 subjects had accrued 4,486 convictions prior to their assessment for methadone. Property offences accounted for half of all these convictions (50%), followed by drug offences (26%) and traffic offences (17%) (see Table 2). Just under half of the sample (45%) had been imprisoned.

The socio-demographic characteristics of those who did and did not enter methadone were similar (see Table 1). They did not differ in gender, proportion employed, amount of education, or in age of first opioid use. However, those who were rejected were younger, and were less dependent on opioids than those who were accepted as indicated by: shorter median duration of dependent opioid use (48 months and 63 months respectively); a smaller proportion who were daily heroin users at the time of assessment (38% and 62% respectively, OR = 2.56 [95% confidence interval: 1.52 to 4.31]); a smaller proportion who had re-

ceived inpatient treatment for drug dependence (47% and 67% respectively, OR = 2.14 [95% confidence interval: 1.35, 3.41]); and a smaller proportion who had been imprisoned (35% and 48% respectively, OR = 1.86 [95% confidence interval: 1.10, 10.83]).

The sequence of opioid use and property convictions

The average age of first illicit drug use (usually cannabis) was 18.1 for men and 18.1 for women. The average age of first opioid use was the same for males (18.0 years) and females (18.2). By contrast, the average age of first conviction was 17.4 years for men and 21.6 years for women. A Kaplan-Meier survival analysis showed that males and females differed in the age of first conviction for a property offence (mean ages of 19.6 and 23.3 years, respectively ($\chi^2 = 30.8$ [1df], $p < 0.001$)).

Just over half the male subjects (51.4%) had been convicted of a property offence prior to using heroin whereas only 15.1% of women had been convicted. Men were thus 5.93 times [95% confidence interval: 3.11 to 11.31] more likely to be convicted of a property offence before using opioids than were women.

Table 2: The number of offences recorded by police for persons who entered and did not enter methadone pre- and post-assessment.

	Entered methadone		Did not enter methadone		Persons	
(N)	(234)		(78)		(312)	
	Pre	Post	Pre	Post	Pre	Post
Drug	905	210	246	21	1151	231
Property	1800	601	428	77	2228	678
Person	238	50	73	16	311	66
Traffic	573	154	182	9	755	163
Soliciting	16	9	25	13	41	22
All offences	3532	1024	954	136	4486	1160

Predictors of pre-assessment convictions

Although older subjects had more drug and property convictions than younger subjects, the rate at which convictions accrued fell with age, as is shown by the decrease in the relative risk of accruing property and drug offences with age (see Table 3). Individuals whose first conviction occurred before the age of 17 had significantly higher rates of both property and drug conviction, as is shown in Table 4. However, the age of first illicit drug use, and the age of first opioid use, were not associated with higher rates of offences.

There were a number of other variables which were associated with the rate of drug and property offences prior to assessment. These included: educational attainment, employment history in the six months prior to assessment, a history of previous treatment for drug and alcohol abuse, and a history of polydrug use.

Attainment of the School Certificate was associated with a lower rate of property convictions (OR = 0.76 [95% confidence interval: 0.69 to 0.84]). Continuous employment in the six months prior to assessment was associated with lower rates of both drug (OR = 0.50 [95% confidence interval: 0.39 to 0.64]) and property convictions (OR = 0.45 [95% confidence interval: 0.38 to 0.54]). Subjects who had been admitted for detoxification or drug treatment had a higher rate of drug convictions (OR = 1.30 [95% confidence interval: 1.11 to 1.54]). A past history of alcohol problems was associated with a lower rate of both drug (OR = 0.64 [95% confidence interval: 0.55 to 0.74]) and property convictions (OR = 0.63 [95% confidence interval: 0.57 to 0.69]). A history of benzodiazepine abuse was associated with a high rate of both drug (OR = 1.35 [95% confidence interval: 1.15 to 1.57]) and property convictions (OR = 1.37 [95% confidence interval: 1.22 to 1.54]).

Table 3: Relative risk of arrest [and 95% confidence interval] by age group.

Age (years)	Drug offences	Property offences
< 23	1.00	1.00
23-26	0.75 [0.71, 0.79]	0.76 [0.74, 0.79]
27-29	0.56 [0.53, 0.59]	0.58 [0.56, 0.61]
> 29	0.41 [0.39, 0.44]	0.45 [0.43, 0.46]

Table 4: Relative risk of arrest [and 95% confidence interval] by age of first conviction.

Age of first conviction	Drug offences	Property offences
< 17	1.00	1.00
17-20	0.30 [0.25, 0.36]	0.75 [0.66, 0.86]
> 20	0.47 [0.40, 0.55]	0.59 [0.52, 0.69]

The effect of entering treatment on the rate of post-assessment convictions

All persons in the study showed a reduction in the rate of drug offence convictions in the post-assessment period (see Table 5). The reduction was larger, however, among persons who did not enter treatment (OR = 0.20 [0.13, 0.29]) than among persons who were accepted into methadone (OR = 0.56 [0.48 to 0.66]). That is, the rate of drug convictions in the post-assessment period was approximately half of the pre-assessment rate for persons who were accepted into methadone, and approximately a fifth of the pre-assessment rate for persons who did not enter methadone.

The picture was more complicated for property convictions. As Table 6 indicates, there was a small but statistically significant increase in the rate of convictions for property offences among persons who entered treatment (OR = 1.15 [1.05, 1.27]), and a reduction in the rate of those who did not enter methadone (OR = 0.45 [0.36, 0.56]). That is, while the rate of property convictions in the post-assessment period was less than half of the pre-assessment rate for persons who did not enter treatment, the rate of convictions among those who were accepted into methadone increased by 15%.

The increase in offences during the post-assessment period among persons who entered treatment reflects two processes. First, many subjects remained in treatment for a short time. More than half were in treatment for less than 12 months so that for these subjects most property convictions in the post-assessment period occurred

after treatment. Second, there was an exceptionally high rate of convictions among a small number of subjects shortly after they had entered treatment. For example, 24 subjects who were accepted into treatment accrued 49 property convictions in their first 3 months of treatment.

Treatment duration and conviction rate

Among those who entered treatment, the relative risk of being arrested for a drug offence in the post-assessment period fell by a factor of 0.95 [0.94, 0.97] for each additional month of treatment (after adjustment for age and age of first conviction). That is, the risk of being arrested for a drug offence nearly halved over 12 months of methadone treatment (OR = 0.56 [0.47, 0.70]).

Among those who entered treatment, the relative risk of being arrested for a property offence in the post-assessment period reduced by a factor of 0.97 [0.96, 0.98] for each month of treatment. That is, the relative risk fell by a factor of 0.69 [0.62, 0.78] for each 12 months of treatment.

These relationships between treatment duration and post-assessment convictions persisted after adjustment for the rate of convictions pre-assessment, which was the best single predictor of crime rates in the post-assessment period. The rate of convictions pre-assessment did not predict retention in treatment so the relationship between duration of treatment and the rate of convictions post-assessment is not due to a higher rate of treatment drop out among more criminally active persons.

Table 5: Comparison of risks of drug offences between those who entered treatment and those who did not.

	Pre-assessment	Post-assessment
Treated	1.00	0.56 [0.48, 0.66]
Untreated	0.89 [0.76, 1.02]	0.20 [0.13, 0.29]

Table 6: Comparison of risks of property offences between those who entered treatment and those who did not.

	Pre-assessment	Post-assessment
Treated	1.00	1.15 [1.05, 1.27]
Untreated	1.01 [0.90, 1.12]	0.45 [0.36, 0.56]

Discussion

The main findings can be briefly summarised as follows. First, persons who applied for entry to methadone treatment in Western Sydney in 1986 had a high rate of convictions for property and drug offences in the period prior to their application. Second, age, gender, and age of first conviction predicted the rate of property and drug convictions in the pre-assessment period. Third, people who did not enter methadone treatment had lower crime rates in the post-assessment period than persons who entered treatment. Fourth, for those who entered treatment, the rate of property and drug convictions decreased with increasing duration of methadone treatment.

The first two findings replicate the results of overseas and Australian research showing high rates of criminal activity among opioid users (Ball *et al.*, 1983; Hammersley *et al.*, 1989; Dobinson & Ward, 1984, 1987). The causal significance of the relationships between entry to methadone, duration of treatment and criminal convictions requires more detailed analysis. Before doing so, we will briefly discuss the validity of criminal convictions as a measure of criminal behaviour.

The validity of official records

As is well known, the relationship between criminal activity and official convictions is an imperfect one: most property and drug offences do not result in convictions; the offences which attract convictions are not a random sample of criminal activity; and rates of convictions are influenced by variations in police activity, and by offenders' attitudes towards being apprehended.

conviction. To minimise this problem we used the date of arrest which led to the conviction rather than date of conviction. Even so, unless when the offender is caught "red-handed", the date of arrest may inaccurately measure when a crime was committed because a person may be charged with a number of more or less recent offences when arrested.

We used official records despite these reservations because they have three advantages over self-report. First, they do not rely on the subject's memory, which may be distorted for events occurring over a longer period of time. Second, official records are also less susceptible than self-report to being influenced by the powerful folklore that drug addiction drives people to predatory crime (Singer, 1971). Third, these biases in official records make it more difficult to detect the effect of methadone treatment on rates of criminal activity.

The relationship between treatment duration and post-assessment convictions

We found that the longer a person spent in methadone treatment the lower was their risk of being convicted of a property or drug offence. This relationship was observed despite the fact that many convictions early in treatment were for offences that were committed before entry to treatment. This finding is similar to that of Sechrest (1979) who reported a drop in drug offences after a year in treatment, and a drop in the rates of other offences after 2 to 3 years of treatment. The results are also similar to those reported by Newman, Bashkow & Kates (1978) who observed quite dramatic reductions in arrest rates for clients who remained in treatment more than a year. Our findings are also in keeping with other

A further problem with the use of official

ing benefit from methadone treatment (Simpson, 1981).

The present findings thus provide *prima facie* evidence that methadone treatment reduced criminal activity. Before drawing such an inference, however, at least two alternative explanations need to be excluded. The first is that the reduction in post-assessment convictions among persons who remained in methadone occurred because criminally-involved drug users were more likely to discontinue treatment. The second possibility is that addicts who remained in methadone treatment were those who were "motivated" to stop using opioids, and thus to reduce their criminal activity.

There was only partial support for the first explanation. The strongest predictor of the rate of post-assessment convictions was the rate of convictions pre-treatment. A high rate of pre-assessment convictions did not, however, predict a higher drop-out rate from treatment. In fact, persons who had a high rate of pre-assessment convictions were marginally more likely to remain in treatment than persons who had a low rate of convictions. This may have been because persons who were referred to programme 2, which had low retention in treatment, had significantly lower rates of property offences pre-assessment.

Although the second possibility is harder to exclude because motivation is difficult to measure, it is unlikely to explain the relationship between treatment duration and criminal activity. In a previous study on this cohort (Caplehorn & Bell, 1991), the dose of methadone was a stronger predictor of retention in treatment than any client characteristics. Since dose and other treatment factors promote retention, it is reasonable to infer that they also promote the beneficial changes associated with retention. Thus, we conclude that the relationship between retention in methadone and lower crime rates is more likely to be causal than coincidental.

Even if we allow that the reduction observed in arrest rates is attributable to treatment, it may seem that the halving in conviction rates among those remaining in

with previous research using official records which have found modest, retention-dependent reductions in arrest rates (Sechrest, 1979), or in some cases no reduction at all (Wiepert *et al.*, 1979). Studies using self-report have suggested a more dramatic impact of treatment (Simpson & Sells, 1981), although they may be susceptible to "expectancy bias" (Gould, 1974). It is worth remembering, however, that the ratio of the number of undetected offences to the number of convictions is of the order of 100 to 1. This suggests that the modest reduction in conviction rate represents a sizeable reduction in the number of offences.

The relationship between rejection for methadone and post-assessment convictions

Given that rate of convictions declines with increasing duration of treatment, it seems paradoxical that there was a greater reduction in criminal convictions among persons who did not enter methadone treatment. Could it be that refusing an applicants' request for methadone has a more salutary effect on their criminal activity than placing them in treatment? There are two good reasons why it would be unwise to draw this conclusion.

The first is that those who entered treatment differed from those who did not in ways that are likely to have affected their risks of receiving criminal convictions. During 1986 and 1987, the demand for methadone treatment greatly exceeded supply so it was restricted to applicants with the most severe addiction problems, as assessed by their regularity of heroin use, previous treatment experience, and degree of involvement in criminal activity. The operation of this policy is reflected in the evidence presented here that persons with more severe dependence, and thus a greater propensity for criminal activity, were more likely to have been accepted into methadone.

A second reason for doubting that no treatment was better than some treatment was the weak relationship between the decision to accept or reject a person for methadone and the amount of time that subjects spent in methadone treatment. More than half of

those who initially failed to enter treatment, subsequently entered methadone programmes (Bell, 1990), and more than half of those who initially entered treatment had left treatment within 12 months (Caplehorn & Bell, 1991). The post-assessment interval thus included a lengthy treatment period for many nominally "non-treatment" subjects, and included a lengthy non-treatment period for many of those who were nominally in the "treatment" group. Selection bias and treatment instability are thus the most likely explanations of the apparent superiority of no treatment.

Conclusions

Proponents of methadone maintenance have in the past made exaggerated claims for its effectiveness (Zinberg, 1977) probably in part to offer hope to demoralised and helpless addicts that treatment can dramatically change their lives. We believe that methadone programmes should pursue achievable and realistic goals, and that outcome and process evaluation research provides a better basis for setting such goals than well-intentioned therapeutic optimism. As this study, and many other evaluation studies have indicated, methadone maintenance can be an effective treatment modality, provided that treatment goals are realistic, and that programme staff recognise that the benefits of treatment will be gradually achieved.

References

- Ball, J.C., Shaffer, J.W. & Nurco, D.N. (1983). The day-to-day criminality of heroin addicts in Baltimore: A study in the continuity of offence rates. *Drug and Alcohol Dependence*, 12, 119-142.
- Bell, J. (1990, July). *A follow-up study of people rejected for methadone maintenance*. Paper presented at the First National Methadone Conference, Sydney.
- Blumberg, H.H. (1976). British users of opiate-type drugs: A follow-up study. *British Journal of Addiction*, 71, 65-77.
- Caplehorn, J. & Bell, J. (1991). Methadone dosage and retention of patients in maintenance treatment. *Medical Journal of Australia*, 154, 195-199.
- Dobinson, I. & Ward, P. (1984). *Drugs and crime: A survey of New South Wales prison property offenders*. Sydney: New South Wales Bureau of Crime Statistics and Research.
- Dobinson, I. & Ward, P. (1987). *Drugs and crime: Phase II*. Sydney: New South Wales Bureau of Crime Statistics and Research.
- Gould, L.C. (1974). Crime and the addict: Beyond common sense. In J.A. Inciardi & C.D. Chambers (Eds.), *Drugs and the criminal justice system* (pp57-75). Beverley Hills: Sage.
- Hall, S. M. (1984). Clinical trials in drug treatment: Methodology. In F.M. Tims & J.P. Ludford (Eds.), *Drug abuse treatment evaluation: Strategies, progress and prospects* (Research Monograph No. 51). Rockville Maryland: National Institute on Drug Abuse.
- Hall, W., Bell, J. & Carless, J. (1990, July). *Drug use and criminal convictions among opiate users applying for entry to methadone treatment*. Paper presented at the First National Methadone Conference, Sydney.
- Hammersley, R., Forsyth, A., Morrison, V. & Davies, J.B. (1989). The relationship between crime and opioid use. *British Journal of Addiction*, 84, 1029-1043.
- Hubbard, R.L., Marsden, M.E., Rachal, J.V. et al. (1989). *Drug abuse treatment: A national study of effectiveness*. Chapel Hill and London: The University of North Carolina Press.
- Hunt, D.E., Lipton, D.S., & Spunt, B. (1984). Patterns of criminal activity among methadone clients and current opiate users not in treatment. *Journal of Drug Issues*, 14, 687-702.
- Inciardi, J.A. (1979). Heroin use and street crime. *Crime and Delinquency*, 25, 335-346.
- Newman, R.G., Bashkow, S. & Cates, M. (1978). Arrest histories before and after admission to a methadone maintenance treatment program. *Contemporary Drug Problems*, 2, 417-430.
- Newman, R.G. (1987). Methadone treatment: Defining and evaluating success. *New*

- Nurco, D.N., Ball, J.C., Shaffer, J.W. & Hanlon, T.E. (1985). The criminality of narcotics addicts. *Journal of Nervous and Mental Diseases*, 173, 94-102.
- Sechrest, D.K. (1979). Methadone programs and crime reduction: A comparison of New York and California addicts. *International Journal of Addictions*, 14, 377-400.
- Simpson, D.D. (1981). Treatment for drug abuse: Follow-up, outcomes and length of time spent. *Archives of General Psychiatry*, 38, 875-880.
- Simpson, D.D. & Sells, S.B. (1981). *Highlights of the DARP follow-up research on the evaluation of drug abuse treatment effectiveness*. Fort Worth, Texas: Institute of Behavioural Research, Texas Christian University.
- Singer, M. (1971). The vitality of mythical numbers. *Public Interest*, 23, 3-9.
- Steinberg, D. & Colla, P. (1988). *SURVIVAL: A supplementary module for SYSTAT*. Evanston, Illinois: SYSTAT Inc.
- Wiepert, G.D., D'Orban, P.T. & Bewley, T.H. (1979). Delinquency by opiate addicts treated at two London clinics. *British Journal of Psychiatry*, 134, 14-23.
- Woody, G.E. & O'Brien, C.P. (1986). Update on methadone maintenance. In H.D. Cappell *et al.* (Eds.), *Research advances in alcohol and Drug problems: Volume 9*. New York: Plenum Press.
- Zinberg, N.E. (1977). The crisis in methadone maintenance. *New England Journal of Medicine*, 296, 1000-1002.

EVALUATION OF A SPECIALIST DRUG AND ALCOHOL TREATMENT SERVICE FOR WOMEN¹

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Introduction

The paucity of research into treatment issues for women with substance abuse disorders has been a serious impediment to the development of empirically validated treatment programmes. One of the aims of this study is to open up the debate on treatment orthodoxy. The question of special treatment needs of women is frequently ignored in the wider discourse on the nature of substance abuse treatment by both researchers and clinicians. The existing treatment models have largely been developed by and for men, with little consideration to gender specific issues. The factors contributing to the serious under-representation of women in existing drug and alcohol treatment programmes have not been adequately addressed. This study comparing client characteristics and treatment outcome of women attending either a specialist women's drug and alcohol service or a traditional mixed-sex programme may clarify many issues about the treatment needs of women, including the question of matching clients to optimal treatment.

Jarrah House is a specialist, residential drug and alcohol treatment service for women. It was established in mid 1987 by the Women's Alcohol and Drug Advisory Committee, which is a non-government body, located in an inner-Western suburb of Sydney. It offers an in-patient programme of up to six weeks, and accommodates thirteen women and eight children under ten years. The service is staffed by registered nurses, women recovering from an addictive disorder, child-care workers and re-

cently a psychologist has been appointed as the senior drug and alcohol counsellor. It offers a choice of medicated or non-medicated detoxification and is funded to offer a choice of alternative approaches to treatment. As a result of a variety of staff recruitment issues the American disease model and twelve-step programmes are employed by the majority of the staff.

Design

A comparative longitudinal design was employed. The comparison group was made up of female clients at Ward 4, Mosman Hospital and Wistaria House (Ward 17) at Parramatta Hospital. The Mosman service offers a seven to ten day detoxification and Wistaria House a 21 day programme, including detoxification. Both services utilise the American Disease concept as their primary therapeutic model, although Wistaria House offers a more comprehensive programme that includes assertiveness training, self-esteem issues and family therapy. Wistaria House is run on a medical model and employs more professional staff than does Ward 4, Mosman. These two centres were chosen as they had the least client population overlap with Jarrah House, that is, clients attending Jarrah House were less likely to have been to either of these services in the past. Clients who had attended more than one of the services in the study were excluded.

There were eighty subjects in each group. The subjects were interviewed within a few days of admission (depending upon their physical/emotional condition), prior to dis-

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charge and at 6 months post discharge. The format chosen was that of a structured interview. The follow-up interviews were conducted by a research assistant who was "blind" to the treatment centre attended by the client.

Hypotheses

The choice of hypotheses was guided by the stated aims and objectives of Jarrah House and an extensive literature review of the treatment needs of women with drug and alcohol problems.

- ♀ Participation in the Jarrah House programme results in a greater improvement in self-esteem than does participation in a traditional mixed-sex treatment service.
- ♀ Jarrah House is more successful in the attraction and retention of women with a background of sexual abuse and/or prostitution.
- ♀ Jarrah House attracts a higher proportion of women in their first intervention.
- ♀ Jarrah House attracts women at an earlier stage of their drug use history.
- ♀ Jarrah House has more positive effects on client's parenting skills.
- ♀ Jarrah House clients have a lower rate of subsequent drug use.

Method

The notion of treatment success is a contentious one, where particular treatment models imply treatment procedures and treatment success. For example, while the disease model upholds abstinence from all psychotropic substances as the hallmark of treatment success, a feminist model implies that control over substance abuse and personal empowerment are also treatment goals. As a result of this difficulty, multiple treatment outcome measures have been chosen in the belief that information obtained about the relationships between client characteristics, aspects of treatment and treatment outcome may shed some

may help in the question of matching clients to optimal modes of treatment.

Variables examined

Admission

- * Demographics: age, marital status, living arrangements, sexual orientation, ethnicity.
- * Life history: obstetric, legal, education, employment, family history of drug or alcohol problems, general health, prostitution, sexual/physical abuse.
- * Drug and alcohol history: initiation of drug use, current drug use, dependence (SADQ/SODQ), treatment history.
- * Psycho-social: family support, referral mode, reason for presentation, Beck Depression Inventory, Coopersmith Self-Esteem Scale, Maternal Satisfaction Scale, Social Network Inventory.

Discharge

- * Length of admission
- * Details of detoxification
- * Sex of primary therapist
- * Reason for discharge
- * Treatment usefulness
- * Referrals offered
- * Beck Depression Inventory
- * Coopersmith Self-Esteem Scale
- * Situational Confidence

Follow-up

- * Current living arrangements
- * Intervening obstetric, legal, employment and health events
- * Current drug use, treatment since discharge, on-going treatment components, retrospective treatment usefulness rating
- * Beck Depression Inventory
- * Coopersmith Self-Esteem Scale
- * Maternal-Child Satisfaction Scale
- * Social Network Inventory
- * Schedule of Life Stressors
- * Situational Confidence

(Nominated collaterals were interviewed separately for validation of the subject's self-report).

Corollary studies

In the course of conducting the project, ideas for further studies logically presented themselves.

♀ To add qualitative information to the study, a process report is being prepared. This report will include information gathered from observation and participation in the daily activities of each of the treatment agencies: group counselling sessions, admission procedures, discussions with staff members and other clients, and observing staff meetings over the 18 month period of the project. The report will also document staff numbers and training, identification of organizational structure and decision making processes.

The value of such qualitative information is that it serves to contextualize the results and allow for the discussion of the possibility that the specialist women's service failed to offer a sufficiently different service from that offered by traditional drug and alcohol treatment agencies, which may contribute to the inability of the evaluation to show significantly different treatment outcomes for the two types of treatment.

♀ Reliability and normative data on the two instruments that had to be developed for the evaluation; the Maternal Satisfaction Scale and Social Network Inventory.

♀ A separate study examining the characteristics of female clients who drop-out of treatment within 5 days of admission in both specialized women's and mixed-sex drug and alcohol treatment services.

Client characteristics

The data analysis is currently at a preliminary stage. However, listed below are some of the characteristics of the clients admitted to the three participant treatment centres.

Social characteristics

The mean age of Jarrah House subjects was 30.3 years, with a standard deviation of 7.7 years and a range of 18-66. The

centres was 31.1 years, with a standard deviation of 8.4 years and a range of 18-53 years. The range of ages that each centre attracts is quite broad, and it is reassuring that the two groups do not differ on such a fundamental variable.

<u>STABLE RELATIONSHIP</u>		
JH	Married	8.8%
	De-facto	8.8%
	Single	46.3%
CS	Married	7.5%
	De-facto	12.8%
	Single	50%
JH = Jarrah House		
CS = Comparison Services		

The table describing relationship status does not include figures for divorced or widowed subjects. The very small percentage of women in the study in a stable relationship is consistent with the findings of Eldred & Washington (1976) who also reported that the percentage of female clients in a stable relationship in that study of a drug and alcohol treatment population was significantly lower than that of men in treatment. The figure of 7.5% - 8.8% of women in the study being married is also markedly lower than that of women in the same age group in the community. This data lends support to the notion that men are less tolerant of their female partner's substance abuse, and are more likely to leave the relationship than are female partners of male substance abusers. The positive effect of having a stable partnership on treatment outcome has been documented in a number of studies (McDonald, 1987; Bromet & Moos, 1977; Glatt, 1961) and will be examined in this study.

As would be expected, there were significantly more women at Jarrah House who had dependent children than at the comparison centres ($\chi^2=12.55$, (1df), $p<.001$). Moreover, of the two comparison services, women with dependent children were sig-

CHILDREN

JH	Dependent	53.8%
	Ever had	63.3%
	Lost custody	37%
CS	Dependent	35%
	Ever had	48.8%
	Lost custody	15%

House, Parramatta than Ward 4 at Mosman Hospital ($\chi^2=4.97$, (1df), $p<.01$). Women with dependent children in the study were significantly more likely to be in their first or second intervention ($\chi^2=4.18$, (1df), $p<.05$) than women with no children. Regardless of what kind of treatment service women are attending, more than half of them have had children at some time and this cannot be ignored as a treatment issue. A most disturbing finding was the high percentages of women who had ever lost custody of their children. Women at Jarrah House were significantly more likely to have lost custody of their children than women at the comparison centres ($\chi^2=7.36$, (1 df), $p<.01$). This alarming statistic perhaps reflects the severity of dependence and degree of degradation in social circumstances experienced by these women before they contemplate entering treatment. The impact on self-esteem and depression of losing custody of one's children is clearly another important treatment issue for these women.

SEXUAL ORIENTATION

JH	Heterosexual	72.4%
	Lesbian	21.3%
	Bisexual	6.3%
CS	Heterosexual	87.6%
	Lesbian	6.3%
	Bisexual	6.3%

Lesbian women with drug and alcohol problems were significantly more likely to at-

centres ($\chi^2=6.18$, (1df), $p<.01$). Lesbian women were significantly more likely to be in their first drug and alcohol treatment than were heterosexual or bisexual women ($\chi^2=6.83$, (1 df), $p<.01$). Lesbian women were also significantly more likely to report sexual abuse in childhood than were heterosexual and bisexual women ($\chi^2=6.38$, (1 df), $p<.01$). Similarly, lesbian and bisexual women were significantly more likely to report sexual abuse in adulthood than were heterosexual women ($\chi^2=8.44$, (1 df), $p<.01$). Speculation on the possible reasons for these findings would require more space than is appropriate in this paper, but is almost certainly related to the treatment issues of women's perceived roles in society and the acceptance of women's sexuality by both self and others.

Drug and treatment history

The mean stay for the comparison centres is the average of the 7 and 21 day programmes. However, Jarrah House clients appear to be using the 42 day guideline quite flexibly, from two to 43. If women were already enrolled in the study, but had left within five days of admission they were not excluded from the study.

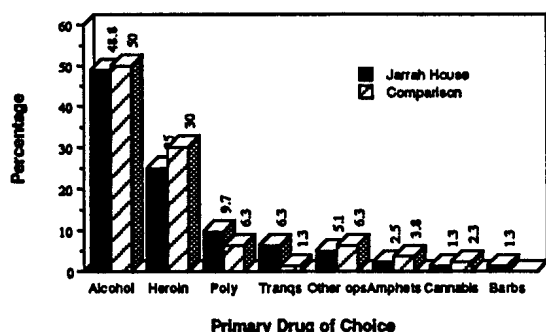
LENGTH OF STAY

JH	Mean	22.5 days
	Median	23 days
	Range	2-43 days
	S.D.	13.1 days
CS	Mean	13.9 days
	Median	21 days
	Range	2-50 days
	S.D.	11.9 days

The number of **previous drug and alcohol treatment** services the subject had attended was not significantly different for each group. Women attending Jarrah House had attended a mean of 3.2 previous treatments (median 6, range 0-10, standard deviation 3.8) and women attending the comparison centres had also attended a mean of 3.2 previous treatments (median 6,

seven percent of women at Jarrah House were in their first intervention as were 45% of women attending the comparison centres. However, there is some evidence to suggest that those women in their first intervention and attending Jarrah House were from a different sub-population than were the women who were in their first intervention and admitted to the comparison centres. The evidence supporting this suggestion will be discussed when examining the issues of sexual abuse, sexual orientation and women with dependent children.

Drug of Choice By Centre



The substance that the subject reported as their drug of choice is reported here, although we need to be aware that many of the clients substitute and supplement their drug of choice with other substances and use other drugs opportunistically. Subjects were only classed as poly-drug abusers if they used a number of drugs with equal frequency. The percentage of women reporting alcohol, heroin and other opiates as their drug of choice is similar in both groups. The other opiates group is made up of substances such as morphine, palfium, pethidine and street methadone.

Jarrah House appears to be attracting women requiring a more complicated detoxification, as there are twice as many poly drug users, six times as many women addicted to benzodiazepines and a small percentage of women with addiction to

Life experiences

The relationship between having experienced **sexual and/or physical abuse** and subsequent substance abuse has only recently been questioned. Women attending Jarrah House were significantly more likely to report having been sexually abused in childhood ($\chi^2=9.43$, (1df), $p<.001$) than were women attending the comparison centres. Fifty six percent of women attending Jarrah House and 38% of women attending the comparison centres reported experiencing sexual abuse in childhood. The abuser was most commonly the biological father, step-father or brother.

The relationship between sexual abuse in childhood and subsequent substance abuse disorders is complex and still remains to be rigorously explored. However, the impact of once again denying the reality and consequences of surviving incest in childhood in drug and alcohol treatment has been shown to precipitate relapse in some clients (Young, 1990).

Approximately 50% of women in this study had been sexually abused (most commonly rape) after the age of eighteen. Women who had been sexually abused in adulthood were significantly more likely to be in their first drug and alcohol intervention than were women with no such history ($\chi^2=5.27$, (1df) $p<.02$). Women who are under the influence of drugs or alcohol are clearly more vulnerable to assault and such an assault may, in turn, precipitate treatment seeking.

The other issues that women who have recently suffered sexual assault bring to treatment are often complex and include emotional trauma, safety and legal concerns, and fear of disease and pregnancy. Approximately 68% of the women in the study had experienced physical abuse as an adult and around 86% of women in the study had experienced sexual and/or physical abuse at some time in their lives, a question rarely explored in treatment for drug and alcohol problems. A drug and alcohol treatment service may be a woman's first contact with health workers for an extended period and failure to address

ty for a range of potential problems. One of the questions addressed in the study was whether the subjects had *ever* worked as a **prostitute**. Thirty four percent of women attending Jarrah House and 25% of women attending the comparison centres reported having worked as a prostitute, usually either working on the streets or in massage parlours. Most commonly the substance abuse preceded the involvement in prostitution, but a number of women perceived prostitution as their profession.

The social stigma of having worked as a prostitute is marked, and in this study prostitutes were significantly less likely to be in their first drug and alcohol intervention than were women who had never worked as prostitutes ($\chi^2=6.64$, (1df), $p=.01$). The women who reported having worked as prostitutes were significantly more likely to have been sexually abused in childhood than were women who did not report such a history ($\chi^2=29.49$ (1df), $p<.001$).

Fifty four percent of women attending Jarrah House and 45% of women attending the comparison centres reported that their father had a problem with drug or alcohol abuse. This finding that half of the women in the study had a **paternal history of drug or alcohol problems** is clearly an important concern for researchers and clinicians. Similar figures have been reported in other studies (e.g. Hesselbrock, 1979).

A most surprising finding of the study was the extraordinarily high incidence of a **maternal history of drug or alcohol problems**. Forty six percent of subjects attending Jarrah House and 27 percent of subjects attending the comparison centres reported that their mothers had a history of substance abuse problems. This difference is statistically significant ($\chi^2=5.80$, (1df), $p=.01$). Other studies report incidences between 21% (Hesselbrock, 1979) and 37% (Glenn & Parsons, 1989), therefore, those attending a specialist drug and alcohol treatment service for women have a markedly higher reporting of a positive family history of such problems than previously cited in the literature. Women who

their mothers in traditional drug and alcohol agencies and are sensitised to the stigma of female substance abuse in society, may be more concerned with ensuring that a treatment service is sensitive to gender issues than women who had no such history.

Whether one subscribes to genetic or social learning based theories of addictive disorders, the role model for substance abuse and parenting practices which women with drug and alcohol problems provide is a powerful influence on the subsequent behaviour of their children and may be reflected by the number of women in this study who had lost custody of their own children.

Proponents of the disease concept of addiction claim that such a model reduces the **social stigma** that the individual with drug or alcohol problems experiences. This study demonstrates that this is not the case for women with drug and alcohol problems. Approximately 84% of women in the study agreed with the statement that "society looks down more on women with drug or alcohol problems than it does on men with similar problems".

When subjects were then asked whether this perceived added stigma of being a woman with drug or alcohol problems caused them to **delay entering drug and alcohol treatment**, or that they did not want to be labelled as "addict" or "alcoholic", approximately half of them agreed that they had delayed seeking treatment for this reason. While the perception of social stigma is a complex concept, the emphasis on daily identification with the label "alcoholic" or "addict", for no empirically validated reason, may not be an appropriate component of substance abuse treatment for women. In reality, the client may be internalising the stigma associated with the label rather than the construct intended by the counsellor.

Subjects were questioned on whether they had achieved **more than two months abstinence** at any time since they had started abusing drugs or alcohol. It is noteworthy that 70% of the women at Jarrah

of control over substance abuse, including women who had not previously been in treatment and 57% of women attending the comparison centres.

Forty-seven percent of the 70.4% of women at Jarrah House and 34% of the 57.3% of women at the comparison centres who had been abstinent for more than 2 months at any time, had achieved this without any intervention. Thus, the emphasis on powerlessness by the disease model of addiction may be seen as inappropriate by women who *have* been able to control their substance abuse for quite prolonged periods of time without assistance. The effect on treatment outcome of having achieved self-control in the past will be assessed in this study.

<u>WHY RELAPSED?</u>		
JH	Stress	42%
	Boredom	10%
CS	Stress	45%
	Boredom	4%

The impact of stressful life events on relapse for women with drug and alcohol problems has been examined by other authors (e.g. McDonald, 1987). In this study, the nature of the stressful life event was most frequently returning to a "using" and/or abusive sexual partner. Subjects used the term "boredom" to explain concerns such as not having a new circle of friends to replace those they drank or used drugs with in the past, or not having sufficient activities to replace the large part of their time previously spent thinking about, acquiring and consuming psychoactive substances. The nexus between unemployment and an impoverished social support network with relapse to substance abuse is well demonstrated.

Related to the hypothesis that women seeking admission to Jarrah House are more likely to be in their first intervention for

prior exposure to self-help, twelve-step programmes. Around 50% of the women in the study had never attended twelve-step meetings prior to admission, and there was no difference between the centres on this variable. Twenty one percent of women attending Jarrah House and 27% attending the comparison centres had attended more than eighty twelve-step meetings in the past. It may be surmised that half of the women in the study were not attracted to a purely self-help approach, despite it being less disruptive than a residential treatment. Furthermore, a quarter of the subjects who had been intensively involved in self-help programmes did not find them completely satisfactory and had to seek residential treatment as an adjunct to twelve-step attendance.

The notion that women with addiction problems prefer a professional treatment model and individual rather than group mode of delivery has been reported by other authors (Curlee, 1971; Sokolow *et al.*, 1980; Beckman & Kocel, 1982).

Subjects in the study were asked why they had sought treatment at that particular agency. This question did not relate to why the women sought treatment *per se.*, but to why they sought treatment at that particular service. The two most frequently noted responses in each group are reported here. It is encouraging that women stated they chose a specialist service for the particular services it offers, although it may be that it was easier for the those subjects at a specialist service for women to make attributions about those reasons. However, it is the feeling of the author when conducting the interviews, that the women at Jarrah House were quick to answer this question, and very concerned that there were few such services available to them.

It is rather disturbing that the responses of the subjects attending the comparison services were not related to treatment components of that service, and many of the subjects had no idea of what the service offered prior to seeking admission.

The measure of depression used in this study was the short-form, 13-item Beck

REASON FOR CHOICE

JH	Women only	39.5%
	Child-care	33.3%
CS	Only option	28%
	Close to home	20.7%

BECK DEPRESSION INVENTORY

JH	Mean	23.2
	Median	23
	Mode	31
	Range	0-36
	SD	7.14
CS	Mean	21.4
	Median	22
	Mode	16/28
	Range	3-48
	SD	8.1

previously in substance abuse studies (Dorus *et al.*, 1987; Bokstrom *et al.*, 1989). The cut-off score for extremely severe depression on this instrument is 19. The impact of depression on drug and alcohol abuse has been addressed in previous studies (e.g. Turnbull & Gomberg, 1988). The finding that a history of depression preceding the onset of alcohol abuse leads to a more favourable prognosis for alcohol treatment, than for those with secondary depression has been found *only for women* (Rounsaville *et al.*, 1987).

The very high level of clinical depression on admission demonstrated for the women in this study cannot be interpreted as merely reflecting a symptom of detoxification. The subjects were not assessed during acute detoxification, but only when physically and emotionally stable enough to interact comfortably with the interviewer. In addition, the women were admitted for abuse of a variety of substances. It is unfortunate that none of the treatment agencies in the study screen for a past history of depres-

sionship of depression to substance abuse in a rigorous manner. The consequences of this oversight are a failure to treat serious psychopathology, which no matter what the exact nature of its relationship to substance abuse is likely to substantially increase the likelihood of relapse to substance abuse upon discharge.

There is a further consequence for treatment agencies that only utilise the American disease model. Consonant with the emphasis on the notion of denial in the disease model of addiction, the clients "attitude" and willingness to agree with the counsellors diagnosis and proposed treatment-plan, is heavily emphasised by the majority of workers. The presence of clinical depression can be perceived as apathy and lack of motivation on the part of the client and denial of the severity of their "disease", and may lead to their being discharged from the treatment service for displaying a poor attitude.

PARASUICIDE

JH	Mean	2.9
	Median	6
	Range	0-50
	SD	6.5
CS	Mean	1.83
	Mode	0
	Median	4
	Range	0-25
	SD	3.7

Consistent with the finding of high levels of extremely severe depression among the women in this study is the reported mean number of previous suicide attempts in the sample. Subjects at Jarrah House reported a median of 6 and those at the comparison centres a median of 4 previous suicide attempts. However, it appears that these figures have been skewed by a small number of extremely disturbed individuals. Around 36% of subjects at Jarrah House and 46% at the comparison centres had never attempted suicide. Around 40% of subjects at Jarrah House and 33% percent

less than 3 times. The extremely specialized treatment needs of these very self-destructive clients, who frequently have a long and complex history of childhood sexual abuse, have not been addressed in the vast majority of drug and alcohol treatment services.

<u>COOPERSMITH SELF-ESTEEM INVENTORY</u>			
JH	Mean	28.0	
	Range	0-88	
	SD	7.14	
CS	Mean	33.1	
	Range	0-80	
	SD	18.7	

The Coopersmith Self-Esteem Inventory is a 25 item scale to which subjects answer that a statement is like, or not like them at that time. The maximum possible score is 100, where a high score reflects a high level of self-esteem. Coopersmith reports that the normative score for women across age, socio-economic status and ethnicity is 71.9. The means of 28.0 and 33.1 are, therefore, consistent with extremely low levels of self-esteem in the women attending the three drug and alcohol treatment agencies.

Beckman (1978) found that self-esteem of female alcoholics was lower than that of male alcoholics and non-alcoholic women, but equal to that of women with psychiatric disorders. The aetiology of the low levels of self-esteem found in this study is almost certainly multi-factorial. These include the subject's own substance abuse, family history of drug and alcohol problems, physical and/or sexual abuse, paucity of social support, unemployment, and, consistent with Beckman's (1978) finding, a socially stigmatising label (such as alcoholic or schizophrenic).

The experience of being in an institution for the treatment of drug and alcohol addiction is disempowering for all its clients, but is especially so for women if not handled in a sensitive manner. The addi-

nique, such as confrontation, for women in drug or alcohol treatment will continue to erode what self-esteem exists and may precipitate the client leaving treatment with a poorer self-image than when they were admitted.

Conclusions

The Jarrah House Evaluation Project data collection will be completed in March 1991 with the last of the six-month follow-up interviews. Therefore, any conclusions or recommendations can only be tentative at this stage.

Outreach

The finding that very few women at the comparison centres were aware of treatment options available suggests that drug and alcohol treatment agencies that cater to women should network and liaise with other health workers such as local medical practitioners, psychologists, psychiatrists, hospitals and women's health centres. Research indicates that women with substance abuse problems are more likely to initially present to local medical practitioners or psychiatrists for familial and interpersonal problems (Johnson, 1965; Dahlgren & Myrhed, 1977; Beckman & Kocel, 1982; Duckert, 1984) without informing of their own alcohol problem. Such outreach practices would enhance the ability of both client and practitioner to make appropriate treatment recommendations.

Programme design

While the American disease model and 12-step meetings may be adequate for a number of women within drug and alcohol programmes, the incorporation of, or replacement with alternative models of treatment appears to be indicated. The desire of women in this study to have access to professional staff and individual counselling techniques is consistent with other research in the area (Curlee, 1971; Sokolow *et al.*, 1980; Beckman & Kocel, 1982). The finding that half the women in the study delayed seeking treatment because of the social stigma of being labelled an addict/alcoholic is also a persuasive argu-

vigorously applying labels during drug and alcohol treatment.

Referral

The importance of allowing (but not coercing) women who have unresolved incest or sexual assault trauma to seek expert counselling early in recovery has been recognised recently by a number of authors (Young, 1990; Bolerud, 1990; Kovach, 1986; Reiker & Carmen, 1986). The folk wisdom of not addressing such issues until six months of abstinence from psychoactive substances has been achieved has been strongly challenged, and the follow-up results of this study may shed some light on this question.

Women in drug and alcohol treatment have also been shown to have impoverished social support, and an important aspect of treatment should be referral to legal, social welfare, housing and employment agencies. The importance of questions such as employment are frequently ignored, and clients are usually advised not to seek employment for some months after treatment. This advice is contrary to findings by authors such as Hester & Miller (1989) and Orford & Edwards (1977) who report the importance of employment as a positive treatment outcome. Although the vast majority of research in the addictive disorders has only used male subjects (Vanicelli, 1984) including the post-treatment factor of employment, this study will be able to examine this and other questions in relation to women's drug and alcohol treatment outcomes.

References

- Beckman, L.J. (1978). Self-esteem of women alcoholics. *Journal of Studies on Alcohol*, 39, 491-498.
- Beckman, L.J. & Kocel, K.M. (1982). The treatment-delivery system and alcohol abuse in women: Social policy implications. *Journal of Social Issues*, 38, 139-151.
- Bokström, K., Balldin, J. & Långström, G. (1989). Alcohol withdrawal and mood. *Acta Psychiatrica Scandinavica*, 80, 505-513.
- Bolerud, K. (1990). A model for the treatment of trauma-related syndromes among chemically dependent inpatient women. *Journal of Substance Abuse Treatment*, 7, 83-87.
- Bromet, E. & Moos, R. (1976). Sex and marital status in relation to the characteristics of alcoholics. *Journal of Studies in Alcohol*, 37, 1302-1312.
- Curlee, J. (1971). Sex differences in patient attitudes toward alcoholism treatment. *Quarterly Journal of Studies in Alcohol*, 32, 643-650.
- Dahlgren, L. & Myrhed, M. (1977). Female alcoholics. 1: Ways of admission of the alcoholic patient. A study with special reference to the female alcoholic. *Acta Psychiatrica Scandinavica*, 56, 39-49.
- Dorus, W., Kennedy, J., Gibbons, R.D. & Ravi, S.D. (1987). Symptoms and diagnosis of depression in alcoholics. *Alcoholism: Clinical and Experimental Research*, 11, 150-154.
- Duckert, F. (1984). Alcohol problems and treatment facilities. Alcohol policy. *Journal of Nordic Alcohol Research*, 1, 30-38.
- Eldred, C.A. & Washington, M.N. (1976). Interpersonal relationships in heroin use by men and women and their role in treatment outcome. *The International Journal of the Addictions*, 11, 117-130.
- Glatt, M.M. (1961). Treatment results in an English mental hospital. *Acta Psychiatrica Scandinavica*, 37, 143-168.
- Glenn, S.W. & Parson, O.A. (1989). Alcohol abuse and familial alcoholism: Psychosocial correlates in men and women. *Journal of Studies on Alcohol*, 50, 116-127.
- Hesselbrock, M.N. (1979). Women alcoholics: A comparison of the natural history of alcoholism between men and women. *Evaluation of the alcoholic: Implications for research, theory, and treatment. Proceedings of a Conference, October 12-13, Farmington, Connecticut. Research Monograph 5. Maryland: National Institute on Alcohol Abuse and Alcoholism.*
- Hester, R.K. & Miller, W.R. (1989). *Handbook of alcoholism treatment approaches: Effective alternatives*. New York: Pergamon Press.
- Johnson, M.W. (1965). Physician's views on alcoholism with special reference to alcohol-

- ism in women. *Nebraska State Medical Journal*, 50, 378-384.
- Kovach, J.A. (1986). Incest as a treatment issue for alcoholic women. *Alcohol Treatment Quarterly*, 3, 1-5.
- Macdonald, J.G. (1987). Predictors of treatment outcome for alcoholic women. *The International Journal of the Addictions*, 22, 235-248.
- Orford, J. & Edwards, G. (1977). *Alcoholism: A comparison of treatment and advice, with a study of the influence of marriage*. Maudsley Monographs No. 26. Oxford: Oxford University Press.
- Rieker, P.P. & Carmen, E. (1986). The victim-to-patient process: The disconfirmation and transformation of abuse. *American Journal of Orthopsychiatry*, 56, 360-370.
- Rounsaville, B.J., Dolinsky, Z.S., Babor, T.F. & Meyer, R.E. (1987). Psychopathology as a predictor of treatment outcome in alcoholics. *Archives of General Psychiatry*, 44, 505-513.
- Sokolow, L.J., Welte, G., Hynes, J. & Lyons, J. (1980). Treatment related difference between female and male alcoholism. *Focus on Women*, 1.
- Turnbull, J.E. & Gomberg, E.S.L. (1988). Impact of depressive symptomatology on alcohol problems in women. *Alcoholism: Clinical and Experimental Research*, 12, 374-381.
- Vannicelli, M. (1984). Treatment outcome for alcoholic women: The state of the art in relation to sex bias and expectancy effects. In S.C. Wilsnack and L.J. Beckman (Eds.), *Alcohol Problems in Women* (pp369-412). New York: Guildford Press.
- Young, E. (1990). The role of incest issues in relapse. *Journal of Psychoactive Drugs*, 22, 249-258.

"GOOD ENOUGH" PROGRAMME EVALUATION

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Introduction

The title of this paper derives from a tradition which is rarely mentioned these days in either our therapeutic endeavours or discourse: psychoanalytic theory. More specifically it derives from the object relations theorist - D.W. Winnicott (1965). It has been more recently coined by another theorist in this tradition: Bruno Bettelheim (1987). Rather than commence with a definition of this term - "Good enough" - I hope to return to it in concluding my paper today when I expect you will already have deduced its meaning.

Over the past three years I have been engaged in a project aimed at exploring the experience of drug and alcohol treatment programmes as they are confronted with a demand for evaluation. The aim of this project has been to work towards the development of a handbook for their use; one that will be easily read, accessible to service providers in agencies, and one which will assist programmes in responding to the questions of others.

My presentation today is thus grounded in this experience; the contact and involvement of over twenty agencies in three States and with a number of evaluation personnel from funding bodies (such as the Directorate of the Drug Offensive in NSW (DODO) and the Western Australian Drug and Alcohol Authority). I have been assisted in this project by a number of others: students, clients of these programmes, coordinating bodies such as WANADA, NADA and VAADA. The other researchers on the project - Fiona McDermott and Priscilla

project to fruition.

Observations regarding evaluation in these agencies, together with consideration of the literature on evaluation and more especially evaluation of drug and alcohol treatment, has led to what will be regarded by many experienced evaluators as an eccentric evaluation handbook.

In developing a plea for a notion of 'good-enough evaluation' I plan to share some of these observations, briefly discuss the process of the development of the handbook and, I hope, leave you with an interest and enthusiasm for exploring your own programme through a utilisation based notion of evaluation (Patton, 1978).

Brief historical context - Evaluation

Requests for evaluation are not new. There is now a substantial literature on evaluation - with numerous journals, texts and articles on both evaluation in general and evaluation in this field in particular. I am not proposing to review all of these here. In fact, we have observed elsewhere (McDermott, Hamilton & Lagay, 1991) that at the moment there seems to be more written about evaluation than evaluation studies undertaken.

General comments on the state of the evaluation literature must recognise first that there is not just one body of literature but several arising over the past two decades from the social and behavioural sciences and their related professions and areas of practice such as sociology, economics,

trations, education, social work, the mental health area and policy studies.

It was in the late 1960s and early 1970s that a formal evaluation literature emerged in the form we recognise today. It was only in 1967 that Edward A. Suchman published *Evaluation Research*, the first hardback textbook on evaluation principles and practice in public health and social action programmes. It was six years later, in 1972, that Carol Weiss wrote *Evaluation Research*. Also in 1972 Sage Publications issued Guttentag & Struening's *Handbook of Evaluation*, to be followed a year later by Sage's first edition of the *Evaluation Studies Review Annual* which has appeared every year since.

The works of Donald T. Campbell, first with Stanley (1963) - *Experimental and Quasi-Experimental Designs for Research*, and then with Thomas D. Cook (1979) - *Quasi-experimentation: Design & Analysis Issues for Field Settings*, are benchmarks in the psychological tradition and central to all evaluation, if not all of behavioural and social science research. Campbell & Stanley (1963), in fact, was published four years before Suchman's *Evaluative Research* as a chapter in the *Handbook of Research on Teaching* (American Educational Research Association, 1963).

One could proceed from each of the disciplines, professions and areas of practice to identify both their unique contributions and partially shared intellectual heritages.

Examining the developments in evaluation since the 1960s, Guba & Lincoln (1987) suggest that evaluation studies in education have moved to a 'fourth generation'. The first generation was characterised by aptitude and intelligence tests (equivalent in this field to crude measures of abstinence); the second by the 'objectives-oriented' descriptive approach fathered by Ralph W. Tyler; the third by moves away from scientific and value-free approaches.

Guba & Lincoln (1989) suggest that the fourth generation is currently emerging: commonly called responsive, these (fourth generation) models take as their point of

similar organisers but claims, concerns and issues put forth by members of a variety of stakeholding audiences, that is, by audiences who are in some sense involved with the evaluationand hence are put at risk by the evaluation. The principles undergirding these responsive models may be noted to a greater or lesser degree in responsive evaluation (Stake, 1977), naturalistic evaluation (Guba & Lincoln, 1981), illuminative evaluation (Parlett & Hamilton, 1977), utilisation focussed evaluation (Patton, 1978) and adversarial evaluation (Wolf, 1979, in Guba & Lincoln, 1987).

What we actually do - Espoused theory and theory in action

Many of these approaches arise from what has come to be called 'action theory'. Argyris & Schon (1976), for example, noted that when you asked professionals or service providers what they did you often got an answer which was quite at odds with a description that you would come up with if you were to observe those same people doing their work. The suggestion that this represented the difference between 'espoused theory' (what they said they did, and sometimes might believe they did) and 'theory in action' or what one could infer about their practice from observing it.

That there might be a difference between what we say we do and what we actually do should not come as a surprise; our children regularly make such profound observations. I will demonstrate this difference by an examination of the process of programme development (see Table 1).

In the left column you will see the schema suggested in most text books and that which is most commonly formally taught: the traditional scientific approach to programme development involving the specification of aims and objectives, needs assessment(s), implementation and measurement of outcomes.

In the right column you will see a description discerned from my observation of how most alcohol and drug treatment programmes actually develop. Someone (or

Table 1: Programme Development

<u>Traditional Scientific Approach</u>	<u>In Action Approach</u>
1. Specify aims and objectives	1. Felt need
2. Review what is known about * the potential clients * the programme elements e.g. needs assessment or literature review	2. Good idea(s) ... (Programme Planning)
3. Programme development * might include development of organisational structures and processes, timetables, locations, staffing...etc.	3. Implementation of ideas * often associated with personal charisma, strong conviction of someone * sometimes associated with literature review * often associated with "review" of previous experience
4. Programme implementation **PROCESS EVALUATION** Stabilise the programme	4. Modification of programme (from time to time). Sometimes according to some of the following: * who comes for the programme (clients) * what these clients want * what seems to work * who the staff are * who else is providing a service * unplanned events - "crises"... money; new guidelines; service agreements; new agency starts up; new drug; new problem (AIDS)...
5. Evaluate impact * who is receiving the programme? * what programme is being received? **IMPACT EVALUATION**	5. Reporting * most often involves 'counting' * most often describes: clients, staff, programme, programme elements
6. What results achieved? **OUTCOME EVALUATION**	6. Reacting * one-off crises - requests from source for information, budget submission, etc.

need ("We really need a here") which, when associated with some ideas, enthusiasm, a charismatic leader or group leads to the establishment of a programme. This is modified over time as a result of many influences and consequently changes and often grows. Evaluation, as such, is absorbed as a part of responding to day to day and external exigencies, events or requirements including reporting and reacting.

What relevance does action theory have for evaluation?

For those of you who have assisted in completing endless activity indicator reports and sent them off to funding bodies, the recognition of their inadequacy in describing what really goes on in an agency or programme will be well known. As a member of the Evaluation Task Force that evaluated the first three years of the National Campaign Against Drug Abuse (NCADA, 1989), one of the most frequent complaints heard from treatment programmes was the frustration felt in these figures going up as representations of their work. Many would say that these were not a good indicator of 'what really goes on here' (and the collectors know this).

If evaluation is to be more meaningful than this monitoring activity for programme service staff, managers, and clients, as well as the funders, it needs to be more firmly grounded in the every day practice of the programme - addressing questions that are meaningful to the programme as well as those questions that others (such as clients and funders) ask. It must be more than a 'bums on seats' count (which can often distort the reality).

One reason why action theory is relevant for evaluation is that it is more consistent with the way in which practitioners actually operate; it speaks their language and operates with methods that are consistent with their practice; it is not alien and should not so readily produce a sense of inadequacy that seems to pervade this (and other) field(s) (e.g. Patton, 1980).

Let me now share some observations from

1. There is a request/demand for programmes to evaluate which all programmes are aware of. There are many reasons to evaluate. The most obviously identified is for accountability for money received. We also evaluate in order to answer questions of others such as staff and clients or future clients, to develop and change and to share what we know. It has generally been found that some of the most important factors determining the effectiveness of counselling, for example, are the confidence of the counsellor in the efficacy of their approach and their competence in potentially delivering this. Thus, to evaluate and gain confidence in what we know has real value.

2. There is general resistance (often passive and occasionally active) from programmes to this demand for evaluation. The sources of this resistance seem to be related to:

- * Source of the request: usually perceived to emanate from funding bodies and thus greeted with suspicion and a fear that it really masks a rationalisation or cut back that will mean decreased resources.

- * Feared cost of the exercise (time, money....etc.).

- * Timing of the request/demand. This often comes as a result of 'trouble' of some kind or at a time of reconsideration for funding.

- * 'Mind Set' of practitioners/treatment personnel regarding evaluation (and the way in which this relates to the 'mind set' of those demanding evaluation). This is discussed further below.

3. Most of us are constantly evaluating. Every time we make a decision to change the treatment regime for a patient, to alter the timing or sequencing of programme elements in our agency or programme, to be more specific about our agency target group, to introduce a self-help group as a part of the programme, or to hire a new staff member, we are acting on an evaluation, making decisions based on some assessment.

We are often using **practice wisdom** (or clinical judgement) in making these deci-

made in an **explicit** or **systematic** manner but they are nevertheless evaluative decisions. It is valuable to take this experience and extend and utilise it in more systematic and broadly based evaluation.

4. The most consistent feature of drug and alcohol treatment programmes is **change**. This is the theme that we discerned after a phase of our research where we spent time in fifteen different agencies (McDermott & Hamilton, 1989). When approached, almost all of the agencies gave us a version of the following:

This is not a good time to study our programme: because we are going through staff changes at the moment; we are just changing the morning programme; because we have a really unusual group of clients in this week; and so on.

It is reasonable to conclude therefore that change is a dominant theme of drug and alcohol treatment agencies and probably all organisations, which might explain why so much is written about managing change in the organisational literature. Change seems to pervade this sector. While there are likely to be many reasons for this, including the target group we work with, one might be the inexact methods and theories we use in tackling treatment of this population. There are many contradictory and confusing findings in the evaluation literature in this field. This has been recognised by many writers (Tims & Holland, 1984, in Guba & Lincoln, 1987; Jaffe, 1984, in Guba & Lincoln, 1987; Sobell, Sobell & Ward, 1987).

The practitioners response to evaluation - A mind set problem

These features of this field combine to produce a complex web of espoused positive acceptance of the importance of evaluation together with a 'theory in action' which produces few actual evaluations (or at least products or processes that participants willingly call evaluations).

Where they are conducted (especially in

very few actually being published and thus available in the public domain.

Let me explore the 'mind set' problem - or the split between espoused acceptance and a lack of action. We resist evaluation, in part, because we do not think we can do it. Or at least, not do it in the way we were taught (or the text books say) it should be done.

We were inappropriately taught.

The origins of some resistance lie in the process of professional education and the training of researchers. (While recognising that this only applies to some who work in this sector, I note that even this group cringe when one asks 'who here knows something about evaluation').

All disciplines educating and training their future professional workers include some research component in the curriculum. I believe that there are two dominant responses to this among students that serves to separate them in the profession subsequently.

Most of us are at least taught how to be research consumers; that is, we are introduced to research and how to read research based articles, the importance of research in the development of knowledge and case histories of professional forefathers/mothers. This teaching is variously good or not so good but most will have been introduced to research based literature.

Many of us will have had included in our curricula a goal statement like 'to introduce students to an understanding of the place and the purpose of research'. These statements are increasingly being implanted in broad knowledge and skills subjects in an attempt to teach research as a relevant aspect of the overall disciplines body of knowledge and to encourage practitioners to see research as an extension of their world. This is, in part, a reaction to the way research has traditionally been taught and, in part, a response to the observation that most practitioners (be they doctors or psychologists, nurses or chaplains) continue to use the approaches and methods they

adapting and using new knowledge developed within the discipline.

This integration of research teaching is theoretically sound, but a preliminary step is required: to get the profession of **teachers** to accept some research literacy and responsibility for 'owning' research.

In many courses research remains an esoteric and separate subject: identified often by the statistics component which is remembered with terror by most service delivery people!

In the past, at least, it was during these undergraduate courses that 'the split' occurred: a split between the **researchers** and the **practitioners**. The **researchers** were likely to specialise in research; they went on to do higher degrees and were seen to be 'academic'; they were perceived to be theoretically sound and interested in higher matters of theoretical intrigue than the other group; they were trained in the dominant research paradigm of the times - with an emphasis on quantitative approaches and only more recently are they coming to develop a broader repertoire including qualitative ones.

The **practitioners** were just as distinctive: laying claim to status derived from being the "real workers"; the people who worked at the coal front; those with the hands on knowledge and skills, who did not mind getting their hands dirty....! This group just 'know' what good practice is, they can tell you who the competent workers are even if they cannot always describe the criteria being used to make the judgement; these are the 'doers'.

This group were generally more interested in doing than in formal enquiry and as such often ignored research. They are most reluctant researchers now, requiring nurturing, support and the development of new approaches to research that are consistent with their world view - the view from the coal front, and useable.

Useable evaluation for practitioners: *The Evaluation Research Project*

The traditional scientific approach tends to

a 'good' evaluation has to meet numerous stringent requirements for validity.

As Atkinson, Brown & Hargreaves (1978) note:

The academic training of evaluative researchers orients them to validity. They are taught how to design experiments that protect against competing internal and external explanations, how to collect accurate and thorough information, how to analyse results using sophisticated statistical techniques Unfortunately none of these strategies helps to ensure that study results will (be useful) to the settings in which the data are collected.

Roos (1973) suggests that evaluative information must be both valid and **useful** to decision makers. He points out that these are often conflicting requirements, necessitating compromises.

These observations formed the basis of this project. With a recognition that there is a place and considerable value in the traditional (often positivist) research and evaluation paradigms that dominate the literature, we asked: how could we translate this in a way that was more consistent with the day to day world of the agencies we were studying? How could we incorporate the numerous contradictions inherent in the themes that dominate the world of treatment? What compromises might be acceptable without flaunting rejection from both "researchers" and "practitioners"?

The challenge for our research project was how to understand, translate and extend the day to day evaluation decisions being made in the agency by the practitioners - the service delivery people - in to a systematic schema for programme evaluation.

The first step was to sort out our own assumptions and biases based on clinical practice in the field, the research team's years of teaching others how to 'do' practice and our combined evaluation and research experience.

When this was combined with the experi-

review of the literature on ways in which alcohol and other drug treatment programmes have been evaluated (McDermott, Hamilton & Lagay, 1991), we developed principles which were to guide decisions during the project.

*Approach and assumption:
Principles*

1. Starting where the client is. This fundamental principle from Social Work suggests that it is important to try to 'enter the world of the client' or to try to see what it might be like for a person to experience what they are telling you about (not what it would have been like for you) and, further, to adapt to the way that the client talks, operates, presents and so on. For example, one cannot assume that to be unemployed is necessarily the same experience for everyone - it is important to try to get some understanding of what it is like for this person.

In this study it was thus important to start by trying to understand the world of the treatment agencies. This was initially done by reflecting on my own experience (as a worker in an alcoholism unit and other drug treatment programmes). A systematic observational study of fifteen agencies was followed by administration of a questionnaire with a semi-structured interview schedule developed from these observations. A feedback session with participating agencies after they had received a report followed and provided further on-the-ground current knowledge of this world and its language.

Given the constant state of change referred to above, this principle directed us to produce a flexible non-prescriptive guide. Most evaluation text books contain a statement like: 'Wait until the programme has stabilised and then'. Taken literally, this immediately makes most of the evaluation text books irrelevant to this sector.

2. Evaluation should be useable and deal with many audiences. This might include funding bodies, managers, service deliverers, clients and others such as other alcohol and drug treatment agencies, other services

This does not mean that one evaluation report (or product) is to be generated to cover all such groups; in fact this is probably quite inappropriate. It means that it should be possible to consider the questions that all of these 'audiences' might have of the programme and to include answering them in the evaluation process.

3. That as many significant people associated with the programme should be involved in the evaluation as possible. This would usually include at least the service delivery people and some clients as well as managers/administrators.

4. That any method or tools suggested should be user friendly; they should be able to be used by service delivery people, i.e. they should be consistent with their daily practice and tap in to the considerable expertise (albeit sometimes buried) in logical problem solving (or research) that this group possess.

5. That there is merit in 'triangulation' of research design. This means that a range of methods are used to examine and explore one programme. Just as counting heads is an incomplete picture of what goes on in an agency, so too is just describing the agency philosophy, or examining the financial statements.

In the handbook we use the analogy of a house with windows. If you want to know what goes on in the house there is value in looking through as many windows as possible before forming a view about what goes on there.

There is an advantage in using both quantitative and qualitative approaches to finding out things - enquiry (see, for example, Guba, 1990; Rossman & Wilson, 1985; Hamilton, 1987).

6. Evaluation should be seen as a process and not merely or necessarily a product. The most important outcome of an evaluation exercise should be organisational and programme development - not a report. A report might be a necessary step towards organisation and programme development but is not useful by itself, other than for

are a necessary part of any accountability mechanisms but usually are occurring anyway and should not be seen as a substitute for evaluation).

Evaluation should therefore not be seen as a point in time activity so much as an ongoing process. It is true that a point in time exercise might help to focus the agency on evaluation and initiate evaluation processes. The importance of considering the implementation issues should be considered early in the process. What are you going to do with what the evaluation discovers?

7. Given this process focus, it is important that the programme or agency 'owns' the evaluation, that is, the programme itself should initiate and conduct, or at least control the evaluation. We have attempted to design a handbook that can be used by service delivery people: practitioners, themselves.

In the process of trialing it we became aware of the severe constraints on time of these people to engage in another activity. While we still believe that it is possible for service delivery people to carry it out, we recognise that some will want to use outside consultants or facilitators to assist them in this.

The important principle is that the agency should decide this themselves and should maintain control of the evaluation. We do not recommend asking an 'outsider' to do it all for you. This would be anti-thetical to the proposed approach. Others, such as Wildarsky (1972) propose 'self evaluating organisations'.

8. **Ask** the questions that you want answered. To do this it is necessary to develop a way of articulating these questions. Too often evaluation is driven by the questions of only one audience - usually the funding body. While these questions are systematically (?) addressed, other pressing questions that the programme has of itself are left to be sorted out by just the manager or just the therapists, or no one at all, except by drift, or non-explicit decision making.

9. Expect resistance and conflict. This is a

manage to evaluate themselves without at least some of it! In our experience this has usually been positive and constructive. What is important is to acknowledge it and develop a way to handle it.

10. Accept contradictions in the findings of the evaluation. We should not expect that everyone looking in to a house will report the same phenomena or that they will report what is going on in the same way. Similarly, you will find that the 'results' of your evaluation throw up apparent contradictions. Do not assume that you have done it wrongly - accept that this is likely and report both findings, trying to reflect on what this might mean or how this can be explained.

11. Reporting of evaluation findings should be focussed. Most of us are selective reporters (even when we try not to be). While I do not advocate unethical withholding of information, not all the things you discover about your programme are of interest to some of the audiences. For example, DODO is probably not particularly interested in whether you hold the relaxation session at 11.00 am or at 4.00 pm but your clients might be; DODO probably do not especially want to know whether one of your workers is wanting to go on leave for a particular purpose but the manager or supervisor might need to know; the client approaching your agency tomorrow might not have a direct concern with whether all the employees are under a specific industrial award; a prospective worker might not know whether our policy is to start a methadone client on 40 mg or 60 mg.; each "audience" has a different set of questions. Evaluation is a political activity. We should be political in our strategic use (and reporting) of it (e.g. see Palumbo, 1988).

Evaluate yourself: A handbook for alcohol and other drug treatment agencies

I do not propose to go through what this Handbook (McDermott, Pyett & Hamilton, 1991) contains. It is informed by the principles and ideas outlined here today. It does not meet the expectations of the traditional research evaluation community. It is not designed to.

It does seem to be something that agency personnel understand and think that they can do. It is not taken and implemented without any other incentive and I believe that some form of combined 'stick and carrot' is probably necessary to actually get agencies to evaluate their programmes. The stick is already there waiting in the wings or, for some, being actively applied. This Handbook offers some small carrot and perhaps some of you can get other carrots from other sources, for example, in NSW one such offering is the willingness and interest of DODO to provide some expertise to assist agencies in conducting evaluations. Quite appropriately DODO will have some questions that they want answered but remember to keep the process in your own control while taking advantage of this offer of support.

Let me summarise the approach to evaluation taken in the Handbook:

*** What questions do you have** (and what questions do others ask or have of you)?

*** Develop a process for determining these** (e.g. brainstorming).

*** Sort out your programme units of evaluation - or those areas that you want to collect information about.**

*** In each unit sort out:**

What information you need to answer the questions posed; how will you get it?; and who will get it?

*** Information seeking and analysis:**

This includes collecting the information, seeing what this information means, and putting the bits of information together.

*** Reporting/changing:**

This includes feedback and a review of the 'findings'; reporting back to participants and audiences; implementing the findings (and sorting out which ones, when); and reviewing the evaluation process.

*** Instituting ongoing evaluation activity** by seeing what can be done in an ongoing way and what needs to be done

This is not a foreign set of suggestions. It is a logical sequence that most programmers engage in but often not explicitly. This is the sequence of activity of any sound practitioner or clinician - how do I make an assessment; what's important information, how do I get it (and from whom - client, clients' partner, family, doctor etc); how do I formulate an assessment or diagnosis; does the client agree or understand; can we form some contract or therapeutic alliance; do we need outside assistance (referral, specialist assessment...) let's commence a treatment plan; is it working; what needs modifying, how can I prevent relapse... let's look at it again ... and so on. These daily skills, grounded in sound practice wisdom, are the fundamental requirements for sound evaluation; for producing useable evaluations; for developing programmes and organisations.

The process of evaluation - A summary

We need to develop and support practitioner - evaluators and to use their language.

You will see in Table 2 a set of words or concepts here on the left hand side that are straight out of any research text book. When we saw them in Psychology I or Professional Practice II they were daunting. They were embedded in the 'split' and many of us were the practitioners - not the researchers.

Do you now see, that practice or service delivery involves a research process. We know evaluation in our everyday experience. We must come to value and assert our knowledge and our questions. We must come to challenge the way in which we have been turned away or scared off researchand evaluation.

We should distinguish between evaluation as described here and what I refer to as evaluation research. There is a place for careful research that compares different approaches using sophisticated research designs; with random allocation to treatment conditions; matched control groups and so on. These are the studies that re-

TABLE 2: THE PROCESS OF EVALUATION**OBSERVATIONS ARISING FROM EXPERIENCE OF EXPLORING
EVALUATION IN THE AGENCY CONTEXT:**

AUDIENCE	Who wants to know?
RESEARCH QUESTION	What do they want to know? What do you want to tell them?
METHODOLOGY	
DATA	What information do we need to answer these questions?
DATA COLLECTION	How can we collect this information?
(METHODS)	
DATA ANALYSIS	How can we make sense of this information?
DATA PRESENTATION	
(FINDINGS)	How can we present this information?
INTERPRETATION	What do we think this means? How might this be explained?
CONCLUSIONS	How does this relate to the questions being asked? What other questions does this information raise? What else do we want to tell them about? How might this be presented in the best possible way (while still appropriate)?

Programmers need this research so that they can determine whether the kind of programme offered can be supported. It is not, however, reasonable or necessary to expect agencies to conduct this sort of research in their everyday work world. It is quite reasonable that they base their programme on ideas derived elsewhere provided that they then examine how well they actually implement them in their own agency.

Programmers thus have a responsibility to:

1. Ground the rationale for their approach in the research based literature of what seems to work (noting the difficulties in this field here particularly). (See, for example, Heather & Tebbutt, 1989, or Alcohol and Health, 1990).

2. Carry out their own evaluation of their programme using their own questions as guiding principles and a starting point. It should incorporate answering the basic 'naive' question: "What is going on here?"

Our research teachers have not always served us well. They have introduced us to evaluation research and left on the wayside those who turned their back on the research track. The teaching has been dominated by 'Ideal Types' where perfection was expected and where approximations were either right or wrong depending on some complex bit of arithmetic that few truly comprehended. Whenever ideal types are used to set standards, anxiety, fear, resistance and rejection follow.

"Good Enough" programme evaluation

No one was more conscious of this than Winnicott when he suggested that for a child to grow up 'normal' they did not require the **ideal** mother; rather what was required was a '**good enough mother**'. Bettelheim (1987), in acknowledging Winnicott when using the concept the 'good enough parent' says:

...in order to raise a child well one ought not to try to be a perfect parent, ...as perfection is not within the grasp of human beings. Efforts to attain it typically interfere with that

tions of others,which alone make good human relationships possible.

I have found it enormously reassuring to have Winnicott's idea of the good enough mother to get me through all those dense texts which seem designed to immobilize any natural mothering in the likes of me (a paid worker mother guilty about my every foible with regard to my dependents). I also know that the programmes that have used the approach to evaluation being advocated here have produced imperfect products; products that they have nevertheless been pleased with and which they have used to grow and develop.

So:

- * be confident in your own questions and knowledge
- * seek to make your information processing or reflecting more systematic and explicit (see, for example, Rossi & Freeman, 1989)
- * appreciate that there is not ONE way to evaluate
- * know that an evaluation developed by you using the handbook can be useful, valid, rigorous and meaningful
- * accept that evaluation is political and be strategic in what you do with your findings.

Agencies that have used it are happy with the process and the product. They accept the evaluations as accurate and valid, that is, they recognise themselves in the evaluation findings (and have made changes to their programmes as a result) which, a year later, they deem to be positive!

In conclusion, when I became a mother the notions of Winnicott were most reassuring. He noted that while many theorists were pursuing the ideal conditions of mothering, studying the **pathological** sequelae or consequences of inadequate mothering, it was important to recognise what he termed 'good enough' mothering, that is, the quality of the relationship that is imperfect, but adequate to produce a 'normal' child.

I hope that you will accept that evaluation, like parenting, is never perfect - and need not be to enhance development. Let service

ations - and let researchers support them in recognition that the positivist research paradigm that dominates our world is only one way of making meaning out of our experience.

As Robert Persig (1976) suggested in *Zen and the art of motorcycle maintenance*:

What's really angering about instructions of this sort is that they imply there's only one way to put this motor. And that presumption wipes out all creativity. Actually there are hundreds of ways to put a motorcycle (*an evaluation*) together and when they make you follow just one way without showing you the overall problem the instructions become hard to follow in such a way as not to make mistakes. You lose feeling for the work. And not only that, it's very unlikely that they've told you the best way (*italics added*).

Neither this handbook nor any text will give you **the ideal** way to evaluate your programme. Our handbook attempts to assist you to develop your own approach; trying hard not to be prescriptive but allowing enough guidance for you to work with it and produce a "**good enough**" evaluation.

References

- Alcohol and Health*. (1990). Seventh Special Report to the U.S. Congress. U.S. Dept Health & Human Services. NIAAA.
- American Educational Research Association. (1963). *Handbook of research on teaching*.
- Argyris, C. & Schon, D. (1976). *Theory in practice*. USA: Jossey Bass.
- Attkisson, C.C., Brown, T.R. & Hargreaves, W.A. (1978). Roles and functions of evaluation of human service programs. In: C. Attkisson, W.A. Hargreaves, M. Horowitz & J.E. Sorensen, *Evaluation of human service programs*. Orlando: Academic Press.
- Bettelheim, B. (1987). *A good enough parent*. Thames & Hudson, 9-B.
- Campbell, D.T. & Stanley, J.S. (1963 and 1966). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally Publishing Co.
- Cook, T. & Campbell, D.T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Chicago: Rand McNally Publishing Co.
- Evaluation Studies Review Annual*. (1976-87). California: Sage Publications.
- Guba, E.G. (1990). *The paradigm dialog*. New York: Sage Publications.
- Guba, E.G. & Lincoln, Y.S. (1981). *Effective evaluation: Improving the usefulness of evaluation results through responsible and naturalistic approaches*. San Francisco: Jossey Bass.
- Guba, E.G. & Lincoln, Y.S. (1987). The countenances of fourth generation evaluation: Description, judgement and negotiation. In: D.S. Cordray & M.W. Lipsey (Eds.), *Evaluation Studies Review Annual*, Vol. 11, pp 70-88. California: Sage Publications.
- Guba, E.G. & Lincoln, Y.S. (1989). *Fourth generation evaluation*. USA: Sage Publications.
- Guttentag & Struening (1972). *Handbook of Evaluation*. Sage Publications.
- Hamilton, M. (1987). What is social about drug research? In: *Towards a national drug and alcohol research network*. NDARC Monograph No. 3. Sydney: NDARC.
- Heather, N. & Tebbutt, J. (1989). *The effectiveness of treatment for drug & alcohol problems: An overview*. NCADA Monograph Series No. 11. AGPS.
- McDermott, F. & Hamilton, M. (1989). The meaning of treatment. *VAADA Vine*, Sept., pp 15-18.
- McDermott, F., Hamilton, M. & Lagay, B. (1991). *Evaluating treatments for alcohol and other drugs*. NCADA Monograph No. 14. Canberra: AGPS.
- McDermott, F., Pyett, P. & Hamilton, M. (1991). *Evaluate yourself - A handbook for alcohol and other drug treatment agencies*. NCADA. Aust.
- NCADA. (1989). *The National Campaign Against Drug Abuse 1985-1988. Evaluation*

- and future directions.* NCADA Monograph Series No. 12. Canberra: AGPS.
- Palumbo, D.J. (1988). *The politics of evaluation.* USA: Sage.
- Parlett, M. & Hamilton, D (1977). Evaluation and illumination: A new approach to the study of innovatory programs. In D. Hamilton and others. *Beyond the Numbers Game.* Berkley, California: McCutcheon.
- Patton, M. (1978). *Utilisation-focussed evaluation.* USA: Sage Publications.
- Patton, M. (1980). *Qualitative evaluation methods.* USA: Sage Publications.
- Persig, R. (1976). *Zen & the art of motorcycle maintenance.*
- Roos, N.P. (1973). Evaluation, Quasi-experimentation and public policy. In: J. Caporaso & L. Roos (Eds.), *Quasi-experimental approaches: Testing, theory & evaluating policy.* Evanston III Northwest University Press.
- Rossi, P.H. & Freeman, H.E. (1989). *Evaluation - A systematic approach.* USA: Sage.
- Rossman, G.B. & Wilson, B.L. (1985). Numbers and words: Combining quantitative and qualitative methods in a single large scale evaluation study. *Evaluation review.* USA: Sage Publications.
- Sobell, L.C., Sobell, M.B. & Ward, E. (1987). (Eds). *Evaluating alcohol in drug treatment effectiveness.* NY: Pergamon Press.
- Stake, R.E. (1977). Responsive evaluation. In D. Hamilton and others (Eds.), *Beyond the numbers game.* Berkley, California: McCutcheon.
- Suchman, E.A. (1967). *Evaluation research: Principles and practice in public service and social action programs.* NY: Sage Publications.
- Weiss, C. (1972). *Evaluation research.* Englewood Cliffs. N J Prentice-Hall.
- Wildarsky, A. (1972). The self evaluating organisation. *Public Admin-Review*, 32, pp 509-520.
- Winnicott, D.W. (1965). *The family and individual development.* London: Tavistock Pub.

