



US Department
of Transportation

**National Highway
Traffic Safety
Administration**

DOT HS 807 475

December 1988

Final Report

Assessment of Classification Instruments Designed to Detect Alcohol Abuse

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1. Report No. DOT HS 807 475	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Assessment of Classification Instruments Designed to Detect Alcohol Abuse		5. Report Date December 1988	6. Performing Organization Code
		8. Performing Organization Report No.	
		7. Author(s) C.L. Ponkin, C.H. Kannenberg, J.H. Lacey and P.F. Waller	
9. Performing Organization Name and Address University of North Carolina Highway Safety Research Center 134 1/2 E. Franklin Street, CB #3430 Chapel Hill, NC 27599-3430		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No. DTNH22-87-R-07328	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Washington, DC 20590		13. Type of Report and Period Covered	
		14. Sponsoring Agency Code	
15. Supplementary Notes The contracting officer's technical representative on this project was Dr. James Frank of the Office of Driver and Pedestrian Research.			
16. Abstract This report summarizes an effort to identify and evaluate instruments currently in use to assess substance abuse problems in driving while impaired (DWI) offenders. The results of a national survey of DWI assessment practices in the United States are reported, including a more detailed examination of procedures in five states. Operational constraints and needs of jurisdictions are described, with special consideration given to factors within each setting which influence the selection of particular instruments and their use within that setting. Several instruments are reviewed and evaluated. Our study of currently available instruments indicated that there were few which appeared to have been developed in a methodologically sound way; and, some of these are older instruments which have not been modified to accommodate changes in the population served. The newer instruments, with automated scoring, synthesize a large amount of information, have a truthfulness scale, and provide the assessor, judge, and treatment provider with a brief overview of the nature of the individual's problem. However, these instruments still have not been adequately validated by independent investigators, even though they appear to have potential. Therefore, widespread adoption cannot now be recommended. The newer and the most widely used assessment instruments are evaluated and the operational needs of various types of jurisdictions are discussed. Based on information obtained through the national survey, individual site visits, and discussions with persons actively involved in DWI assessments, suggestions are offered for refining the assessment process and assuring greater accuracy in the identification and appropriate referral of those individuals with drinking problems.			
17. Key Words Substance abuse assessment instrument Alcohol assessment instrument Drunken driving Drunk driving DWI		18. Distribution Statement Document is available to the U.S. public through the National Technical Information Service, Springfield, VA 22161	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages	22. Price

ACKNOWLEDGMENTS

This project covered a broad area and the information gathered was obtained from a large number of people who spent a considerable amount of time talking with us or writing to us about the procedures which they followed in their states. In each of the sites which we visited, state level coordinators, personnel from departments of motor vehicles, substance abuse assessors, judges and other judicial personnel actively involved with DWI offenders were generous with their time helping us to understand how assessments were conducted and used in their states. We are indebted to all these people.

We wish to give special acknowledgment to several people who kindly gave of their time and knowledge. Special thanks to Mr. Pete Martin, Chief, DWI/Criminal Justice Branch, North Carolina Department of Human Resources for his assistance in allowing us to use the results of the national survey as well as the pilot study of DWI assessment in North Carolina. Thanks also are extended to Mr. Gary Cole of Mr. Martin's office who helped us in identifying many instruments available nationwide.

Mrs. Peggy James and Ms. Teresa Parks assisted in the preparation of this manuscript. Mrs. Jane Stutts and Mr. Jeff Lowrance kindly reviewed the report. To these persons we offer our thanks.

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TECHNICAL SUMMARY

for the project entitled

ASSESSMENT OF CLASSIFICATION INSTRUMENTS DESIGNED TO DETECT ALCOHOL ABUSE

This report summarizes the results of the NHTSA-sponsored research project entitled "Assessment of Classification Instruments Designed to Detect Alcohol Abuse." The project objectives included specifying which definitions have been used to classify problem drinkers, and identifying and evaluating substance abuse assessment instruments available for classifying drinkers among the driving while impaired (DWI) population. Instruments currently in use by the courts in the United States to screen DWI offenders for alcohol abuse were reviewed for adherence to psychometric principles in instrument design and validation. A description of the operational requirements and needs of the courts in DWI screening is made. Finally, suggestions are offered concerning additional validation needs for DWI assessment instruments and their optimal use.

Information about the types of variables available to the courts and assessors to help differentiate drinking types was grouped into subject areas such as biological markers, driving history, pattern of alcohol consumption, and psychological adjustment. The content of these definitions was summarized. The overall conclusion is that an elevated BAC level at time of arrest and a history of DWI are useful and convenient indicators and strongly suggestive of problem drinking among the DWI population.

The results of a survey conducted under the auspices of another HSRC study were used to assist in providing information on current assessment practices in the United States with regard to assessing DWI offenders. A product of this survey was a listing of substance abuse assessment instruments currently in use in the U.S. In addition to this listing, the literature was searched and experts in the area were contacted for suggestions regarding which instruments appeared most promising

for assessing DWI convictees. Because the list was extensive, only those instruments which were most recently developed or which were used in more than three states were reviewed.

Since a model definition was not to be used as a benchmark, a general format was adopted whereby all these instruments and their supporting material could be reviewed and evaluated. Although factors such as costs for the instrument and equipment might ultimately determine instrument selection, they did not enter into this evaluation because they are most relevant to the operational constraints of the jurisdiction and do not necessarily reflect on the quality of the test. The research team reviewed all of the information available and evaluated the instruments by placing them into one of four categories --poor, average, moderately good, and excellent.

None of the instruments was judged to be excellent, considering both psychometric quality and appropriateness with a DWI population. Therefore, no instrument could be recommended for use. However, two instruments rated to be moderately good and a few others, rated as average, are good candidates for further scientifically-sound validation studies on DWI populations. One problem encountered was the lack of a good criterion measure for establishing validity. Comparing the test outcome with that of an established test with demonstrated validity is an acceptable and frequently used measure of concurrent validity, especially when other non-test measures of behavior are difficult to obtain. However, it is not clear that the established instruments, such as the Mortimer-Filkins and MAST, are themselves well-validated by today's standards. Thus, selecting one of them as a benchmark with which to validate new instruments may be misleading.

Furthermore, as discussed more extensively in the introduction, there does not appear to be a 'typical' DWI offender. Offenders run the gamut from social drinker to alcoholic. The norms which were developed on many of the instruments which we reviewed had been derived from a population of hospitalized or diagnosed alcoholics, which represent only one end of the drinker

continuum. Since alcohol inpatients are clearly not representative of the entire spectrum of those persons arrested for DWI, scoring criteria developed with them may have limited utility with a DWI population.

Similarly, the literature review did not reveal any instruments with a demonstrated predictive validity for the DWI offender.

In addition to a review and evaluation of these instruments, consideration was given to the operational requirements and administrative constraints which affect both the selection and use of instruments. Using the information from the national survey of alcohol assessments and other sources, including experts in the area, a decision was made to visit four sites: Florida, Alaska, Arizona, and Minnesota. These jurisdictions were using those instruments which were in most widespread use nationwide or were using other instruments which were believed to have the greatest potential in terms of diagnostic accuracy and/or use of innovative administration and scoring techniques (i.e. computer administered and/or scored instruments). Information on substance abuse assessment practices in North Carolina is also presented.

In these jurisdictions, state level coordinators, members of the judiciary, local court administrators, and court or other assessment personnel involved in the day-to-day administration of the assessment program were interviewed. The interviews were conducted in an attempt to develop an understanding of court needs within each jurisdiction which could influence the use of assessment instruments. Although the major focus of this project was an understanding of adult screening instruments, an effort was also made to identify how adolescent cases were handled in each jurisdiction and which instruments are being used to identify drinking problems among this population.

Regarding the use of pencil-and-paper instruments versus computerized instruments, selection of one instrument format over another is usually based on a complex set of factors. The reputation of some paper-and-pencil instruments, such as the Mortimer-Filkins and the MAST, has been established through a history of widespread use in the field. These instruments have the advantage of being

inexpensive and relatively easy to administer and score. They typically produce a single score for an individual which is easily interpreted by comparing it to one or more cutoff scores. Although computerized instruments are generally costlier to purchase, their use may result in real savings in terms of assessor time, the single greatest expense in the assessment process. A problem encountered in reviewing information about some of the newer automated instruments is that many of the studies of these instruments are on-going and instruments are undergoing revision. Thus, some of the information provided on reliability and validity was based on earlier versions. In order for the results of validation studies to be of practical use, they should be conducted on the current version of the instrument. Hence, many of them require further developmental work such as validation studies. Modifications are still required in order to give them greater accuracy and utility.

Despite some obvious barriers to their use, such instruments may offer the greatest long-term utility to both the assessor and client, as well as the whole treatment referral process. Perhaps their greatest benefit is the ability to use computer scoring to generate a printout which may highlight critical responses contributing to subscale and whole test scores, identify factors to be pursued in the subsequent interview, and suggest appropriate treatment modalities. In addition, many of these instruments have a built-in test-taking truthfulness component which was found to be useful to assessors. In general, computerized programs may provide a more objective and comprehensive summary of the information provided by the respondent. Computerization of the data could provide a wealth of information which is currently available to only the most sophisticated jurisdictions with the greatest resources.

In summary, the lack of success of many of the programs designed to curtail DWI recidivism may be due, in part, to inaccurate or inappropriate screening and referral. The proper use of automated assessment instruments offers uniformity to the initial interview process. Coupled with an appropriate personal interview, these instruments may offer promise for more appropriate referral practices in the

future.

Assessment requirements differ among jurisdictions, and some instruments are more appropriate in some settings than others. A jurisdiction in the process of selecting an instrument must consider a variety of factors. Clearly, no one instrument had all of the desired credentials. A suggestion of the authors is that norms be collected on a DWI population for several of the more promising instruments and that independent evaluative testing be conducted. Finally, sound validation procedures applied against accepted criteria are essential for an effective and useful instrument to be generated. A final section of this report includes a discussion of suggested methods to optimize the usefulness of these instruments.

1.0 INTRODUCTION

It is well recognized that alcohol intoxication is a factor in many serious and fatal crashes. Fifty to 55 percent of fatal motor vehicle crashes and 27 percent of serious injury crashes are alcohol-related (Accident Facts, 1988). The estimated cost of alcohol-related (A/R) motor vehicle crashes in 1987 was 13 billion dollars. A disproportionate number of those persons involved in A/R crashes had been previously arrested for DWI (Lacey et al., 1977), thus making the identification of the drinking driver who is most likely to become a repeat offender and getting this person into appropriate therapy an important component of the complex of measures taken to deal with that person.

This research project examined several issues relating to the alcohol problem assessment of DWI offenders. These included a review of the various criteria used to define problem drinking and problem drinkers, identification of the assessment instruments used in the United States to evaluate DWI offenders for problem drinking, review of the psychometric procedures used in the development and validation of those instruments, and a review of the operational requirements and procedures used in the field with actual assessment of DWI offenders. These activities were to result in an appraisal of the extent to which available assessment instruments meet the needs of the DWI control and treatment community.

1.1 Background

In the decade of the 1980's there has been a marked reduction in the proportion of fatal crashes involving alcohol (Fell, 1987). These benefits have generally been attributed to legal changes, increased enforcement, quick and certain punishment, and the continued presence of citizens activist groups and the resultant general deterrent effects of these various forces. However, a large proportion of DWI convictees continue to engage in DWI behavior. Identifying this population and getting them into appropriate treatment is an important component of the health system approach to dealing with DWI.

The lack of precision in the definitions of drinkers is a familiar problem. Jones and Joscelyn (1978) indicate that a variety of variables, including psychological factors, situational stress, patterns of alcohol consumption, and driving behavior are used in defining types of drinkers. The difficulty in assigning appropriate definitions is further complicated by the fact that numerous instruments are employed to determine the extent of a person's drinking problem. Few of these instruments appear to have been well designed and validated. Several instruments appear to have seemingly good face validity but have not been empirically validated for how well they discriminate among different types of drinkers.

The effective use of assessment instruments in some jurisdictions is hindered by inconsistency in the training of personnel and variation in methods for administering instruments. Moreover, once a level of drinking problem is identified, appropriate treatment resources may not be available. Finally, appropriate identification, referral, and treatment do not ensure that the individual will not recidivate.

For reasons such as these, the assessment and treatment of problem drinking has not enjoyed a high rate of success in changing drinking-driving behavior. When these factors are taken into consideration, it is clear that the courts, which must often initiate the health care approach to rehabilitation as a DWI countermeasure, are faced with what seem to be perplexing options.

While the extent of a drinking problem is most likely best described on a multidimensional continuum, discrete categories may help court personnel to select the most appropriate treatment available. However, these categories may not be sensitive enough to suggest the most appropriate course of treatment for a particular individual. For this reason further refinement of diagnosis must be made by the treatment provider so that a treatment program can be suitably tailored to address an individual's needs.

For example, some assessment tools define too few categories or categories that are too broad to be meaningful, e.g., social drinkers and problem drinkers may be combined into a single category. Frequently, first-time DWI offenders are

automatically considered social drinkers and ordered to an educational type of treatment. Alcohol education schools have been shown to be effective in changing the drinking driving behaviors of some social drinkers (Nichols, et al., 1978). Other research indicates, however, that one DWI conviction can be indicative of alcoholism (Selzer, 1969), suggesting that more intensive assessment and treatment would result in a lower rate of recidivism among this group of first offenders.

Even when an assessment instrument distinguishes between social drinkers and problem drinkers, it may not provide a means for separating true alcoholics from pre-alcoholics, i.e., those who are not yet physically addicted. Treatment requirements differ for these two categories of drinkers. A pre-alcoholic may be defined as a heavier drinker than a social drinker but as one who is not yet physically addicted to alcohol. Immediate and intensive treatment may be required to prevent addiction and recurrent drunken driving events.

Once an assessment has been conducted and a mode of treatment has been selected, there arises the need to monitor the progress of persons undergoing treatment. Reis (1982) found that 30 percent of multiple offenders failed to complete a one-year rehabilitation program and that 45 percent of those attending an educational counseling program, which included chemotherapy, did not complete the course. Tracking clients in their treatment programs obviously requires resources such as funding and trained staff. When clients do not complete treatment, procedures for reporting to the court need to be in place.

The effectiveness of the assessment and treatment process is also affected by administrative factors. Cost of the instrument and equipment, such as computer hardware and software, the time required to administer the instrument, preparation of reports, court time required per case, and volume of clients, affect decisions about which tool will be employed, as well as the results that it yields. For this reason, descriptive data on actual administrative practices is helpful in understanding the impact of these factors.

Descriptive information is also useful for evaluating implementation practices. For example, many jurisdictions administer the Mortimer-Filkins but

exclude the face-to-face interviews that should accompany this assessment. Since this instrument was validated only when both components, the written test and the interview, were combined, the value of the tool may be diminished when the interviews are eliminated.

1.2 Overview of Research Effort

The primary focus of this research endeavor was to determine if there are assessment instruments available which may help discriminate between drinking drivers in such a fashion that appropriate treatment modalities may be selected for them. To this end HSRC conducted a two-part effort, the first related to reviewing existing research studies and the second related to investigating instrument use in the court system. In the first, we conducted a critical review of current highway safety literature and developed a list of definitions of problem drinkers. Definitions that focus on adolescent problem drinkers were also reviewed. An important component of the original solicitation was the consideration of the definition of problem drinker (and corresponding definitions of the remaining classifications). Many definitions appear in the current highway safety literature and were derived from such factors as level of BAC, number of previous DWI arrests, laboratory measures of enzyme levels and other biochemical tests, community agency identification of persons with drinking problems, clinical judgments made by professionals, legal documents such as arrests for public drunkenness, and responses to paper-and-pencil instruments. A single definition was not pursued because of the lack of consensus in the literature.

A related activity was to have been to analyze crash data to estimate the proportion of crashes for which problem drinkers are responsible. The lack of operable or appropriate criteria for identifying problem drinkers within the crash involved driver population made the pursuit of this task inappropriate with the resources available. Thus, efforts were expanded in the area of reviewing current court practices and needs.

In order to get a perspective on which instruments were currently in use in

the United States and to understand how they were being used, the results of a national assessment survey, provided as supplemental information to this solicitation, were used. The findings of this survey were combined with information obtained from other experts in the area of substance abuse assessments, and a comprehensive list of assessment instruments was developed. Those instruments which were favored by various states as well as those which appeared to have great applicability to the courts in handling DWI offenders were selected and test design considerations were reviewed. Psychometric procedures used in the development and validation of the instrument were reviewed, and a model was developed for examining alternative assessment instruments. This model included the development of a format to describe the components of each instrument, procedures used in its development, cost and mode of administration, the results of past validation efforts, and identification of the normative population. The set of instruments was reviewed by two psychologists with expertise in the area of psychometrics who wrote a brief narrative review of each instrument. Subsequent to this review, all instruments were rated by the project team.

The second part of this report focuses on the court system's use of these instruments. First, in determining details of current practice, supplemental information is provided in this report on the types of treatment modalities to which persons are assigned by the North Carolina court system as a result of assessments. Information was available from ten counties participating in a pilot study in North Carolina (Popkin, 1988). In these counties, all persons convicted of DWI were required to receive a substance abuse assessment. Information is provided regarding BAC levels, assessment outcome, and treatment modalities. However, too little time had transpired since the law was implemented in January 1988 to permit a study of this group of convicted drivers. In addition to the findings of this North Carolina study, supplemental information is provided in this report on the results of a survey of state level substance abuse program administrators which was conducted to determine what assessment instruments were being used, existing legislative constraints, and administrative practices.

Assessment and treatment needs and resources vary between jurisdictions. In an attempt to understand better the operational needs and constraints affecting which instruments are selected and how they are used, several jurisdictions using widely employed or promising new assessment instruments were visited so that the operational requirements and needs of the courts in various settings could be assessed.

Finally, the information obtained from the first two tasks was assimilated, and an attempt was made to present information on each instrument in matrix form so that a given jurisdiction might review the current instruments available and select those most appropriate to their needs and operational constraints. Suggestions and recommendations are made for potential revisions of classification procedures and tools.

2. AN APPROACH TOWARD IDENTIFYING THE PROBLEM DRINKER

The original research plan included the development of an approach for evaluating various assessment instruments which was based on their ability to identify problem drinkers according to a model definition. In an attempt to identify a model definition, the national and international highway safety literatures were reviewed to ascertain criteria used for defining problem drinkers. This literature search resulted in a large number of definitions almost as varied as the contexts in which they were being applied. In general, it might be said that a variety of factors was used for classifying problem drinkers including such things as psychological, biological, social and economic factors, patterns of alcohol consumption, and driving behaviors. After reviewing the literature, it became evident that more variations of alcoholism exist than were conceived of in a unitary disease model of alcoholism. These different forms of alcoholism may be characterized by different etiologies and symptomatology. Because of the lack of consensus in the literature on what constitutes problem drinking, no prototype or model definition of problem drinker was developed for this project and consequently there was no standard with which the instruments reviewed were compared according to how well they categorized problem drinkers.

In the area of highway safety, the pertinent categories of drinkers in this report are social drinkers, problem drinkers, and alcoholics. Such a classification implicitly assumes that each group represents a point on a unidimensional continuum of involvement with alcohol. However, some overlap may exist between the categories, in spite of the fact that they are intended to be mutually exclusive. For example, social drinkers may, on occasion, use alcohol to relieve stress or interpersonal discomfort, sometimes with problematic consequences -- i.e., being apprehended for drinking and driving -- although their general pattern of alcohol use does not typically interfere with social or occupational functioning. Similarly, a problem drinker may show signs of tolerance typically diagnostic of physiological dependence, without other signs of physiological dependence, social, or occupational

impairment characteristic of alcoholics. The definitions provided by Jones and Joscelyn (1978) of social drinkers, problem drinkers, and alcoholics presented below briefly characterize each type.

- o "Social drinkers" are those whose consumption of alcohol is part of their socially defined interactions with family, friends, neighbors, and co-workers. For the social drinkers, use of alcohol enhances the occasions associated with it. Alcohol consumption in this context is both a symbol of shared feeling and, for some, a means of relaxing just enough to be comfortable in sharing feelings. The health and social functioning of the social drinker are not impaired by his pattern of alcohol consumption.
- o "Problem drinker" is a term used to describe those whose pattern of alcohol consumption either contributes to or is symptomatic of the disruption of their relationships with family, friends, neighbors and co-workers. Alcohol had not been identified as a cause of the problems of the drinkers in this category. It is just one element of behavior displayed by people with interpersonal problems who also drink immoderately.
- o "The alcoholic" is a person whose nervous system has developed a tolerance to alcohol, i.e., over a period of time more and more alcohol is required to achieve a given effect. The alcoholic is likely to drink in order to cope with social interactions. Thus, he may drink before, as well as during the party or ceremony. Yet, in spite of his priming, he fails to cope because he cannot control his drinking. He is unable to act upon evidence that he has reached a point in his consumption of alcohol at which the benefits of drinking begin rapidly to decline and drinking itself becomes a problem. For the alcoholic, however, in contrast to the problem drinker, drinking is not just one of an array of problems. The drinking patterns of alcoholics clearly contribute to problems of poor health, social disruption and economic instability."

A brief review of the definitions of alcoholism currently appearing in the literature is presented here. These definitions focus on such factors as level of blood alcohol concentration (BAC), driving history (previous DWI arrests), biological markers such as gamma glutamyltranspeptidase (GGT), community agency identification of persons with drinking problems, clinical judgments made by professionals, legal documents such as arrests for public drunkenness, and responses to paper-and-pencil instruments.

In general, most of these definitions contain descriptors which enable some discrimination between social drinkers, problem drinkers, and alcoholics. Many research studies used several criteria to differentiate between drinking types, for example, a previous DWI arrest and a BAC of .15 or greater, to define a problem drinker. This review revealed that high BACs and a history of multiple arrests and/or driving violations appear to be useful indicators of problem drinking in a drinking driver population. However, a clean driving record accompanying a DWI arrest does not necessarily rule out problem drinking. The various sources of information generally used in these drinker classifications are discussed on the following pages.

2.1 Medical Information

Certain biological markers, e.g., the results of laboratory measures of enzyme levels and other biological tests, have been used as flags for alcoholism. These results are analyzed individually or in combination to determine if they fall outside an acceptable range, after ruling out the possible effects of other medical conditions or medications. Also available are reports of possible alcohol abuse appearing in the medical record.

2.1.1 Biological Markers of Alcoholism. There are several clinical tests/assays available which may indicate an alcohol substance abuse problem. Those most often cited in the medical literature are the gamma glutamyltranspeptidase (GGT) assay and analysis of methanol concentration. There may also be visible signs of

alcohol related (A/R) liver disease - fatty liver, alcoholic hepatitis, and cirrhosis of the liver - which are increasingly severe indicators of heavy drinking and/or alcoholism.

GGT. According to Papoz et al. (1981) GGT, combined with an elevated mean corpuscular volume (MCV), correctly identifies 75% of chronic heavy drinkers. In order to obtain a GGT and MCV, a sample of blood must be drawn and analyzed. If a person has an elevated GGT in the absence of other conditions such as hepatitis, which may also result in an elevated score, there is a high likelihood that the person has a chronic history of heavy alcohol use. Although some clinicians and researchers suggest a GGT greater than 40 to be indicative of a chronic drinking problem, considerable debate exists as to the appropriate cut-off point since GGT may differ depending on age, sex and several other factors.

Dunbar et al. (1985) found that a third of drivers arrested for DWI had an abnormal GGT at the time of their arrest. Similarly, they report a strong association between GGT and road traffic accidents but not with alcohol concentrations or previous convictions. Other research has been undertaken in England use the results of the GGT to determine whether a person who is a drinking driver has successfully changed his or her drinking behavior. In this setting a GGT test is given to persons participating in treatment programs six months after their entrance into the program to determine if their alcohol use has decreased. Dunbar et al. (1983) also mention that if GGT is measured more than 5 months after arrest it indicates whether or not the driver is controlling his drinking. This, of course, could have implications for driver licensing authorities as well as for treatment providers.

However, the GGT has not been shown to be an unequivocal indicator of alcohol abuse. Devgun et al. (1983) indicate that an elevated GGT may be the result of some other physical condition, and may also reflect the nutritional status of the individual or delays in assaying samples. Similarly, many drugs can influence biochemical measurements and therefore must be ruled out in order to increase the sensitivity and specificity, and hence the predictive value, of the test.

Other enzymes such as aspartate transaminase (AST), have been used to

classify those individuals suspected of having alcohol-related problems. However, at this time, these do not appear to be as sensitive in identifying drinking chronicity as the GGT and MCV (Devgun et al., 1983). Because the use of blood assays is relatively expensive as well as intrusive, it has not been recommended for extensive use with the overall DWI population in the United States.

2.1.2 Medical Records. In addition to using the results of clinical tests, some definitions refer to notations in the medical records of suspected alcohol abuse. Using the medical record to help classify drinking drivers is fraught with problems. First, in the United States, physicians are reluctant to enter the label "alcoholic" or "pre-alcoholic" in the medical record of an individual, thus increasing the number of false negatives in the DWI population. Furthermore, there is no standardization in reporting these conditions and, thus, no way to determine inter-rater and intra-rater reliability in both identifying and recording substance abuse information. For this reason the use of medical records as a source of corroborating information may be of little value. Moreover, access to medical records is difficult to obtain, and deciphering the information in an individual's medical record may prove both arduous and financially unfeasible. If a physician records information about possible substance abuse or if the individual appears at the emergency room with the "smell of alcohol," this may be an indication of problem drinking. The presence of such comments in the past medical history, in combination with a current alcohol-related problem, could be considered evidence of chronic abuse. However, the converse, that is, the absence of medical comment, does not preclude chronic abuse. Thus, medical record review is unlikely to be of widespread utility for drinker classification among the DWI population.

2.2 Driving History

The driving history is often available to the judiciary and assessment agencies. Information such as number of violations, previous DWI arrests, number of moving violations, accident involvement, and BAC level at time of arrest may be useful in drinker classification. Two or more DUI/DWI arrests or previous arrests

for public drunkenness are frequently mentioned in the literature as indicative of problem drinking.

Where available, it also appears that in addition to prior DWI convictions, the circumstances of arrest (time of day) are an important factor in classifying a driver as a problem drinker in that problem drinkers may be driving while impaired during non-standard drinking times.

The most frequently cited indication of problem drinking in the highway safety literature is the blood or breath alcohol concentration (BAC). The BAC at the time of arrest may also be considered a biological marker. It is more often available from the driver record than the medical record, generally appearing in the latter only if the individual has requested a blood test or was seriously injured in a crash. For drinking drivers the BAC at time of arrest is information usually available to the courts.

In some studies a previous DWI arrest combined with a BAC of .15 or more at the time of arrest is considered an indication of problem drinking. There is some controversy regarding the cut off point that discriminates between problem drinkers and social drinkers, with some states arbitrarily selecting a cutoff of .15 and others a cutoff of .20 or greater. In general, it is believed that social drinkers rarely achieve a BAC level in excess of .10 (Alcohol and Traffic Safety NHTSA Workshop Series 1980-1981). In fact, the trend in the research literature for suspicion of problem drinking appears to be moving from a threshold BAC of .25 to one somewhere between .10 and .15.

Ten counties in North Carolina are participating in a pilot program in which every person convicted of DWI is required to have a mandatory substance abuse assessment. A preliminary study of this pilot program (Popkin, 1988) offers some interesting data on the degree of drinking problems among those arrested for DWI.

In order to standardize procedures in the pilot counties where all DWI convictees were to be assessed, it was arranged that a single assessment tool with computerized scoring be used. The assessment instrument selected was the Substance Abuse Life Circumstances Evaluation (SALCE) produced by Automated

Drinking Evaluation Corporation (ADE). This instrument allows the assessor to enter the subject's responses on a computer, producing a recommended categorization of the subject's handicap with regard to alcohol or other drugs. The SALCE drinking evaluation categories are as follows:

- Category 1 Individuals in this Category do not significantly identify with symptoms commonly associated with problem drinking or alcoholism, and have not demonstrated a tendency to look unusually good or bad in the manner in which they answered the questions.
- Category 2 Individuals in this Category identify with a minimum number of behavioral and social symptoms commonly associated with problem drinking. Such identification does not necessarily reflect a problem with drinking.
- Category 3 Individuals in this Category identify with a minimum number of clinical, as well as behavioral and social symptoms commonly associated with problem drinking and alcoholism. Such identification may suggest a possible drinking problem and/or potential alcoholism.
- Category 4 Individuals in this Category identify with a sufficient number of clinical, behavioral, and/or social symptoms to indicate a drinking problem.
- Category 5 Individuals in this Category clearly identify with the clinical, behavioral, and/or social symptoms commonly associated with middle to late stage alcoholism.

One benefit of the computerized assessment instruments is that the results of each individual assessment are recorded (anonymously) and are then available for later analysis. The following discussion is based on tables provided by ADE (Popkin, 1988) from the results of assessments conducted in the pilot counties in the first nine months of the program. These data show that, based on the SALCE, 85% of DWI convictees assessed for whom results were reported were categorized at level 3, 4, or 5. Among first time DWI offenders with a BAC between .10 and .14 who normally would have been sent into an educational type traffic school, 55% were characterized

as a level 3, 4, or 5. These findings suggest that a large proportion of those persons who would have been sent into an educational type traffic school perhaps required a more thorough assessment for substance abuse. As North Carolina law enforcement agencies become more proficient at identifying those who drive while impaired and the mean BAC level correspondingly decreases, increasing numbers of persons with BACs from .10 to .15 may be identified as needing treatment.

On the other hand, perhaps using a BAC cutoff point will result in a large number of false negatives. Dunbar et al.'s (1983) research with the Tayside Safe Driving Project indicates that problem drinkers may be found among drivers with blood alcohol concentrations below the legal limit. Their results indicate "that any attempt to identify high risk individuals based on blood alcohol concentrations would be an arbitrary choice, likely to miss a large proportion of high risk offenders."

2.3 Reports from Social Agencies

Social service agencies often receive reports that suggest the possibility of alcohol abuse. Such community agency identification of persons with drinking problems, as well as clinical judgments made by professionals, and legal documents (such as arrests for public drunkenness), may provide useful collateral information to the assessor. These records frequently identify individuals whose drinking is interfering with social or occupational functioning and may thus suggest that a person is potentially a problem drinker or alcoholic. However, this type of report may be difficult to obtain in a consistent fashion and should be regarded merely as supplemental corroborating information.

2.4 Individual Responses to Clinical Interviews and Assessment Instruments

How an individual responds in a clinical interview and/or to an assessment instrument provides valuable information to the counselor or assessor about the degree of a person's drinking problem. For those convicted of DWI, generally an attempt is made to obtain information about previous DWI arrests as well as the

BAC level at the time of the most recent arrest. In addition to this information, the individual's responses in clinical interviews and on tests provide clues to the nature of his drinking problem. Most interviews and assessment instruments try to obtain as complete a picture as possible of the person's drinking patterns. These responses are very useful in covering a broad range of indicators such as BAC, reports of social agencies, number of previous DWI arrests, alcohol consumption pattern, and some indication of the social and psychological disruption which has been caused by drinking.

A national survey of DWI assessment coordinators will be discussed more completely in the section of the report dealing with assessment instruments. The most frequently used assessment instrument in the United States is the Mortimer-Filkins Questionnaire. However, several newer instruments are currently available which are computerized and provide a synthesis of the information provided by the DWI offender's response to the questionnaire. Many of these instruments include a "truthfulness" measure of the extent to which the respondent is misrepresenting him or herself or is confused in following directions. These response biases are then taken into consideration in scoring the instrument. In general, these computerized instruments provide a more thorough summary of the findings and a more detailed overview of the factors which contributed to the test outcome. However, there are drawbacks to using such instruments. Most require a financial investment for the computer equipment and software, generally a one-time administrative charge, and require that either the clients, assessors, or both work with a computer. Generally there is also a charge each time the instrument is administered. However, computerized testing may appeal to many jurisdictions if volume is high and resources are available. Paper-and-pencil instruments require a smaller initial investment and may be less costly to administer, but most of them provide only an overall score with little or no explanation of the factors which contributed to this score.

2.5 Patterns of Alcohol Consumption

As mentioned earlier, a person may move from one category of drinking type to another based on the pattern of alcohol consumption. However, it is important to understand the setting in which the alcohol consumption occurs. The types of overt drinking behavior usually associated with a pattern of pathological alcohol use (Diagnostic and Statistical Manual of Mental Disorders-3rd Edition) include: need for daily use of alcohol for adequate functioning, inability to cut down or stop drinking, repeated efforts to control or reduce excess drinking by "going on the wagon" (periods of temporary abstinence) or restricting drinking to certain times of the day, binges (remaining intoxicated throughout the day for at least two days), occasional consumption of a fifth of spirits (or its equivalent in wine or beer), amnesic periods for events occurring while intoxicated (blackouts); continuation of drinking despite a serious physical disorder that the individual knows is exacerbated by alcohol use, drinking of non-beverage alcohol, and impairment in social or occupational functioning due to alcohol use, e.g., violence while intoxicated, absence from work, loss of job, legal difficulties (e.g., arrest for intoxicated behavior, traffic accidents while intoxicated), and arguments or difficulties with family or friends because of excessive alcohol use.

2.6 Sociological and Psychological Factors

A person's level of social functioning may differentiate between social drinker and problem drinker (Mortimer-Filkins, 1971). A social drinker's consumption of alcohol does not usually impair emotional, social, physical, or occupational functioning. These drinkers have the ability to abstain and an ability to stop drinking once begun. Alcohol rarely is used to cope with stress. Social drinkers may not always exercise control over the amount or occasions on which they drink. However, the social drinker drinks for socially acceptable reasons and in socially acceptable ways, rather than moved by some individual problem, anomaly or disease.

On the other hand, the problem drinker is an excessive drinker whose

drinking causes private or public harm and who is seen to cause problems for himself or for others. Abusive use of alcohol impairs emotional, social, physical and/or occupational functioning. The problem drinker frequently uses alcohol to cope with stress but experiences no significant loss of control. The alcoholic is consistently unable to refrain from drinking or to stop drinking before getting intoxicated. Abusive use of alcohol seriously and chronically impairs his/her emotional, social, physical and/or occupational functioning, and he or she may have developed a physical dependence on alcohol characterized by craving for alcohol and withdrawal symptoms when alcohol intake is stopped.

2.7 Adolescent Problem Drinking

The period of adolescence is usually defined as the period from twelve to twenty one. Determining the degree of substance abuse problem of the adolescent is difficult because it is hard to differentiate between adolescent problem drinking and normal adolescent experimentation. Jessor (1987) found that being classified as an adolescent problem drinker was strongly associated with higher rates of involvement in other problem behaviors among this age group. In fact, drinking alcohol has appeal as a rebellious or risk-taking type of behavior among this age group. Zylman (1972) suggests that young problem drinkers use alcohol more often, in greater quantities and in order to become intoxicated, but cautions using the label "problem drinker" with this group.

Because drinking is so prevalent in this group, alcohol problems may be likely to arise. One study (Lowman et al.,1981) has shown that binge drinking (the consumption of 5 or more drinks) increased to 42% among this age group. Lowman et al. estimates that 1.6 million or 15% of senior high school students are weekly heavy drinkers, and 27% are estimated to be weekly drinkers. They further estimate that one out of four high school students was at risk for an alcohol-related accident at least once in the previous year. They prefer the definition of youth "at risk" rather than problem drinker.

Braucht (1974) found that adolescent heavy drinkers use illicit drugs more

often and exhibit aggressiveness, impulsivity, low self-esteem, high anxiety, depression, and/or unsuccessful attempts in attaining life's goals. In addition, they have peer and parental influence which strongly affects alcohol use. Other studies which they reviewed found that adolescent alcohol misusers were more strongly influenced by peers and had greater need for approval, as well as having more models and increasing pressure for drinking by parents or peers, parents who drink, family relationships lacking parental involvement and affection, antisocial behavior, and easy accessibility to alcoholic beverages.

The use of biological markers may be inappropriate with an adolescent population. Many biological markers use actual physiological change as an indication of a drinking problem. Most adolescents have a short history of drinking which is probably not of sufficient duration to produce physiological change. Dunbar et al (1985) suggest that the acute effects of alcohol may be the dominant factor contributing to the high accident rate of this group. Similarly, the use of an adult BAC level may result in underidentification of problem drinking among this group because inexperience with drinking may result in intoxication at a lower BAC level.

In some places instruments designed for adults are being used to classify adolescent substance abusers, largely because very few instruments for assessing adolescents exist. Since many of the instruments for adults are based on lifetime drinking experiences, they may have very little validity for young persons with short drinking and driving histories. Moreover, in assessing this population the use of drugs other than alcohol should be considered since it may be higher among adolescents in general.

2.8 Summary

According to the literature, high blood alcohol concentrations, and a history of multiple DWI arrests and/or driving violations appear to be useful indicators of problem drinking. Foo-Colon et al. (1983) conducted a demonstration project in which all arrested drinking drivers were screened unobtrusively using existing data

sources. In order to determine the criteria for referral recommendations, screening data were reconstructed retrospectively for convicted drivers using lifetime driver abstracts and state police ticket files. A survival rate analysis for 18 months following conviction revealed that the major predictors of recidivism were BAC at time of arrest, prior DWI convictions, and other circumstances of arrest (time of day).

The use of biological factors excluding the BAC level appears to be an impractical and unpredictable method for determining level of drinking problem of those persons convicted of DWI, particularly for screening a relatively large population. They may be most useful for multiple offenders who often become part of a medical evaluation program. Self-reporting of drinking habits and related problems appear to have greater sensitivity and specificity than those of biochemical markers for identifying alcoholics (Allen, et al., 1988). However, research is still required to determine if biological markers used in conjunction with the results of assessments may be useful in screening a DWI offender population. Thus, it appears at this time that BAC level and previous DWIs may be the most useful initial information available to the courts for identifying problem drinkers. This information when used in conjunction with supplemental data from assessment instruments may be useful in further classifying problem drinkers.

3.0 REVIEW OF SELECTED SUBSTANCE ABUSE SCREENING INSTRUMENTS

In order to develop as comprehensive a listing as possible of instruments in use for DWI substance abuse assessments, a multifaceted effort was initiated. First, the literature review focusing on definitions of problem drinkers generated a list of instruments frequently used to identify problem drinkers. Concurrently with this review, a national survey of program coordinators for DWI substance abuse assessments was conducted. Sponsored by the North Carolina Division of Human Resources, the survey queried individuals responsible for monitoring programs at the state level regarding assessment tools and practices in their states. The national survey revealed a number of instruments in use by only one or two states. In order to prevent the instrument evaluation efforts from becoming too diffuse, only the instruments in use by at least three states received further consideration.

Most of the instruments reviewed in this report are currently being employed for substance abuse assessments in a number of states. A few additional instruments, not identified in the survey, were uncovered in a literature search of current psychological tests and through contacts with substance abuse professionals. The following instruments were reviewed and evaluated:

Adult Screening Instruments

- Addiction Severity Index (ASI)
- Alcohol Use Inventory (AUI)
- CAGE (Cut down, Annoyed, Guilty, Eye-opener)
- Craig Analysis of the Substance Abuse Syndrome (CASAS)
- Driver Risk Inventory (DRI)
- Hopkins 20-Questions Test (New Hopkins 20-Questions)
- Life Activities Inventory (LAI)
- MacAndrew Scale of MMPI (MAC Scale)
- Minnesota Assessment of Chemical Health (MACH)
- Michigan Alcoholism Screening Test (MAST)

- **Modified Criteria of the National Council on Alcoholism (MODCRIT)**
- **Mortimer-Filkins Questionnaire (Court Procedures for Identifying Problem Drinkers)**
- **Substance Abuse Life Circumstances Evaluation (SALCE)**

Adolescent Screening Instruments

- **Adolescent Alcohol Involvement Scale (AAIS)**
- **Adolescent Chemical Dependency Inventory (ACDI)**
- **Juvenile Automated Substance Abuse Evaluation (JASAE)**
- **Personal Experience Inventory (PEI)**
- **Personal Experience Screening Questionnaire (PESQ)**

3.1 Approach to Instrument Reviews

The major objective of this task was to examine the utility of existing assessment instruments in assigning individuals to pertinent drinker categories, thereby facilitating decisions regarding referral to educational or therapeutic programs. We evaluated each instrument's psychometric quality, specifically, the adequacy of its norms and the reliability and validity of its test scores. Also important in the present context was a judgment of the instrument's utility in expeditiously screening a broad range of persons convicted of drunk driving.

Based on our preliminary review of the available literature, we did not expect all assessment instruments to have been well validated. A test whose content appears on the surface to tap the trait being measured is said to have face validity, yet that does not necessarily imply that its empirical relationship to the trait has been demonstrated. Nonetheless, we felt it was important not to exclude instruments with questionable empirical validity since these might still be of potential usefulness to the courts.

As described earlier, a set of assessment instruments currently in use was assembled on the basis of a survey of state programs and contacts with professionals active in the field. Pertinent information about the instruments, including results

from validation studies, was obtained through a review of the literature on alcohol and highway safety and the clinical literature on alcohol diagnosis and treatment. The reviews of the clinical and highway safety literatures were assisted by computer searches of two databases, Buros' Mental Measurements Yearbook and PsycLIT. In addition, Test Critiques (Keyser and Sweetland, 1985) was consulted but contained no references to the instruments on the preliminary list.

Some instruments, particularly the newer automated ones, have not had enough exposure in the field to be referenced in the literature. In this case, materials from the developers, which provide general and psychometric descriptions of the tests, served as the resource for our reviews.

In order to ensure consistency in our evaluation of alcohol problem assessment instruments, we developed a format to describe quantitative and qualitative information about each test. The format is adapted from Anastasi's (1982) suggested outline for test evaluation. Using descriptive information available from the instrument developer and independent evaluations reported in the literature, a descriptive review of each test was done using the format presented below. The information provided is simply a review of what is reported in the literature and does not reflect independent evaluations conducted for this project. Key articles are referenced at the end of each review.

GENERAL	Author (s), publisher, copyright date; time required to administer; cost
DESCRIPTION	Test format and type of items, subtests and separate scores, number and nature of classification categories, suitability for different populations (i.e. females, minorities, adolescents)
EVALUATION	General qualitative evaluation Technical evaluation is divided into 3 components:

Norms	Nature and size of standardization sample
Reliability	Correlation coefficients for test-retest, internal consistency, and/or interrater reliability
Validity	Correlation coefficients for concurrent or discriminant validity and/or rates of false positives/negatives in identifying problem drinkers; nature and size of validation sample

For each instrument, general information is listed, such as the instrument's developer and distributor, time and resources needed to administer and score the instrument, including computer capability and personnel time, and cost for the instrument. Cost can be an especially important factor in low-volume jurisdictions in which computer support and training time for computer-assisted software may not be economical. Special features of the test, such as the inclusion of a truthfulness measure, are also listed in the descriptive section.

Measures of test-taking attitude or truthfulness attempt to compensate for response sets which may mask or distort the psychological attribute(s) being assessed. Particularly when the test will be used to make an important decision about an individual, as is often the case with DWI assessments, response sets such as social desirability and dissimulation may be manifested. A social desirability response set would be reflected in the tendency to give socially acceptable responses and thus put oneself in a favorable light, while dissimulation reflects a more deliberate attempt to appear overly healthy (or in some cases, overly pathological). A frequent approach to dealing with both response sets is to incorporate a truthfulness scale which statistically adjusts raw scores on the test so that they more accurately reflect the personality dimensions being measured. Since denial is widely recognized as a coping mechanism among problem drinkers, a built-in truthfulness measure seems to be an important component of screening instruments for DWI assessments.

In addition to describing general information about the test, its psychometric quality was evaluated. This technical component of the review included any

information that was available, either from the test publisher or the literature, regarding test norms, reliability, and validity. A brief discussion of these critical dimensions of test quality follows. Each instrument and its supporting materials, including references, were then reviewed, evaluated, and summarized in a brief narrative.

3.1.1 Norms. A norm is a distribution of test scores obtained from a large sample of people who are representative of the population for whom the test is intended. Norms provide the basis for interpreting an individual's scores by relating them to the normative sample. Our review of instruments indicated that the standardization sample by which the test was first validated was seldom described. When it was, the criterion group usually consisted of alcoholic inpatients and/or DWI offenders. One criticism which has been applied to several of the older instruments is that their initial standardization samples did not include females (or nonwhites or adolescents), raising questions about the validity and utility of those instruments with any but a white, adult, male population. Although that description may have characterized the drunk driving population a decade or two ago, the increased numbers of licensed drivers in other subgroups has made drinking driving a concern in all segments of the population. Thus, there is a pressing need for updating the norms of the earlier instruments to include females, nonwhites, and, if appropriate, adolescents.

An attractive feature of the newer, computer-scored instruments is the capability to conveniently store and manipulate information from respondents. Test distributors are thereby able to offer periodic updating on demographic characteristics of respondents, analyze response profiles for various subgroups, and may even be able to provide clients in a particular jurisdiction with norms specific to population groups within their jurisdiction.

3.1.2 Reliability. For a test to be an adequate measure of a particular trait it must be able to assign scores to individuals in a consistent fashion. The importance of consistency comes from the fact that tests are used to make important decisions about people. The reliability of a test refers to the consistency with which it

measures some attribute or behavior. Two types of reliability are reported in reviews of alcohol problem screening instruments: test-retest and split-half reliability.

Test-retest reliability measures the stability of test scores over time. It is obtained by administering the same test to a group of individuals on two occasions separated by a specified time interval, and comparing their test scores on the two administrations. Since the dimension of behavior being sampled by these instruments can be assumed to be relatively stable, test-retest correlations are expected to be fairly high, assuming the test is valid. However, this correlation was rarely reported in the literature or in the documentation for an instrument, presumably because of its limitations. These limitations include the respondents' memory for specific items which can inflate the reliability coefficient, reactivity to the experience of taking the test (i.e. enhanced awareness of an alcohol problem), as well as the cost and impracticality of gathering the respondents for a second administration of the test.

The split-half method estimates reliability from a single test administration and thus does not rely on having respondents available for a second session, while it precludes possible carry-over effects. This method divides the test into comparable halves, usually odd and even items, and obtains a correlation between the two halves, which is then adjusted to determine the reliability of the score on the whole test. The resulting quotient provides a measure of the test's internal consistency, or how well the test items are intercorrelated. This content sampling measure of a screening instrument was more frequently reported and may indeed be a more appropriate measure of reliability in this context.

3.1.3 Validity. Perhaps the most important factor in critically evaluating a test is its validity. Simply defined, the validity of a test refers to how well it measures what it is intended to measure. The more clearly understood and circumscribed the trait or dimension of behavior being measured, the better the criterion, an independent measure of the trait, against which the test outcome can be compared. The criterion measures typically used to validate alcohol problem screening

instruments are counselor/clinician diagnoses or, alternatively, scores from another instrument with acceptable validity.

Criterion-related validity thus compares test outcome with an independent measure of the behavior, concurrently (i.e., clinical diagnosis) or in some future situation (i.e., vocational status or future DWI), and is expressed as a correlation coefficient. The latter comparison, predictive validity, would be a particularly useful feature of a test in the present context in helping to identify DWI offenders who, because of an existing alcohol problem, are highly likely to recidivate if they fail to receive some form of treatment. A demonstration of predictive validity, however, would require that test scores not be used to select people for entry to a particular program or treatment, because such participation will be likely to influence the criterion variable. If one had expectations that treatment might be effective, such a demonstration would be both impractical and unethical. Consequently, very few psychological tests have been submitted to the prospective scrutiny that would be necessary to establish their predictive utility.

An alternative means of reporting criterion-related validity is based on decision theory. In this case, dichotomous classifications based on test outcome (problem drinker vs. non-problem drinker) are compared with these individuals' current status (i.e. alcoholic vs. nonalcoholic diagnosis). The result is described as a percentage of hits or correct rejections -- agreement between test and criterion measures -- and the percentage of false positives (test indicates problem drinker, but clinical diagnosis does not) or false negatives (test indicates no drinking problem when clinical diagnosis suggests one exists).

Less often reported in the assessment literature is construct validity, probably due to the difficulties inherent in measuring it. Construct validity is an indication of how well a test measures the theoretical trait or construct it is intended to measure. In many cases, however, the construct itself is not well understood or defined and may involve such heterogeneous attributes as to make its measurement by paper-and-pencil tests difficult. This is the case, for example, with tests of general intelligence since intelligence is believed to be a composite of

various verbal and spatial skills, many of which are difficult for test items to tap.

A similar controversy exists in the definition of alcoholism, which is evolving from that of a unitary disease entity to a multidimensional array of alcoholic syndromes, each with a unique cluster of symptoms, etiology, prognosis, and appropriate treatment. Unfortunately, many of the tests designed to screen for alcohol problems offer a binary answer to the question of whether a person has a drinking problem, when such a dichotomy may not exist in reality (Jacobson, 1983). Furthermore, this simple classification scheme seems particularly inadequate with the DWI population who run the gamut of problem drinker types. Although some screening instruments place the individual on a continuum of severity and thus offer somewhat more information, they still assume a unidimensional syndrome.

The lack of a precise definition and understanding of problem drinking is clearly an obstacle to developing psychometrically valid instruments to measure it. As we develop a better understanding of the complex of genetic, biochemical, experiential, and cultural factors contributing to the spectrum of syndromes collectively referred to as alcoholism, it will be increasingly necessary to use assessment techniques that offer a multidimensional diagnostic system (Mischke and Venneri, 1987). A clearer, more comprehensive picture of the problem will enhance the accuracy of diagnosis which, in turn, has its greatest value in specifying appropriate treatment and prognosis.

3.2 Reviews of Instruments for Adults

On the following pages, information obtained on each of the above-listed instruments is summarized in a standardized format. Following each summary is a brief critical review of the instrument.

Instruments designed primarily for use with adults are presented first. The descriptive summaries are based on documentation provided by instrument developers and information in the literature. For instruments which have inspired a significant body of literature, only those articles appearing most pertinent to the present report are considered.

3.2.1 Addiction Severity Index (ASI)

GENERAL	Available from A. Thomas McLellan (Copyright, 1980) Building 7, Philadelphia JAMC, Philadelphia, PA 19104 25-40 minutes Cost of personnel time (trained technician) to administer interview
DESCRIPTION	Structured clinical interview addresses six problem areas via objective information and patients' judgments: chemical abuse, medical, family/social, employment/support, psychological, legal Provides profile of 10-point problem severity ratings for each area
EVALUATION	Offers treatment recommendations tailored to patient's problem severity <u>and</u> current level of treatment Appropriate for use with men and women, adults ≥ 16 Suitable for repeated administration to assess patient progress
Norms	No data available
Reliability	<u>Test-retest:</u> Consistent (coefficient not available) <u>Interrater:</u> $r = .89$ (McLellan et al., 1980)
Validity	<u>Face:</u> Correlations between scale scores and independent measures of the problem area are generally in the $r = .60$'s range (McLellan et al., 1980) <u>Concurrent:</u> ASI scores identified opiate addicts with psychological problems and correlated highly with other self-report measures in the same problem areas (i.e. Beck Depression Inventory, Social Adjustment Scale) (Kosten et al., 1983) <u>Predictive:</u> A follow-up study to examine predictive utility is underway

The ASI is a structured clinical interview designed to be administered by paraprofessionals with minimal training for the purpose of identifying the extent to

which a person is in need of additional treatment. It is based on both objective information, that is, verifiable data such as test results, laboratory reports, physical examinations, and facts concerning the patient's life pattern; and the patient's own judgments of the severity of his problems. Six scales cover Substance Abuse, Medical, Employment/Support, Legal, Family/Social, and Psychological. The information obtained is based on problems experienced during the previous 30 days, so that the instrument may be used to monitor changes over time.

The test developers appear to have been unusually sensitive to some of the more technical aspects of test construction, including recognition of the fact that the test needs further validation. Nevertheless, the extent to which they established reliability of the interview scoring is impressive. Furthermore, the test findings indicate that there are different groupings of patients, showing different kinds of problems beyond the single common problem concerning substance abuse. The initial development was based on veterans, and the authors clearly state, "It should be clear that the particular clusters presented here may not be indicative of groups found in other clinics, especially programs with adolescents, women, nonveterans, etc." Nevertheless, their initial exploration of this instrument is thorough and shows results that hold promise for use with other populations.

An independent evaluation was conducted with opiate addicts in treatment at a mental health center (Kosten, et al., 1983). Again, the authors conclude that the instrument is at least as sensitive as other widely used instruments in identifying depressed addicts and antisocial addicts. The fact that the instrument addresses different problem areas that may not be interrelated is useful for purposes of designing treatment programs. These authors are conducting a long range study to examine the predictive validity of the ASI.

None of the information available on the ASI is based on convicted drunk drivers. However, the promising findings thus far, although based on only two reports, suggest that this instrument is worth pursuing further. It should be especially interesting to determine the extent to which it may provide valuable information in the treatment of convicted drunken drivers.

References

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McLellan, A.T, Luborsky, L., Woody, G.E., and O'Brien, C.P. An improved diagnostic evaluation instrument for substance abuse patients. Journal of Nervous and Mental Disease, 1980, 168, 26-33.

3.2.2 Alcohol Use Inventory (AUI)

GENERAL	Developed by Horn, Wanberg, Foster in 1974 (see Wanberg et al., 1977); copyright 1986 by National Computer Systems, Inc. Professional Assessment Services P.O. Box 1416, Minneapolis, MN 55440; 1-800-328-6759 35-60 min \$6 (approx); scoring systems: hand, mail-in, microcomputer, teleprocessing
DESCRIPTION	228 objective items, orally or self-administered 24 independent scales measure alcohol-related problems in 4 domains: benefits, styles, consequences, and concerns associated with alcohol use
EVALUATION	Discriminates between levels of identified problem drinkers (male and female sample; Wanberg et al., 1977) Various scoring services available Profile and narrative interpretation aid development of treatment plan Lack of validity scales may limit usefulness to self-identified problem drinkers
Norms	Reference groups: 1200 alcoholism treatment inpatients at Denver St. Hospital; 274 alcoholic outpatients
Reliability	<u>Internal consistency</u> : $r = 0.67 - 0.93$ (Skinner & Allen, 1983) <u>Test-retest</u> : $r = 0.77$ (one-week interval)
Validity	<u>Concurrent</u> : $r = 0.71 - 0.83$ between MAST and General Alcoholism Scale of AUI ($n=274$) (Skinner & Allen, 1983) <u>Construct</u> : AUI significantly discriminated 3 groups: outpatients, acute inpatients, and chronic inpatients ($n=458$) (Wanberg et al., 1977)

There are apparently no truthfulness scales included, that is, scales that would detect if the testee were confused or trying to look better or worse than what is the case.

The instrument "should be used in conjunction with other methods of

assessment, including the clinical interview with the patient and, when possible, with collaterals."

This instrument appears to be in too preliminary a stage of development to be of any immediate practical use, although it may be of value for exploratory research purposes. There is no information concerning its use with convicted drunk drivers.

References

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3.2.3 CAGE (Cut down, Annoyed, Guilty, Eye-opener)

GENERAL	<p>Developed by Ewing and Rouse in 1970 (see Ewing, 1984) Available from Center for Alcohol Studies, UNC School of Medicine, CB# 7140, Chapel Hill, NC 27599</p> <p>Time varies depending on length of interview or questionnaire in which questions are embedded Cost of personnel time to administer interview</p>
DESCRIPTION	<p>4 items (Y/N) embedded in (social history) interview or questionnaire: 1 positive response merits further investigation of a problem 2-4 positive responses indicate high likelihood of alcoholism</p> <p>Each letter in name represents a word in one of the 4 items: Have you ever felt the need to Cut down on your drinking? Have people Annoyed you by criticizing your drinking? Have you ever felt badly or Guilty about your drinking? Have you ever had a drink first thing in the morning (Eye- opener)?</p>
EVALUATION	<p>Brief, simple, non-threatening instrument</p> <p>May be performing as a unidimensional cumulative scale; should not be used as single index of problem drinking w/DWIs (Mischke & Venneri, 1987)</p>
Norms	<p>No data other than validation studies</p>
Reliability	<p><u>Internal consistency</u>: $r = 0.71$ (Mischke & Venneri, 1987)</p>
Validity	<p><u>Concurrent</u>: range of $r = 0.50$ (sample of DWI offenders; Mischke & Venneri, 1987) to 0.89 (sample of hospitalized psychiatric patients; Mayfield et al., 1974) between test scores and counselor decisions</p> <p>True positives = 85%, true negatives = 89%; $n = 521$ inpatients (Bush et al., 1987)</p> <p><u>Internal</u>: all four items significantly discriminated between criterion groups (Mischke & Venneri, 1987)</p>

This instrument is especially simple to use and has the advantage that it is apparently non-threatening to the testee. Whether this characteristic would still

hold true for convicted drunk drivers is not clear. The CAGE consists of four items, and the name of the test derives from the key drinking-related concept measured within each item, namely, Cut down, Annoyed, Guilty, Eye-opener.

The CAGE is much too brief to serve as a comprehensive diagnostic tool. Nevertheless, in a study of DWI offenders by Mischke and Venneri (1987) the CAGE showed higher agreement with counselor decisions than did either the MAST or the Mortimer-Filkins. In spite of the high level of agreement, Mischke and Venneri conclude that "The overall performance of the CAGE in this study suggests little support for its use in DWI assessment." The support for this conclusion is not clearly stated.

The authors of this report would agree that the brevity of the CAGE precludes its use other than as a tool in preliminary screening of convicted drunk drivers. However, it should be cautioned that it has not been demonstrated what effect, if any, the judicial aspect of the drunk driving system may have upon client response. The Mischke and Venneri study combined both pre- and post-conviction offenders and made no attempt to isolate the influence of conviction status. The point is of particular significance in that the CAGE includes no validation scales, and at least some authors express the opinion that the DWI population "attempts to avoid detection of an alcohol-related problem. . ." (Mischke and Venneri, 1987).

The major useful contribution of the CAGE appears to lie in its potential as a simple, inexpensive, non-threatening screening instrument that could provide the basis for further evaluation where indicated.

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3.2.4 Craig Analysis of the Substance Abuse Syndrome (CASAS)

GENERAL	J. R. Craig and P. Craig (1977, 1986) Diagnostic Counseling Services, Inc.; P.O. Box 6178; Kokomo, IN 46904 25-30 min (5 min scoring) \$2/test (approximately), volume discounts
DESCRIPTION	108 items Individual or group self-administration, paper-&-pencil format Appropriate for men, women, and adolescents Two independent scales: Alcohol, Anxiety, and two "validity" scales: Inconsistency, Defensiveness
EVALUATION	Easily administered, scored; no special training/equipment required Profile sheet displays scale scores in relation to norms Built-in validity checks for test-taking truthfulness Highlights problem areas for treatment planning
Norms	Based on 2000+ adolescent and adult drinkers/non-drinkers
Reliability	<u>Test-retest</u> : $r > 0.90, 0.80$ for Alcohol, Anxiety scales, respectively
Validity	<u>Discriminant</u> : CASAS significantly discriminated between alcohol inpatients and college/high school students (using t-tests for differences between means, scale by scale)

The development of this instrument included both subjects with alcohol problems and subjects presumed to have no drinking problems. The former were inpatients with a primary diagnosis of alcoholism, while the latter consisted of high school students and university students from both commuter and residential campuses. As pointed out by the authors, it is possible that some of the students did indeed have alcohol problems, but the assumption was made that as a group they were characterized by being less likely to have such problems than the inpatients.

There is no indication that the authors considered other important differences between the inpatients and their comparison subjects. It is highly likely that the inpatient population was older and more predominantly male. Since age

and sex are both strongly associated with having alcohol related problems, it is essential that any comparisons take these variables into consideration. It is also highly likely that the inpatient population on the whole was less well educated and perhaps of lower socioeconomic status, although no information is provided on these variables. There is no evidence that the test developers considered the many factors that are related to the development of alcohol problems or took any steps to take such factors into account. As a result, it is not possible to accept the reported differences in test performance as an indication of differences in alcohol abuse.

The difficulties extend to other aspects of the test as well. There is no independent validation showing that the scales referred to as anxiety scales are actually measuring what they are purported to measure. The same problem exists for their "validity" scales.

Finally, there are no data that independently validate the usefulness of this test. All the supporting materials are provided by the test authors, with no independent scientific evaluations available. As a result, it is not possible at this time to say how useful this instrument may be.

3.2.5 Driver Risk Inventory (DRI)

GENERAL	Developed by Lindeman and Scrimgeour, Behavior Data Systems, Ltd. (Copyright 1987) P.O. Box 32038, Phoenix, AZ 85064 20 min (+ 5 min scoring, automated <u>only</u> [IBM compatible]) Approximately \$10/test, discounts for volume purchases and for participation in DRI research
DESCRIPTION	131 items (empirically selected via item analysis) Individual or group self-administration, on-line or paper-&-pencil Appropriate for men & women; Spanish version available 5 independent scales, each with risk level classification (normed on DWI population): I. Truthfulness; II. Alcohol; III. Drugs; IV. Driver Risk; V. Stress Quotient
EVALUATION	Easily administered and scored (computerized evaluation) Uses direct, non-offensive, uncomplicated language Truthfulness measure adjusts DRI scale scores Includes treatment recommendations Flags responses to critical items Report (3-page summary) may be tailored for the courts, treatment provider, and/or the offender
Norms	Normed on DWI population; some scales have sex-specific norms. Annual updating on demographics.
Reliability	<u>Internal consistency</u> : $r = 0.74 - 0.90$ across scales
Validity	<u>Concurrent</u> : $r = 0.44 - 0.63$ between DRI scale scores & DWI screener/evaluator ratings <u>Concurrent</u> : Significant correlation between Alcohol scale & BAC, $r = 0.24$ ($p < .001$) and between Driver Risk scale & prior violations and crashes, $r = 0.16$ ($p < .02$) to $r = .37$ ($p < .001$) <u>Concurrent</u> : Significant correlations between DRI scales (especially Alcohol) and other tests (MAST, Mortimer-Filkins, and Sandler)

This instrument appears to be by far the most carefully constructed from a psychometric standpoint. It was developed specifically for screening convicted

drunk drivers, presumably for purposes of disposition decisions. Reliability is well established and validity is based on the instrument's relationship to other established measures. Data from respondents are retrieved from users to update norms annually while allowing additional specification of norms for particular geographic or demographic subgroups.

The instrument consists of 131 items that can be read by someone who has passed the written driver's license examination. The test provides results on five measures, including one on alcohol. For each measure, the testee is classified according to risk level along a four point scale ranging from low risk to high risk. A truthfulness scale alerts the evaluator to the presence of response bias in the protocol. One of the scales is designed to detect irresponsible driving and provides an assessment of driver risk, a particularly useful feature for evaluating the DWI offender that does not exist in any other instrument we reviewed. Automated scoring provides a written summary of the findings, in addition to the actual scores on the scales and the items. The results also include recommendations for disposition.

In settings where it has been adopted as the primary screening instrument for processing convicted drunk drivers, substance abuse counselors have reported that it improves the quality of their decisions while making their task less time-intensive. The documentation does not include information on outcome measures, that is, there are no studies that report how effectively the instrument identifies persons who subsequently benefit from one type or another of treatment or disposition.

Nevertheless, of the instruments reviewed, this test is the most carefully constructed. However, there remains the need for careful follow-up validation research to determine whether it truly achieves what its developers purport. More information is also needed assessing the usefulness of the various dispositions employed.

3.2.6 Hopkins 20-Questions Test (New Hopkins 20-Questions)

GENERAL	<p>Original version developed by Robert Seliger in 1930's New Hopkins 20-Questions developed by Wallace Mandell, 1984 Johns Hopkins University School of Hygiene & Public Health 615 N. Wolfe St., Baltimore, MD 21205</p> <p>Approximately 15 min to administer and score Available for cost of reproducing questions (and personnel time if counselor-administered)</p>
DESCRIPTION	<p>20 Yes/No questions (orally or self-administered) sampling 4 areas: psychological dependence, tolerance, withdrawal syndrome, central nervous system disorganization</p> <p>Diagnostic categories: alcoholic (may be, is, definitely is) <u>vs.</u> not alcoholic</p> <p>Originally developed as self-assessment instrument; Mandell (1989) does not recommend it for use by clinicians due to the lack of any systematic efforts to standardize and validate the instrument.</p>
EVALUATION	<p>No data are currently available due to the lack of evaluation studies.</p> <p>The Oklahoma Department of Mental Health has an extensive database on DUI assessments using the New Hopkins and other instruments (i.e. Mortimer-Filkins [interview], MacAndrew Scale) which also includes sociodemographic and driver record information. Although they have more than 4000 cases entered, they have not developed an analysis and retrieval system with which to establish norms or cross-validate the instruments.</p>

This instrument consists of 20 questions divided into four categories. The first category concerns psychological dependence and includes eight items. Category 2 concerns tolerance and includes two items. The third category deals with physiological dependence and includes three items. The last seven items measure central nervous system disorganization. A score of two indicates possible alcoholism, and a total score of three or greater suggests problem alcoholism and a need for treatment.

It can be seen by the very low scores required for concluding that there is an

alcohol problem that the items are describing fairly severe symptomatology. Furthermore, all items are quite obviously concerned with alcohol abuse, and there is no evidence of any concern about a person's deliberately falsifying answers.

While the instrument has face validity, it appears useful only for identifying persons who openly admit to alcohol problems of a very serious nature. One of the major values in assessing convicted drunk drivers is the opportunity it affords for identifying persons in the early stages of developing alcohol problems. It does not appear that this instrument would be useful for that purpose. Because of this limitation, as well as the lack of any validation information, it is not recommended that this instrument be considered for use in evaluating DWIs.

Reference

Mandell, W. Personal communication, November 1988.

3.2.7 Life Activities Inventory (LAI)

GENERAL	Developed by Fort Logan Mental Health Center, Denver, CO Available from NHTSA, NTS-21, 401 Seventh St. S.W. Washington, D.C. 20590 60 min (+ 5-20 min scoring by hand) Available for cost of reproduction
DESCRIPTION	115 items (Likert-scaled), self-administered + interview Three sections: Life Activities Inventory, Personality Assessment Survey, and Treatment/Arrest/Accident Record Developed for use by ADSAP (Alcohol Drug Safety Action Program) practitioners for case-management; modified from research instrument used to evaluate ASAP (Alcohol Safety Action Project) programs in the Comprehensive DUI Project (Holden and Reis,1981) Multidimensional measure of adjustment in life areas affected by drinking: marital problems, control of drinking problems, income and employment stability, physical health, residential stability, social interaction and control of drinking
EVALUATION	Anecdotal reports from South Dakota assessments suggest satisfactory reliability and validity
Norms	Normed on DUI offenders
Reliability	<u>Internal consistency</u> : acceptable (no coefficient reported) (Lettieri, 1985)
Validity	Satisfactory (no coefficient reported)

There is very little information available on this instrument. It apparently underwent a series of revisions under the auspices of the group working at the University of South Dakota that evaluated the early ASAP programs. The information available clearly states that it was "not intended as an assessment instrument for use as a basis for deciding whether an individual client had successfully completed a treatment or education program. It was, as a matter of important difference, designed and used as an experimental criterion measure for

treatment groups." Hence, it does not appear that this instrument is an appropriate option for use in initial assessment of convicted drunk drivers for purposes of making disposition decisions.

References

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Holden, C., and Reis, R. A Description of Life Activities Inventory and Scoring Procedures, 1980 Annual Report. Volume VI. Final Report--CDUI Project, Alcoholism Division, County of Sacramento Health Department, Sacramento, CA 95814. DOT Publication No. HS-6-01414. Washington, DC: NHTSA, Department of Transportation, 1981.

3.2.8 MacAndrew Scale of MMPI (MAC Scale)

GENERAL	<p>Developed by MacAndrew, 1965 Available as one of the MMPI™ (1970, University of Minnesota) special scales through National Computer Systems, Inc., Professional Assessment Services, P.O. Box 1416, Minneapolis, MN 55440; 1-800-328-6759</p> <p>90/20 min (whole MMPI/MAC alone) + 2-3 min to score Less than \$1/test for answer sheets & reusable booklets plus \$34 for administration manual, scoring keys About \$4/test for scoring services (mail-in, teleprocessing)</p>
DESCRIPTION	<p>49 T/F items embedded in 566-item MMPI, paper-and-pencil Revised MMPI (to be released in 1989) replaces 4 MAC items with new ones MAC items may be administered separately, but may compromise validity by increasing respondent's defensiveness*</p> <p>Diagnostic categories: alcoholic and non-alcoholic (much simpler than for whole MMPI, obviating the need for a highly trained clinician to interpret score)</p>
EVALUATION	<p>Easily scored by clerical personnel May be a general measure of substance abuse (does not discriminate between alcoholics and heroin/polydrug users)</p>
Norms	<p>Updated norms from a major restandardization effort will be available by June 1989, replacing those from the 1940's</p>
Reliability	<p><u>Test-retest</u>: high: Hoffman et al. (1974) used a 13-year interval; seems to be tapping a very stable dimension of behavior</p>
Validity	<p><u>Discriminant</u>: Scale items empirically selected based on ability to differentiate alcoholic and non-alcoholic patients</p> <p><u>Concurrent</u>: Across settings, correct classification (hits) of alcoholic adults (Greene, 1980) and adolescents (Moore, 1985) varies from 61% to 81%</p> <p><u>Predictive</u>: Good predictor of alcohol/drug use in <u>adolescents</u> (Wisniewski et al., 1985 (n=403); Hoffman et al., 1974)</p>

* If MacAndrew items are to be administered separately, it is appropriate to get permission from Beverly Kaemmer at the University of Minnesota Press: 2037 University Ave. S.W. Minneapolis, MN 55414.

Based on the MMPI, the MAC consists of 51 items found on the MMPI and presumably administered as part of the MMPI. Because two of the items explicitly mention alcohol, they are usually omitted, leaving 49 items. Unlike most of the available instruments, the MAC is applicable to females as well as males.

Although the MAC has been shown to be effective in differentiating between alcoholic and nonalcoholic patients in a variety of psychiatric settings, there is evidence that it is measuring enduring personality characteristics that persist even when a drinking problem no longer exists. Conversely, these characteristics have been found to be present in college freshmen years prior to their developing an alcohol problem. Thus, scoring high on the MAC appears to be an indication of a personality pattern that is associated with a high probability of developing an alcohol problem, of currently displaying an alcohol problem, or of having had an alcohol problem.

It is therefore important to recognize that a high score on the MAC does not mean that the person currently has a serious alcohol problem. Nevertheless, someone convicted of DWI and scoring high on the MAC should be counseled concerning the apparent vulnerability to developing a serious alcohol problem. If the DWI program is viewed in light of the larger health problem posed by alcohol and used as a means of detecting persons in the early stages of developing an alcohol problem, the MAC could prove to be the instrument of choice. However, if the DWI program focuses more narrowly on the combination of drinking and driving, the MAC may not be as desirable as some of the other instruments reviewed.

One study (Wisniewski et al., 1985) reported a strong relationship between the MAC and reported alcohol and drug use, but this study is based on anonymous responses and it is not clear how the students involved were selected from the larger student population. Furthermore, as indicated above, the MAC apparently measures enduring personality characteristics found in persons prone to developing substance abuse problems, but it does not necessarily measure actual abuse. In other words, someone could score high on the MAC and never have used alcohol or other drugs but simply be highly vulnerable to developing substance abuse

problems.

The MAC is embedded in the 566-item MMPI, and if used in this way it does not appear to be a readily usable instrument in assessing convicted drunk drivers unless a fairly in-depth assessment is undertaken. The fact that the MMPI is a thoroughly validated personality instrument that includes validation scales means that the MAC would be especially useful in those cases warranting such in-depth assessment. However, personal communication with one of the world's foremost experts on the use of the MMPI, Dr. W. Grant Dahlstrom, indicates that the MAC can also be used in conjunction with the MMPI validity scales but without using the entire instrument (in which case it is appropriate to get permission from the University of Minnesota Press; see above note). What may be lost in validity will likely be more than made up in practical usefulness. Furthermore, the extracted scale places less of a demand on the clinical skills of whomever is scoring and interpreting than does the whole MMPI. In this shortened version, the use of the MAC may prove more feasible in working with DWI offenders. It would be interesting to assess the scale's predictive validity using DWI recidivism as the criterion measure.

References

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3.2.9 Minnesota Assessment of Chemical Health (MACH)

GENERAL	Developed by James Kincannon, 1984 MACH, 9 Kings Lane, Chaska, MN 55318, (612) 623-2588 30 min, automated scoring (IBM or compatible) \$5/test or lease for \$100/month
DESCRIPTION	Branching/interactive interview (multiple-choice responses), counselor or self-administered, that incorporates parts of MAST, Mortimer-Filkins, and DSM-III criteria Appropriate for both sexes, minority clients Not designed for use with adolescents but has been used in the field with reported success
EVALUATION	Diagnoses respondent according to above test criteria and placement criteria developed by third party payers or regulatory bodies (e.g., Minnesota Department of Health Services Rule 25) Detailed printout assesses problem severity, current stressors, environmental obstacles to recovery, and provides appropriate referral options
Norms	Normative data are collected on demographics of respondents and on common problems presented
Reliability	Data are not yet available
Validity	<u>Concurrent:</u> MACH-counselor agreement (63%) is higher than inter-counselor agreement (55%) Kincannon is validating the instrument with a sample of adolescents (using the Personal Experience Inventory) in Fall 1988

This instrument is provided on a floppy disk to be administered through a computer. Its automated administration requires only a brief orientation but interpretation of the results must be done by a certified counselor. It can be administered in approximately half an hour, after which a counselor reviews the results with the client and a course of action is agreed upon mutually.

The MACH is designed to assess alcohol/drug problems and makes no

attempt to explore other potential problem areas. While it incorporates items from the MAST and the Mortimer-Filkins, it is an interview rather than a questionnaire or test. The set of questions used varies as a function of the respondent's prior answers. The MACH identifies the following:

- Factors indicative of a pathological pattern of use (of alcohol/drugs, e.g., sick when stopping or cutting down: within the year)

- Significant factors associated with alcohol/drug use, e.g., children won't bring friends over

- Significant factors which would predispose to future pathological use, e.g., spouse may be having problem with alcohol or drugs

- Current stressors to be taken into consideration, e.g., no close friends

- Highest level of functioning in important life areas in the last year (as a parent, as a wage earner, interpersonal/social life)

These listings are reviewed by the client and the counselor together, so that there is opportunity for elaboration and explanation on the part of the client. Thus the MACH is designed as a tool to be used by a skilled counselor in conjunction with further input from the client. All conclusions are agreed upon mutually and signed by both client and counselor.

In addition to the information above, the MACH provides referral options that are to be used only as guides and in light of additional information available to the counselor but not covered by the MACH. These MACH formulations have been compared with similar formulations derived by counselors independent of MACH results, with an agreement rate of 63%. In contrast, agreement between counselors assessing the same clients was only 55%. Thus, it appears that the MACH is at least as able to predict a counselor's formulation as is another counselor.

The MACH is continually subjected to further validation as feedback is received from its field use. Presumably such information will be used to further strengthen and enhance its usefulness. It does not purport to be a quick and easy paper-and-pencil test but rather functions as a structured interview that is flexible in response to the client's answers. The interview results must be reviewed by a

counselor in conjunction with the client.

The MACH appears to combine a desired standardization and objectivity with the flexibility for valid assessment of clients with a variety of alcohol/drug problems. Furthermore, its time requirements are reasonable for the results provided. It would be desirable to have further validation of this instrument, but on the basis of the documentation provided, it appears to hold great promise for use with convicted drunken drivers.

3.2.10 Michigan Alcoholism Screening Test (MAST)

GENERAL	Developed by Melvin Selzer (1971) at the University of Michigan Available from M. Selzer, 6967 Paseo Laredo, La Jolla, CA 92037 10-15 min \$5 charge for a copy of the MAST; no fee for its use
DESCRIPTION	24 items (Y/N), self or counselor-administered (latter more valid) 3 categories: no drinking problem, possible problem, alcoholism Another instrument, NDP (Numerical Drinking Profile) includes the MAST along with personal data items
EVALUATION	Quick, inexpensive, easy to score and interpret High face validity may interfere with self-report accuracy [May be more appropriate for self-acknowledged alcoholics or for ranking respondents along a continuum of alcohol involvement/deterioration] High rate of false positives (33%, see Jacobson, 1983)
Norms	Based on initial validation sample (n=526) of hospitalized alcoholics, DWIs, Drunk & Disorderlies, drivers with excessive violations, and controls (Selzer, 1971); subsequent studies provide information on <u>female norms</u> (see Jacobson, 1983)
Reliability	<u>Internal consistency</u> : ranges between $r = 0.83$ and 0.95 (Mischke and Venneri, 1987)
Validity	<u>Concurrent</u> : $r = 0.65$ w/alcoholism counselor decisions (Mischke and Venneri, 1987) Significantly more repeat offenders than first offenders were identified as alcoholic by the MAST (Yoder and Moore, 1973) <u>Internal</u> : 71% of items significantly discriminated between problem and non-problem drinkers (Mischke and Venneri, 1987)

The MAST is one of the most widely used instruments for screening for alcohol problems and consequently there is considerable information available on

it. However, there are a number of problems with its use. First, it can be easily faked by anyone trying to look either "too good" or "too bad," and there are no validation scales included. Second, it was developed simply by "eyeballing" the way in which items differentiated between two groups of subjects, so that there are questions concerning the levels at which different items are weighted.

Like other screening instruments, it should be used only in conjunction with an interview by a counselor. Because of the obvious nature of the questions, there is some indication that this instrument may be useful in detecting persons who acknowledge having an alcohol problem, a use that may not be particularly applicable when dealing with convicted drunken drivers, especially young convicted drunken drivers. There are some data becoming available on female subjects, which may increase the instrument's versatility.

The ease and low cost of the MAST's administration, as well the number of studies in which it has been used, suggest that it may be a useful instrument so long as its limitations are recognized.

References

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3.2.11 Modified Criteria - National Council on Alcoholism Diagnosis (MOD-CRIT)

GENERAL	<p>NCA checklist of 86 symptoms reduced to 14 by Jacobson, 1978 Ralph G. Connor Alcohol Research Reference Files (CAARF) Center for Alcohol Studies, Rutgers University New Brunswick, NJ 08903</p> <p>Less than 1/2 hour to complete Cost of reproducing the questions</p>
DESCRIPTION	<p>Checklist of 35/26/14 (depending on version) observable symptoms usually presented as series of Y/N questions</p> <p>3 diagnostic levels reflecting degree of alcohol dependency: (1) classical, definite, obligatory, (2) probable, frequent, indicative, and (3) potential, possible, incidental</p> <p>Not intended as screening tool to differentiate alcoholic subtypes but as a standard list of signs and symptoms that characterize alcoholism</p>
EVALUATION	<p>Earlier version focused on late stages of illness, i.e., physical consequences of alcoholism; MOD-CRIT includes only psychological, behavioral, attitudinal symptoms</p> <p>Used in Wisconsin for all DWI mandatory assessments (Gurnack, 1984)</p> <p>Validity of earlier versions questioned (Pattison, 1980); MODCRIT-II only includes items with high discriminant validity (Jacobson, 1980)</p>
Norms	<p>Based on responses of hospitalized alcoholics, DWI offenders, and welfare recipients</p>
Reliability	<p>No information available</p>
Validity	<p>Validity data cited below appear in Jacobson's (1983) review of the MOD-CRIT</p> <p><u>Concurrent:</u> overall rate of agreement between MOD-CRIT-based and MAST-based decisions = 72-82%</p> <p>Significant correlation with quantity-frequency measure of alcohol consumption</p>

Overall classification errors (using counselor decisions as criterion) = 14% (6.5% false negatives, 7.5% false positives)

Internal: 14/35 items (40%) significantly discriminated between criterion groups and thus became the MODCRIT-II

The MODCRIT is named to reflect the fact that it is a modification of the National Council on Alcoholism's Criteria for the Diagnosis of Alcoholism. It may be more accurately referred to as the MODIFYINGCRIT in that it appears to be undergoing a series of modifications in light of new findings. Consequently it is difficult to know which version has been established as showing which findings. In fact, the Criteria initially numbered 86 but were subsequently reduced to a 35-item version and eventually to 14 items (MODCRIT-II). Thus the several versions of this instrument indicate a need for clarification in considering any evaluation conducted of it.

The validity data must be interpreted in light of the above information. Overall a comparison of MAST and MODCRIT shows a high correlation, namely, 0.81, but it is also pointed out that there is "a 72% overlap between MAST and MODCRIT-II in terms of the symptomatic behaviors described by the two measures" (Jacobson, 1983).

It should also be noted that the criteria are readily recognizable as addressing drinking problems, and consequently it would be easy for a respondent to "fake" socially acceptable responses. There do not appear to be any validating scales included. Hence, the validity of the results would be dependent upon the cooperation of the testee.

Apparently this instrument has been used for several years throughout Wisconsin in the mandatory psychological assessment of persons convicted of drunken driving. Because this instrument has been in use for so long and with such large populations in Wisconsin, and because the populations with which it has been used are precisely the kinds of drinkers of interest to this project, it appears that there may be the potential for someone to conduct a validation study using existing data. Test results could be related to the treatment received and the subsequent

outcome. Such a study would require time and money, but it may be possible to conduct it for considerably less and in less time than would be required if starting from scratch.

For purposes of immediate application, in the absence of definitive evaluation information, there does not appear to be sufficient information available on the MODCRIT to make it a useful instrument at this time.

References

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3.2.12 Mortimer-Filkins Questionnaire (Court Procedures for Identifying Problem Drinkers)

GENERAL	<p>Developed by R. Mortimer and L. Filkins, University of Michigan Highway Safety Research Institute, 1971 Available through the National Highway Traffic Safety Administration, Traffic Safety Programs, Office of Alcohol and State Programs (NTS-20) 400 Seventh St., N.W. Washington, D.C. 20590 (Attn: Stephen Hatos) 202-366-2729</p> <p>No cost for the instrument, manual, and scoring keys; user bears only the cost of reproducing the instrument 45-90 min</p>
DESCRIPTION	<p>58 item (T/F, Y/N, short answer) questionnaire plus interview; individual or group administration</p> <p>3 categories: (social drinker, presumptive problem drinker, problem drinker)</p> <p>Specifically designed for court assessment of DWI/DUI offenders; used extensively by many states for evaluation of drinking drivers</p>
EVALUATION	<p>Time consuming to administer; validity may be compromised when interview is omitted due to time constraints</p>
Norms	<p>Based on sample of alcoholic inpatients, outpatients, and incarcerated offenders and a sociodemographically heterogeneous sample of controls</p>
Reliability	<p><u>Internal consistency</u>: questionnaire- $r = 0.95$, interview- $r = 0.97$, total score- $r = 0.98$ (Mortimer et al., 1971)</p>
Validity	<p><u>Concurrent</u>: Initial validation study (192 problem drinkers vs. 297 controls) yielded 92% hits, 99% correct rejections; correlations between scores and criterion group membership: questionnaire- $r = 0.85$, interview- $r = 0.91$, total score- $r = 0.92$ (Mortimer et al., 1971)</p> <p><u>Concurrent</u>: Study of DWI recidivists vs. controls ($n=1800$) reported unacceptably high false positive (19%) and false negative (70%) rates (Wendling and Kolody, 1982)</p> <p><u>Concurrent</u>: $r = 0.46$ between test scores and counselor decisions (Mischke & Venneri, 1987)</p>

Concurrent: MF's criterion-related validity seems to depend on cutoff score used for problem drinker classification

Internal: 67% of items significantly discriminated between criterion groups in DWI sample (Mischke & Venneri, 1987)

This instrument, unlike most of those reviewed in this report, was developed and specifically designed for assessing DWI offenders. Developed in 1971, it has been available and used far more widely than most of the other instruments reviewed here, yet there are not a great deal of data available on it in the literature. Different studies report divergent findings in terms of its accuracy in differentiating between problem drinkers and controls, DWI recidivists and controls, or test scores and counselor judgments. There are no truthfulness scales to detect faking "good" or "bad."

While the instrument appears to be one of the most psychometrically sound of those we reviewed, its administration and scoring procedures are lengthy. It takes 45 to 90 minutes to administer, depending on whether the questionnaire is administered alone or in conjunction with the interview, as is intended. Many evaluation programs do not feel they can allocate so much time. On the other hand, there is no short, easy, accurate instrument available. For those reasons it may be worthwhile to consider using it, if it is used in conjunction with an interview by a qualified professional.

References

- Mischke, H.D. and Venneri, R.L. Reliability and validity of the MAST, Mortimer-Filkins Questionnaire and CAGE in DWI assessment. Journal of Studies on Alcohol, 1987, 48, 492-501.
- Mortimer, R.G., Filkins, L.D., and Lower, J.S. Court Procedures for Identifying Problem Drinkers: Final Report. DOT Contract FH-11-7615, Highway Safety Research Institute, University of Michigan, Ann Arbor, 1971.
- Wendling, A., and Kolody, B. Evaluation of the Mortimer-Filkins as a predictor of alcohol-impaired driving recidivism. Journal of Studies on Alcohol, 1982, 43, 751-766.

3.2.13 Substance Abuse Life Circumstances Evaluation (SALCE)

GENERAL	ADE, Inc., 1983, 1986 20 West Washington St. - Suite 12B, Clarkston, MI 48016 15 min (+ 5 min computer [IBM] analysis + 20 min interview) \$10/test (+ \$450 one-time administration fee)
DESCRIPTION	85 T/F and scaled items, self-administered 5 categories: (D1- no use; D2- use with no reported problems; D3- substance use with minimal problems; D4- substance use with problems; D5- substance use with physical or psychological symptoms of addiction) Combines former ADE (Automated Drinking Evaluation) instrument with a Life Circumstances rating
EVALUATION	Easily administered and scored (computerized evaluation) Includes measure of test-taking attitude Flags responses to critical items Includes treatment recommendations
Norms	Normed on DWI population; annual updating on demographics
Reliability	<u>Internal consistency:</u> $r = .93$
Validity	<u>Concurrent:</u> 61% perfect agreement (93% within one category) between SALCE assessment and assessments based on personal interview (by probation officers, ADETS staff, hospital staff and counselors [n = 2000+]) <u>Concurrent:</u> SALCE scores are generally consistent with MAST scores but SALCE identifies more problem drinkers

The initial version of the SALCE was adapted from the Criteria for the Diagnosis of Alcoholism developed by the Criteria Committee of the National Council on Alcoholism. It was not designed to differentiate alcoholics from non-alcoholics but rather to "characterize an individual's need to alter his/her use of alcohol or other drugs. More specifically, the test's function is to identify behavioral, attitudinal and clinical indicators of this need." It was developed

especially for use with DWI offenders and attempted "to assess drinking behavior on a continuum from 'nonproblem social drinking' to 'severe problem drinking' and/or 'alcohol addiction'."

The test is designed to be used in conjunction with an interview. The test developers report validation studies based on comparing the SALCE with professional assessments and with the Mortimer-Filkins. Using five assessment categories of drinking, they report a high level of agreement between the SALCE and the ratings by the professional assessors. Compared to the Mortimer-Filkins, the SALCE identifies a higher proportion of DWI offenders as problem drinkers rather than social or presumptive problem drinkers. Thus, the SALCE tends to classify the same respondents as having more serious drinking problems than does the Mortimer-Filkins.

Unfortunately there are no independently published evaluations of this instrument, so it is difficult to assess its usefulness. However, because it appears to be reasonably well constructed, includes a measure of response bias (truthfulness), and has the automated capability for updating norms specific to DWI offenders, it has considerable potential with this population.

3.3 Reviews of Instruments for Adolescents

The number of adolescent screening instruments available is very limited. Most of these are recently developed and generally focus on a holistic view of the adolescent. The MacAndrew Scale (MAC) of the MMPI, reviewed in the section on instruments for adults, has been successfully applied to adolescent populations. The reader should consult that review for information pertaining to its use with adolescents. Reviews of the five instruments listed below are presented in this section.

- Adolescent Alcohol Involvement Scale (AAIS)
- Adolescent Chemical Dependency Inventory (ACDI)
- Juvenile Automated Substance Abuse Evaluation (JASAE)
- Personal Experience Inventory (PEI)
- Personal Experience Screen Questionnaire (PESQ)

3.3.1 Adolescent Alcohol Involvement Scale (AAIS)

GENERAL	Developed by Mayer and Filstead (1979) Behavioral Consultants, Inc. 2604 Dempster St., Suite 307 Des Plaines, IL 60016 (312) 297-5740 10-15 minutes to administer Approximately \$3/test (volume discounts available)
DESCRIPTION	14 multiple-choice items with weighted scoring system Individual or group administration (written or oral) 3 categories: I-abstainer or light drinker; II-moderate drinker; III-heavy drinker
EVALUATION	Designed primarily as a research tool to identify alcohol misuse, not alcoholism
Norms	Sample of 3662 high school students in Chicago area (Mayer and Filstead, 1979)
Reliability	<u>Test-retest</u> : $r = 0.90$ (Mayer and Filstead, 1979)
Validity	<u>Concurrent</u> : Categorical classification corresponded with frequency of use measures for alcohol and other drugs (Wisniewski et al., 1985) <u>Concurrent</u> : Significant correlation with MacAndrew Scale, $r =$ 0.35 (Wisniewski et al., 1985) <u>Construct</u> : Items for inclusion were rated by adolescent alcoholism professionals according to how well they tapped into alcohol misuse (Mayer and Filstead, 1979) <u>Discriminant</u> : Total test scores discriminated between groups of alcoholic and normal adolescents (Mayer and Filstead, 1979)

This scale was developed primarily as a research tool rather than for use in diagnosing individuals for purposes of determining disposition. Administration of the instrument as a research tool is based on anonymous participation by young people who will in no way be affected by the results. However, the authors suggest that it can be used effectively as a screening tool to help discriminate between

adolescents whose involvement with alcohol merits intervention and those whose relationship with alcohol is negligible or moderate.

The instrument is dependent upon the young person's responding openly and truthfully. The items clearly concern one's alcohol use, and there are no items to measure the veracity with which a person is responding. While this approach may be satisfactory for collecting data anonymously, it may not be appropriate for use with convicted DWIs whose future disposition depends upon the responses provided.

Despite several criticisms raised by Moberg (1983), he reported that the instrument as a whole functions reasonably well for research purposes and, for example, adequately classified a group of adolescent inpatients in his study. However, a review of the AAIS by Riley and Klockars (1984) recommends that the instrument not be used in its present form. Specifically, they criticize the way in which graded response options are assumed to be ordered in terms of increasing problem severity and are weighted as such in the scoring system. Riley and Klockars asked a group of five clinicians, experts in substance abuse diagnosis and treatment, to rank order the response options and found that complete agreement was obtained on only one of the fourteen scale items. For most items, the intermediate response options produced the most disagreement among the judges. Given this questionable ordering (and weighting) of response options, the validity of AAIS scores may be compromised. Furthermore, Riley and Klockars suggest that Mayer and Filstead (1979) incorrectly applied the technique of factor analysis to their scale, leading them to make inappropriate assertions about the factor-loadings of the items, again, with implications for interpretation of scale scores.

Thus the construction of the AAIS does not hold up well under psychometric scrutiny. It appears that without major revisions in the scale, its use in DWI adolescent assessment programs cannot be recommended at this time. Nevertheless, it may be a reasonable instrument to use in a research setting for developing sorely needed data on this population.

References

- Mayer, J. and Filstead, W.J. The Adolescent Alcohol Involvement Scale: An instrument for measuring adolescents' use and misuse of alcohol. Journal of Studies on Alcohol, 1979, 40, 291-300.
- Moberg, D.P. Identifying Adolescents with Alcohol Problems: A Field Test of the Adolescent Alcohol Involvement Scale. Journal of Studies on Alcohol, 1983, 44, 701-721.
- Riley, K. and Klockars, A.J. A Critical Reexamination of the Adolescent Alcohol Involvement Scale. Journal of Studies on Alcohol, 1984, 45, 184-187.
- Wisniewski, N.M., Glenwick, D.S., and Graham, J.R. MacAndrew scale and sociodemographic characteristics of adolescent alcohol and drug use. Addictive Behaviors, 1985, 10, 55-67.

3.3.2 Adolescent Chemical Dependency Inventory (ACDI)

GENERAL	Lindeman & Scrimgeour, 1988 Behavior Data Systems, Ltd., P.O. Box 32938 Phoenix, AZ 85064
	20 min (+ 5 min scoring, automated <u>only</u> [IBM compatible]) \$11/test, volume discounts available
DESCRIPTION	104 items (T/F) Designed for adolescent substance abuse screening & evaluation
	5 independent scales, each with percentile score and risk category: I. Truthfulness; II. Alcohol; III. Drug; IV. Adjustment; V. Distress
EVALUATION	Still undergoing field testing with juvenile court population
Norms	Data are being collected to compare private school students with court-adjudicated adolescents
Reliability	Data are not yet available
Validity	<u>Concurrent</u> : Anecdotal reports from field testing sites suggest good correspondence between test outcome and staff assessments.

The information available on this instrument was extremely limited and was provided by the vendor. It is not possible on the basis of this information to make a judgment as to the potential usefulness of the ACDI in evaluating adolescents convicted of DWI.

At this time the ACDI cannot be recommended for making decisions about DWI adolescents, although it would be worthwhile to conduct an evaluation of the instrument for this purpose.

3.3.3 Juvenile Automated Substance Abuse Evaluation (JASAE)

GENERAL	ADE, Inc., 1987 20 W. Washington St. Suite 12B, Clarkston, MI 48016 15 min (+ 5 min computer [IBM] analysis + 20 min interview) \$10/test (+ \$450 one-time administration fee)
DESCRIPTION	85 T/F and scaled items, self-administered Based on SALCE instrument for adults Written at third/fourth grade reading level 5 categories: (D1- no use; D2- use with no reported problems; D3- substance use with minimal problems; D4- substance use with problems; D5- substance use with physical or psychological symptoms of addiction)
EVALUATION	Easily administered and scored (computerized evaluation) Includes measure of test-taking attitude Flags responses to critical items Includes treatment recommendations
Norms	High school students in Detroit area (n=250) and court and school-referred adolescents (criterion group)
Reliability	Data not yet available
Validity	Field test trials revealed that the test-taking attitude measure tends to be lower than in adults, probably reflecting less sophisticated defenses

The limited information available on the JASAE was that provided by the vendor. The instrument is based on the SALCE but designed for use with adolescents. It includes a measure of test-taking attitude, i.e., the extent to which the person is responding openly or attempting to present a favorable impression.

Because of the computerized administration of this instrument and the corresponding potential for compiling data, the JASAE may be an attractive candidate instrument for evaluation for use with adolescent DWIs.

3.3.4 Personal Experience Inventory (PEI)

GENERAL

Winters and Henly, 1987
Western Psychological Services, 12031 Wilshire Blvd.
Los Angeles, CA 90025 800-222-2690

Approximately \$7/test, volume discounts available (IBM or compatible or paper-and pencil format with mail-in computer scoring service)

50 minutes (it can be administered in two sittings for slow readers)

DESCRIPTION

300 items (Y/N and multiple-response distributed between:
-13 (chemical use) Problem Severity scales (grouped into Basic, Clinical, and Validity subscales) and
-19 Psychosocial scales (Personal Adjustment, Family and Peer Environment, Other Problems, Validity Indexes)

Items written at 6th grade reading level

Includes scales for measuring response bias (defensiveness, faking "bad")

Given in conjunction w/ADI-R (Adolescent Diagnostic Interview-Revised): a structured diagnostic interview organized around DSM-III (Diagnostic and Statistical Manual of Mental Disorders, 3rd Ed.) criteria for substance use disorders

EVALUATION

Developed in response to need for identification, assessment, and treatment of adolescents who are candidates for chemical dependency treatment

Norms

Standardization data are based on adolescents age 12-18 receiving chemical dependency evaluations or treatment

Reliability

Internal consistency coefficients are high, i.e.,

Problem Severity scales: $r = 0.80 - 0.97$

Psychosocial scales: $r = 0.74 - 0.90$

Test-retest: $r = 0.72 - 0.87$ (one-week and one-month intervals)
(Winters and Henly, 1987)

Validity

Concurrent: In a sample of New Jersey DUI youth offenders, PEI problem severity scales significantly discriminated between groups referred for education vs. treatment (Winters, 1988)

Concurrent: Significant correlations between the psychosocial scales and a drug use frequency index

Concurrent: PEI significantly discriminated between criterion groups: no service received/evaluated and not referred for chemical dependency treatment/evaluated and referred for treatment (Winters and Henly, 1987)

The PEI is based on males and females ages 12-18 in both urban and rural treatment centers but predominately urban, white, males age 15-17 in evaluation or treatment for chemical dependency, on a residential or outpatient basis. Items for the PEI were selected from a large pool based on their ability to discriminate between school and adolescent drug clinic populations. Such an item selection procedure ensures empirical validity in the instrument's construction.

It has been subjected to several validation efforts, using as criterion measures referral decisions, prior treatment for chemical dependency, a drug use frequency index, and another adolescent screening instrument (the Adolescent Alcohol Involvement Scale). Its design and psychometric quality are impressive, although its length may preclude its use in settings which have limited time for screening. A shorter, similar instrument for preliminary screening is available from the same developers, the PESQ (Personal Experience Screen Questionnaire), also reviewed in this section. Although more data are needed on the application of the PEI with adolescent DWI offenders, thus far it appears very promising for use with this population.

References

Winters, K.C. Use of the PEI in a Sample of DUI Offenders. Unpublished manuscript, 1988.

Winters, K.C., and Henly, G.A. Advances in the Assessment of Chemical Dependency: Development of a Chemical Use Problem Severity Scale. Psychology of Addictive Behaviors, 1987, 1, 146-153.

3.3.5 Personal Experience Screen Questionnaire (PESQ)

GENERAL	Developed by Winters, 1988 Adolescent Assessment Project 907 West Arlington, St. Paul, MN 55117 (612) 647-4625 Approximately \$2/test, volume discounts available 15 minutes to administer and score
DESCRIPTION	38 items (Y/N and multiple-response) covering problem severity, a drug use frequency index, other mental/behavioral problems and truthfulness (faking-good, faking bad) Individual or group administration Items were derived from same item pool as for the PEI (Personal Experience Inventory) but were not included in the PEI
EVALUATION	Developed to screen or pre-assess teenagers for chemical dependency; can be followed up with clinical interviews or more comprehensive testing with the PEI
Norms	Standardization data are based on adolescents age 12-18 receiving chemical dependency evaluations or treatment
Reliability	<u>Internal consistency</u> : $r = 0.92$
Validity	<u>Concurrent</u> : Significant correlations between PESQ scores and problem severity scores of PEI and to treatment referral decisions and diagnostic decisions Concurrent validity is currently being evaluated in a large sample of juvenile offenders in Minnesota

The PESQ was developed by the Minnesota Adolescent Chemical Dependency Project to fill the need for a brief screening instrument for adolescents suspected of having substance abuse problems. It is shorter and less comprehensive than the PEI, and is intended as a "pre-assessment" or preliminary screen which can be followed up, if warranted, by the more extensive assessment provided by the PEI. The 38 items on the PESQ were selected from the same item pool that was used to generate PEI items but were excluded from the PEI for being redundant with items already selected for inclusion.

The PESQ was developed and normed on adolescent chemical dependency, juvenile offender, and school samples. The scale addresses history of drug use, other teenage problems, and provides measures of test-taking truthfulness (faking good and faking bad). PESQ scores correlate well with the problem severity scales of the PEI, whose validity has been demonstrated, and with counselor decisions regarding diagnosis and treatment referral. The developers are completing further validation efforts with DSM-III-R (Diagnostic and Statistical Manual of Mental Disorders, 3rd Ed., revised) diagnostic criteria and with independent ratings of mental and behavioral functioning.

Pending favorable validation studies by independent groups, the PESQ may be a very appropriate and versatile instrument for assessing youthful drunken drivers. Because it is quick to administer and score by hand (paper-and pencil format) it is adaptable to high-volume settings, in which administration of the PEI is too time-intensive and yet can still be an option for a more comprehensive second-stage assessment. Since its administration and scoring do not depend on computer equipment, it can also be useful in low-volume settings that do not have those capital resources.

3.4 Evaluation of Assessment Instruments

Based on the information gathered from the literature and other pertinent sources, and the narrative reviews of each test and its supporting materials, all of the instruments were rated on a scale from 1 (poor) to 10 (excellent). In addition to using the information gathered in the effort described above, the ratings were developed from the authors' judgments based on their understanding of the nature and function of DWI assessments.

The ratings are grouped into the following categories:

Poor

CASAS

LAI

MODCRIT

New Hopkins 20-Questions Test

Average

AUI

ASI

CAGE

MACH

MAST

Mortimer-Filkins

SALCE

Good

DRI

MAC Scale (excerpted from whole MMPI)

Several issues emerged in this evaluation of the instruments and are discussed below. First, many of the instruments attempt to classify respondents using a unitary disease model of alcoholism. As mentioned earlier, such a view is seriously questioned in contemporary alcohol research, in favor of a multidimensional view of alcoholism which suggests that there may be several

qualitatively different varieties of the disease. Given this view, a test which produces a binary classification based on a single score is likely to be very limited in its ability to suggest appropriate treatment alternatives for an individual. Clearly, the value of diagnosis hinges on its ability to specify a treatment approach. However, an instrument designed to tap into several significant problem areas through the use of multiple scales (e.g., alcohol involvement and current stressors) will ultimately do a better job of classifying individuals for treatment purposes, regardless of whether a unitary or multidimensional model of alcoholism is assumed.

A second issue concerns the normative samples by which instruments were standardized or validated. Ideally test norms are derived from a sample of people who are representative of the population of interest, in this case the DWI offender. However, there does not appear to be a "typical" DWI offender; persons convicted of drunken driving comprise a broad spectrum of problem drinker types. Although some of the tests were normed on DWI offenders, norms for many of the instruments reviewed were based on populations of hospitalized or diagnosed alcoholics, who are likely to represent only the most severe end of the continuum of drinkers. Because these alcoholic inpatients are not representative of the broad spectrum of persons arrested for DWI, norms based on their scores may have limited utility with such a population. Furthermore, norms for some of the more established tests were derived with adult, white, male samples which may have characterized the population of drunk drivers several decades ago. These norms do not consider the increasing proportions of women and minorities in the population of drinking drivers.

There were several concerns about validity, stemming from the absence of a good criterion measure. The criterion measures typically used to validate the instruments we reviewed were counselor diagnoses of an alcohol problem or other instruments designed to measure the extent of such a problem. As criterion measures, presumably independent and objective measures of a drinking problem, these leave much to be desired. In the first case, the clinical literature is rife with

controversies about the validity of clinical diagnosis. Clinicians frequently disagree among themselves on a particular diagnosis, raising questions about their accuracy and their superiority to statistically-based decisions, e.g., those based on test scores (Murphy and Davidshofer, 1988).

In the second case, it is not clear that the tests typically used to validate new alcohol problem instruments are all that soundly validated themselves. These instruments may have been useful in their time but may not be keeping pace with changing theoretical conceptions of substance abuse problems nor with changes in population characteristics. Either factor could markedly affect a test's adequacy as a criterion measure for an alcohol problem. Although defining another test as a criterion is often a convenient way to validate a new instrument, its limitations must be recognized.

In this context, some of the tests appeared to have good face validity, but had not been adequately (i.e., empirically) validated against a criterion variable. Face validity refers to the degree to which test items appear to be measuring the behavior of interest. It may be important for establishing rapport with the respondent who could conceivably become impatient and annoyed with questions which seem to have little relationship to the purpose of the assessment. However, face validity can also be a disadvantage by arousing defensiveness or denial in the respondent when the questions pertain to sensitive or socially unacceptable behavior. For example, if a question obviously is directed at alcohol abuse, the respondent may lie to obtain a more socially acceptable score.

Incorporating a truthfulness index in the test to measure the veracity of responding is a partial solution to the problem but still does not address the instrument's empirical validity, e.g., its correspondence with an independent measure of the behavior. Many assessors using instruments with good face validity seem to be satisfied with them because they believe that they are asking the appropriate questions, i.e., those they would ask in their interview. However, a good test should be judged by its demonstration of empirical validity and not rely on face validity except to the extent it is necessary to establish credibility and rapport

with the respondent.

It had been hoped that some of the instruments would have demonstrated predictive validity, e.g., the ability to identify those at high risk of recidivating. Unfortunately, there are few data showing that any of the instruments have good predictive validity. A few studies with regard to predictive validity have been done using the Mortimer-Filkins (Wendling and Kolody, 1982; Struckman-Johnson et al., 1976), and the MAC Scale (Wisniewski et al., 1985; Hoffman et al., 1974). However, interpretation of their results is problematic. It is misleading to obtain a measure of predictive validity from a group of individuals classified by an instrument who are then exposed to some educational or therapeutic intervention which may affect the behavior of interest, namely DWI recidivism. Ideally, the predictive validity of these tests should be determined with people to whom the tests have been administered but have not received any subsequent intervention.

A final problem was encountered in a few cases in which an instrument had undergone a series of modifications. It was sometimes difficult to discern which iteration of the instrument was employed for a particular validation effort. While it is commendable that these test developers have made changes to improve their products, it does not obviate the need to validate these modified versions and present those data clearly.

3.5 Considerations in Instrument Selection

A jurisdiction preparing to change or add to their cadre of acceptable instruments will want to consider several factors. The first issue in selecting one or more instruments is the state's philosophy with regard to their role in the drinking driving problem. That is, do they wish to address the larger problem of substance abuse by intervening with all convicted DWIs, under the assumption that many of these persons will be in the early stages of an alcohol or drug problem? Alternatively, is the state's primary concern to reduce drinking driving through more immediate and direct measures, with less of a priority on rehabilitation?

The state's philosophy will determine whether the processing of DWI

offenders will be rehabilitative or punitive in nature, and this approach will have implications for how the assessment is conducted. If the goal is rehabilitation, then a more thorough assessment with an instrument which is sensitive to an individual's dependency or abuse potential, as well as their current life circumstances, is appropriate. If intervention is not the goal, then an instrument which will screen for driver risk and detect only the most obvious cases of an alcohol problem, is more appropriate.

Once the state's philosophy is resolved, the remaining factors for a jurisdiction to consider are practical in nature. Special characteristics of the clients may dictate the choice of an instrument which can accommodate special needs. For example, low reading level may necessitate use of an instrument which can be orally administered by a counselor. In areas which are heavily populated with persons for whom English is a second language, the availability of a foreign language version of an instrument is important.

The cost of the instrument and any supporting materials or equipment which it requires will be an important factor in its selection. Many jurisdictions will want to adopt one of the presently available automated instruments which afford great savings in personnel time, computerized interpretations, and automated data collection. An agency which processes a large number of offenders can usually justify the investment for computer hardware and software; however, it may not be cost-effective for a low-volume agency to do so. The latter may then choose from among several paper-and-pencil instruments, some of which offer scoring services in addition to manual scoring, options that will depend, again, on budgetary constraints.

Some instruments require more extensive training in their administration, scoring, and interpretation. Other tests require a degree of sophistication on the part of the assessor, and their proper use assumes that interpretations will be made by persons with fairly extensive clinical training and experience, often in conjunction with interview data. In many jurisdictions, it will simply not be the case that assessments are conducted by such highly qualified professionals. Thus it is

extremely important that an instrument be selected whose implementation does not exceed the professional qualifications of the evaluators using it, and that instruments which require any special training be implemented only when such training has been provided.

Finally, the jurisdiction will want to consider the psychometric quality of the test, and whether there are data from validation studies conducted independent of the vendor. Data on reliability, validity, and norms reported here may be consulted. It may even be possible for an agency to conduct its own informal validation of an instrument, particularly if part of the assessment procedure is automated, comparing test outcomes against other information to which they have access. Depending on the nature of the offenders they commonly evaluate, they will want to consider how important it is for the test to have a truthfulness measure, and whether the instrument detects differences across a broad spectrum of DWIs or makes finer discriminations at one end of the spectrum.

In order to facilitate the selection of an instrument, two reference matrices were prepared which include summary information for both adult and adolescent assessment instruments (see Figures 1 and 2). These matrices include such information as time to administer, cost, special features, etc., and provide a quick reference guide to the instruments.

	ASI	AUI	CAGE	CASAS	DRI	Hopkins 20-Questions	LAI	MAC Scale	MACH	MAST	MOD-CRIT	Mortimer- Fikins	SALCE
Time to Administer/Score (min)	25-40	35-60	5-10	25-35	20-30	15	60-80	90-100	30-40	10-15	20-30	45-90	20-40
Cost	Personnel time	~ \$6	< \$1	~ \$2	~ \$10	Reproducing instrument	Reproducing instrument	< \$1	\$5	Reproducing instrument	Reproducing instrument	Reproducing instrument	\$10 + \$450 admin. fee
Special Equipment	----	----	----	----	IBM or compatible	----	----	----	IBM or compatible	----	----	Scoring keys	IBM or compatible
Diagnostic Categories	Profile of 6 areas	24 scale profile	2	5	5 scale profile	4	7 factor risk indexes	2	Multiple criteria	3	2	3	5
Special Training	Minimal	No	No	No	No	No	Minimal	No	No	No	No	No	No
Validation Group(s)	Substance abusers	Alcohol inpatients, outpatients	DWIs, alc inpatients	Alcohol inpatients, college students	DWIs	None	DWIs	Alcohol inpatients, outpatients, college students	Sustance abuse outpatients	Alcohol inpatients, DWIs	Alcohol inpatients, DWIs, welfare recipients	Alcohol inpatients, outpatients inmates	Alcohol inpatients, outpatients, DWIs
Suitable for Adolescents/Females	16+/Yes	16+/Yes	No/No	Yes/Yes	Yes/Yes	No/Yes	No/Yes	Yes/Yes	Yes/Yes	No/Yes	No/Yes	No/Yes	No/Yes
Interpretive Summary	No	Yes	No	Profile graphs scale scores	Yes	No	No	No	Yes	No	No	No	Yes
Special Features	treatment recommend- ations, Tx progress assessment	scoring by hand, mail-in, or automated	quick screen	measures of test-taking defensiveness; consistency; normed for adolescents	truth scale, Spanish version			scoring by hand, mail-in, or automated	interactive interview, detailed summary				measure of test-taking attitude, Tx recom- mendations

Figure 1. Assessment instruments for adults.

7/1

	AAIS	ACDI	JASAE	PEI	PESQ
Time to Administer/Score (min)	10-15	20-25	15-20	50-60	15-20
Cost	~\$3	~\$10	\$10 + \$450 admin fee	~\$7	~\$2
Special Equipment	None	IBM compatible	IBM compatible	IBM compatible	IBM compatible
Diagnostic Categories	3	5 scales- risk levels	5	Scale profiles	2
Special Training	No	No	No	No	No
Validation Group(s)	High school students (Chicago)	Adolescents in juvenile courts	High school students (Detroit), court- referred adolescents	High school students, adol's in chemical dependency programs	High school students, adol's in chemical dependency programs
Suitable for Females	Yes	Yes	Yes	Yes	Yes
Interpretive Summary	No	Yes	Yes	Yes	Yes
Special Features	mail-in scoring, teleproces- ing	automated administr/ scoring/ truth scale	automated administr/ scoring/ truth scale	automated administr/ scoring/ truth scale	automated administr/ scoring/ truth scale

Figure 2. Assessment instruments for adolescents.

4. REQUIREMENTS AND NEEDS OF THE COURTS AFFECTING INSTRUMENT SELECTION

In addition to reviewing specific substance abuse assessment instruments, project activity included a review of the operational requirements and needs of the courts, with regards to problem drinking assessments of DWI offenders. A variety of factors influence the particular instruments selected including the state's philosophy regarding assessment and treatment, personnel training capabilities, time available for assessment, whether or not the assessor is also the treatment provider, funds available for assessments, and the availability of special equipment for scoring some of the instruments.

In order to obtain a reasonable perspective on the operational requirements and the needs of the courts in the United States, as well as an understanding of the procedures used in the actual assessment of DWI offenders, HSRC contacted experts in the area of DWI assessments, examined the results of a national survey of substance abuse assessment coordinators, and conducted site visits to several states using instruments believed to have the greatest potential in terms of diagnostic accuracy and/or the use of innovative administration and scoring techniques. The end product of this activity was an appraisal of the extent to which available instruments meet the needs of the courts as well as the total DWI control and treatment community.

4.1 National Survey

As part of a North Carolina Department of Human Resources project, HSRC queried all states to more clearly determine DWI assessment procedures across the nation. Through the cooperation of North Carolina's statewide DWI coordinator, state assessment coordinators throughout the United States were contacted by written survey (Appendix A). The survey included questions to ascertain what substance abuse tests were being used and in what types of settings, whether or not the instruments had been locally modified, who was required to have an

assessment and how much they were charged, and whether any special procedures were used for dealing with adolescents. Those states not responding to our written survey were contacted by telephone to obtain their responses to the survey. Eventually responses from 49 states were obtained, and two states submitted reports from jurisdictions within their states which handled assessments differently. A copy of the summary of responses appears in Appendix B.

The survey presents an overview of what is occurring on a national level as of October 1987. At that time, several states were in the process of altering their assessment procedures, and many of them were considering the use of automated assessment techniques. Similarly, although few were using special tests for assessing adolescents, identification of suitable adolescent instruments was repeatedly mentioned as an area of growing concern and interest.

The findings of this survey were used not only to help to identify substance abuse screening instruments, but also to gain a better understanding of the operational requirements and constraints affecting their use in the field.

4.2 Summaries of Site Visits

The national survey enabled the identification of states that were using instruments and methods for conducting assessments that might have applicability to this project. Information obtained from this survey about potential sites to visit was combined with information obtained from experts in the area of substance abuse assessments. In consultation with NHTSA, a final list of potential sites was discussed. A decision was made to visit Florida, Alaska, Arizona, and Minnesota. In addition, information from North Carolina was available and is included in this report. In order to assure uniformity in the collection of information, a protocol for site visits was developed (see Appendix C).

In general, site visits were coordinated through the state level contact who responded to the questionnaire. One or two communities within the state were identified as being representative or for having model programs. Arrangements were made to visit those communities and talk primarily with persons in court and

assessment administration, and with substance abuse evaluators.

Following are summaries of project site visits. As might be expected, each state differed in its guiding philosophy and procedures for substance abuse assessments.

4.2.1 Alaska Assessment Procedures

Introduction. The majority of the Alaskan population is concentrated in a few cities (most notably Anchorage, Fairbanks and Juneau) with the remaining populace scattered across a vast area. This creates logistical difficulties in providing of government-sponsored services, including DWI assessment, to the entire population. To examine DWI assessment procedures in Alaska, project personnel visited Anchorage and interviewed persons involved in the assessment process. Anchorage was chosen for a number of reasons. It handles approximately half of Alaska's annual DWI case load; it has a model computerized DWI case-tracking system in its assessment office (the Alcohol Safety Action Program or ASAP); and its ASAP office provides training and certification to the 17 other ASAP offices in the state and thus could give a good review of procedures and needs statewide.

Anchorage Procedures. The Anchorage ASAP provides substance abuse screening, counseling, treatment monitoring, and other services for misdemeanants, primarily district court cases. An agency of the Office of Alcoholism and Alcohol Abuse within the Department of Health and Social Services, the Anchorage office is physically housed in space provided by the court system and, in fact, characterize their role as "the neutral link between the court and the treatment community."

DWI offenders are referred to the ASAP by the courts upon conviction (pretrial assessments are rare), and they are scheduled for a session with a probation officer who conducts the assessment. The probation officers have been trained in the proper administration of the Mortimer-Filkins Questionnaire and Interview and in other ASAP policies and procedures. Clients complete the Mortimer-Filkins Questionnaire and are administered the interview. These are scored and, in conjunction with information on prior DWI behavior and BACs obtained from

arrest records, the DWI offenders are classified into one of the following four categories: problem drinker, presumptive problem drinker, non-problem drinker, and classification pending. In general, if this process results in a categorization of a DWI offender as a non-problem drinker, that person is enrolled in an Alcohol Information School. If the person is classified as a presumptive problem drinker or problem drinker, the offender is referred to a treatment agency for a more thorough clinical evaluation before a specific treatment regimen is prescribed.

Adolescents less than 18 years old are not screened in this way but rather are referred to a treatment agency for evaluation and fall into the "classification pending" category. Such a classification may also be used with persons scoring within the non-problem classification but who, in the past five years, had attended an Alcohol Information School or had been classified previously as a problem drinker.

Offenders within each classification are presented with the appropriate list of service providers and may choose from among them. An initial appointment is set up and their record is put into a computerized tracking system which is used to monitor compliance with subsequent evaluation and treatment. Treatment agencies provide monthly reports on each client to the ASAP office. Warning letters and, if necessary, bench warrants for noncompliance are generated by computer, checked by a probation officer and submitted to the courts for signature and mailing. The computerized tracking system has greatly enhanced the timeliness of such follow-up actions and, in turn, compliance with treatment.

Summary. DWI alcohol problem assessments are conducted as an initial screening of DWI convictees in Alaska on a post-conviction basis, with pre-trial assessments a rarity. A combination of Mortimer-Filkins scores, prior DWI behavior and BAC at time of arrest is used to classify these persons. The ASAP program monitors compliance and informs the court of noncompliance. Otherwise the court is not made aware of the assessment results.

4.2.2 Arizona Assessment Procedures

Introduction. Phoenix, Arizona was selected for a site visit because it is a

relatively large jurisdiction which makes extensive use of one of the newer computerized instruments, the Driver Risk Inventory (DRI), in its assessment of convicted DWI offenders. The Phoenix Municipal Court Substance Abuse Screening Service handles a large percentage of the state's DWI cases and thus processes a large number of cases annually. Persons interviewed included personnel from the Arizona Department of Health Services, the Phoenix Municipal Court System, and treatment providers.

Arizona Procedures. In the state of Arizona, persons convicted of DWI (26,000 in 1987) are ordered during sentencing to have an assessment and comply with its recommendations. Each court jurisdiction has its own screening component, essentially a social service of the court, which conducts an evaluation and makes a referral to education or treatment (or some combination of the two) depending on the extent of the individual's substance abuse problem. Certified counselors use test results from the DRI, MAST, or Mortimer-Filkins in conjunction with a face-to-face interview to develop their evaluation of the individual's substance abuse problem and determine to which of three general treatment tracks to refer the person:

- Level 1: referral to an educational program (8-12 hours)
- Level 2: referral to education and treatment (18-20 hours)
- Level 3: referral to more comprehensive treatment -- outpatient or residential program, individual counseling, AA

The screening agency also has responsibility for monitoring the offender's compliance with the program to which they have been referred. If they do not attend the classes or treatment sessions, a report is sent to the court which issues a letter ("Order to Show Cause") to the individual. If there is no response to the letter, the court issues a warrant and an amended order.

When the offender is sentenced to jail time (for example, a second offense within 5 years carries a mandatory 60-day jail term which is often served on weekends) the screening agency follows up after the jail term has been completed to work out the logistics of the referral. It is considered unrealistic to expect the

offender to participate in an educational or treatment program concurrently with serving jail time, because the majority of facilities do not have in-house programs, and compliance with the jail sanction may force the offender to be noncompliant with the treatment regimen.

By court order, offenders must bear the cost of the assessment as well as the reasonable costs of the education or treatment program to which they are referred. The cost of an initial assessment currently ranges from \$15-\$100. Educational programs range from \$100-\$200. Treatment costs vary widely, depending on the mode and duration. Although the state has directed that a portion of the DWI fines be set aside in a fund to assist indigent offenders in meeting their treatment needs, the monies have not accrued as projected due to judges' discretionary reduction of fines imposed at the time of sentencing.

In the high-volume Phoenix setting they have the advantage of automating parts of the assessment procedure and maintaining an information database on clients. A \$75 fee covers the screening/assessment (structured interview with illiterate clients), referral, and follow-up. For assessment of the offender's substance abuse problem they administer the DRI in paper-and-pencil format and conduct a 30-45 minute face-to-face interview. After completing the DRI, a computer operator keys in responses and generates the DRI profile within minutes. The screener then takes these results into the interview and reviews the profile, including any problem indicators, and the overall results with the offender. The interview is thus an opportunity to clarify the test results, receive input and additional information from the offender, and work out the logistics of the program assignment.

It was the consensus of the three substance abuse counselors interviewed that the DRI has enhanced the screening process for DWI offenders. It covers the essential areas for a substance abuse problem assessment that are not always addressed by other instruments, such as use of drugs other than alcohol, driver risk, and current stress/coping ability. They consider the built-in truthfulness scale, which adjusts raw scale scores, to be necessary in dealing with the DWI offender who may be prone to engage in denial of substance abuse (or other psychological)

problems. Additionally, the use of an automated instrument affords a time savings to the evaluator. The evaluator's time is viewed as their most valuable resource, due to the high volume of cases in their jurisdictions.

All of the substance abuse professionals interviewed in Phoenix had formerly used the Mortimer-Filkins but now preferred the DRI for this screening function because of its relative ease of use, its sensitivity to substances of abuse other than alcohol, the truthfulness scale and the ability to regularly norm it to the population being assessed. It should be noted that the developer of the DRI is located in Phoenix and has readily provided support as they have encountered problems with its use.

As in many other jurisdictions the assessment procedures described above constitute an initial screening for substance abuse problems among DWI convictees. Those for whom no problems are identified are referred to an educational setting and receive no further problem assessment as a result of that conviction. Persons identified as Level 2 or Level 3 who are referred to treatment receive a more extensive evaluation at intake by the treatment agency personnel whereupon a specific treatment program is developed. The screening agency retains the responsibility to monitor compliance with the prescribed treatment regimen and reports non-compliance to the courts.

Adolescents arrested for DWI are remanded into the juvenile court system, and handled as minors. Juveniles are only screened when special problems are reported by probation officers, and no special adolescent instruments are used.

Summary In Arizona, substance abuse problem assessments for DWI offenders are conducted after conviction and, in the case of those receiving active jail terms, after the jail time has been served. Results from a screening instrument (DRI, MAST, or Mortimer-Filkins) are combined with a face-to-face interview in determining to which of three levels in the state classification system the offender will be assigned. Phoenix programs have recently begun extensive use of the DRI and have found it very useful in meeting their needs in providing assessments to a large number of DWI offenders. If the person is referred to other than the least

intensive educational program, they receive a further, in-depth evaluation by a treatment professional. The assessments are conducted post-conviction and post-sentencing so the judiciary is rarely made aware of the results, and they are not used in determining sentence.

4.2.3 Florida Assessment Procedures

Introduction. Two locations in Florida (Pasco County and Orlando) were selected for site visits. They represent jurisdictions of varying size (Pasco is the smaller of the two) in a state where many of the assessments are conducted prior to trial on the DUI charge. Additionally, both jurisdictions were participating in a validation study comparing results from the Driver Risk Inventory (DRI) with assessor's determinations based on their current assessment procedures.

Florida Procedures. In Florida, many DUI offenders attend an alcohol safety school and receive an alcohol problem assessment prior to the final court disposition of their case. Because completion of the alcohol safety school is a requirement for hardship licenses to be issued to first offenders, many wish to receive such privileges immediately upon conviction. In many jurisdictions DUI offenders are advised of this requirement at arraignment. Additionally, most DUI defense attorneys counsel their clients on this regard.

In both the jurisdictions visited, the DUI assessment program is operated by a private not-for-profit organization that also operates the DUI school but does not provide more extensive treatment services.

In Pasco County, DUI assessments are conducted on a walk-in basis. DUI offenders are advised of the DUI school services at arraignment, and when they come to the facility to register for the school, the assessment services are provided. Offenders complete a 4-page psychosocial questionnaire, the Heilmann (a short questionnaire similar to the MAST), and write a short narrative account of the 12 hours preceding arrest. After reviewing these items, an evaluator conducts a face-to-face interview with the offender, covering nine different areas (i.e., family, education, employment, physical and mental health), inquiring into both historical and current circumstances. The Mortimer-Filkins questionnaire (not interview) is

administered orally during the interview.

The complete evaluation takes 1 to 1-1/2 hours and results in a decision by the evaluator to place the offender in one of two educational tracks and/or refer to treatment. The judgment is formulated from a point score summary of the evaluation including test scores, physical description, BAC, prior alcohol-related arrests, etc. First offenders are typically placed in the "A" track, which provides 12 hours of substance abuse education, while multiple offenders are automatically placed in the more advanced "B" track (24 hours) and referred to treatment for a minimum period of three months. The vast majority of treatment referrals are to outpatient facilities.

The evaluators in Pasco County report that they do not rely heavily on the Mortimer-Filkins interview, except for the information they obtain from the family history and tolerance questions and questions that serve as depressive indicators.

In the Orlando program, offenders complete an enrollment packet containing a psychosocial questionnaire, the Mortimer-Filkins and the MAST. Typically they enter the class within 10 days of registration. The assessment is scheduled at enrollment and may be completed at a later date but before they finish the class.

The face-to-face interview portion of the evaluation takes an hour and relies on the Mortimer-Filkins (interview) as a guide to areas for questioning. The evaluator may refer to the offender's earlier responses to the MAST as a "lie scale," and hence a further springboard for questioning.

Since offenders often begin classes before the evaluations have been completed, placement in the "A" or "B" educational track is based solely on whether they are first or multiple offenders, respectively. The 12-hour "A" track for first offenders follows essentially a lecture format while the 21-hour "B" track for multiple offenders is designed to be more experientially based.

Mandatory referral to treatment occurs for multiple offenders, those with a BAC ≥ 0.20 , and anyone who comes to class under the influence. Their policy is to refer to the least restrictive treatment alternative, hence the majority are outpatient referrals. An appointment with the treatment agency is made immediately upon

disclosure of the results of the evaluation.

Orlando program officials, in part, found the Mortimer-Filkins questionnaire and interview useful because of their ease of administration, though they did see a need for updating the supporting information on the instrument. Personnel in both programs felt strongly that the face-to-face interviews and resulting impressions of the evaluator were important and essential components of a good assessment. They also felt that since assessment may be seen as the first step in intervention, that it is desirable for evaluators to possess some counseling skills as well. In both programs, even though the assessments are generally done before final court disposition, the assessment results are not typically used in sentencing. As in other jurisdictions, persons referred to treatment receive a more thorough evaluation at intake. Both programs reported that those evaluations were generally in agreement with initial results.

Both programs were at the point of concluding data collection for a validation study of the DRI against the results obtained from their standard assessment procedures. Though the results of that study were not yet available, the overall reaction to the DRI was generally negative in both programs. Their major criticisms were poor wording of questions, computer operator errors in keying responses, and their perception of discrepancies between DRI results and evaluator impressions. Additionally, it was clear that the potential for a diminished role for evaluators in the assessment process was viewed by both programs as a drawback to the use of the DRI. That is, with its automated narrative output, it is possible that some jurisdictions might choose to use it without additional input from a face-to-face interview.

Adolescents convicted of DUI in Florida are subject to the same assessment procedures as adults. This situation is currently under review in Florida.

Summary. In Florida, assessments are generally conducted pre-trial, particularly for first offenders. This is not necessarily done to assist the judge in determining sentence but rather to qualify the offender for a business license immediately upon conviction. First offenders are automatically arraigned to a 12

hour course, and multiple offenders a 24 hour course. Based on an initial assessment incorporating the Mortimer-Filkins, both categories of offenders may be referred to more intensive treatment, though that happens much more frequently with multiple offenders than first offenders. Upon treatment intake, a more thorough substance abuse evaluation is conducted.

4.2.4 Minnesota Assessment Procedures

Introduction. Minnesota has an established and extensive infrastructure of alcohol problem assessment and treatment resources. All DWI convictees as well as other criminal offenders whose offenses involved alcohol are required to receive alcohol problem screening. The Minnesota legislature and Department of Human Services have established specific rules and guidelines for alcohol problem screening and assessments. This was partially in response to a growing concern about increased costs incurred in providing alcohol problem treatment services in both the public and private sector.

Minnesota Guidelines. In Minnesota, persons receiving DWI assessments, in general, go through a two-stage process. State law calls for an alcohol problem screening for persons convicted of DWI or another offense arising out of a DWI arrest. This screening may be done by persons with knowledge and skills in alcohol problem screening and deemed qualified by the court. Generally screening is provided by court probation officers with some training in the area of alcohol problem screening and by persons conducting driver improvement clinics (again with skills in the area). If the screening results in a determination that the person has a chemical dependency problem, the law requires that the DWI offender undergo a comprehensive chemical use assessment by a more highly qualified assessor to confirm that a substance abuse problem exists and determine the level of treatment required. These assessors are to gather and use, at a minimum, certain specific items of information specified under Department of Human Services regulations in conducting their assessment and they are then to apply detailed criteria in determining the appropriate level of treatment. These items and criteria are spelled out in a document commonly called Rule 25. If the original screening

was done by a qualified assessor according to Rule 25 procedures, an additional assessment is not required.

Rule 25 does not specify that a specific instrument be used but rather specifies that the following types of information be gathered through a personal interview, contacts with collaterals (relatives, friends, work associates) and review of official records:

- a history of the client's chemical use
- client demographics
- current and historical family status
- history of previous assessments and treatment
- physical status in terms of disorders which may be related to chemical abuse
- history of arrests and legal interventions associated with chemical use
- ability to become qualified for, obtain and perform employment
- ability to function in an educational setting.

Based on information gathered as above, and any additional information, the assessor is to determine the level of the individual's chemical use problem as either 0 (no apparent problem), 1 (at-risk), 2 (chemical abuse) or 3 (chemical dependency). In turn, further criteria are used to determine the appropriate level of care (outpatient treatment, residential treatment, residential treatment in a hospital setting, extended care or halfway house). With rare exceptions the assessments are to be conducted by persons who would not potentially realize any financial gain from the resultant provision of treatment.

The state standards do not specify the use of any specific assessment instrument as long as at least the minimum data are collected. A computer assisted instrument, known as the Minnesota Alcohol Chemical Health (MACH), incorporates the Rule 25 requirements as well as elements of several standard instruments

Adolescents arrested for DWI in Minnesota are arraigned in juvenile court. When convicted, they are subject to the same assessment requirements as adults. The Minnesota DMV treats all licensed individuals, including adolescents, as adults and receives a copy of their complete records.

Hennepin County Procedures. In Hennepin County the initial screening is conducted by court probation officers after conviction and before sentencing. Screening is usually done on the day of conviction. There are several probation officers and they receive screening assignments on a rotating basis, independent of either judge or defendant. Many of the probation officers in Hennepin County have received the training required to qualify as assessors under Rule 25 and could technically comply with Rule 25. However, because complying with all of the Rule 25 provisions is time consuming and most initial screens must be conducted within one hour, they rarely conduct a full scale rule 25 assessment. Within the division there is variation in the assessment instruments used. Most use the MAST because it takes little time to administer and score, others use the MACH, Jellinek or Heilmann. The probation officers attempt to conduct their screens in approximately 30 minutes and attempt to contact collaterals. Most provide a brief written report to the judge for use in sentencing. The judges report that the screening results are helpful to them in their sentencing decisions.

If the probation officer identifies an alcohol problem which may require treatment, the defendant is sentenced and required to submit to an assessment by the county Department of Human Services. This assessment is scheduled to take place within two weeks and is conducted by a chemical dependency counselor or evaluator at the Hennepin County Chemical Health Division. This assessment usually takes from one to one and one-half hours and involves more extensive face-to-face contact with the individual. The assessors in Hennepin County often use the MACH as part of their assessment and report that they are quite satisfied with it. They use the results from it as well as their personal interview results to determine the level of problem, if present, and then apply the state criteria for determining treatment modality. One criterion which is locally applied is that if the client claims

abstinence for a period of 30 days or more prior to assessment, he is automatically determined not to have a dependency problem. To a large extent this is done to reduce treatment costs and is viewed with some consternation by court officials. A variety of treatment services, both public and private, are available in Hennepin County. When treatment is determined to be appropriate, access to treatment resources is not a problem.

Summary. Minnesota has a highly structured alcohol problem screening and assessment system in terms of qualification of assessors, information to be acquired, criteria to be applied, and treatment level to be prescribed. There is some feeling that the criteria are designed for cost containment and that as a result some persons who would profit from treatment are not being referred to treatment. This structure does not extend to specifying the assessment instrument to be used and thus a variety of instruments are in use throughout the state. There are no current plans to require the use of a particular instrument on a statewide basis. The instrument in most widespread use in the jurisdiction visited is the MACH, and the users were generally pleased with it, to a large extent because its use insured that they were in compliance with the specific requirements of the state. The alcohol problem screening is done presentence and the judges find it useful in determining sentence.

4.2.5 North Carolina Assessment Procedures

Introduction. North Carolina recently implemented a 10 county pilot program incorporating an automated assessment instrument. Information on procedures and problems encountered with both assessments and changing assessment procedures in North Carolina is presented here.

Procedures. In North Carolina, substance abuse assessments are mandatory for persons convicted of DWI who have a BAC $>.14$ or are multiple offenders who, in conjunction with the current arrest, either refused to submit to a chemical test or have a BAC $>.09$. The majority of DWI cases are handled at the district court level. Although pre-trial assessments are permissible and may be used as a mitigating factor at the time of sentencing, most assessments are conducted post-trial. The clerk of court or a liaison person from the local mental health center directs the

DWI offender as to the procedures to be followed in order to obtain an assessment.

Although assessments may be done by public or private agencies, at the present time, most assessments are carried out by public mental health centers. The 90 non-pilot counties may use any one of a number of assessment instruments approved by the Department of Human Resources in conjunction with a face-to-face interview. In many cases the assessor is also the treatment provider. In North Carolina the driver's license may not be reinstated until the assessment is completed.

In January 1988 the legislature established a ten-county (North Carolina has 100 counties) pilot program requiring mandatory assessments for any person convicted of DWI, and at the present time statewide expansion of the program is being considered. All of the public and private agencies in the pilot program are required to use the SALCE instrument in addition to a face-to-face interview with the client.

Constraints and problems encountered in non-pilot programs. Substance abuse assessments in the non-pilot counties are done primarily by assessors at public mental health centers. In most instances the agency conducting the assessment also provides treatment, thus creating a situation in which conflict of interest may occur. Most frequently this occurs when a public agency provides both services. This issue is discussed in a later section of the report.

The absence of clear guidelines for referral and treatment is also a problem because people with similar drinking problems may not be directed into similar treatment. This lack of uniformity is further complicated by the fact that there is considerable variation in the availability of treatment resources in different regions of North Carolina.

As current North Carolina law now stands, a person needs only to complete an assessment to have license reinstatement. Whether or not the individual must comply with any recommended treatment is left to judicial discretion. However, in most instances compliance with the prescribed treatment regimen is a condition of the suspension of active jail time.

Constraints and problems encountered in pilot programs. The ten county pilot program began in January 1988 and had the usual problems encountered with a shift in procedures. The courts were unfamiliar with the requirements of the new law. The fees structure for assessments was changed, increasing the charge for an assessment in pilot counties from \$75. to \$100. Many agencies had to upgrade their computer capabilities, since the SALCE is an automated instrument. Agencies had to familiarize themselves with new procedures and a new instrument and had to train their staffs in the administration of the SALCE. Many assessors were uncomfortable with the new instrument and preferred using one with which they were familiar.

The Department of Human Resources had obtained the support of the ADE Corporation in providing supplemental information on the results of substance abuse assessments in the pilot counties. However, the provision of this information required computerized entry of information or submission of supplemental information on each case to the ADE Corporation for processing. No software was available for this data entry procedure, and as a consequence, many programs were slow in providing the supplemental data.

One of the main reasons for implementing the pilot program was to gain an understanding of the types of problems which might be encountered if the program were implemented statewide. It was suspected that many more cases of substance abuse would be identified and that referrals for DWI convictions would generate more cases than the already over-burdened system could handle. Indeed, many of treatment programs are reporting backlogs of cases to be assessed and treated. To date, many persons have not reported for assessments perhaps because they did not understand that reinstatement of the driver license is contingent upon their undergoing an assessment. It is expected that a large number of these cases will appear early in 1989 when those convicted early in 1988 begin to apply for license reinstatement and discover that they cannot be reinstated until they have completed an assessment.

The 1988 legislation enabled private agencies to participate in the assessment,

referral and treatment system as well. Some of these private agencies are part of larger substance abuse treatment facilities. Others have been established to meet an emerging market, and many of these are unable to compete financially with the lower rates charged by public mental health programs.

Adolescents convicted of DWI in North Carolina are handled in the same fashion as adults by the courts and are assessed using the same instruments. At the present time, the JASAE is being pilot tested in one county in North Carolina; but, to date, no information is available on its use there.

Summary. Substance abuse assessments for DWI offenders are in a state of transition in North Carolina. It is expected that the pilot program may be expanded statewide and will result in the identification of a greater proportion of individuals with alcohol problems. The pilot program provides an interesting comparison between the use of one instrument and that of several. Many of the problems encountered in North Carolina may be anticipated in other states adopting a new instrument and/or modifying its assessment procedures.

4.3 Considerations in Instrument Selection and Use

In the following sections, factors affecting both instrument selection and use are discussed including state philosophy, legislated constraints, financial considerations, training and certification requirements for assessors, caseload and volume, attitude toward the use of computers, and benefits of the various instruments. Much of this discussion is based on the survey of state level program administrators.

4.3.1 State Philosophy. The general philosophy of the jurisdiction toward the DWI problem will influence the handling of the DWI offender. A jurisdiction may wish to ameliorate the drinking driver problem only as it affects the person's driving performance and may adopt a solely punitive approach, or it may wish to view a DWI as an indication that the person convicted of DWI has a drinking problem and should receive any treatment required (a rehabilitative approach). In practice, mixtures of these orientations characterize jurisdictional approaches. These

differences in philosophy to some extent influence which instrument is selected and certainly the course of treatment.

4.3.2 Legislated Constraints. Many jurisdictions have legislative guidelines designating who is to receive a substance abuse assessment, which instruments may be used, and how much may be charged for an assessment.

In some states, including those which have legislation guiding assessment procedures, local policy may also influence the use of assessment instruments. In some jurisdictions there is a very strong interface between the courts, the assessors and treatment providers. A unified bench with a set of guidelines for handling DWI cases will be more consistent in identifying those persons felt to require referral and treatment. Similarly, they may respond more quickly to treatment non-compliance. In other jurisdictions this may not be the case, and a judge may need to be familiar with several different assessment instruments. Thus, in those instances in which the judge receives the actual assessment results when uniform protocols are absent, the judge's individual philosophy may influence and dictate the assessment, referral, and treatment process.

4.3.2.a Instruments Permissible for Use. Some states permit the use of only one instrument under the assumption that there is more uniformity in assessments when only one is employed. By specifying an instrument for use in a jurisdiction, data from assessments are more comparable.

On the other hand, several states have no mandated instruments, thus several different instruments are usually employed by the various programs in these states. In general, the experience of many of these states is that there is no one instrument with demonstrated superiority over others. Some of these states have a list of recommended instruments from which an agency may choose. Providing training for assessments is more complicated in states permitting the use of multiple instruments since many specialized training programs may be required. On the other hand, these states have fewer obstacles to the introduction of new instruments than do ones that specify a single permissible instrument.

4.3.2.b Instruments Currently in Use. At the time of the survey (October,

1987), the most popular pencil-and-paper instruments in use for DWI alcohol problem assessments were the Mortimer-Filkins (used in 35 states) and the MAST (used in 31 states) . The SALCE/ADE and DRI were the most frequently mentioned computerized instruments. Several states indicated that they were considering adoption of one of these instruments or were already conducting pilot programs using them.

4.3.2.c Eligibility for Assessment. Many states designate who is eligible for an assessment, those for whom an assessment is mandated, and those for whom no assessment is required. In 33 states assessments were required for all convicted DWIs. In terms of the type of assessment, 28 states screen for both alcohol and other drug abuse.

4.3.3 Needs of Special Populations. Two population groups require special consideration -- the illiterate and non-English speaking populations. Illiteracy continues to be a problem for both the courts and licensing agencies. Conservative estimates suggest that 25 percent of the adult U.S. population is functionally illiterate (Kozol, 1985). For this reason, many jurisdictions may feel the need to select an instrument that may be administered orally to the DWI offender and, as a consequence, may select an instrument which requires less time to administer. Similarly, some jurisdictions may require instruments which have foreign language adaptations because a considerable proportion of their population is not English-speaking. A few of the instruments have foreign language adaptations. The availability of these is discussed in the instrument review section of this report.

4.3.4 Instrument Modification. Eight states modified instruments for use in their state. Such modifications may render the assessment less valid by substantially altering the psychometric properties of the test. For example, the Mortimer-Filkins test was designed to have two components: a self-report questionnaire and a clinical interview. The initial validation of the Mortimer-Filkins was based on both components of the instrument. Omission of the interview portion may thus affect the accuracy of the overall assessment.

In addition to altering the interview portion of the assessment, assessors may

shorten the time required to administer the self-report questionnaire by eliminating portions of it and thus further compromise the validity of the assessment. The extent to which this problem exists is not known. To some extent the use of automated instruments may reduce this problem because all questions must be completed before a score is generated.

4.3.5 Financial Considerations. Just as legislated matters may affect the selection and use of these instruments, so too may the costs associated with their use. These costs may include the price of the assessment instrument itself including start-up charges and costs for special equipment such as microcomputers and printers. In addition, the cost of training of the person conducting the assessments, both in the administration of the test and accurate interpretation of its results, will be significant. These issues are discussed below.

4.3.5.a Fees for Assessments. The monies available to pay for assessment and case management may influence which assessment instrument is chosen. In some states, the costs are covered by fines, or there may be state funds earmarked for those who cannot pay the costs of an assessment. In other states, there is a maximum charge allowable for an assessment and part of the charge may be used for administration of the state-level program and/or to subsidize the costs for indigent clients. The fees charged for assessments range from zero to a high cost of \$350. Agencies in many states must cover their operating costs through these fees. However, it is difficult to determine from the survey responses the extent to which the costs for substance abuse assessments were covered by fees paid.

4.3.5.b. Cost of the Assessment Instrument. The cost of the instrument itself is an important selection factor. Many administrators were reluctant to pay \$7 to \$10 per assessment for some of the computerized instruments. They said the costs of the assessment would be better spent on the face-to-face interview and on more extensive collection of collateral information. Moreover, many jurisdictions considering changing to an automated system balk at the start-up costs for the software, which may be as high as \$450, and the cost of buying computer hardware, which minimally includes the purchase of an IBM-compatible microcomputer and

printer. The direct costs for instruments in some instances may be offset by increased efficiency for the evaluator. However, in some administrative settings, budgets may not be flexible enough to readily accommodate a different category of expenditure or initial capital investments.

4.3.5.c Costs for Training Assessors. The costs of training the assessor in the use of an instrument may be significant. Since the individuals conducting substance abuse assessments come from a wide range of training backgrounds, they cannot be assumed to have a common set of assessment skills. Furthermore, instruments vary in terms of how much clinical or interpretive skill they require, depending on, for example, the presence of an interview component or multiple scales scored as a profile to be interpreted in total. Certainly, a personal interview is an important component of the assessment, even when it is not explicitly part of the testing. Thus, each assessor should receive training for each instrument they will use if they are not already versed in its administration, scoring and interpretation as well as training in general interviewing skills. Training should attempt to be comprehensive, and this requires setting aside a portion of the assessor's time for initial training and, later, for in-service training.

4.3.5.d Salary Costs for Conduct of the Assessments. The highest single cost component for a substance abuse assessment is evaluator time. Thus, the more time-intensive the assessment procedure, the more costly it will be. Although the automated instruments may have higher initial costs, in many cases they require less assessor time thus reducing the overall cost of the assessment.

4.3.6 Training and Certification Requirements for Assessors. Our national survey revealed a wide diversity of training and certification requirements for persons conducting assessments. Requirements varied from a master's degree plus several years of experience to no written requirements at all. Originally, assessment instruments were introduced into DWI assessments to standardize the process and reduce error in classifying drinkers. Clearly, if an evaluator has not received adequate training in the use of an instrument, it may be incorrectly administered or inappropriately interpreted. Moreover, many people favor the instruments which

they have been trained to use and with which they are familiar. Jurisdictions permitting the use of several instruments must take particular care in requiring that assessors use only those instruments which they have been trained to administer, or provide training in the use of alternative ones.

4.3.7 The Assessor as Treatment Provider. In 30 states responding to the survey, the assessor was sometimes or always the treatment provider. There may be some benefits in that such a situation may lend itself to more efficient handling of cases with less redundancy in the assessment procedure. On the other hand, a conflict of interest may occur when the assessor is also the treatment provider. For example, assessors working for an agency with a low case volume may feel pressure to identify enough clients to meet operational needs. In other cases, an assessor may fear that the client being assessed may be disruptive to their program and, thus fail to identify a problem in order to avoid having to deal with the individual in the treatment setting. For these reasons, it is desirable that the assessor and treatment provider be independent persons from independent agencies. However, it should be recognized that many small rural jurisdictions do not have the luxury of multiple facilities of this nature.

4.3.8 Caseload of the Jurisdiction and Assessors. The degree of urbanization of a jurisdiction may be pivotal in any consideration of cost, since the number of cases will influence the type of instrument selected. For example, if a jurisdiction handles several hundred DWI cases a week, there may be a need for a self-administered questionnaire which can be computer-scored and interpreted. Depending on the number of actual assessors available in this type of setting, use of a computerized screening instrument may expedite processing and scoring and allow an individual assessor to spend more time with the client in a face-to-face interview and in contacting collaterals.

In the course of our contacts with local providers, there was some indication that certain urban locations handling large caseloads were considering the elimination of the assessor and using a computerized assessment, presumably administered by the clerk of court, as the sole basis for a referral decision. This trend

may gain popularity as many states seek to curtail rising costs for assessment and referral. However, most instruments do not differentiate adequately among DWI offenders classified as potential problem drinkers who may or may not require treatment. If administered alone in the initial screening, many DWI offenders will subsequently require a clinical interview, thus reducing the burden on resources for the screening assessment at the expense of the treatment providers. In summary, the most pronounced shortcoming to the use of these instruments without a personal interview is the issue of the identification of a large number of false positives.

On the other hand, a jurisdiction handling few DWI cases may have totally different requirements. For example, a rural setting may employ only one or two assessors whose time may be underutilized. Thus, the need for a quick way to screen the DWI offender is minimized; and, as a consequence, a low-volume DWI jurisdiction may not have a sufficient caseload to justify the outlay for start-up costs for an automated assessment system. Similarly, rural areas may have fewer treatment facilities, thus reducing the need for an instrument which is able to differentiate and refine the degree of a person's drinking problem so referral to appropriate therapy can be made, because basically there is only a mental health center to deal with any type of problem presented.

4.3.9 Attitude toward the Use of Computers. Most of the automated assessment programs require at least a minimal knowledge of computer use. In general, assessors will quickly become more comfortable with the computer. In some jurisdictions, those being evaluated may be asked to enter their own responses directly onto the computer, and the assessor may find that an apparently simple program becomes time consuming because of the client's inexperience or fear of computers.

4.4 Benefits of Automated Assessment Instruments

Some of the significant benefits of computerized instruments have led some jurisdictions, aware of their limitations, to select them anyway. For example, many

of these instruments include a "truthfulness" component, that is, a measure of whether the respondent is attempting to present too good (or too bad) an image. In one of the instruments this "truthfulness" factor is taken into consideration by the program before it generates its output. Other instruments indicate whether there seems to be a high level of truthfulness or whether additional information must be examined because the respondent is looking too good. The inclusion of such "truthfulness" scales is an attractive feature of some of these instruments.

Another benefit of the automated programs is that the complete instrument must be administered in order to receive the final assessment. It is suspected that many assessors compromise the validity of the instruments they use by routinely modifying or shortening them in order to meet the demands of a heavy caseload. Thus, the use of an automated instrument may eliminate this problem.

Computerized instruments also have the capacity to provide extensive information regarding the factors which contribute to their final assessment score. Several generate a composite picture of the individual's drinking status and list those factors which appear to be aggravating or mitigating the problem. Such information may prove particularly useful to the assessor. In addition, the output can be tailored to meet the needs of the specific person using it. For example, a modified version of the DRI has a printout tailored to meet the needs of the judge, another for the treatment provider, and a third for the person being assessed which summarizes specific information considered useful to that person.

In addition to providing useful information to the assessor, many of these automated instruments, after assuring individual client anonymity, provide normative and summary statistics on all those clients using their system. This information may be valuable to jurisdictions studying trends in DWI offender assessment, treatment and referral.

4.4.1. Ability of Computerized Programs to Generate Summary Data

The North Carolina Experience. There are now ten counties in North Carolina that are participating in a pilot program in which all persons convicted of DWI receive mandatory substance abuse assessment. Although a variety of

assessment instruments is used in North Carolina, in order to standardize procedures in the pilot counties where all DWI convictees are assessed, a single assessment tool with automated scoring was selected, namely, the Substance Abuse Life Circumstances Evaluation (SALCE) produced by Automated Drinking Evaluation, Corp. (ADE). This instrument allows the assessor to enter the subject's responses into a computer which provides a recommended categorization of the subject's handicap with regard to alcohol or other drugs. The SALCE drinking evaluation categories were described earlier in Chapter 2.

One benefit of the computerized assessment instrument is that the results of each individual assessment are recorded (anonymously) and are then available for later analysis. The following discussion is based on the preliminary tables (which appear in Appendix D) provided by ADE from the results of assessments conducted in the pilot counties in the first nine months of the program. Table 1 shows pilot county results of the assessment codes by blood alcohol concentration (BAC) for first time offenders and for multiple offenders. The total number in this table reflects the total number of persons assessed in the pilot program, or 4064 persons.

The SALCE alone is not used to establish the final assessment. The assessor obtains information from collaterals (friends and relatives) and from the driver history file. Pilot programs augment the SALCE score with additional information obtained through a clinical interview and official records, such as BAC at time of arrest and number of previous DWI's. Many of the programs had difficulty providing this information because to do so required additional post-assessment data entry. As a result, such supplementary assessment information was not supplied in 53 percent of the cases. The information which follows is based upon the data provided to HSRC by ADE Corporation. For those for whom an assessment code was received (n=1907), 84 percent had some type of alcohol handicap identified. Sixty-six percent (545/823) of first time offenders and 98 percent (1062/1084) of multiple offenders had some alcohol handicap identified.

Table 2 indicates the type of treatment to which first time and multiple DWI offenders were referred. Among first time DWI offenders, 63 percent were referred

to a community mental health center, 21 percent were referred to Alcohol Drug Education Traffic Schools (ADETS), 13 percent had no treatment indicated, and 2 percent were sent to either a psychiatric rehabilitation center or an alcohol rehabilitation center. For multiple offenders, 91 percent were referred to a community mental health center, 2 percent were sent to ADETS, less than 1 percent had no treatment indicated and 5 percent were sent to either a psychiatric or an alcohol rehabilitation center.

Table 3 shows the SALCE drinking evaluation category by blood alcohol content for first time DWI offenders. Here it may be seen that 71 percent of first time DWI offenders were identified in drinking evaluation categories greater than or equal to three. Thirty-eight percent of first time offenders were categorized greater than or equal to 4. Moreover, 55 percent of those in pilot counties who had a BAC of .10 to .14 (those usually regarded as social drinkers) were in categories greater than or equal to three. Table 4 indicates that 16 percent of DWI convictees in the pilot program had either a drug use problem or probable addiction to drugs other than alcohol.

4.4.2 Ability of Programs to Generate Management Information. A useful feature of many of the automated assessments is their ability to generate information on the number of clients seen and the levels of drinking problems observed. One computerized assessment instrument, the MACH, was designed to compile data specified in Minnesota's legislation. In addition to collecting this information, the instrument is also able to review the client's responses, and, based on the person's health insurance plan, indicate whether or not the individual's insurance would pay at least part of the cost for suggested treatment.

While an automated assessment system will probably be able to provide statewide statistics and other administrative information, other data management systems are capable of generating similar information. For example, although the Alaska ASAP program uses the Mortimer-Filkins, a pencil-and-paper instrument, to assess its clients, it assigns a number to the client; and they become part of a computerized data management system. Thus, the assessment results are made a

part of their computerized system and may be available for analysis.

In summary, pencil-and-paper instruments cost less money for instrument purchase and generally require less training time than computerized instruments. On the other hand, computerized instruments provide more uniform administration and detailed scoring, the ability to get statewide norms, and a wider range of information.

4.4.3 Tracking the DWI Offender. Because DWI offenders are characteristically highly mobile and non-compliance is frequently a problem, tracking them may be very important to the success of any program. If they are non-compliant with the assessment or treatment ordered, they must be contacted as soon as possible to keep them in the system. A non-compliant individual should have a bench warrant issued as soon as possible to assure that he will not 'fall through the cracks.' However, many areas do not have the resources in terms of manpower, money and computerized equipment to deal adequately with these persons.

A computerized system offers a quick and efficient way to issue orders for non-compliance and warning letters. In Alaska, a computerized system is used to track people once they are convicted. When someone does not appear for an assessment within the designated period or if reports of treatment compliance are not received, a warning letter is issued; if that fails, a bench warrant is issued for his arrest. The Alaska ASAP computer actually generates the bench warrant which is sent to the judiciary for review and service.

4.5 Use of the Assessment by the Courts.

Each jurisdiction determines how and at what point the results of the assessment will be used. As of October 1987, twenty states made the assessment post-trial (this includes four in which the assessment is conducted pre-sentencing). In fifteen states, the assessments were conducted pre-trial. In fourteen states time of assessment was optional.

The point in the adjudication process in which the assessment is conducted may influence which instrument is selected. When the assessment is conducted pre

trial, and the results are presented to the judge, the judiciary may be more actively involved in the selection of the instrument and may be more inclined to encourage the use of a computerized printout which succinctly summarizes the factors to consider in rendering a sentence. However, when states permit assessments to be conducted pre-trial, problems may arise when the results of the assessment may influence the sentence imposed. In such cases, the defendant may be more apt to shop for the most favorable assessment.

Similarly, when the assessment is to be made post-conviction but pre-sentencing, it may be important to conduct the assessment quickly so as to return to the judge so that sentencing may take place while the judge is still familiar with the case. In Minnesota, for example, the initial screening is made the day of the trial. After being found guilty, the defendant goes to an office in the courthouse where he is assigned to a probation officer, who usually has an hour to complete the entire assessment. The probation officer then goes to courtroom with the defendant and presents the findings to the judge who then passes sentence.

Where the assessment is made after sentencing, there are fewer time constraints, as well as reduced interest on the part of the judiciary as to which instrument is used. The court may be concerned with the results of the assessment only if the individual is returned to the court system for non-compliance. Thus, the output from a post-trial assessment will be used predominantly by the assessor and perhaps the treatment provider.

4.6 Interface between the Legal System and the Driver Licensing Agency.

The interface between the court system and the Division of Motor Vehicles (DMV) or licensing authority is a factor which may affect the success of the assessment and treatment components of the program. Required completion of an assessment and treatment program before license reinstatement may be a powerful impetus in encouraging the convictee to obtain the assessment and also to complete treatment. Similarly, rapid notification to the courts of any other traffic violations occurring during the period of license suspension may enable the courts to deal

more swiftly with this portion of the DWI population which may be more likely to recidivate.

4.7 Adolescent Assessments

With regard to adolescent assessment instruments, there were only six states using specific instruments for dealing with adolescents. Many of the other states indicated that they were in the process of reviewing their procedures for handling adolescents or were actually considering changing their policies.

Assessing adolescent substance abuse problems is much more complicated than handling those of adults. First, substance abuse is viewed as only one component of adolescent problem behavior, and there is considerable difficulty in discriminating between normal adolescent 'risk taking' behavior and real problem behavior. For example, adolescence is often associated with experimentation with drugs including alcohol. The point at which such behavior becomes problematic is difficult to pinpoint.

The use of adult instruments on this population appears to be inappropriate for several reasons. First, many adult substance abuse assessment instruments use reported chronicity of drinking to determine the severity of problem, and most adolescents do not have a long history of alcohol use. Similarly, an adult screening instrument might label adolescent drug experimentation as problem substance abuse because adults do not experiment with drugs as frequently. Thus, the use of adult instruments with this population may lead to a large number of false negatives due to a relatively shorter drinking history. Similarly, false positives may occur due to the greater likelihood of casual experimentation with drugs which will result in "deviant" responses resulting in classification as a problem user even though such drug use may not be problematic.

The problems brought about by the use of adult instruments for an adolescent DWI population is heightened by the fact, though some are under development, as yet no screening instruments seem to be suitable for assessing this segment of the population. Although some adolescent instruments appear to be

very promising, validation studies using these instruments on an adolescent DWI population are still lacking.

In addition to difficulties in finding an appropriate instrument, in many states, adolescents are arraigned in juvenile court and may not be subject to the same assessment requirements as adults. Moreover, records may be handled differently. This problem is further complicated by the fact that licensing authorities in the same states may treat adolescents as adults.

4.8 Summary

An understanding of the operational requirements and needs of the courts, accompanied by an understanding of procedures currently in use, helps to put the selection and use of assessment instruments into the proper perspective. Factors other than instrument design and methodological soundness are influential in determining which instrument is selected and evolve out of the specific needs of the jurisdiction.

From the site visits, it became clear that the principal function of court ordered assessments of DWI offenders is to screen them for the presence or absence of an alcohol problem that may require treatment. In most instances, the more thorough evaluation of the nature and depth of the problem is left to the treatment provider who may then tailor the treatment regimen to the needs of the client if appropriate resources and treatment alternatives are available.

Thus, the required output of assessment procedures in this context is a less detailed assessment of the nature and level of an individual's alcohol handicap, but rather as accurate as possible a determination of whether a drinking problem is present or not. It is important that both false positives and false negatives be minimized, in the former case so that treatment evaluation resources will not be overburdened and in the latter case, so that individuals who might profit from treatment will not be overlooked.

There appears to be a growing trend in the United States to provide alcohol problem assessments to all DWI offenders rather than to just multiple offenders.

Though in some jurisdictions this may tax the capacity of treatment resources, the earlier identification of some problem drinkers may enhance the potential effectiveness of treatment programs.

Though in many jurisdictions assessments are conducted before final court disposition of the case, it appears that in most jurisdictions the assessment results are not used in the sentencing process. This is probably a healthy process. If the main intent of the assessment is to determine whether treatment is warranted or not, truthfulness is important. Expectation by the client that his responses may influence other aspects of the sentence could influence these responses and undermine the accuracy of the alcohol problem assessment.

It was also apparent that field personnel felt strongly that face-to-face interaction with the DWI offender was important to conducting good assessments. Though the quality of the instrument is as important as the qualifications and training of the assessor, both the site visits and the national survey indicated a wide variation in the qualifications of assessors. It is important that appropriate training and certification of assessors be emphasized.

In summary, since substance abuse handicap evaluations are generally provided by treatment agencies receiving DWI offenders, the initial assessment of DWI offenders should be viewed as a screening or triage activity with emphasis on correctly classifying persons as problem or non-problem drinkers rather than into further sub-classifications. Since the trend is to provide such assessments to all DWI offenders, efficient yet accurate techniques should be pursued. This dictates that assessors be properly qualified, and efficient techniques be implemented which involve both the use of valid instruments and effective personal contact.

5. CONCLUSIONS AND RECOMMENDATIONS

There are differences of opinion as to what should be the goals of a state program for processing DWI convictees. Some take the position that the only legitimate concern of the program is the reduction of drinking in combination with driving. If the person has a substance abuse problem but does not continue to drive while impaired, then the substance abuse problem is of no concern. This philosophy may emphasize punitive measures in an attempt to discourage future infractions. Others view the DWI process as the most promising opportunity for identifying persons in the early stages of developing alcohol problems; and the judicial system, in conjunction with the licensing authority, may provide the impetus for channeling these people into appropriate assessment and treatment programs. This view is more likely to be concerned with broader evaluation and a wider range of treatment options.

Which philosophy is espoused will to some extent influence the assessment instruments selected. Some assessment instruments focus solely on the drinking-driving issue. Others deal with the broader issue of substance abuse and whether the person is likely to develop a serious problem even if one does not presently exist. Indeed, at least one instrument is designed to measure the vulnerability to developing a problem even if no alcohol or other drug is currently being used.

The high rate of recidivism experienced by convicted DWIs, in combination with their continued elevated risk of crash, indicate that our current programs leave much to be desired. A major issue concerns the difficulty in differentiating those with a serious alcohol problem from those who have not yet developed such a problem and may be more appropriately considered social drinkers. The current state of knowledge is far from complete.

Ideally, if a program is concerned with anything more than imposing sanctions for a given violation, the assessment process should lead to accurate classification of the quality and degree of substance abuse problem, and subsequently to appropriate treatment. At the present time, most states have no guidelines for

the referral and treatment process.

This lack of guidelines stems at least in part from the paucity of information on which treatments work best for which types of alcohol problems. Although Donovan and Marlatt (1982) have identified five subtypes of DWI offenders, it is not known which treatments should be used with each subtype. In fact, the problem is even more basic in that there is no agreement as to the criteria for successful treatment! Thus, there remains a pressing need for instruments and procedures that will improve the identification and treatment of convicted drunken drivers whose substance abuse problems, if left untreated, will continue to contribute to impaired driving.

In summary, the state or jurisdiction's philosophy regarding DWI offenders in the context of the larger problem of substance abuse has a large impact on their identification and treatment. Whether the state's philosophy emphasizes immediate, punitive measures or longer-term therapeutic intervention has a direct effect on whether and to what degree the rehabilitative approach is implemented. In many cases, a state does not have adequate resources and chooses to limit its effort to preventing the DWI offender from drinking and driving again. Even when the state's philosophy has a broader scope which views the DWI offense as an opportunity for positive intervention with a substance abuse problem, the assessment, referral, and treatment of offenders has not been particularly effective in reducing either DWI recidivism or the larger problem of substance abuse.

Summary

The primary purpose of this study was to examine assessment instruments for evaluating DWI offenders within the context of the needs of the court system. This effort involved developing an understanding of the needs and practices of the courts in the area of DWI assessment, and reviewing several assessment instruments that are currently used.

It became clear that the evaluation of DWI offenders for treatment purposes is ideally conducted in two stages. An initial assessment is conducted for the courts

to determine whether the person may have an alcohol abuse problem that merits more intensive treatment than the customary alcohol safety schools provides to most first-time DWI offenders. Thus, the initial assessment performs a screening function by categorizing individuals into either problem drinkers or non-problem drinkers.

In most jurisdictions, if an individual is identified as a problem drinker, he is referred to a treatment agency for a further, more extensive clinical evaluation. This second evaluation is intended to confirm whether a substance abuse handicap exists and, if so, attempts to determine its nature and extent in order to recommend an appropriate treatment. Ideally, this evaluation would be considered a normal part of the treatment intake.

In general, the initial screening conducted for the courts can be less intensive and detailed than this second evaluation, yet it should be able to discriminate fairly accurately between non-problem and problem drinkers and do so in a relatively expeditious way. The growing trend in the United States to screen an increasing proportion of DWI offenders makes it important that this screening be done efficiently. Because there are limited resources for the more extensive evaluations and treatment, it is also important that the instruments and procedures used in the initial assessment of individuals be as accurate as possible in classifying persons as problem versus non-problem drinkers.

It is important that errors of misclassification in either direction are minimized. Problem drinkers who are misclassified as non-problem drinkers (false negatives) most often would receive the minimal intervention of alcohol safety schools which are unlikely to address their drinking problem or reduce their likelihood of another DWI offense. Similarly, the classification of non-problem drinkers as problem drinkers (false positives) must be minimized so that treatment facilities do not become overburdened with people who do not require the more extensive evaluation and treatment services provided.

The review of court practices indicated that although many jurisdictions conduct the alcohol problem assessment prior to trial, the results of the assessments

are seldom used in the sentencing process. Since a major concern in the assessment process is the extent to which subjects offer responses they feel will make them appear not to have a drinking problem, the practice of post-trial use of assessments is recommended. If the offender feels that those responses may also affect sanctioning, they may be even more likely to try to deceive the evaluator. It is recommended that it be made clear early in the assessment process that the assessments are intended to assist in placement in the appropriate treatment program and will not be used in determining other aspects of the DWI sanction.

No instrument could be recommended without reservation. Our review of assessment instruments for use in the court setting identified a number that are available, but none that have been contemporaneously validated by independent investigators for their accuracy in classifying DWI offenders. This deficit is due, in part, to the lack of good criterion variables against which to measure test classifications. Both the definition of problem drinking and the clinical determination of problem drinkers are problematic. Frequently, validation studies of the instruments have used the criterion of an alcoholic diagnosis, which represents only one end of the continuum of problem drinking among DWI offenders, or they have used some widely accepted, although not necessarily well-validated, instrument. Thus, to establish a standard against which instruments may be validated, there is a need to develop better criteria for classifying individuals as problem versus non-problem drinkers.

With the advent of computer technology and the growing number of persons receiving the initial assessments, some new instruments are being marketed which involve either computerized administration and/or computerized scoring and interpretation of the client's responses. Because of the potential for multiple types of output with the software, these instruments tend to provide a more detailed description of the extent of problem drinking than had been the case in the past with paper-and-pencil instruments. However, the extent to which these more detailed screening results may be used to place persons in distinct treatment modalities should be monitored with caution. If, in practice, this procedure results in a single

assessment rather than the two-stage process discussed above, inappropriate treatment referrals may result.

There is a consensus among persons administering DWI assessment programs that a very important component of the assessment process is the face-to-face interview and personal contact of a trained assessor with the client, even though training and qualifications of assessors vary considerably across the country. The computerized assessment instruments are generally intended to be used in concert with a face-to-face interview, as are paper-and-pencil instruments. However, the very nature of their automated output, with a diagnosis or classification of the extent of the client's drinking problem, has led some jurisdictions to consider the test sufficient for making a decision about referral and treatment.

If some screening programs increase their reliance on results of computerized instruments without additional input and interpretation by trained counselors, the initial screens may become a simple clerical duty with diminished quality and utility. While economic pressures may encourage eliminating the trained professional from the process, referral of clients to inappropriate treatment programs will result in greater expenditures in the long run as well as the lost opportunity to have an impact on the drinking-driving behavior. A trained evaluator can often enhance the assessment, both in terms of appropriate classification and initial counseling of the offender. Therefore, it is strongly recommended that jurisdictions avoid the practice of relying solely on test outcomes in making their referral decisions.

Several instruments in widespread use in the United States were reviewed: the ASI, the AUI, the CAGE, the CASAS, the DRI, the New Hopkins 20 Questions, the LAI, the Mac Andrews Scale, the MACH, the MAST, the MODCRIT, the Mortimer-Filkins, and the SALCE. Several adolescent instruments were also reviewed including the AAIS, the ACDI, the JASAE, the PESQ, and the PEI. The DRI most closely approached sound psychometric design, but is still in need of independent validation. The Mac Andrews Scale and the SALCE also appear to be

carefully developed and are good candidates for further independent validation studies on DWI populations. Nonetheless, more work is needed on all of these instruments before they can be fully recommended.

In some jurisdictions adolescent DWI offenders are tried within the adult court system; in others, these cases are handled within the juvenile court system. Nevertheless, there appears to be a consensus that special assessment procedures are needed for this population. Although five screening instruments for adolescents were identified and reviewed, several of those likely to be appropriate for use with the DWI population were so recently developed that a comprehensive evaluation of their reliability and validity had not yet been completed. When the results of such evaluations are available, jurisdictions will have more options from which to select an appropriate adolescent instrument. At the present time, validity data using adolescent drug clinic patients have been collected on the PESQ. These data indicate some discriminative ability between those patients and a comparison group of matched school subjects. However, for highway safety purposes, there is a need to validate the test using the more relevant group, youthful DWI offenders, as subjects.

In general, validation of the instruments suffered from the lack of an adequate criterion measure. A major recommendation of this study is that a good criterion measure be established and that existing instruments be carefully validated against such a measure. In addition it is recommended that the more promising instruments be independently evaluated. To this end we recommend that NHTSA provide funding for independent evaluative testing of the more promising instruments which are specifically designed for dealing with DWI offenders. If these efforts do not reveal acceptable validity in existing tests, then NHTSA should consider funding the development of a new instrument using sound psychometric principles. Furthermore, test vendors or assessment programs themselves should be encouraged to compile norms on DWI populations with existing instruments to further enhance the description of this population as a whole and the discrimination of subtypes of offenders. Such efforts may facilitate decisions regarding intervention with this high risk population, with the ultimate goal of

reducing their hazard to themselves and others.

In conclusion:

1. There is a pressing need for better programs for dealing with convicted DWIs, including better assessment procedures and more effective treatment procedures.
2. Current assessment instruments vary in the extent to which they are well designed. None has been adequately validated on a DWI population by independent investigators. They also vary in length of time required for administration, ease of administration, equipment required (i.e., computers), cost, and requirements for qualification and training of assessors. These differences will affect the desirability of various instruments in different jurisdictions.
3. States and communities vary in their approach for dealing with the DWI offender. Some seek only to punish the offender so as to discourage future infractions. Other jurisdictions seek to determine whether there is a serious alcohol abuse problem that should be treated in its own right, while they are attempting to reduce the probability of future infractions. Which philosophy is espoused will influence the choice of an assessment instrument.
4. Problems in establishing the validity of instruments stem mainly from the lack of consensus on the criterion or criteria for what constitutes an alcohol problem.
5. In part because there is little agreement on a definition of what constitutes an alcohol problem, there is a lack of consensus on what constitutes appropriate treatment. Furthermore, there are no good evaluations of treatment outcomes for different levels of alcohol problems.
6. There is considerable variability in the qualifications of persons conducting the assessments.

Based on the above conclusions, it is recommended that:

1. A small group of nationally recognized experts in the field of DWI substance abuse assessments should be assembled to establish acceptable criteria for defining what constitutes an alcohol problem for purposes of DWI assessment. Such consensus is required before it will be possible to establish the criteria for objective evaluation of different assessment instruments and treatment programs.
2. A consensus process should also be implemented to establish criteria against which assessment instruments may be validated, and treatments may be evaluated.
3. NHTSA should fund independent evaluative testing of the more promising instruments specifically designed for dealing with DWI offenders.
4. The alcohol problem evaluation should always include a face-to-face interview with a trained counselor who can consider the assessment instrument results in light of other information obtained about the client.
5. There should be uniform training and qualification requirements for assessors.
6. Instruments should have qualified versions for adolescents or foreign language speakers.
7. Assessors should not be treatment providers for the clients they evaluate and, ideally, should not work for the same agency.
8. The DWI convictee identified as a problem drinker should be monitored through the referral and treatment process by an established tracking mechanism.
9. Better coordination among all the players in the system -- the courts, assessors, treatment providers, and DMV licensing authorities -- is needed to increase the likelihood of success.

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Appendix A

**National Survey of DWI Substance Abuse
Assessment Instrument Use**

NATIONAL SURVEY OF DWI SUBSTANCE ABUSE ASSESSMENT INSTRUMENT USE _____

state

1. What assessment instruments are currently being used in your State to determine the level of substance abuse problem for persons arrested or convicted of DWI? Please check all that are in use in your state and circle whether they are used in urban (U) rural (R) or both (B) settings.

	Rural/urban/both		Rural/urban/both
<input type="checkbox"/> ADE	R U B	<input type="checkbox"/> Johns Hopkins	R U B
<input type="checkbox"/> SALCE	R U B	<input type="checkbox"/> Alcohol Use Inventory	R U B
<input type="checkbox"/> MAST	R U B	<input type="checkbox"/> NCA	R U B
<input type="checkbox"/> MMPI	R U B	<input type="checkbox"/> Other: _____	
<input type="checkbox"/> Mortimer/Filkins	R U B		
<input type="checkbox"/> CAGE	R U B		

2. Are you using any widely used instruments which have been modified for local use?
 No Yes. If yes, please explain on the back of this sheet.
3. Do you assess for problems other than alcohol? Yes No
4. Who is required to have an assessment? All DWI's Multiple DWI's Other
 If other, please explain: _____
5. At what stage of the judicial process? Pretrial Post trial Optional (pre/post)
6. What is the job title of persons conducting alcohol assessments? _____
7. What training or certification requirements, if any, do they have? _____
8. Is the assessor also the treatment provider? Yes No Sometimes.
 If sometimes, what % of the time? _____%
9. Are assessments used in place of education type programs? Yes No
 Are assessments used in conjunction with them? Yes No
10. What is the range of costs in your state for conducting assessments? _____
 low high
11. What percentage of assessments are conducted by public providers? _____%; Private _____%
12. Do you use a special instrument for assessing adolescents? No Yes.
 If yes, which instrument(s)? _____

We are interested in identifying a rural (R) and an urban (U) jurisdictions in your State to learn about local procedures. Please indicate some candidates.

 Who are other persons in your State whom we should contact about these issues?
 Please list on back.

Completed by _____
 Phone Number (____) _____

Appendix B

**Results of the
National Survey of DWI Substance Abuse
Assessment Instrument Use**

National Survey of Substance Abuse Assessment Instruments

STATE	ADE *	SALCE *	MAST *	MMPI *	MF *	CAGE *	JOHNS HOPKINS *	AUI *	NCA *	DRI *	OTHER
ALABAMA					YES, BOTH						YES, IF ORDERED BY JUDGE
ALASKA					YES, BOTH						
ARIZONA				YES, BOTH						YES	
ARKANSAS				YES, BOTH							
CALIFORNIA											
COLORADO					YES, BOTH						YES, DRINKING DRUG USE HISTORY QUESTIONNAIRE
CONNECTICUT					YES, BOTH						
CONNECTICUT			YES, BOTH								
DELAWARE					YES, BOTH						YES, SOCIAL HX/ RESEARCH Q
FLORIDA			YES, ANCILLARY	YES	YES						YES, MACANDREWS
GEORGIA		YES, BOTH	YES, BOTH		YES, BOTH						
HAWAII			YES, BOTH		YES, BOTH						
IDAHO			YES, BOTH		YES, BOTH			YES, BOTH			
ILLINOIS			YES, BOTH	YES, BOTH	YES, BOTH			YES, BOTH			MAY USE ANY INSTRUMENT
INDIANA											
IOWA											
KANSAS			YES, BOTH	YES, URBAN	YES, BOTH			YES, BOTH			
KENTUCKY			YES, BOTH								
LOUISIANA			YES		YES		YES		YES		YES, PEI
MAINE					YES, BOTH						YES, MULTIPLE OFFENDERS WIP (LIFE MATRIX)
MARYLAND			YES, BOTH					YES, BOTH			
MASSACHUSETTS			YES, BOTH		YES, BOTH						YES, MODIFIED M-F
MICHIGAN	YES, BOTH		YES, BOTH		YES, BOTH		YES, URBAN	YES, BOTH			
MINNESOTA			YES, BOTH		YES, BOTH		YES, BOTH	YES, BOTH			YES, DSM III AND JELLINEK/SIGNS AND SYMPTOMS
MISSISSIPPI					YES						YES, CROWN MARLOW SOCIAL DESIRABILITY SCALE
MISSOURI			YES, BOTH		YES, BOTH						
MONTANA			YES, BOTH		YES, BOTH						YES, REVISED JELLINEK SEE OTHERS
NEBRASKA			YES		YES						
NEVADA			YES, BOTH							PILOT	YES, WITH INTERVIEW
NEW HAMPSHIRE			YES, BOTH		YES, BOTH	YES, BOTH					
NEW JERSEY											YES, RUTGERS BAC QUESTIONNAIRE
NEW MEXICO, ALBUQUERQUE					YES URBAN						YES, RISK OF ALCOHOLISM PROFILE, DRUG USE HX QI
NEW MEXICO, SANTA FE					YES, URBAN						YES, MILLON CLINICAL MULTIAIXIAL INVENTORY AND S
NEW YORK			YES, BOTH		YES, BOTH						
NORTH CAROLINA	YES, BOTH	YES, BOTH	YES, BOTH	YES, BOTH	YES, BOTH		YES, BOTH	YES, BOTH	YES, BOTH		YES, SHORT MAST
NORTH DAKOTA			YES, BOTH		YES, BOTH						YES, MACANDREW CENTER USES AT LEAST 2
OHIO			YES, MOSTLY		YES						
OKLAHOMA			YES		YES, INTERV.		YES, BOTH MOD				MACANDREW, ALCADD, 16PF
OREGON					YES, JUST INSTR						YES, DHQ AND DRUG USE INVENTORY
PENNSYLVANIA					YES, BOTH						CT REPORT. NETWORK (CRIN)
RHODE ISLAND					YES, BOTH						YES, MF INTERVIEW NCA MODCRIT
SOUTH CAROLINA		YES, BOTH	YES, BOTH	YES, BOTH	YES, BOTH	YES, BOTH	YES, BOTH				YES, LAI
TENNESSEE			YES, BOTH	YES, RURAL	YES, RURAL						YES, LAI
TEXAS					YES, BOTH						YES, NUMERICAL DRINKING PROFILE (NDP)
UTAH			YES, BOTH	YES, BOTH							
VERMONT			YES								YES, OTHERS MAY BE USED IN ADDITION TO THE MAS
VIRGINIA	YES, BOTH		YES, BOTH		YES, BOTH						
WASHINGTON					YES, BOTH	YES, BOTH					YES, DEVELOPED W.A.L.C. SCREENING INVENTORY
WEST VIRGINIA			YES, BOTH				YES, BOTH				
WISCONSIN											YES, MODCRIT
WYOMING											

* Both = instrument used in both urban and rural areas.

B-1

National Survey of Substance Abuse Assessment Instruments

STATE	WESTERN PERS.	MACANDREWS	MODIFY INSTR.	ASSESS FOR PROBLEM	ALL ASSESSED	MULTIPLE DWTS HAVE	OTHER HAVE ASSESSM
ALABAMA			NO	YES	YES		
ALASKA			NO	NO	YES		YES, OTHER ALC RELATED C
ARIZONA			NO	NO	YES		
ARKANSAS					YES		
CALIFORNIA			NO	NO		YES	
COLORADO			NO	NO	YES		
CONNECTICUT			NO	YES	YES		
CONNECTICUT			NO	NO		YES	
DELAWARE			NO	YES	YES		
FLORIDA	YES	YES	NO	YES	YES		
GEORGIA			NO	YES	YES		
HAWAII			NO	NO		YES	
IDAHO			NO	YES	YES		
ILLINOIS			YES	YES	YES		
INDIANA			NO	YES			OTHER
IOWA			NO	YES			YES, SEE ATTACHMENT
KANSAS			NO	YES	YES		
KENTUCKY			NO	NO		YES	
LOUISIANA			NO	NO	YES		
MAINE			YES	YES	YES		
MARYLAND			NO	NO	YES		
MASSACHUSETTS			YES	YES	YES		
MICHIGAN			NO	YES	YES		
MINNESOTA			YES	YES			YES, IDENTIFIABLE PROBLE
MISSISSIPPI			YES	NO	YES		
MISSOURI			YES, MAST CHANG	NO, BUT STARTING	YES		
MONTANA	YES		YES, LAI	YES	YES		
NEBRASKA	YES		NO	YES			NO FORMAL REQUIREMENT
NEVADA			NO	NO			NONE REQUIRED TO HAVE IT
NEW HAMPSHIRE			NO	YES	YES		
NEW JERSEY			NO		YES		
NEW MEXICO, ALBUQUERQUE	YES		NO				YES, FIRST TIME DWI OFFER
NEW MEXICO, SANTA FE				YES		YES	YES, OTHER ALCOHOL RELA
NEW YORK			NO	YES		YES	YES, ALSO A/R OFFENDERS
NORTH CAROLINA			NO	YES	NO IN 10 PILOT COUNTIES	YES	IN 10 PILOTS ANYONE WIT
NORTH DAKOTA				NO	YES		
OHIO	YES		YES, COMBO MAS	YES			YES, ALL REFERRED FOR CC
OKLAHOMA			NO	NO	YES		ONLY GET 30%
OREGON			YES	NO	YES		
PENNSYLVANIA			YES	YES	YES		
RHODE ISLAND			NO	YES	YES		
SOUTH CAROLINA			YES, LAI SCORED	YES	YES		
TENNESSEE			NO	YES			NO ONE REQ. TO HAVE SCR
TEXAS			NO	NO	YES		
UTAH			NO	YES	YES		
VERMONT			NO	NO			YES, AT JUDG DISCRET FO
VIRGINIA			NO	NO			
WASHINGTON				YES	YES		
WEST VIRGINIA			NO		YES		
WISCONSIN				YES	YES		OTHER REFUSING BREATH I
WYOMING				NO			NONE

National Survey of Substance Abuse Assessment Instruments

STATE	PRETRIAL	POST TRIAL	ASSESSMENT OPTIONS	TITLE OF PERSONS CONDUCTING	TRAINING REQUIREMENTS	RX PROVIDER
ALABAMA			YES, PRIMARILY POST	CT REFERRAL OFFICERS	IMPLEMENTING CERT. PGM	SOMETIMES, 50%
ALASKA		YES	YES	PROBATION OFFICER II TRAINING IN M-F	TRAINING IN MF AND ASAP ADMINISTRATION	NO
ARIZONA	YES			DWI CERTIFIED COUNSELOR	PROBATION FOR VRL40 HOURS TRAINING	NO
ARKANSAS	YES			DWI CERTIFIED COUNSELOR	PROBATION FOR VRL40 HOURS TRAINING	NO
CALIFORNIA						
COLORADO		YES		ALC/DRUG EVALUATION SPECIALISTS	SEE LETTER	NO
CONNECTICUT	YES			ALCOHOL COUNSELOR	CERT. ALC COUNSELOR	
CONNECTICUT		YES		REHABILITATION COUNSELOR	CERT. CALD. COUNSELOR	NO
DELAWARE			YES	DUI EVALUATOR	CERT/TRAIN./BS DEGREE	NO
FLORIDA	YES			EVALUATOR	BA IN HUMAN SERVICES ETC	SOMETIMES, 33%
GEORGIA			YES	SENIOR A & D COUNSELOR	TRAIN. IN SALCE AND INTERPRETATION	YES
HAWAII			YES	CERTIFIED SUB. ABUSE COUNSELOR		SOMETIMES, 50%
IDAHO	YES			DUI SUBSTANCE ABUSE EVALUATOR	SEE COPY OF LICENSURE REQUIREMENTS	NO
ILLINOIS	YES			DUI EVALUATOR/SPECIALIST DUI EVAL	3DY ORIENTATION/12HRS. 75% CERTIF	SOMETIMES, 10%
INDIANA	YES					NO
IOWA			YES	S. ABUSE COUNSELORS/INTAKE AND ASSESS	BA/CERTIFIED	SOMETIMES, 95%
KANSAS	YES			A & D COUNSELOR	NONE	SOMETIMES, 25%
KENTUCKY			YES	ALC DRIVER EDUCATION INSTRUCTOR	PRE SENTENCE TRAIN/ ANNUAL SEMINAR	NO
LOUISIANA		YES, PRESENTENCE		PROBATION OFFICERS	BA AND IN HOUSE TRAINING	SOMETIMES
MAINE		YES		CONTRACT INSTRUCT., SR. & JR. COUNSELORS	LICENSED BY STATE	NO
MARYLAND			YES	IN-COURT ASSESS. COUNSELORS	LEVEL II ADDICTIONS TRAIN. OR EQUIV.	SOMETIMES, 80%
MASSACHUSETTS		YES		CLINICIAN I OR II	MS PLUS 2-3 YEARS EXPERIENCE	YES
MICHIGAN		YES		PROBATION OFFICERS/SUBSTANCE ABUSE	APPRENTICE COUNS. CERTIF.	SOMETIMES
MINNESOTA		YES, PRESENTENCE		ASSESS. COUNSEL., PAROLE OFF., SOCIAL WORKERS	SEE ATTACHED SHEET	SOMETIMES
MISSISSIPPI		YES		MASAP INST	IN HOUSE TRAINING MS	NO
MISSOURI			YES	INSTRUCTOR	LMT TRAINING	SOMETIMES
MONTANA						
NEBRASKA		YES, PRESENTENCE		PROBATION OFFICER, SUBSTANCE ABUSE	2 WKS TRAINING, 1 YR. EXPERIENCE	SOMETIMES, 60%
NEVADA	YES			ALCOHOL & DRUG ABUSE COUNSELOR	VARIED TRAIN. STATE CERTIF. PROCESS	SOMETIMES, UK
NEW HAMPSHIRE		YES		CERTIFIED ALC COUNSELOR/ CERTIFIED ALC	CADAC/GAC	SOMETIMES, 25%
NEW JERSEY		YES		INTOX. DR. RESOURCE CENTER COUNSELOR	CAC OR SUPERVISED GCAC	SOMETIMES, 10%
NEW MEXICO, ALBUQUERQUE		YES		CLINICAL SPECIALIST	NO STATE REQUIREMENTS, NCA REQ MSW	NO
NEW MEXICO, SANTA FE		YES		ALC EVALUATOR, DIRECT. OF SPEC. CT SERVICES	MSW; PH.D.	NO
NEW YORK		YES		Z		YES
NORTH CAROLINA			YES	VARIES; ALC DRUG PROFESSIONAL	THERE ARE NONE	SOMETIMES, 50%
NORTH DAKOTA	YES			LIC. ADDICTION COUNSELORS	LICN, 24 HRS. FROM COLLEGE, 2 YEARS	YES, 3%
OHIO		YES		COUNSELORS, PSYCHOLOGISTS, PROBATION OFFICERS	TRAIN. FOR INSTRUMENT CAC'S REQUIRE	SOMETIMES
OKLAHOMA	YES, PRE PLEA			CERTIFIED DRUG COUNSELORS	OK AL DR PROF ASSOC RECERTIFIES	SOMETIMES, <50%
OREGON			YES	A&D EVALUATION SPECIAL	BS SOC SCI OR EQUIV UN SUPER	SOMETIMES
PENNSYLVANIA	YES			CERT. CRN EVALUATOR	2 DAY INITIAL, 1 DAY FOLLOW-UP	SOMETIMES, 50%
RHODE ISLAND		YES		CONSULTANTS HIRED BY COMM. SVCS; COUNSELORS	CACS & THERAPISTS HIRED AS CONSULTANTS	NO
SOUTH CAROLINA		YES		INTERVENTION SPECIALIST	STATE CERTIFICATION	NO
TENNESSEE		YES		MH CT COUNSELORS, PGM DIRECTORS	HUMAN SERVICES DEGREE MSW	SOMETIMES, 67%
TEXAS			YES	PROB. OFFICER, DRUG EDUCAT. INSTRUCTOR	M-F TRAINING, NDP WORKSHOP	SOMETIMES, 30%
UTAH			YES	VARIES	STATE CERT AS THERAPIST	SOMETIMES, 60%
VERMONT		YES, PRESENTENCE		SUBS ABUSE COUNSELOR	CAC OR STATE APPROVED	SOMETIMES?
VIRGINIA	YES			CASE MANAGER	ANNUAL TRAIN. PROVIDED BY STATE	NO
WASHINGTON			YES	QUALIFIED COUNSELOR	STANDARDS	SOMETIMES, 90%
WEST VIRGINIA				COUNSELOR	CAC	SOMETIMES, 50%
WISCONSIN	YES			INTOX DRIV PROG ASSESSORS/COUNSELORS	ALC/DRUG RX & PREVIM; MANDATED TRAINING	SOMETIMES, 25%
WYOMING	YES			SUBSTANCE ABUSE COUNSELOR	S/B QUALIFIED COUNSELOR	YES, 75%

National Survey of Substance Abuse Assessment Instruments

STATE	IN PLACE OF	CONJUNCT. WITH	COSTS-HIGH	COSTS-LOW	% PRIVATE	ADOLES. INSTR.	NAME OF INSTRUMENT
ALABAMA	NO	YES		20	20	0	NO
ALASKA	NO	NO		60	0		NO
ARIZONA	NO	YES	NO CHARGE, PT OF FINE	NO CHG		0	UNSURE
ARKANSAS	NO	YES	NO CHG./PART OF FINE			0	UNSURE
CALIFORNIA							
COLORADO	NO	YES		119	119	0	NO
CONNECTICUT		YES	250.00		250	0.00	NO
CONNECTICUT	NO	YES	NO CHARGE	NO CHARGE			NO
DELAWARE	NO			50	50	100	NO
FLORIDA	NO	YES		235	68		NO
GEORGIA	NO	NO		75	45	10	INSTR. BEING DEVELOPED BY ADE
HAWAII	YES			200	25	100	NO
IDAHO	NO	YES		80	35		NO
ILLINOIS	NO	YES		125	35	40.00	NO
INDIANA	VARIES	VARIES			0.00		NO
IOWA	NO	YES		64	26	UK	NO
KANSAS	NO	YES		110	110	15	NO
KENTUCKY	NO	YES		50	50		NO
LOUISIANA	NO	YES		100	100	0	NO
MAINE	NO	YES				50	YES, 16 PF 16 PF
MARYLAND	NO	YES	NO CHARGE	NO CHARGE		20	YES, SEE SHEET RISKDX SCREENING, YDSD, 20 QUEST., AAS ETC
MASSACHUSETTS	NO	YES	\$44 PER HR	44 PER HR		0	NO
MICHIGAN	NO	YES		65	25	20	NO
MINNESOTA	NO	NO		120	60	40	NO
MISSISSIPPI		YES		65	65	0	NO
MISSOURI	NO	YES		110	110	100	NO
MONTANA							
NEBRASKA	NO	YES		100	0	20	YES ADOL. ALC INVENT., & MAYER & FILSTEAD
NEVADA	NO	YES		185	0	20	NO
NEW HAMPSHIRE	NO	YES		100	45	0	NO
NEW JERSEY	NO	YES		150	100	0	NO
NEW MEXICO, ALBUQUERQUE	NO	YES		115		0	YES
NEW MEXICO, SANTA FE	NO	YES		30	30	0	NO
NEW YORK	NO	YES		350	40	15	NO
NORTH CAROLINA	NO	YES		50	25	25	NO
NORTH DAKOTA	NO	YES	?	50 FOR PUBLIC		40	YES, AAS, MINNESOTA INSTRUMENT AND 40 QUESTIONNA
OHIO	NO	YES		275	130	100	NO
OKLAHOMA	NO	YES		75	75	2	NO
OREGON	NO	YES		70	70	50	NO
PENNSYLVANIA	NO	YES		50	20	80	NO
RHODE ISLAND	NO	NO		50	50	0	NO, ADOL UNIT OUT OF FAMILY CT. SYSTEM
SOUTH CAROLINA	NO	YES		50	50	0	NO
TENNESSEE	NO	YES		75	50		NO
TEXAS	NO	YES		25	10	5	NO
UTAH	NO	YES				30	NO
VERMONT	NO	YES				80	NO
VIRGINIA	NO			250	250		NO
WASHINGTON	NO	YES		100	0	48	NO
WEST VIRGINIA	NO	YES		35	35	100	NO
WISCONSIN	NO	YES		100	75	50	NO, 16 PLUS CONSIDERED ADULTS (ADAPT QUESTIONS, MODIFY EMPLOYME
WYOMING		YES				5	NO

National Survey of Substance Abuse Assessment Instruments

STATE	COMMENTS	COMMENTS
ALABAMA		
ALASKA		
ARIZONA	PHOENIX PILOT PGM /DRI	
ARKANSAS		
CALIFORNIA	PROGRAM ADMINISTERED AT CO LEVEL	PGM ADMINISTERED
COLORADO		
CONNECTICUT		
CONNECTICUT		
DELAWARE		
FLORIDA	PROPOSED RESEARCH PROJECT WITH DRI	NICE DESCRIPTION
GEORGIA	HAVE FIVE PILOT COUNTIES	
HAWAII		
IDAHO		
ILLINOIS	MAY 1988 MANDATORY USE OF MORTIMER-FILKINS	
INDIANA		
IOWA		
KANSAS		
KENTUCKY		
LOUISIANA		
MAINE	GOOD SITE ADOLESC	
MARYLAND	GOOD SITE FOR ADOLESCENTS	
MASSACHUSETTS		
MICHIGAN		
MINNESOTA		
MISSISSIPPI		
MISSOURI		
MONTANA		
NEBRASKA		
NEVADA	DRI PILOT STUDY IN LAS VEGAS	
NEW HAMPSHIRE		
NEW JERSEY		
NEW MEXICO, ALBUQUERQUE	GOOD SITES	
NEW MEXICO, SANTA FE		
NEW YORK		
NORTH CAROLINA	SALCE IN 10 PILOTS FOR ALL DWTS	
NORTH DAKOTA		
OHIO		
OKLAHOMA		
OREGON		
PENNSYLVANIA		
RHODE ISLAND		
SOUTH CAROLINA		
TENNESSEE		
TEXAS		
UTAH		
VERMONT		
VIRGINIA		
WASHINGTON		
WEST VIRGINIA		
WISCONSIN		
WYOMING		

Appendix C

Protocol for Site Visits.

PROTOCOL FOR SITE VISITS ON THE PROJECT ENTITLED

This activity is intended to help develop an understanding of the operational requirements and constraints involved in the use of assessment instruments with DWI offenders. To this end we have identified jurisdictions using those instruments which are in most widespread use nationwide as well as ones using other instruments which we feel have greatest potential in terms of diagnostic accuracy and/or use of innovative administration and scoring techniques (i.e. computer administered and/or scored instruments). In these jurisdictions we will contact state level coordinators for more in-depth information than obtained through the questionnaire and the arrange on-site interviews with members of the judiciary, local court administrators and court or other assessment personnel involved in the day to day administration of the assessment program. If feasible, we will visit both an urban and a rural jurisdiction within each state to be studied in order to learn the extent to which variation of that dimension of the court setting influences the selection and use of instruments. Though the major focus of this project currently is on instruments used with adults, an effort will be made to identify some jurisdictions which use special instruments for adolescents and to learn about the context in which they are used.

As a first step in this process the survey obtained from the state will be reviewed and the state level contact reached telephonically for a more detailed discussion of their perceptions of practices and to confirm potential jurisdictions and contact persons for site visits. In most instances this telephonic follow-up will constitute the state level inquiries mentioned above. When a local jurisdiction to be visited is the same as or near the state capitol the state level persons may also be visited in conjunction with the visit to the local jurisdiction. After the telephone follow-up at the state level but before the site visit either the COTR or project personnel will contact the relevant NHTSA regional office to inform them of our

plans. Then the local contacts provided by the state coordinator will be called and arrangements made for the visit. This will involve scheduling discussions with judges, other court personnel and substance abuse counsellors, as appropriate. A discussion guide has been prepared for each category of person to help provide some structure to these conversations.

Following each visit, a summary report on the visit will be prepared outlining the issues encountered, perceived benefits and limitations of assessment in general and the specific instruments and procedures in place in the jurisdictions. These observations will be provided to the COTR on a visit by visit basis.

PROTOCOL FOR CONTACTING STATE-LEVEL PERSON.

What instruments are currently being used in your state?

We understand from our survey that you are currently using (LIST INSTRUMENTS MENTIONED). (If more than one instrument is in use, try to find out what factors influence which instrument is being used.)

Please describe the procedures in STATE for conducting alcohol abuse assessments.

Do you foresee any changes occurring in this procedure during the next few years? If yes, what changes? Why?

Have you given any thought to using computerized instruments?
If yes, which instruments are you considering using? Why?

What are the financial limitations placed on the assessment (at each stage. Do they have money to conduct the initial screening but not enough to do a more thorough assessment?

Is the offender required to pay for the assessment?

Are the assessments conducted by the treatment provider or court personnel?
(Review training requirements of assessors as reported on the national survey form.)

Is there any monitoring and follow-up of an individual who has been referred to a particular treatment plan?

Do you know of any studies currently being carried out in your state to determine the effectiveness of a particular assessment instrument? (If yes, who's the contact person and what do they know about the study.)

Do you believe that a particular instrument is being used more often in a rural setting than in an urban one? If yes, do you have any idea why rural/ urban settings chose their respective instruments?

Have there been any recent legislative changes affecting the handling of DWI cases by the courts which might have an impact on assessment and treatment of DWI offenders?

Are there any legislative constraints which impact on the use of alcohol abuse assessment instruments in your state?

How do you contact persons in the state to inform them of changes in assessment procedures?

How do you receive feedback from them on difficulties which they may be encountering with particular instruments or procedures?

How much of the information obtained from assessments and treatment is computerized at the state level in STATE? What's done with it?

Are there any special constraints which dictate the type or assessment provided such as setting available to administer it, time available, information available, etc.?

**PROTOCOL FOR INTERVIEWING JUDGES REGARDING THEIR IMPRESSIONS
OF THE UTILITY OF ASSESSMENT INSTRUMENTS**

Approximately how many DWI cases do you handle during a typical week?

In what percent of DWI cases do you order that the defendant be assessed for an alcohol abuse problem? On what basis do you make this determination?

Do you prefer to obtain the assessment, pretrial, presentence, posttrial?

In what form are the results of assessments presented to you?

Are there particular assessment instruments which you prefer over others? If so why? What are their shortcomings?

How valuable are the results of the assessment to you in determining the course of treatment you recommend?

Do you feel that there are enough treatment options available to those convicted of DWI in your jurisdiction? How would you make it better?

Can you think of more effective ways to deal with alcohol abuse problems?

Identify what constraints exist in your system for assessing a defendant appropriately?

PROTOCOL FOR COURTROOM PERSONNEL USING ASSESSOR INSTRUMENTS

Which instrument (s) do you usually use in determining an alcohol abuse problem?

Why did you select this/these instruments? (Try to get them to name as many specific criteria as possible for each instrument - cost, facilities, time, etc.)

What are the things which appeal to you about the instrument? (Was the selection influenced by marketing?)

How often does the test outcome conflict with your preconceived impression of the offender and what do you do in the case of a discrepancy?

Which aspects do you think appeal to judges (ease of administration, understandability, speed of output)?

Are there things which you would like the instrument to provide you with that are currently lacking?

(If not already using a computerized test.) Have you heard about the new computerized instruments? Which ones? What do you know about them? Where did you hear about them?

What other sources of information about the clients, e.g., interview, BAC, prior record, do you use in formulating your overall assessment?

How often (what % of time) do you use this information in conjunction with test outcome?

Do you think it would be desirable to develop a stand-alone (no-interview) instrument for DWI assessments? Why or why not?

In what form are your assessments presented to the courts? May we have a sample.

Are these presented to the judge presentencing or post sentencing?

Is your instrument appropriate for all defendants (foreign, female, young old)?

Appendix D

**North Carolina Preliminary Results
Mandatory Substance Abuse Assessments
Pilot Program**

Using SALCE

Tables provide by ADE Corporation

TABLE I
 PILOT PROGRAM RESULTS
 ASSESSMENT CODE *
 BY
 BLOOD ALCOHOL CONTENT
 FOR FIRST AND MULTIPLE DWI OFFENDERS
 BLOOD ALCOHOL CONTENT

ASSESSMENT CODE FREQUENCY	NO BAC REPORTED		REFUSAL		.03/.09		.10/.14		.15/.19		.20+		TOTAL		GRAND TOTAL
	1st	2+	1st	2+	1st	2+	1st	2+	1st	2+	1st	2+	1st	2+	
100		1					3	2	1	2			4	5	9
120	2	6	3	28		1	23	39	40	60	32	51	100	185	285
123	5	2	4	11			4	27	11	41	8	37	32	118	150
124-160			1				1				1		3	0	3
200	26	21	32	121	8	5	84	166	136	158	67	134	353	605	958
230	2	4	5	18			13	30	12	41	12	25	44	118	162
234-260		1		8		1	4	10	4	5	1	6	9	31	40
300-560	3		1	1		1	8	2	4	1	2	1	18	6	24
600	9	1	10		3		97	9	44	3	15	2	178	15	193
700	3		12		1		39	1	27				82	1	83
0	66	79	88	127	20	5	443	267	414	315	160	173	1191	966	2157
TOTAL	116	115	156	314	32	13	719	553	693	626	298	429	2014	2050	4064

* ASSESSMENT CODE DESCRIPTION

1. FURTHER EVALUATION NECESSARY
2. ALCOHOL HANDICAP IDENTIFIED
3. OTHER DRUG HANDICAP IDENTIFIED
4. SIGNIFICANT ATTITUDE PROBLEM IDENTIFIED
5. EMOTIONAL OR PSYCHIATRIC PROBLEM SUSPECTED
6. OTHER
7. NO PROBLEM IDENTIFIED (ONLY WAKE COUNTY USED THIS)

Table 2
PILOT PROGRAM RESULTS

ASSESSMENT CODE *
by
REFERRAL CODE **
FOR FIRST AND MULTIPLE DWI OFFENDERS

ASSESSMENT CODE FREQUENCY	REFERRAL CODE FREQUENCY																		GRAND TOTAL						
	NO REF		140		100		200		300		400		500		600		700			800		900		TOTAL	
	1st	2+	1st	2+	1st	2+	1st	2+	1st	2+	1st	2+	1st	2+	1st	2+	1st	2+		1st	2+	1st	2+	1st	2+
100					2	2			1		2			2									4	5	9
120			42	71	58	111					1				1		1						100	185	285
123			30	103	2	15																	32	118	150
124-160					3																		3	0	3
200			128	217	202	325	2	10	15	38	1	5			5	3		2		5			353	605	958
230			1	21	79	24	38	1			1	3					1					1	47	123	170
234-260		3		1	7	5	17				1	1								1			9	26	35
300-560		1			2	3	1				1			1									19	6	25
600													24	3	154	12							178	15	193
700													82	1									82	1	83
0	887	875											0	1	145	30							1032	906	1938
TOTAL	891	876	222	477	298	511	4	10	15	39	3	12	107	5	318	49	1	4		6		1	1859	1990	3849

* ASSESSMENT CODE DESCRIPTION

1. FURTHER EVALUATION NECESSARY
2. ALCOHOL HANDICAP IDENTIFIED
3. OTHER DRUG HANDICAP IDENTIFIED
4. SIGNIFICANT ATTITUDE PROBLEM IDENTIFIED
5. EMOTIONAL OR PSYCHIATRIC PROBLEM SUSPECTED
6. OTHER
7. NO PROBLEM IDENTIFIED (ONLY WAKE COUNTY USED THIS)

** REFERRAL CODE DESCRIPTION

1. REFERRAL TO A COMMUNITY MENTAL HEALTH CENTER
2. REFERRAL TO PSYCHIATRIC REHABILITATION CENTER
3. REFERRAL TO AN ALCOHOL REHABILITATION CENTER
4. REFERRAL TO AA
5. NO TREATMENT INDICATED
6. REFERRAL TO ADETS - ADETS IS NOT CONSIDERED TREATMENT
7. REFERRAL TO A PRIVATE OUTPATIENT SUBSTANCE ABUSE CENTER
8. REFERRAL TO A PRIVATE INPATIENT SUBSTANCE ABUSE CENTER
9. REFERRAL TO SOME OTHER TYPE OF INTERVENTION

Table 3
SALCE DRINKING EVALUATION CATEGORY
 by
BLOOD ALCOHOL CONTENT

FOR FIRST TIME DWI OFFENDERS
 PILOT SAMPLE = 2014 (P)
 NON PILOT SAMPLE = 1467 (NP)

FIRST DWI	NO BAC REPORTED		REFUSAL		.03/.09		.10/.14		.15/.19		.20+		TOTAL	
	P.	NP	P.	NP	P.	NP	P.	NP	P.	NP	P.	NP	P.	NP
CAT. 1	14	29	20	27	2	1	154	21	0	0	0	0	190	78
CAT. 2	27	32	32	15	4	1	173	42	165	138	0	0	401	228
CAT. 3	26	60	55	30	10	7	223	45	255	216	94	101	663	459
CAT. 4	25	65	31	30	8	4	126	36	200	215	120	102	510	452
CAT. 5	23	63	18	8	8	1	44	16	73	75	84	87	250	250
TOTAL	115	249	156	110	32	14	720	160	693	644	298	290	2014	1467

Table 4

**SALCE DRUG EVALUATION CLASSIFICATIONS
FOR NORTH CAROLINA
PILOT AND NON PILOT PROGRAMS
FOR FIRST AND MULTIPLE DWI OFFENDERS**

	NO USE		USE NO PROBLEMS		USE MINIMAL PROBLEMS		DRUG USE PROBLEM		PROBABLE ADDICTION		
	1	2+	1	2+	1	2+	1	2+	1	2+	
PILOT	34%	22%	27%	24%	23%	28%	10%	13%	6%	13%	
	1 = (2014)										
	2+ = (2050).										
NON-PILOT	28	25	41	19	18	29	9	13	3	13	
	1 = (1630)										
	2+ = (1912)										