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Use of Intermediaries in DWI Deterrence

Volume II—Phase I Report Analysis of Potential Target Clusters for DWI Intermediary Programs

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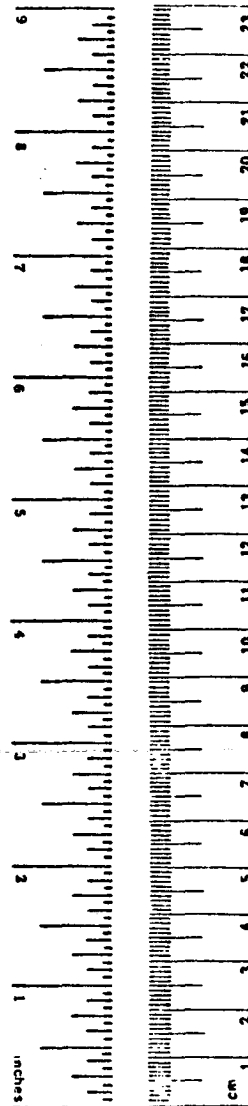
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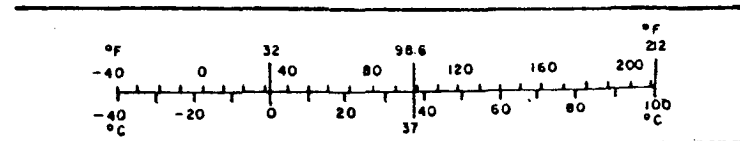
Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
AREA				
in ²	square inches	6.5	square centimeters	cm ²
ft ²	square feet	0.09	square meters	m ²
yd ²	square yards	0.8	square meters	m ²
mi ²	square miles	2.6	square kilometers	km ²
	acres	0.4	hectares	ha
MASS (weight)				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
VOLUME				
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft ³	cubic feet	0.03	cubic meters	m ³
yd ³	cubic yards	0.76	cubic meters	m ³
TEMPERATURE (exact)				
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
AREA				
cm ²	square centimeters	0.16	square inches	in ²
m ²	square meters	1.2	square yards	yd ²
km ²	square kilometers	0.4	square miles	mi ²
ha	hectares (10,000 m ²)	2.6	acres	
MASS (weight)				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
VOLUME				
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m ³	cubic meters	35	cubic feet	ft ³
m ³	cubic meters	1.3	cubic yards	yd ³
TEMPERATURE (exact)				
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



*1 in = 2.54 cm exactly. For other exact conversions, and more detailed tables, see NBS Misc. Publ. 286, Units of Weight and Measures, (Rev. 3-72) or NBS Catalog No. C-13, 10, 200.

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LIST OF ABBREVIATIONS

ABC	Alcohol Beverage Control
ARS	Alcohol Related Situation
BAC	Blood Alcohol Content
DISCUS	Distilled Spirits Council of the United States
DUI	Driving Under the Influence
DWI	Driving While Intoxicated
ERIC	Educational Research Information Clearinghouse
FARS	Fatal Accident Reporting System
MADD	Mothers Against Drunk Driving
MLBA	Michigan Licensed Beverage Association
NASS	National Accident Sampling System
NCSI	National Capitol Systems, Inc.
NHTSA	National Highway Traffic Safety Administration
NIAAA	National Institute on Alcohol Abuse and Alcoholism
NIMH	National Institute on Mental Health
OECD	Organization for Economic Co-operation and Development
PI&E	Public Information and Education
RID	Remove Intoxicated Drivers -- USA
SADD	Students Against Drunk Driving
SES	Socio-Economic Status
TRIS	Transportation Research Information Service

SUMMARY

This report presents the methodology and the findings of Phase I of the National Highway Traffic Safety Administration sponsored project on the Use of Intermediaries in DWI Deterrence. It also presents recommendations of the contractor--National Capitol Systems, Inc.--for "target clusters" to be developed in Phase II of the contract.

The objective of this project is to develop a program to encourage other persons, "intermediaries", to intervene in immediate drinking/driving situations to prevent driving while intoxicated (DWI). There are two overall goals. The first is to identify and select a limited number of "target clusters"--combinations of probable drunk drivers, potential intermediaries, drinking settings, and interventions--that offer the greatest potential payoff in terms of reduced DWI behavior. The second is to develop the intervention strategies more fully and perform limited feasibility analysis and testing of the selected target clusters.

The project has been divided into two phases, roughly corresponding to these two overall goals. In Phase I, the data collection, analysis and assessment needed to support the selection of target clusters were carried out. This report summarizes the data collection and analysis performed during Phase I and presents recommendations of National Capitol Systems, Inc. (NCSI) concerning selection of target clusters. In Phase II, selected intervention strategies will be developed; some additional feasibility analysis and limited testing of the selected target clusters will also be conducted.

Methodology

Information was collected in five general topic areas: (1) descriptive epidemiology of drinking and DWI; (2) psychosocial characteristics of DWI individuals and potential intermediaries; (3) previous studies of DWI intervention; (4) previous studies of analogous interventions (crisis intervention, "gate keeper" therapy, etc.); and (5) past campaigns to motivate intermediaries (e.g., "Friends don't let friends drive drunk"). The investigation of these topics consisted of a literature review, interviews with key individuals involved in DWI intervention and prevention, a review of recent clinical interviews and focus groups dealing with DWI, and an analysis of national survey data on accidents and alcohol consumption.

Major Empirical Findings

The data and the research studies that were reviewed during Phase I yielded the following major findings especially relevant to the selection of target clusters and the development of intervention strategies.

Drinkers and Drunk Drivers. A high percentage of accident-involved drunk drivers were young (less than 30 years old) males. This high accident involvement has a number of components. Proportionately there are more young people and more young licensed drivers than older people and older licensed drivers in the general population. Young drivers are more likely to drive while intoxicated or under the influence than are older drivers. However, of DWI or DUI drivers, with one exception, young people are no more likely than older people to be involved in accidents. The one exception involves young males who have just attained legal drinking age. A few studies suggested that young males who were both learning to drink and learning to drive may have faced greater accident risk of DWI. Driving history and occupation status were also predictors, albeit weaker ones, of DWI accident involvement. Other driver characteristics, such as race and marital status, were unrelated to DWI involvement (pp. 10-16).

Drinking Locations and DWI Trip Origins. Interviews and survey data indicate that the largest share of drinking appears to take place at home. In terms of the distribution of drinking, women tend to drink more in restaurants and other peoples' homes, while men tend to drink more in bars and other places outside of the home. Studies of DWI trip origins, though inconclusive, indicate nonetheless that a majority of DWI trips originate at bars and other public drinking places (pp. 17-24).

Public Drinking Places and DWI Intervention. Because a large number of DWI trips tend to originate from public drinking places, they are important places to intervene. However, the attitudes that people carry with them into bars, their behavior in bars, and the mechanisms of social control (or lack thereof) in bars make intervention difficult. Bar patrons view bars as "time-out" social settings where a wide range of social behaviors are tolerated. Many social activities and standards of behavior in bars support and reinforce heavy drinking and the consequent attainment of impaired BAC's. The three potential agents of social control in bars--bar management or service personnel, other patrons and the individual himself--face real limitations in their ability to control drunk driving, although the potential for exercising such control varies widely among different types of public drinking places (pp. 24-30).

Helping Behavior and Intervention. Review of related social psychological research on helping behavior and bystander intervention found that the presence of other individuals, the ambiguity of emergency situations and lack of clarity on what should be done inhibit intervention. On the other hand, feelings of personal responsibility, an absence of norms restricting intervention and tangible evidence of the victim needing help encourage intervention. Most potential DWI situations do not rate very favorably on these factors (pp. 31-36).

DWI Intermediaries and Intervention. From 1972 to 1980 increasing percentages of the population reported intervening in potential DWI situations--up to 42 percent in 1979 and 1980. This suggests growing public acceptance of intervention. Males, younger persons and persons frequently involved in alcohol situations more frequently reported intervention. There were also variations in intervention behavior--both amount and type of intervention--by personality type. In order of decreasing acceptability, the most acceptable interventions have been driving the person home, taking his or her key away and having the person stay over (pp. 37-41).

Analysis and Recommendations

In the analysis phase of the project a descriptive model of factors affecting the impact of particular target clusters was developed. The model was used to assess the likely impact associated with selecting groups of drinkers, intermediaries, drinking settings and intervention techniques. From this analysis, 25 target clusters were selected, their likely impacts were evaluated using multi-dimensional ratings and consensus analysis, and two clusters with the greatest potential were recommended for further development.

The two target clusters were:

- o Younger and older adult males in neighborhood or home territory bars, service personnel as intermediaries
- o Youth and younger adult males in singles or market place bars, friends/family as intermediaries

Programs to motivate these intermediaries should reduce resistance to intervention by identifying and reinforcing specific actions to take in an imminent DWI situation; determination of whether a friend or guest is impaired; social acceptability/desirability of intervention, and reassurance about potential reactions to intervention by the driver. The alcohol industry and trade associations are suggested as networks for communicating these messages.

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This report was prepared by Dr. William Cozzens (Project Director) and the following NCSI staff: Dr. Douglas Mackintosh, Ms. Ruth McGoff, Mr. Jim Antetomaso and Ms. Beverly Bryant. Dr. Nancy Ostrove, project consultant, drafted the section of the report on Psychology of Intervention and Helping Behavior.

The NHTSA Project Officer for this effort was Dr. Maria Vegega. Other NHTSA officials and agency and organization staff provided advice as well as contacts and information for further investigation.

I. INTRODUCTION

BACKGROUND

Driving while intoxicated (DWI) or driving under the influence of alcohol (DUI) constitutes one of the most important public health and safety problems in the United States. Millions of teenage and adult Americans regularly get behind the wheel with their driving capability seriously impaired by their prior consumption of alcoholic beverages (Waller, 1970; OECD, 1978, Census, 1979). The aggregate impacts of these individual behaviors are startling. Of the 50,000 traffic accident fatalities occurring each year, alcohol is "involved" in 50 percent, or an estimated 25,000 of them (U.S. Department of Transportation 1982). Additional hundreds of thousands of persons are injured and millions of dollars in medical costs and property damage result from crashes involving drunk drivers (Edwards and Mackintosh, 1981). The economic as well as the human and personal losses associated with such alcohol-involved crashes are staggering.

While alcohol is not necessarily the cause of all these fatal accidents and while some of these crashes would have occurred without alcohol present (Zylman, 1974), alcohol is undoubtedly a causal factor in many of them. Reductions in the number of people driving under the influence of alcohol, the frequency of DWI and the blood alcohol content (BAC) of those who continue to engage in such behavior would reduce the number of crashes and the tragic human and economic losses associated with them.

How to change this behavior and reduce these losses has proven to be one of the most difficult and challenging tasks our society has faced. Laws exist forbidding drunk driving and imposing sanctions on those caught engaging in such behavior. Yet in most states the penalties are not very severe, the chance of arrest is small, and the probabilities of being convicted and having any penalty imposed are low (Borkenstein, 1975; Ennis, 1977; Wilde, 1971, 1975). Norms in our society also seem to reinforce drunk driving. Drinking, "holding one's liquor" and operating an automobile demonstrate manly competence (Cavan, 1966; Kotarba, 1977). The American transportation system and, unfortunately, most driver's everyday experience also tend to reinforce drunk driving behavior. Our low density settlement patterns and high dependence on the automobile even in big cities make the alternatives to drunk driving impractical, inconvenient or costly. Walking, taking a cab, using public transportation, or hitching a ride with a friend may be impossible, or if possible, extremely costly or time-consuming for the drinker and/or his friends. In the face of this inconvenience and these costs, drinkers' everyday experience--namely, that they can get home successfully when intoxicated--encourages them to continue such behavior.

Although there is a growing awareness of the individual and social costs associated with DWI, similar factors seem to have inhibited major legislative or administrative reform. It would appear that the prevalence of DWI behavior and a resulting awareness among the electorate and its legislative representatives that "there but for good fortune go I," has limited support for much harsher penalties or stepped up enforcement efforts. The police, the court system and the prison system also seem to have resisted demands for stepped up enforcement, arguing that these systems cannot handle the increased load without additional resources or facilities.

Beyond traditional punishment or threat of punishment, past efforts to reduce driving while intoxicated and the associated toll of accidents have taken two paths. Many programs have focused on reducing recidivism among the small number of drivers who have been convicted of DWI. For example, under many of the state or local Alcohol Safety Action Projects (ASAPs), drivers convicted of DWI have been referred to rehabilitation programs for education and counseling. At the other end of the spectrum, public information campaigns, using television and radio spots and newspaper or magazine advertisements, have sought to inform the public about the risks of DWI and to change DWI behavior (Wilde, 1971, 1975; Swinehart, 1972, 1981).

Both of these approaches suffer from some important drawbacks. Efforts directed at convicted DWI offenders have limited impact because the number of offenders reached is small and represents only a very small part of the population of DWI drivers. These efforts also appear to have had little deterrent effect because the risk of apprehension was perceived by the general population to be low. The public information campaign as a more general countermeasure may reach a much greater proportion of the population of DWI drivers, but messages have only limited impact on behavior.

There are indications now that public awareness of the DWI problem is increasing and that even values may be changing. Grass roots organizations such as Mothers Against Drunk Driving (MADD), Students Against Drunk Driving (SADD) and Remove Intoxicated Drivers-USA (RID) are providing a local constituency for tougher legislation and enforcement. At the national level, Congress passed legislation that would give states a financial incentive to strengthen their anti- drunk driving laws. A 30-member Presidential Commission on Drunk Driving has also been established with the objectives of creating a greater public awareness of the drunk driving problem, inspiring more activity by state and local governments, and generating public support for these efforts. The Commission will consider four basic approaches to reducing drunk driving: public information; raising the perceived risk of arrest for DWI; increasing the severity of punishment; and education and rehabilitation. State and local governments are expected to play major roles in those approaches the Commission identifies as potentially effective.

Despite these recent developments there still is much to overcome. Many of the values and incentives favoring DWI are still in place. DWI countermeasures are still needed that will reach a significant portion of the at-risk population and have an effect on their behavior.

PROJECT OBJECTIVES

Encouraging other persons to intervene in the immediate drinking/driving situation to prevent driving while intoxicated is one DWI countermeasure that may both be broad reaching and have a reasonable probability of behavior change. The National Highway Traffic Safety Administration (NHTSA) is considering a multi-year effort to develop strategies to encourage such non-official person-to-person intervention into probable drunk driving situations. This initial study was designed to establish the foundation for a program to motivate such intervention.

This project has two overall goals. The first is to identify and select a limited number of "target clusters"--that is, combinations of probable drunk drivers, potential intermediaries, drinking settings, and interventions--which offer the greatest potential payoff in terms of reduced DWI behavior. The second is to develop the intervention strategies more fully and perform some very limited feasibility analyses and testing of the selected target clusters.

The project has been divided into two phases, roughly corresponding to these two overall goals. In Phase I, the data collection, analysis and assessment needed to support the selection of target clusters was carried out. This report summarizes the data collection and analysis performed during Phase I and presents NCSI's recommendations concerning selection of target clusters. In Phase II, selected intervention strategies will be developed; some additional feasibility analysis and limited testing of the selected target clusters will also be conducted.

PROJECT SCHEDULE

Work on the project began in October, 1981. Phase I was completed in June, 1982, with the first draft of this Phase I summary report submitted in July, 1982. Phase II got underway in August and will be completed in April, 1983.

METHODOLOGY

In this section of the report the methodological approach and the detailed activities involved in executing this approach are discussed. First, the conceptual framework underlying the study is presented; then data collection and analysis activities are reviewed.

Conceptual Framework.

As discussed above, the objectives of this project are to identify, develop and test strategies for motivating persons who are in positions to take immediate preventive action in potential drunk driving situations. The objective in Phase I was to identify two or three combinations of drivers/intervenors/settings/appeals that are likely to result in a significant reduction in DWI incidents. To simplify the approach, we first identified, defined and categorized drinkers/drivers, potential intermediaries, settings, appeals to intermediaries and sources of appeals along several dimensions. Groups of drinkers were categorized in terms of their probability of undertaking DWI trips, their contact with potential intermediaries and their susceptibility to intervention. Potential intermediaries were categorized in terms of the likelihood of their being in a position to intervene in a potential DWI situation, their likelihood of intervening, their likelihood of success in deterring DWI incidents and their susceptibility to appeals to intervene. Settings were categorized in terms of DWI trip generation potential, the likelihood of a potential intermediary intervening and probable response of a drinker to an intermediary. Finally, appeals and the sources of appeals were categorized in terms of their probable impact on potential intermediaries.

In Phase I, we have recommended "target clusters", each consisting of a class or group of potential drunk drivers, a drinking setting, and a class or group of potential intermediaries. We also have analyzed possible appeal(s) to the intermediaries to intervene, possible source(s) of the appeal and, implicitly, one or more potential interventions by the intermediaries. All of these will be selected and developed more fully in Phase II. The target clusters were selected to have the greatest possible impact in terms of reduction of dangerous DWI incidents. The purpose of data collection and analysis in Phase I was to establish an empirical basis for assembling these components into target clusters and judging the likely impact associated with them.

Data Collection

Before data collection could proceed, several activities had to be completed: definition of key terms, determination of the scope of the study and determination of the specific topic areas to be investigated. Six key terms were identified: intermediary, drinking setting, intervention, drinker, motivational techniques,

and target cluster. For the purpose of this project the following definitions of these terms were adopted.

- o Intermediary. Any person who intervenes in a potential drinking/driving situation to prevent a drinker from driving or to reduce his or her DWI risk if driving cannot be prevented.
- o Drinking setting. The location (bar, private home, picnic, etc.) where drinking occurs prior to a driving while intoxicated incident and where intervention to prevent DWI can take place.
- o Drinker. The person consuming alcoholic beverages who is a potential DWI offender.
- o Intervention. Direct or indirect action taken by an intermediary to discourage or prevent a drinker from driving while intoxicated. Could include actions taken to reduce the drinker's blood alcohol content and his accident risk. Limited to actions taken in the drinking setting.
- o Motivational technique. Any direct or indirect action taken to encourage intervention by an intermediary.
- o Target cluster. A combination of drinker category, drinking setting and intermediary group selected for their potential results if used for intermediary intervention.

As the definition of intervention indicates, we decided that we were interested only in preventive actions that would take place in a drinking setting. We excluded less immediate actions that could take place prior to a drinking situation such as preventing an individual from drinking even small amounts of alcohol.

To initiate and organize the research and information related to cluster selection, five general topic areas of interest were identified:

- o Descriptive epidemiology of drinking and DWI individuals,

- o Psychosocial characteristics of DWI individuals and potential intermediaries,
- o Previous studies of intervention and DWI,
- o Previous studies of other analogous interventions (crisis intervention, "gate-keeper" therapy, etc.), and
- o Past campaigns to motivate intermediaries (e.g., "Friends don't let friends drive drunk").

These topics are not mutually exclusive, but they did provide distinct categories that could be investigated. Our investigation primarily consisted of a literature review. We identified relevant reports and other publications through a variety of sources, including:

- o Interviews with researchers, administrators and policy makers familiar with these topics,
- o Printouts of computer-generated lists of publications, and
- o Citations and references in published papers and reports.

We interviewed in person several NHTSA officials and key individuals in other agencies in the Washington, D.C. area. We telephoned selected public officials in state agencies (police, alcohol abuse, etc.) and other experts in traffic safety research. They informed us about past and on-going studies and expressed opinions about the most reasonable approaches to DWI intervention.

Several automated lists of relevant publications were investigated. They included:

- o Psychological Abstracts
- o Social Science Search
- o Transportation (TRIS)
- o Sociological Abstracts
- o Educational Research Information Clearinghouse (ERIC)

- o National Clearinghouse for Alcohol Information (NIAAA)
- o National Clearinghouse for Mental Health (NIMH)

Additional bibliographies were obtained from the Institute for Highway Safety at Michigan State University and other reference libraries. By systematically abstracting and cataloging references we believe we have covered the literature thoroughly.

Two other sources of information were investigated and utilized: recent clinical interviews and focus groups dealing with DWI conducted under other NHTSA contracts, and on-going national survey data on accidents and alcohol consumption. The interviews and focus groups included individuals who had drinking and driving experience. Motor vehicle accident and alcohol consumption survey data came from three national reporting systems:

- o Fatal Accident Reporting System (FARS-NHTSA)
- o National Accident Sampling System (NASS-NHTSA)
- o Sixth Survey of Drinking Patterns (NIAAA)

These data were analyzed to answer the following questions:

- o What are the demographic characteristics of individuals who drive while intoxicated?
- o In what setting(s) do individuals most frequently drink before DWI?
- o With whom do they drink?

The results of these analyses provided an epidemiologic description of individuals with higher accident risk and consequently greater risk of traumatic injury; these individuals also expose others (their passengers, pedestrians, and occupants of other vehicles) to the risk of injury. In the next section of the report, the data analyses are discussed further.

Analysis. The analysis phase of the study combined and synthesized the information obtained through the data collection and literature review. Two descriptive models were constructed; the first, summarizing what is known about the relationship between potential drunk drivers and possible intermediaries; the second, summarizing what is known about possible intermediaries and how they can best be influenced to intervene in situations that may result in DWI incidents. The function of the data

analysis was to assess clusters of intermediary groups, target drunk drivers, and drinking settings. After identification of these target clusters, their likely impacts were evaluated, and those with the greatest potential were recommended for further development.

Selection of target clusters was complicated by several factors. Groups of individuals who are most at risk might be least susceptible to interventions either because of resistance to an intermediary's message and/or because of intermediary reluctance to become involved with these people. Also, one motivational appeal might reach a large number of intermediaries but the probability of each intermediary intervening as a result of the appeal might be low; another appeal might be much more selective, (i.e., reach a much smaller group of potential intermediaries) but the probability of each intervening as a result of the appeal might be high. Thus the analysis for cluster recommendations was performed using a multi-dimensional rating of target clusters. By necessity, trade-offs had to be made among desirable and undesirable effects. Since little research has been conducted on the impact of intermediaries in DWI settings, the analysis ultimately had to rely on the informed judgment of participating investigators. In the absence of empirical research, but with analysis of the descriptive epidemiology of DWI and the social psychological aspects of action intervention, multi-dimensional ratings coupled with consensus analysis appeared to be a reasonable method for recommending target clusters.

PRODUCTS

The goal of this investigation was to identify two or three combinations of drinkers/intermediaries/settings that are most likely to result in a reduction in DWI incidents. These combinations should have the greatest potential for reducing DWI and be susceptible to public/private initiatives for action. The objective of Phase II is to develop further and do preliminary testing of the one or two most promising target clusters. This report summarizes the investigation conducted in Phase I and its results. A report prepared at the conclusion of Phase II will present the developed intervention and motivational strategies for the selected clusters.

OUTLINE OF REPORT

This report is organized into three major sections. In Chapters 2 and 3, the results of our data collection and analysis are presented. Chapter 2 presents findings from the literature review and data collection and provides the empirical base for the analyses of drinking groups, locations, intermediaries, and intervention techniques. Chapter 3 discusses the aggregation of

these factors into target clusters, suggests criteria for each target cluster component, and evaluates and recommends clusters expected to have the greatest impact in reducing DWI. The information presented in Chapter 2 serves as a basis for the subsequent evaluation and recommendation of clusters. In Chapter 4 we discuss national, state, and local initiatives to encourage intermediaries to take action in drinking settings. We recognize that careful planning and groundwork must be conducted to determine how best to reach the two or three potentially most effective groups of interveners.

II. RESEARCH FINDINGS

INTRODUCTION

This chapter presents findings of the literature review and data collection. The information that has been investigated is organized under six major headings: Drinker Characteristics, Drinking Locations, Drinking Settings and Interaction, the Psychology of Intervention, Intervention Techniques and DWI Intermediaries. Under each heading, data and information from a range of sources are presented and synthesized to give as complete a picture as possible of what is known about each particular topic.

The detail and the utility of information available vary tremendously across the six topics. There has been a moderate amount of research done on characteristics of drinkers and DWI individuals; however, little has been done on the effectiveness of various intervention techniques or the likely behavior of different potential intermediaries. As a consequence, several of the sections are much briefer than others, simply because there is not as much that can be said about those topics. Also, as a result of the wide variations in amount of research done on the different topics, we have different degrees of confidence in the analysis and target cluster recommendations presented later. In recommending that a particular group of drinkers be targeted, we have relatively good information on the incidence and risk of DWI for that and for other groups. But in recommending that a particular technique be used or a particular group of intermediaries be encouraged to intervene, we have very little hard empirical research on which to assess the likely effects of using that technique or group.

DRINKER CHARACTERISTICS

Driver Age and DWI Involvement

Age is a characteristic that could be used to distinguish persons for inclusion in possible target clusters. There are several rationales for using age to define clusters:

- o Members of particular age groups may face a higher risk of alcohol/driver involvement.
- o Members of particular age groups who drink and drive may face a higher risk of being in an accident, either because of their degree of impairment or other characteristics of their driving behavior.

- o Because of the above two points and differences in the size of age groups, some particular groups may represent a disproportionate share of total accidents with alcohol involved drivers.
- o Drinking patterns and drinking locations may vary substantially among age groups. Thus, even if the risk and/or incidence of DWI is not higher for particular age groups, a focus on one or more of those groups may make sense because they can be easily reached or influenced.
- o Individuals of different ages may have different values and different psychological profiles. This means that different intervention techniques or different intermediaries may be more effective with them.
- o Finally, age is a personal characteristic that potential intermediaries can easily use to identify or select targets for their intervention. Bartenders or other service personnel can easily estimate patrons' ages and so can tailor their intervention to the patrons' characteristics.

This section of the report will examine the evidence concerning DWI involvement and risk by different age groups. In order to select an age group for targeted DWI intervention, it is desirable to consider two populations: 1) those driver age cohorts that account for the greatest amount of DWI involvement, and 2) those driver age cohorts that have the greatest DWI-collision risk. Selection is simplified to the degree that these groups overlap.

DWI Involvement. A.C. Wolfe's (1975) analysis of data from the first nationwide roadside survey suggests that younger drivers make up a large part of the impaired driving population. In this study drivers aged 16-30 represented over 50% of the drivers with a Blood Alcohol Content (BAC) above 0.08%, whereas the next fifteen year age cohort (31-45) accounted for 32% of the high BAC drivers. Kenneth Perchonok (1978) examined over 7,400 police accident reports in western New York State, about half of which were alcohol-related. The age distribution of culpable drinking drivers involved in collisions in this study was almost identical to Wolfe's elevated BAC breakdown by age. Using roadside survey data and police accident reports, William Carlson's (1973) extensive analysis of drinking driving and driver age in Washtenaw County, Michigan, also found that young persons represented a large share of night drivers with high BAC's and drivers in alcohol-related crashes. Of the drivers in

alcohol-related, single-vehicle, night crashes, 62% were aged 16-29.

Data from the 1979 National Accident Sampling System (NASS) are consistent with these findings. Table 2.1 shows the age distribution of drivers with some indication of alcohol involvement (either DWI citation, measured BAC or officer's indication on the accident report) who were in motor vehicle accidents, by sex. Males far outnumber females, younger drivers far outnumber older drivers. The age 15-29 drivers make up 59% of the group. The 15-29 year old males alone make up 50 percent of all alcohol-involved drivers in accidents. Even modest reductions in this group's alcohol-driving involvement could have

Table 2.1
DWI Accident Involved Drivers,
by Age and Sex

AGE CATEGORY	MALES		FEMALES	
	NUMBER (000)	PERCENTAGE	NUMBER (000)	PERCENTAGE
15-29	113	14.2	16	2.0
20-24	188	23.7	27	3.4
25-29	95	12.0	25	3.2
30-34	65	8.2	8	1.0
35-39	35	4.4	18	2.3
40-44	37	4.7	5	0.6
45-49	45	5.7	9	1.1
50-54	18	2.3	7	0.9
55-59	24	3.0	2	0.3
60-64	16	2.0	2	0.3
65+	21	2.6	3	0.4
<u>Age Unknown</u>	14	1.8	0	0.0
TOTAL	671	84.6	122	15.4

Source: 1979 National Accident Sampling System data

a positive effect on the DWI problem. Just based on sheer numbers, this group could be the primary focus of an intervention effort.*

DWI Risk. The other important consideration for selecting target groups for countermeasures is the relative risk of being involved in a DWI situation or accident. Risk is defined as the chance of experiencing some event. For example, in terms of the previous discussion, it is important to know whether the high percentage of accidents involving alcohol in which the driver is a younger male are attributable to a greater chance of young males having DWI accidents or simply to a larger number of young male drivers (greater exposure). The question of risk is more difficult to address because calculating it requires a measure of the number exposed (the relevant denominator). Unfortunately, few studies meet the requirements of case control or similar methodology that can yield a good measure of risk. However, some evidence is available.

The so called Grand Rapids study (Borkenstein, et.al, 1964) used a case control methodology that permitted analysis of risk by age. Allsop's (1967) reanalysis of Grand Rapids data as reported by the OECD (1978) found significant differences in accident risk by age, controlling for BAC. At BAC's above the limit of 0.08 percent, 18-24 year olds were more than twice as likely as 35-54 years olds to have an accident (OECD, 1978, p.28). Carlson's previously mentioned study (1973), with finer age breakdowns, found higher involvement in DWI-related accidents than would have been predicted by exposure alone in one age group--the 18-21 year olds.** On the other hand, younger drivers

*Police officers' subjective appraisal and reporting of "alcohol involvement" is sometimes suggested as a source of bias in the apparent age distribution of alcohol involved drivers. Carlson (1973) discounts at least the first part of this argument, saying that some studies have indicated a tendency for police officers' subjective appraisals to underestimate alcohol involvement in fatal accidents, but that it is reasonable to assume that any bias affects all types of accidents and groups of drivers equally.

**Carlson's study provides an excellent example of how sensitive results can be to the choice of the exposure measure for calculating risk. When he calculated "involvement ratios" defined as the ratio of night drinking drivers to total population or as the ratio of drivers in alcohol-related single vehicle crashes to total population, the 25-29 year old cohort showed the highest involvement (1973, pp 251-252). He argues convincingly that total population is not the most appropriate measure of exposure.

(age 16-18) were overinvolved in non-alcohol related crashes than would be predicted by exposure. He suggested that these data are consistent with a learning-to-drive and a learning-to-drink-and-drive model of crash occurrence. The 16-18 year olds had more accidents because they were just learning to drive; the 18-21 year olds had more DWI-related crashes because they were just learning to drive under the influence of alcohol. In other respects, Carlson found that the high incidence of young (16-25) drivers in night, single vehicle crashes was a direct function of their amount of night driving.

Other studies, although less detailed, have results generally consistent with Carlson and the Grand Rapids study. Farris, et al., (1976) again found the 18-19 group having a considerably greater alcohol crash risk. Using data on fatal accidents involving alcohol over five years in four cities, James Fell (1977) constructed a profile of drinking drivers with an increased risk of involvement in fatal accidents for which they were responsible and in which they had been drinking. Males between the ages of 20 and 35 fell in the high risk group, again pointing toward the younger driver as a target group. The literature has also consistently shown (e.g., Perrine, Waller, & Harris, 1971; Zylman, 1972, OECD, 1978) that young drivers are particularly vulnerable to small amounts of alcohol and that they get into trouble on the highways at lower BACs than do older drivers.

It is interesting to note that although the 35-44 age cohort consistently is overrepresented among drivers with high and very high BACs, it has not been found to be either frequently involved or at risk in regard to DWI collisions. This would suggest that factors not associated directly with alcohol consumption, e.g., amount of driving experience, amount of drinking experience and psychosocial factors such as driver hostility and perceived alienation (Pelz, Schuman, 1974) may have an important influence on the probability of a collision among DWI drivers.

Driver Sex and Alcohol Characteristics

All of the evidence we examined indicates drinking and driving is a predominantly male phenomenon and problem. Most of the evidence is in terms of exposure rather than risk. The literature we surveyed as well as NASS and NIAAA data all indicate that a much larger proportion of men drive while intoxicated and that a much larger proportion of all DWI drivers are men.

In a nationwide roadside survey of late-night, weekend driving, 14.5% of the male drivers had BACs at 0.05 or above, as compared with 8.4% of the female drivers (Wolfe, 1975). The percentage of men driving with illegal BACs was twice that of women. In a random sample of individuals arrested for DWI in Philadelphia and Washington, D.C., 93.5% and 96% respectively were men (Fine, Scoles and Mulligan, 1975; and Government of the

District of Columbia, 1979). One study showed that, while men accounted for less than 43% of the population 16 or older in Mississippi, they accounted for 95% of DWI offenders (Weeber, 1981). While women have been found less likely to be arrested for DWI in non-collision situations, suggesting possible bias in some studies (Argeriou and Paulino, 1976), in roadside surveys men have been uniformly found to be overrepresented at high BACs.

The NASS data are consistent with the above findings from the literature. As table 2.1 illustrated, of drivers involved in accidents who were cited for DWI or who had some indication on the police accident report of alcohol involvement, about 85 percent were men; only 15 percent were women.

Other Driver Characteristics

A variety of studies have investigated the relationship between DWI behavior, accident involvement and driver characteristics other than age and sex. Few of these studies provide conclusive evidence of relationships between such characteristics and DWI risk.

Race. Data related to race and ethnic group are mixed and inconclusive. Wolfe's (1975) report on late-night, weekend drivers based on a nationwide roadside survey sample showed a slight disproportion (1.5%) of blacks to whites at BACs above 0.05. The Philadelphia DWI arrest data (Fine, Scoles and Mulligan, 1974) indicated that blacks had significantly higher levels of impairment than whites for those drivers in their middle 30's through middle 50's. But Voas' (1974) overview of roadside survey data concluded that ethnic group has no strong relationship to driver BAC. In Weeber's data (1981) on DWI individuals, the proportion of blacks to whites was identical to that of the entire state. It has been argued that any overrepresentation of blacks is more a result of low socioeconomic status than anything else (Zylman, 1972). The literature provides no strong justification either to target or to exclude a particular group for drunk driving intervention on the basis of race.

Marital Status. Married individuals have been found to drive at lower BACs than most non-married groups (Voas, 1974; Fine et al., 1974). However, Voas' report (1974) found that the group with the largest proportion of alcohol free drivers and the lowest proportion of illegal BACs was the single, never married group. The most overrepresented group having illegal levels of intoxication in the Voas study was the divorced or separated category. These results are consistent with Fell's findings (1977). But Jones and Joscelyn (1978) caution that data on crash risk by marital status may be confounded by the age of driver. Voas suggested that the single, never married individuals are likely to include many of the youngest drivers, who are less likely to have developed heavy drinking habits. The evidence does not appear to be strong enough to differentiate target groups based on marital status.

Occupation. Driver surveys in Grand Rapids, Michigan and Howard County, Indiana (Fox and Borkenstein, 1974) found blue collar workers overrepresented at BACs above 0.05 percent compared to white collar workers. Perrine, Waller and Harris (1971) report that drivers from lower occupational categories were overrepresented among those who had drinking and driving problems, especially DWI convictions. Voas' study (1974) of roadside survey data determined that white collar workers had a greater share of alcohol-free drivers as well as a smaller portion of intoxicated drivers. In Wolfe's roadside survey report (1975), blue collar workers were again found to have a larger proportion of moderate and illegal BACs than the white collar group. One significant exception to this pattern was Damkot's study (1979) of rural driving in Vermont. His evidence showed that 15% of "upper" socioeconomic individuals were driving illegally impaired, as opposed to 10% of the "middle", 9% of the "lower", and 7% of the "other" socioeconomic categories.

The NIAAA 1979 National Alcohol Survey also yielded information on the relationship between occupation and drinking/driving. Twenty-six percent of the NIAAA sample of drinkers reported ever having experienced drinking and driving. Just over half of those reporting ever having combined drinking and driving reported having done so in the last year. Thus, 13.4 percent of the entire sample of drinkers reported having combined drinking and driving during the previous year. Laborers and operatives--the lower occupational categories--reported higher rates of recent drinking and driving than other occupational categories. Just under 24% of laborers indicated having combined drinking and driving in the last year. Slightly more than 20 percent of operatives (assemblers, mine operatives, machine operatives, meat cutters, sewers and stitchers, packers and wrappers, textile operatives, gas station attendants, bus drivers, truck drivers, fork-lift operators) reported combining drinking and driving during the last year. These higher rates of DWI for lower occupational categories are consistent with the survey results reported above.

Driving History. Perchonok (1978) found that "the proportion of drinkers among accident drivers (based on police accident reports) increased with the number of previous accidents, the number of previous non-alcohol driving convictions, and the existence of at least one previous alcohol driving conviction." Thirty-six percent of the accident drivers with at least one previous drunk driving conviction had been drinking before the surveyed accident, versus only 8 percent of those accident drivers without a previous alcohol conviction. Damkot (1979) reported that proportionally twice as many male motorists with a previous DWI conviction were driving again at illegal BACs than those without a prior citation. Fell's (1977) profile of the culpable drinking driver in fatal accidents was a male who "had an increased risk of having a previous DWI arrest, or two or more speeding violations". Perrine's (1974) drunk driver profile was consistent with that of Fell's: "the overwhelming majority of

individuals convicted for DWI were already well known to the courts and the motor vehicle officials."

DRINKING LOCATION

The specific information on where people drink before driving is surprisingly limited. Different pieces of evidence from a variety of sources had to be integrated to get a picture of where drinking takes place before people drive, and therefore where intervention could be most effective. In the sections that follow, information from two data bases and a variety of literature and research reports on where people drink and where DWI trips originate is presented. While the evidence is by no means conclusive, it suggests that a high percentage of DWI trips originate from bars and, to a somewhat more limited extent, from other people's homes.

Trip Purpose/Origin from NASS Data

The trip purposes given by alcohol/accident involved drivers in the National Accident Sampling System (NASS) data suggest the recreational nature of most alcohol consumption associated with automobile use. Table 2.2 presents 1979 NASS data showing the

Table 2.2
Percentage of Total Alcohol/Accident Involved
Drivers by Trip Purpose

TRIP PURPOSE	NUMBER	PERCENTAGE	ACCIDENT INVOLVED DRIVERS
			PERCENTAGE EXCLUDING UNKNOWN
Return Home	203	34.1	47.2
Pleasure Driving	44	7.4	10.2
Visit Friend or Relative	40	6.7	9.3
Pick-up/Leave-off Passenger	34	5.7	7.9
Entertainment	22	3.7	5.1
Family or Personal Business	20	3.4	4.7
Work Related Business	14	2.4	3.3
Eat Meal	12	2.0	2.8
All Other	41	6.9	9.5
<u>Unknown</u>	<u>165</u>	<u>27.7</u>	<u> </u>
TOTAL	595	100.0	100.0

Source: 1979 National Accident Sampling System data

number and percentage of alcohol involved drivers in accidents by trip purpose. The sample is small, and the trip purpose categories are not very descriptive with respect to location, but the table does give some indication of the types of trips on which alcohol related accidents occur. Even excluding "Return Home" trips, 32.7 percent of the drivers who indicated a trip purpose said they were engaged in a trip that could be classified as casual, recreational or entertainment related. Only 12.2 percent of all trips were clearly classified as work, shopping or business related, and this includes a category called "Family/Personal Business" which includes components that could just as easily be considered casual or recreational.

Two major trip purposes accounted for more than half of all trips resulting in an accident by alcohol involved drivers. "Return Home" trips make up 47.2 percent of all known trip purposes. "Pick-up/Leave Off Passengers" trips make up 7.9 percent of all known trip purposes. Unfortunately, neither of the categories can be clearly classified as casual/recreational or business. If we assume that the "Return Home" and "Pick-Up/Leave Off Passengers" trips have the same proportion of recreational purposes as the trips for which the purpose is known, then about 73% of all trips involved going to or coming from recreational, entertainment or casual activities.

Unfortunately, specific origins of trips cannot be determined from the NASS data. For the design of an intervention program we would like to know whether people are coming from bars and restaurants, friends' houses and private parties or other origins such as sporting events. Other data must be investigated to develop estimates of such trip origins.

NIAAA Data on Where People Drink

The 1979 NIAAA National Alcohol Survey on Attitudes and Interest used several variables that yielded information on where people drink, and thus, by implication, on where DWI trips originate. More importantly, the survey allows calculation of a series of "quantity frequency" variables indicating the number of drinks consumed per month in different drinking settings. We have used these variables to calculate each drinker's share of drinking in five major settings: (1) restaurants, (2) bars, cocktail lounges, etc., (3) other person's homes, including private parties, (4) own home, and (5) elsewhere away from home (picnics, sporting events, in cars, etc.). The share of drinking is the percent of monthly alcohol consumption in each of these locations.

We have calculated the average share of consumption in each location for all drinkers and for different groups of drinkers--drinkers categorized by age, by sex, by amount of alcohol consumed, and by self-report of DWI experience--to see if there is any pattern to where people drink, because drinking patterns might be related to DWI behavior. Table 2.3 below shows the

share of drinking in different locations by sex. As can be seen, there is not a big difference in drinking patterns between men and women. Both men and women drink more in their own homes than in any other location.

Table 2.3
Share of Drinking in Various Locations by Sex

	<u>Men</u>	<u>Women</u>
In Restaurants	12.9%	21.0%
In Bars, etc.	18.2	15.5
At Someone else's home	12.4	15.1
In own Home	40.4	37.3
Elsewhere, out of home	16.1	11.2

Source: 1979 NIAAA Alcohol Survey

Men do a larger share of their drinking in bars, in their own homes and elsewhere out of the home; women, a larger share than men, in restaurants and in other person's homes.

There is also some variation in the share of drinking done in various locations when drinkers are categorized by age and by amount of drinking. Tables 2.4 and 2.5 show that younger drinkers and heavier drinkers--two groups that exhibit heavier DWI involvement--do a greater share of their drinking in bars than do older drinkers or lighter drinkers.

Table 2.4
Average Share of Drinking in Different
Settings, by Drinker Age

AGE	SHARE OF DRINKING				
	IN RESTAURANTS	IN BARS, TAVERNS, COCKTAIL LOUNGES	IN SOMEONE ELSE'S HOME	AT OWN HOME	ELSEWHERE OUT OF HOME
	9.6	31.3	32.7	18.9	7.2
20-24	10.0	25.0	14.9	32.0	18.1
25-29	15.9	20.8	13.6	35.8	14.0
30-34	16.7	18.3	13.4	38.6	13.0
35-39	16.2	16.4	15.0	40.4	12.0
40-44	19.4	13.5	12.5	40.7	13.8
45-49	22.2	15.4	8.1	36.9	17.4
50-54	24.4	13.3	12.6	36.8	12.8
55-59	21.3	8.9	11.5	45.5	12.7
60-64	14.1	11.4	18.7	43.7	12.0
65 and up	22.1	4.6	9.0	54.9	9.5
AVERAGE	17.0	16.8	13.8	38.8	13.6

Source: 1979 NIAAA Alcohol Survey

Table 2.5
Average Share of Drinking in Different Settings,
by Drinking Amount of Drinking

AMOUNT*	<u>SHARE OF DRINKING</u>				
	IN RESTAURANTS	IN BARS, TAVERNS COCKTAIL LOUNGES	IN SOMEONE ELSE'S HOME	AT OWN HOME	ELSEWHERE OUT OF HOME
2	22.6	9.9	21.4	34.8	11.2
2 to 10	17.3	16.0	13.7	42.0	11.0
10 to 60	16.9	18.4	12.7	37.0	15.1
60 to 120	12.1	20.8	8.9	41.6	16.6
120 or more	9.4	22.1	9.0	43.4	16.1
AVERAGE	17.0	16.8	13.8	38.8	13.6

*Drinks per month

Source: NIAAA Alcohol Survey 1979

To get more directly at a relationship between drinking location and driving, drinkers were categorized according to their responses to the item, "Please tell me if this experience ('driven car') has ever happened to you in connection with drinking". Responses were: "ever happened" and "never happened". The share of drinking in bars reported by those giving affirmative responses to the above question was slightly higher than for those claiming never to have combined drinking and driving. Table 2.6 shows the share of drinking in various locations by reported combination of drinking and driving. For drinkers reporting some DWI experience, own home is where the biggest share of drinking took place. Although undoubtedly some people drink and then go out, drinking in one's own home is unlikely to result in severely impaired DWI. Although we have no direct evidence on this point, it seems plausible that the person drinking heavily at home is more likely to stay there simply because there is no need to travel; while the person going out for the evening probably only has a limited number of drinks, and those may be in combination with dinner. Therefore we assume that the distribution of drinking among locations away from home is most important. Thirty five percent of all drinking takes place in service establishments (restaurants, bars, etc.), while 26.3 percent takes place in other people's homes or elsewhere out of the home (picnics, sporting events, in cars, etc.). If DWI trips are assumed to originate in direct proportion to the share of drinking at out of-own-home locations, then service

establishments, and especially bars, are the major source of DWI trips.

Table 2.6
Share of Drinking in Various Locations,
by DWI Experience

	YES, Ever EXPERIENCED <u>DRINKING/DRIVING</u>	NO, NEVER EXPERIENCED <u>DRINKING/DRIVING</u>
In Restaurants	11.8	11.6
In Bars, etc	23.2	19.8
At Some Else's Home	8.4	10.1
In Own Home	38.7	44.5
Elsewhere	17.9	13.9

Source: 1979 NIAAA Alcohol Survey

To refine this analysis somewhat further and focus on a more specific identification of intervention locations for possible target clusters, we examined the share of drinking in different locations for people reporting DWI activity, categorized by age. Cell sample sizes become too small for us to have much confidence in the results but the data do suggest some patterns. As Table 2.7 shows, across all age groups except the youngest, the largest proportion of drinking takes place at home. A greater share of very young and very old drinkers drink in bars than do middle and late middle age drinkers. For drinkers in the age 25 to 59 age range, drinking in restaurants comprises almost as large a share of drinking as drinking in bars.

Other Literature on DWI Trip Origin

There is not a great deal of information regarding the origin of DWI trips in the literature. What is available, though, clearly points to bars as the most frequent point of origin in DWI situations. Richard Yoder (1975; Yoder and Moore 1973) conducted an extensive study of the pre-arrest behavior of persons convicted of DWI or of a lesser charge related to DWI, in El Cajon, California. As a condition of probation these individuals were required to attend a course entitled "The Impact of Drinking and Driving". Each student completed a Personal Data Form, part of which was a narrative report of the individual's

Table 2.7
Share of Drinking in Various Drinking Locations by Age for
People Reporting DWI Experience

AGE	IN RESTAURANTS	AVERAGE SHARE OF DRINKING		AT OWN HOME	ELSEWHERE OUT OF HOME
		IN BARS, TAVERNS COCKTAIL LOUNGES	IN SOMEONE ELSE'S HOME		
20	7.7	42.6	15.6	22.5	11.0
20-24	6.3	24.7	12.9	12.9	25.2
25-29	16.7	23.3	9.4	34.5	16.2
30-34	14.2	22.6	12.3	35.4	15.3
35-39	12.5	10.8	10.9	55.5	10.2
40-44	11.5	18.8	5.7	47.1	16.9
45-49	15.2	18.6	6.5	46.6	13.0
50-54	32.0	11.5	7.0	41.1	8.5
55-59	19.2	5.9	18.0	45.1	11.5
60-64	15.2	27.2	11.0	38.4	7.8
65 & Up	12.5	26.6	6.1	40.1	14.5

Source: 1979 NIAAA Alcohol Survey

activities during the twelve hour period prior to arrest. An examination of narratives collected in the summer of 1971 revealed that 52 percent of the drivers were drinking at a bar or pool hall. The next most frequently mentioned place was "at a friend's house" (15 percent), followed by "party or picnic" (7 percent). Only 4 percent of those screened said they were drinking at home before their arrest. A second wave of the Personal Data Forms completed in 1972 produced similar results: 57 percent drinking in a bar or pool hall, 18 percent, at a private party or picnic, 13 percent at own home or campsite, and 10 percent at a friend's home.

David Damkot (1979), using roadside survey data, found that while almost equal proportions of drivers with a BAC greater than zero had been last drinking either at home, at a friend's house, or at a bar, those found legally impaired were more often coming from a bar. Fully 46 percent of those drivers with illegal BAC's (0.10% and above) were coming from a bar, as opposed to 18 percent from a friend or relative's home, and 5 percent from their own home. Twenty-one percent of the drivers who were drinking at a bar before being surveyed were legally impaired. Late-night weekend drivers studied by A.C. Wolfe (1975) with data

obtained from a roadside survey, also showed a tendency to be coming from taverns. His data show that "more than half of the 105 respondents who said they were going from one eating or drinking place to another eating or drinking place were at or above 0.02% BAC, and more than one third were probably impaired (0.05% BAC or higher)".

Conclusion

Findings from the aforementioned data sources suggest that although a very large percentage of drinking takes place in the individual's own home, most DWI trips do not originate from this location. Instead DWI trips tend to originate in bars, other person's homes and, to a more limited extent, in restaurants and other locations outside the home.

PUBLIC DRINKING PLACES, SOCIAL INTERACTION AND DWI DETERRENCE

In the previous section, data from the NIAAA alcohol surveys and information from other studies of DWI trips indicate that public drinking places are major points of origin for drunk drivers. Thus, it becomes important to understand how the characteristics of public drinking places affect the likelihood of DWI trips originating from them and how such characteristics might affect the potential for DWI intervention in those settings.

There are a host of specific questions in this area, answers to which would facilitate the selection and design of a DWI counter-measure program directed at the service personnel in public drinking places. Some relevant questions include:

- o What are the characteristics of patrons in public drinking places and how do these characteristics influence their DWI behavior?
- o How do drinking and other behavior in public drinking places influence drunk driving?
- o What are the attitudes of patrons in public drinking places toward DWI and how do such attitudes influence drunk driving behavior?
- o What are the attitudes and behavior of service personnel in public drinking places and how do these attitudes and behavior influence DWI?

- o What are the formal and informal mechanisms of social control in public drinking places and how could such mechanisms be used to deter drunk driving behavior?
- o How do public drinking places differ in terms of the above, and do those differences suggest a need for interventions tailored to the particular characteristics of drinking settings?

Unfortunately very little social science research has addressed any of these questions directly. There has, however, been some effort--both among sociologists and alcohol researchers--to examine the public drinking place as a social institution, as a setting for human behavior, in general, and as a "drinking context" explaining some of the variation in alcohol-related behavior. While few of these studies have explicitly considered the consequences for drunk driving of behavior in public drinking places, some of their findings are relevant to the development of DWI countermeasures for bars, taverns or other public drinking places. The research studies examined include ethnographic studies of types of bars with descriptive data on activities routinely carried out in them, comparative studies describing differences among bars, household surveys on the frequency of alcohol consumption, and experimental studies that analyze environmental influences on drinking.

A number of recent studies have examined the questions of who drinks in public drinking places and the relationship between bar or tavern attendance and alcohol consumption. Analyzing several different sets of survey data, Clark (1981) found that 54 percent of male drinkers and 43 percent of female drinkers go to bars, taverns or cocktail lounges. Fifty-eight percent of young unmarried men go to bars at least once a week. In general, he found that sex, age and marital status are strongly and regularly related to tavern patronage and that young unmarried males are represented most heavily among patrons while young single females are the second most widely represented group. These data are consistent with the previously analyzed information on the sex-age composition of the DWI population.

Tavern Attendance and Alcohol Consumption

Survey data also yield some evidence on the relationship between tavern attendance and alcohol consumption. Clark (1981) found that heavier drinkers reported more frequent bar or tavern attendance than did lighter drinkers. In local as well as national surveys, the quantity and frequency of alcohol use were associated with the frequency of going to public drinking places. Clark was careful to point out that this association did not mean that drinkers necessarily consumed more alcohol in public drinking places than elsewhere, although he did cite several reports--Harford (1975), Gerstel, et al. (1975) and Partanen (1975), as well as some unnamed sources--which suggested that

people did drink more heavily in bars than at home. Consistent with the above, Harford's (1980) analysis of survey data on drinking amount, drinking frequency, drinker age and the social activities in which individuals engage found that when social activity (drinking setting) was controlled, the relationship between age and daily amount of drinking disappeared, suggesting that drinking setting rather than age may be the significant independent variable.

Experimental evidence from both laboratory settings and public drinking places suggest some of the social mechanisms through which attendance at bars or taverns could lead to greater alcohol consumption. Skog (1981) summarized both the classic studies in this area and more recent research. Two relationships that have been widely observed are: (1) a group size effect and (2) a heavy drinker modeling effect.

Studies exploring the group size effect cited by Skog--Cutler and Storm (1975), Rosenbluth, Nathan and Lawson (1978), Dight (1976)--have found a positive association between group size and amount of alcohol consumed, duration of drinking episode, or alcohol intake per hour. Skog explored several possible interpretations of these data: heavy drinkers may prefer larger groups, persons may prefer large groups when they intend to drink large amounts, the social circumstances (reasons for getting together and consequent drinking expectations/behavior) of large groups may differ from small groups, and, finally, group size itself may influence the amounts that individuals tend to drink. Skog also discussed the possibility of a spurious relationship--differences in group composition or mobility that could account for apparent differences in alcohol consumption behavior in different size groups. However, if further research substantiates an independent group-size effect, that finding could help explain heavier consumption of alcohol in public drinking places.

The second relationship from experimental evidence discussed by Skog is the heavy drinker modeling effect--experimental subjects adjusted their amount and rate of consumption toward the drinking behavior of the experimenter's confederate. But the relationship was asymmetrical--heavy drinking is copied more readily than light drinking. Skog explored some of the explanations offered for such results--asymmetrical drinking norms, suggested by Bruun (1959), and such commonplace consumption-elevating techniques as toasting and ordering drinks in rounds. Regardless of the specific explanation, such heavy drinker modeling probably helps explain the higher alcohol consumption in public drinking places.

That heavy drinking takes place in bars will surprise few people. In the present context such a finding is important because it suggests that drivers coming from bars are likely to be more impaired than drivers coming from many other drinking settings. Such an inference, in turn, suggests the importance of public drinking places as points for intermediary intervention.

The discussion of social factors tending to elevate alcohol consumption in public drinking places also points out the important role of social control mechanisms in bars and taverns, a topic that we will address now in greater detail.

Social Control in Public Drinking Places

In public drinking places there are three potential sources of control over individuals' drinking and their handling of driving: the self, a peer group of "significant others" and the bar manager or bartender (Gusfield, 1981). In different settings the balance among these sources of control will differ. The literature on social control in bars suggests that most drinkers view the bar or tavern as a place that is free of the "normal" constraints on behavior. Going to a bar, tavern or cocktail lounge provides "time out" from the expectations and conventions of the outside world, a place where adult "play" is acceptable, even encouraged (Kotarba, 1977). Public drinking places are "open regions" where conversation and other forms of sociability with "unacquainted others" are expected and where behavior that would be unacceptable elsewhere is alright (Cavan, 1966, p.67). Quarreling, overindulging, and other behavior that would normally shame or disgrace someone (belching, stumbling, falling asleep, falling off a bar stool) do not seem to humiliate when they take place in a public drinking place (Cavan, 1966). The normal forms of social control seem to be relaxed considerably.

Yet within bars and other public drinking places a definite code of behavior applies. Gusfield (1981) analyzed such a code in terms of "competent" versus "incompetent" drinking. From his observational research in bars, he argued that individuals were motivated to feel competent and to present the appearance of competence to others. Competence in a bar setting was defined as the ability to undertake "ordinary risks" and to deal with those risks successfully. Competent drinking included: drinking along with the group of which one was a part, "holding one's own", and not creating trouble or embarrassment (through out-of-control intoxication). Driving after drinking--no matter how intoxicated--was also considered normal, competent bar behavior. Incompetence included refusing a drink in a drinking group, avoiding ordinary risks or engaging in ordinary risks but failing to deal with the risk successfully. Somewhat paradoxically, Gusfield also found that drinkers' "displaying self-understanding of incompetence"--that is, recognizing their own inability to undertake ordinary risks--was a display of competence (Gusfield, 1981, pp 161-162).

Such norms are enforced through a variety of informed mechanisms. Cavan (1966) found that there were many penalties from one's drinking companions for loss of "situational control" as a result of drinking: getting classed as "being drunk"; and facing other drinkers' "disgust, scorn, fear, and loss of respect." Bartenders also preferred and favored customers who knew when to stop drinking or when to call a cab for themselves. They did not like the customers for whom they had to cut off

service or call a cab because of the antagonism and conflict those actions caused (Gusfield, 1981).

Typology of Public Drinking Places

In all the observational studies, how enforcement of such social norms occurred depended upon the type of public drinking place in question. Prospectively, we can also see that involvement of intermediaries in DWI deterrence also depends on characteristics of the on-premise drinking setting. Over the years several sociologists and alcohol researchers have noted the differences among bars, taverns, cocktail lounges, etc. and have attempted to develop descriptive typologies of such drinking places. Macrory (1952), using data on Wisconsin drinking establishments, developed a typology based on the drinking establishments' location, physical structure, patronage and function to define five types of public drinking places. The "skid row tavern" was located close to the downtown business district, was patronized by "drifters, homeless single men, transients, vagabonds and alcoholics," and had the primary functions of dispensing alcoholic beverages and playing music. The "downtown bar" was located in the business district and had a predominantly male clientele of "working men and business and professional persons." The physical layout of the downtown bar consisted of a long bar and few tables. The "drink and dine establishment" was located in the business district or near the city limits and functioned as a restaurant as much as a bar. Spacious dining rooms dominated the physical layout with the bar less prominently located. Women made up a greater share of the clientele, with business and professional persons outnumbering craftsmen or laborers.

In the "night club", the fourth type of public drinking place, drinking and eating were combined with dancing and/or non-participatory entertainment. The bar was a secondary element of the physical layout with seating arranged around the stage and/or dance floor. Patrons included males and females of all social classes. The night clubs were typically located along main highways near the city limit. The last type, the neighborhood tavern, functioned as a social, recreational and counseling center as much as a place for drinking. Attendance was mixed male and female. Neighborhood taverns could be located in almost any residential area--rural area, village, suburb or city neighborhood. Macrory emphasized the social aspects of attendance at neighborhood taverns and the development of regular patronage of particular taverns by the same clientele.

Gottlieb (1957) while not asserting that his was an exhaustive typology, analyzed and contrasted the cocktail lounge and the neighborhood tavern. The lounge was usually located in a commercial area, had booths and tables as well as a bar, and primarily served mixed drinks. The clientele was primarily upper middle class, and tended to be transient. Cocktail lounges sometimes offered live professional entertainment. The neighborhood taverns, on the other hand, were usually located in

residential areas, had a bar and possibly some tables and served draught beer and whiskey. For the entertainment and recreation of patrons, neighborhood taverns usually had a television, games and jukebox. The clientele in neighborhood taverns tended to be lower-middle and upper-lower class. Also a greater proportion of the clientele in neighborhood taverns tended to be "regulars" -- persons who frequented the place on a regular basis; if not everyday, then at least several times per week.

Cavan (1966), basing her work on participant observation and other ethnographic techniques in San Francisco Bay Area public drinking places, developed a typology of bars based exclusively on the functions of the drinking places--that is, the "various uses to which such settings might be put." Her four categories were: the convenience bar, the night spot, the marketplace bar and the home territory bar.

The convenience bar was used for "a minor course of action that was an adjunct to the daily round of activities." People may have stopped there to pass brief periods of spare time before or between scheduled or planned activities. The night spot was a drinking place in which some sort of staged production was the focus of attention. There was little interaction among patrons--they tended to behave like an audience and the patron/server relationship revolved around the formal serving of drinks. Cavan's night spot was most similar to Macrory's night club and bore some resemblance to Gottlieb's cocktail lounge.

The third type in Cavan's schema, the marketplace bar, was a public drinking place which functioned as "a place where agreements were made for the potential exchange of sexual services"--the "pick-up bar," "singles bar" or "meat market" in current terminology. Cavan emphasized that sexual services in this context were very broadly defined, ranging from flirtatious sociability to sexual intercourse. The home territory bar was the last in Cavan's typology. In such bars, the regular customers tended to share one or more defining characteristic--residence in a particular neighborhood, race or ethnicity, occupation or sexual preference. Outsiders, people who did not meet the criteria for group membership, were not welcomed at the bar and tended to be shunned, if for some reason they did come in. The home territory bar came closest to the neighborhood tavern in Macrory's and Gottlieb's analyses. Among the San Francisco area bars that Cavan studied, the home territory bar was the most common, with the marketplace bar the second most commonly encountered. Unlike other investigators, Cavan observed that the function of bars could change depending upon the time of day or the day of the week--a convenience bar during the day could become a marketplace or home territory bar in the evening. Also bars with different physical layouts and differing degrees of interaction between patrons and the service personnel could fall in the convenience, marketplace and home territory bar categories.

The most recent research on bar types and one that linked type of drinking establishment to an analysis of DWI was conducted by Gusfield, Kotarba and Rasmussen (Gusfield, 1981). Using participant observation techniques in a small sample of bars, they analyzed the patterns of interaction among patrons and between patrons and service personnel to understand the factors influencing drinking and the sources of social control over drinking behavior. For our purposes, the critical differences among bars were the role of the bartender and bar management and the potential they had or did not have to influence behavior. In two neighborhood bars, the bartender was either an integral part of the social activity of the bar or the "fulcrum of activity." Also in these bars a core group of regulars participated informally in the management of social behavior. In a singles bar that was crowded, noisy and filled with the beat of music and dancing, the bartenders, waiters and waitresses had neither the time nor a physical setting supportive of observing the clientele or managing their activities. In a bar that would probably have been classified by Macrory as a "drink and dine" establishment or as a cocktail lounge by Gottlieb, Gusfield reported that the bartender was not a central part of the socialization; moreover, there was not the core of regular customers.

In both of these settings, social control and the management of potential DWI risks, fell much more heavily on the individual drinker or the drinker and any immediate circle of friends with whom he or she was drinking.

Implications for DWI Deterrence and Intervention

The analysis of public drinking places has a number of implications for selection and design of an intervention program. These will be mentioned here and developed further in Chapter 3. In terms of selecting the type of public drinking place on which to focus an intervention program, clearly the neighborhood tavern with its strong participation by the bartender/bar owner in the social activity of the bar offers more intervention possibilities. In terms of type of intervention strategy, clearly the strategy needs to be matched to the bar type. Strategies relying heavily on bartender or manager intervention will have a greater probability of success in bars like the neighborhood tavern. Effective programs for the singles bar or cocktail lounge will have to rely more heavily on friends and drinking buddies, with supporting roles played by the bar management and service personnel.

The widespread social acceptability of DWI among bar patrons (Kotarba, 1977; Gusfield, 1981) and the attitude that time spent in the bar is "time out" with few implications for the outside world (Cavan, 1966) will be big obstacles to effective intervention in bars. As Kotarba (1977) noted, methods of thwarting arrest for and detection of DWI can be popular topics for bar discussion. Reversing such attitudes and the resulting behavior will be difficult. Deterrence implies injecting real world concerns into the "fun", suspended-concerns atmosphere of

the bar.

PSYCHOLOGY OF INTERVENTION AND HELPING BEHAVIOR

Intervention in a potential DWI situation has some parallels to other kinds of behavior where one person helps, or in some way intervenes with, another person. As part of the literature review and research on factors affecting intervention in DWI situations, we examined research on these analogous behaviors to see if there were any findings in these areas that could be applied to DWI intervention.

The death of a young woman in New York City in 1962 provided much of the current impetus for research on helping behavior. Approximately 40 people admitted hearing Kitty Genovese call out for help while trying to escape from an attacker who finally killed her. Despite the fact that there was sufficient time for someone to go to her aid or, at the very least, call for help, no one helped her or called for assistance. At the time everybody blamed this incident on apathy and the indifference of urban dwellers so overcome by blight. However, this description was not congruent with reports given by the witnesses of their thought processes at the time. These reports indicated that witnesses failed to act because they faced a great degree of uncertainty and confusion--not because they lacked concern.

The interest aroused by this and similar incidents produced a classic monograph resulting from initial research into the factors affecting bystander intervention in emergencies (Latane and Darley, 1970), and engendered a flurry of subsequent social psychological research. We are interested in this research because of the analogy between bystander intervention in emergencies and intervention in DWI situations. We would like to gather some insight into the factors likely to influence potential intervenors in a DWI situation. An analysis of these factors will help us identify intermediaries and DWI situations that offer the greatest potential for reducing DWI behavior.

One of the first questions that come to mind when considering the possibility of utilizing intermediaries to reduce DWI behavior is: why should we expect someone to intervene? Why would an individual help another intoxicated individual to avoid a potentially dangerous act? There are a number of implicit as well as explicit social norms that dictate helping behavior in circumstances of need. The existence of such norms has been demonstrated through parables (e.g., the "Good Samaritan") and personal actions too numerous to catalog. People do, indeed, help others. However, the question concerning the circumstances under which help is offered is of necessary interest. If no one offered help to Kitty Genovese, how can people be convinced to offer help under circumstances that seem much less compelling? Although, as will be pointed out in more detail later, the helping behavior literature is based on research investigating

circumstances different from DWI intervention, nevertheless, it should be possible to use the factors and/or processes identified in the research by extrapolation to the desired set of circumstances. Hence, a review of the available information seems in order.

Group Size Effect

Most individuals do not drink alone; in restaurants, bars and at parties people tend to consume alcohol in the presence of others. This fact enables us to consider using intermediaries to intervene in drunk-driving situations. Therefore, the general finding that the presence of other people inhibits an individual from being helpful in an emergency (for an extensive review, see Latane and Nida, 1981), is clearly relevant. Specifically, the presence of even one other individual inhibits helping in an emergency compared to when a potential helper is alone. Several reasons are hypothesized for this finding. One is that the presence of another person creates audience inhibition of intervention due to potential risk of embarrassment or negative evaluation by others should the intervenor be wrong about the severity of the emergency or be told to "mind your own business." Support for this hypothesis was the finding that pairs of friends helped an individual presumed to be injured more than pairs of strangers (Latane & Rodin, 1969; Latane & Darley, 1970). However, a more positive outlook was offered by the finding that when people were led to expect future interaction with the accompanying others, the effect of group size was attenuated (Gottlieb & Carver, 1980), suggesting that when individuals expected to be able to offer an explanation of their actions, they were not as concerned with potentially immediate negative evaluation.

The second hypothesized reason for this effect is that people use the reactions of others to judge the severity of the circumstances; while they are doing this, they try to appear as composed as possible. Hence, a scenario is created in which there are a number of individuals who notice an event (a loud scream, a noise, an unexpected silence), remain calm and observe everyone else (also staying cool and surreptitiously checking each other out) in an attempt to determine what is going on, resulting in a state of "pluralistic ignorance." The various unconcerned faces are convincing to each other that nothing is wrong. In support of this hypothesis of social influence is the finding that increasing the clarity (decreasing the ambiguity) of the situation reduces the effect of group size (Solomon, Solomon, & Stone, 1978). Furthermore, as the cue value of a nonreactive person (i.e., the value of an individual's input) increased, the effect of group size increased (Smith, Smythe, and Lien, 1972); conversely, the group size effect decreased with a person's decreased cue value (Ross & Braband, 1973). Similarly, when another person helped to define a situation as an emergency, the group size effect decreased (Borges & Penta, 1977).

The final hypothesized reason postulates the operation of a process called diffusion of responsibility in which the psychological cost of nonintervention is "shared by"--diffused throughout--all of the observers or potential helpers (Latane and Darley, 1970; Zimbardo, 1969; Mynatt and Sherman, 1975). In fact, we can conceptualize the effect of group size in terms of the potential costs of both helping and not helping. Specifically, the more people who are present in a (possible emergency) setting, the more costs one may incur for intervention (embarrassment, etc.) and the fewer for nonintervention (diffusion of responsibility, an excuse for not fully understanding the situation because of pluralistic ignorance). Therefore, increasing the clarity or perceived severity of the situation should tip the balance toward helping; being with someone with whom you are already acquainted should decrease the perceived risk of being laughed at for overreacting and also increase the probability of helping. On the other hand, being in a group of relative strangers--ones with whom you would like to make a good impression--should tend to increase the perceived costs of intervention and thus decrease helping. Given this analysis, we might expect that a potential emergency situation occurring in a neighborhood tavern would be more likely to provoke an intervention by another customer than the same situation in a bar attended mainly by single individuals hoping to meet a potential partner.

Other Psychic and Social Costs of Intervention and Nonintervention

Staying with the analysis of costs for a while, we can identify another variable which could be expected to increase intervention by increasing the cost associated with nonintervention. It has been consistently shown that when individuals are made to feel personally responsible for the property of another, they are more likely to intervene in a situation where that property is threatened (Austin, 1979; Schwarz, Jennings, Petrillo, & Kidd, 1980; Shaffer, Rogel, & Hendricks, 1975). This would suggest that intervention can in fact be increased by making people feel responsible for outcomes.

In the cases of the laboratory and field experiments cited above, this feeling of responsibility was most often manipulated by having a confederate extract from the subject an agreement to watch his or her belongings; thus the subject voluntarily committed him or herself to a position of responsibility. Other means by which this personal commitment might be obtained could include appeals to the familial or societal responsibilities of the potential helper or the use of legal or financial sanctions to make clear the official view that certain potential helpers are bound to act under specified circumstances. However, it should also be noted that all of the indications from research in attitude change and formation (e.g., cognitive dissonance, self-perception) suggest that the act of commitment to personal responsibility should, if at all possible, be a voluntary one in order to be most resistant to contrary cues in the environment.

Another cost of intervention involves the uncertainty an individual experiences in deciding what form that action should take if action is deemed appropriate; uncertainty itself is often conceptualized as negatively arousing (Brounstein, Ostrove, & Mills, 1979). Other research suggests that giving people specific instructions as to actions they should follow makes it more likely that they will in fact take action (Leventhal, 1970).

With these factors in mind, Bickman (1975) mounted a media campaign at a large university designed to increase bystander intervention in shoplifting at the university bookstore. In it, he attempted to increase students' perceived responsibility toward the bookstore and also gave specific instructions on how to intervene. Both direct and indirect methods of intervention were suggested, lending support to the notion that individuals who do not feel competent enough to intervene directly might be willing to inform someone perceived as more competent (in this case, a store employee). Unfortunately, although post campaign measures indicated that both students' beliefs in their personal responsibility and their intentions to intervene should they witness shoplifting were affected in the predicted direction, actual behavior (measured by responses to staged shopliftings) was affected only marginally at best. In other words, although the media campaign was sufficient to increase feelings of personal responsibility, the necessary congruent behavior was not elicited. This suggests that a two-pronged approach to intervention may be necessary: consisting perhaps of media saturation to affect the motivation, along with some behavioral intervention (e.g. training) to facilitate the actual desired behavior. It should also be noted that the difficulties associated with stimulating members of a college student population to act against a shoplifter might in fact be similar to those associated with getting drinkers to intervene in potential DWI situations.

An additional factor that can affect psychic costs and hence presumably intervention, concerns the impact of the implicit norms governing specific behavior. Similar to the existence of norms prescribing helping, there are norms which proscribe specific kinds of behaviors. Staub (1974) and Ashton and Severy (1976) reported results which indicated that implicit restrictions on behavior (e.g., not leaving the room in which an experiment was taking place) acted as powerful inhibitors on helping behavior; permission to ignore these implicit restrictions (conceptually analogous to implicit norms) significantly increased helping behavior.

Relevance/Limitations of the Research

This review of the literature on helping/bystander intervention is limited in both practical and theoretical senses. Because of the variety and extent of published reports, a thorough review was not deemed appropriate. Also much of the

relevant experimental research utilized circumstances which were designed to be perceived as emergencies--situations dictating immediate intervention. In many cases, screams of pain coming from another room were utilized as cues. Clearly, the circumstances surrounding DWI incidents do not include such cues being emitted by an intoxicated person and are even less likely to be interpreted as emergencies. Indeed, a person does not need to appear to be intoxicated to have his or her capacity to operate an automobile seriously impaired. Thus, on the surface at least, the research may not appear to be very relevant to our current area of concern.

However, important parallels remain between the emergency situations used in the experiments and potential DWI incidents. Both situations involve a high degree of ambiguity. In both emergency and DWI situations, the presence of other people (group size effect) is likely to influence individual judgments. Finally, explicit or implicit evaluation of costs and benefits by individuals seems to be an almost universal element of decision making. Such similarities support the relevance of the research we have reviewed.

However, strictly speaking, most people do not perceive the threat of DWI as a full fledged emergency. Shotland and Huston (1979) found that people classify an event as an emergency based on the threat of harm or actual harm to a victim and the degree to which that threat of harm increases with time. Who in fact, is the victim in a potential drunk-driving situation? Chances are that the driver is not seen as the victim; therefore an intermediary is actually acting on behalf of a third, unknown party who might be injured by the drunk driver. As part of their research the authors developed a classification and rating scheme for emergencies. Respondents were asked to rate a large number of incidents or events, including "mildly intoxicated friend wants to drive home" on an emergency scale from "definitely an emergency" (1) to "definitely not an emergency" (5). The DWI incident achieved an average rating close to the middle of the scale--2.84--and was therefore categorized by the authors as an "everyday problem." Such an assessment of DWI implies that people will be even more hesitant to intervene than they would in situations where threat of harm is more immediate.

Implications for DWI Intervention

The most important, the most general, and the most obvious conclusion that is reached through our review of the literature is that the perceived social costs of intervening must be reduced if we are to expect people to overcome their self consciousness, directedness and their fear of intruding in another person's business.

Setting characteristics. Although not frequently investigated, the type of setting in which intervention takes place was found to be important by Howard and Crono (1974). In the setting that exhibited a higher degree of "psychological

structuredness" (type of furniture, seating pattern, degree of constraint on behavior and degree to which task-oriented behaviors were prescribed), less helping behavior took place. In the less structured setting, more helping behavior took place. We should expect that situations in which the implied norms (e.g., those not restricting helping) are minimal would facilitate the greatest intervention. In this sense, the norms in neighborhood taverns would be expected to differ considerably from the norms in singles bars with the "task-oriented" behavior of the latter inhibiting intervention.

Intermediary characteristics. Some research (Latane and Rodin, 1969) suggests that the targets of a campaign message designed to increase intervention should be peoples' friends. There is also some evidence that females are more consistent helpers (Austin, 1979). However, most situations investigated have not involved potentially heavy physical or psychological costs either. A smaller, relatively less powerful woman put in a position of potential intervention agent for a large, rambunctious male faces potentially serious consequences should her efforts be interpreted negatively by the individual she is trying to aid.

Friends both benefit by preventing their friends from driving drunk and experience fewer costs associated with attempted intervention. However, strangers and service personnel may perceive few benefits associated with helping, high potential costs for intervening, and no costs for nonintervention (that are likely to be enforced). Consequently, to increase intervention among service personnel and strangers, it will be necessary to increase the perceived benefits associated with intervention and decrease the perceived costs associated with such action.

Intervention messages. The research we have reviewed and summarized suggests that intervention strategies should include:

- o Increasing an individual's felt personal responsibility to intervene
- o Offering numerous action alternatives/types of intervention (e.g., direct vs. indirect),
- o Reducing perceived norm restrictions (e.g., it's okay to take a chance on being refused, everyone's probably wishing they'd do something),
- o Clarifying the circumstances under which intervention should be attempted in order to reduce the impact of ambiguity, and
- o Making the consequences of DWI more tangible by identifying potential victims.

DWI INTERMEDIARIES AND INTERVENTION TECHNIQUES

As the foregoing review suggests there has been a substantial amount of research on intervention and helping behavior in general. Unfortunately, but not unexpectedly, the research on intervention related specifically to DWI situations has not been nearly as extensive. A very limited number of studies, most sponsored by NHTSA, have examined the characteristics of intermediaries and have considered what kinds of interventions are most effective and most acceptable to potential drunk drivers and potential intermediaries. In this section we will review the limited evidence in these areas. We will also review quickly the few programs designed to stimulate intermediary intervention.

DWI Intermediaries

The NHTSA sponsored surveys of public perceptions on highway safety (Teknekron Research, 1979; Automated Services, 1980) reported increases in the percentage of persons having taken some action to prevent a driver who had been drinking too much from driving. From 1972 to 1979 the percentage of survey respondents reporting intervention increased from 16 percent to 42.9 percent. In 1980 the percentage reporting intervention remained unchanged from 1979.

The likelihood of reporting intervention on 1979 and 1980 surveys was related to sex, age, involvement in an alcohol-related situation, perceived risk of having an accident and recall of a public information or educational (P.I.&E) message related to drunk driving. The probability of reporting intervention was higher for men than for women; higher for younger persons than for older; higher for persons frequently involved in alcohol-related situations than for those infrequently involved; higher for those with a high perceived risk of accident involvement than for those with a low perceived risk; and higher for those who recalled a P.I.&E message than for those who did not recall one (Teknekron Research, 1979; Automated Services, 1980).

The most detailed analysis of DWI intermediaries and potential interventions was carried out by Grey Advertising, Inc. for NHTSA and the National Institute on Alcohol Abuse and Alcoholism (Grey Advertising, 1975). Using data from telephone interviews with a probability sample of 507 adults, and data from face-to-face interviews with 1512 adults, Grey Advertising defined the population of potential intermediaries as "adults age 18-55 who participate at least once a month in a social or business situation where alcohol is served" (p.18). Grey Advertising called these individuals Adult ARS-involved persons, ARS standing for Alcohol Related Situation. Based on individual personality traits and expressed willingness to employ various intervention techniques, the ARS-Involved were divided into four segments:

Social Conformers. The largest ARS-involved segment with 43 percent of the individuals, was made up of males and females, primarily in the 20-45 year age range, who were well educated, had above average incomes, were predominantly white collar or professional, and were somewhat more passive than individuals in other segments, but still willing to intervene--if it was the socially acceptable thing to do (p.76).

Aggressive Restrainers. The second largest ARS-involved segment with 27 percent of individuals, was a predominantly younger male group with slightly lower incomes and education. They were aggressive and motivated by strong feelings of friendship (p.93-94).

Cautious Pre-planners. Making up only 18 percent of the ARS-involved, this was an older, lower-income predominantly female group with quiet, nonassertive personalities. They were motivated by a desire to avoid potentially harmful situations (p. 111-112).

Legal Enforcers. The smallest group, making up only 12 percent of the ARS-involved population, was almost equally divided between males and females, was older than average and had somewhat higher than average income. They had cautious personalities and were motivated by a very high respect for the law and a desire for social approval (pp. 128-129).

As will be discussed below, Grey Advertising found that certain interventions were acceptable to, and likely to be used by, all four groups of potential intermediaries, but that other interventions were much more likely to be employed by one of these groups or another.

DWI Interventions

The critical questions on intervention techniques for deterring DWI are related to (a) acceptability of the technique to potential intermediaries, (b) acceptability of the technique to drinkers who are the potential DWI drivers and (c) effectiveness of the technique in preventing DWI. Unfortunately, the research evidence is extremely thin, with somewhat more information on the acceptability of interventions but virtually nothing on effectiveness.

The NHTSA sponsored surveys of public perceptions on highway safety asked a question on types of intervention actions taken (Teknekron, 1979; Automated Services, 1980). Driving the person home has consistently been the most commonly reported intervention, with more than 60 percent of intervenors taking that action. Taking the person's keys or license away was the second most commonly reported intervention, with anywhere from 11 to 20 percent of intervenors reporting having done so. Having

the person stay over was the third most commonly reported intervention, with from 6 to 19 percent of intervenors reporting this action. Getting someone else to drive the person home was the fourth most common intervention, with 4.5 and 9.7 percent of intervenors reporting doing it on the two most recent surveys. Other interventions--calling a taxi for the person, calling the police, using physical restraint, giving the person food or coffee and other unnamed miscellaneous interventions were reported less frequently (Teknekron, 1979; Automated Services, 1980). These responses give an indication of both the relative acceptability of actions to intermediaries and the potential effectiveness of interventions, as perceived by intermediaries.

These same surveys have also asked about the reaction of the intoxicated person to the intervention. Considering the 1979 and 1980 data together, calling the police, taking the person's keys and using physical restraint encountered the most hostility. More than 50 percent of the respondents reported hostile reactions to these interventions. Driving the person home or having the person stay over got the highest positive response from intoxicated persons, with almost 50 percent agreeing to these interventions and another 10 percent actually being grateful for the intervention. It is important to note, however, that none of the interventions were overwhelmingly well received. Fully one quarter of the respondents received hostile reactions to even the most acceptable interventions--driving the person home and having the person stay over (Teknekron, 1979; Automated Services, 1980).

The Grey Advertising study on communication strategies for alcohol and highway safety also analyzed the acceptability of various countermeasures--both immediate action interventions and countermeasures involving preplanning (Grey Advertising, 1975). Their analysis considered the acceptability of countermeasures differentiated according to the relationship between the intoxicated person and the potential intermediary, the drinking location and the intermediary's personality characteristics.

Interventions that respondents indicated they would be extremely likely to use with a close friend or relative--offering to drive them home or inviting them to stay over--were less likely to be used if the intoxicated person was only a casual acquaintance or someone the potential intermediary had just met. These interventions were even still less likely to be used if the drinking location was a bar as opposed to the intermediary's own home or a friend's home.

Other interventions were generally less acceptable regardless of the intoxicated person's relationship to the potential intermediary or the drinking location. Interventions viewed as having only moderate potential included taking keys away or restraining a close friend or relative and calling a taxi for any person. Calling the police had low potential, regardless of the location or the potential intermediary's relationship to the intoxicated person.

There were differences in the likelihood of particular interventions being used among the four subgroups in the ARS-involved sample. The largest group, the so-called social conformers were less likely than the full ARS-involved sample to take keys away or restrain the intoxicated person. While the aggressive restrainers and the legal enforcers were both more willing to take keys away or to restrain. The legal enforcers were also much more likely to call the police than the other groups. The cautious pre-planners were more likely to call a cab for the intoxicated person and less likely to offer to drive anybody but a close friend or relative home (Grey Advertising, 1975, p. 73).

A 1982 NHTSA-sponsored study by Automated Services, Inc. employed clinical interviews with a small and not necessarily representative sample of drinking and DWI-involved individuals to explore the viability of different strategies to reduce drunk driving. Key issues that were discussed included when to intervene, how to handle resistance, and generally what actions to take to prevent DWI. The study found that people had difficulty determining when another's impairment was severe enough to warrant intervention. As a result, intervention was reported to have occurred most often at extreme levels of intoxication. With regard to how to deal with resistance and hostility, most respondents reported that they would refrain from pushing intervention efforts if they felt the intoxicated person was becoming belligerent. Most respondents stated that they would be reluctant to intervene in public places because of the risk of creating a scene. Although the sample used was small and by no means representative, the results of this study were in agreement with other studies reviewed, in that the most acceptable form of intervention was driving the intoxicated person home. Other responses included letting the person stay over, or arranging to have others drive him or her home. Only a few respondents reported willingness to use physical restraint, take keys away, or call the police.

In summary, although the number of studies is very limited, they seem to agree that supportive interventions--driving the person home or offering to let the person stay over--are much more acceptable, both to the potential intermediary and the intoxicated person, than are the strictly preventive or interdictive interventions--taking keys, physically restraining, calling police, etc. More interdictive interventions seemed slightly more acceptable with close friends or family (Grey Advertising, 1975), although even there they were not popular.

Encouragement of Intermediary Action

Perhaps the most extensive and successful public information and education campaign targeted at "third party" intervention was the NHTSA-initiated and sponsored "Friends Don't Let Friends Drive Drunk" (FDLFDD) campaign. The campaign, begun in 1975 and still continuing in 1982, focused on the FDLFDD theme in

television and radio public service spots, print ads, pamphlets, bumper stickers and other media. The primary goal of the campaign was to persuade intermediaries to use appropriate countermeasures in potential DWI situation.

"Friends Don't Let Friends Drive Drunk" personalized three essential components of the intervention message:

- o That behavioral intervention should be acceptable and can be hassle-free
- o That the source of the message is a universally acceptable, personable, creditable, non-authoritarian central figure
- o That essential information and education appeal is delivered by this visually personable source

Two 30 second television spots appear to have been particularly effective in using these components:

- o "Teddy" - An "average" type of male tells us how he convinced his friend Teddy to spend the night on his couch rather than risk the drive home after several beers.
- o Bartender - A bartender tells us how he just sent a man home in a cab and how his friend could have intervened.

Both ads refute several myths about sobering up and both clearly suggest that intervention is the social responsibility of friends. The "Friends Don't Let Friends Drive Drunk" campaign established positive role models and provided a valuable set of media resources for future campaigns.

* * * *

This concludes our review of the data and research literature that provided some guidance in the selection of target clusters. In Chapter 3 we will analyze the major cluster components and recommend clusters for selection and development.

III. ANALYSIS AND CLUSTER SELECTION

OVERVIEW OF ANALYTIC OBJECTIVES

Introduction

The objectives of the analysis, and indeed the core of Phase I, were to identify the target clusters--combinations of drinkers, drinking settings, intermediaries and interventions--that promise to have the greatest impact on the DWI problem. For a given level of effort made to deter drunk driving, the objective is to maximize the change in behavior by drinkers who might engage in DWI. A specific criterion could be the number of drinkers/drivers desisting from DWI altogether--either not driving if they have been drinking or not drinking if they know they will have to drive. An alternative criterion, less ambitious but perhaps more realistic and just as important would be reduction in the blood alcohol content (BAC) of those who do combine drinking and driving. BAC is associated with accident risk, so a change in drinking behavior resulting in lower BAC's would reduce accident risk. Clusters should be selected that will result in risk reducing changes in behavior by as many people as possible who now engage in dangerous DWI behavior.

The expected effect of selecting a target cluster can be expressed in terms of the number of DWI drinkers reached multiplied by the probability that those who are reached will be convinced not to engage in DWI or will be convinced to change their DWI behavior sufficiently to reduce their risk. Making estimates of the number of drinkers that can be reached by utilizing different clusters and the probability that their behavior will change as a result of intervention is a complex task. Many different factors are likely to influence both the number of drinkers who can be reached and the probability of changes in behavior. In principle, at least, it is possible to identify many of these factors and even to suggest how they may influence the relative impact of particular target clusters. However, attaching quantitative estimates to either the probabilities or the number of drinkers reached is much more difficult.

In the following section we will present a descriptive model of factors influencing both the potential numbers of drinkers reached and the probabilities that drinkers will change their DWI behavior if a given target cluster is utilized. This model has been useful as a heuristic tool, helping us to envision target cluster characteristics and to think of potential interrelationships among them that may have an effect on their impact.

In Chapter 2 we presented empirical information on the epidemiology of drunk driving, the results of research on drinking settings, a summary of what is currently known about

intervention and helping behavior from social psychology and the very limited research on intervention and use of intermediaries to deter DWI. After describing the heuristic model of target cluster impact, we will use the model and the previously presented empirical information to analyze what combinations of drinkers, drinking settings, intermediaries and types of interventions appear most promising as potential target clusters. The data do not permit validated empirical estimates of the number of drinkers that could be reached by each cluster or the probability that a drinker who is reached would be dissuaded from DWI. But the available information does allow us to suggest ordinal relationships--"success is more likely in this setting than in that one," or, "this intermediary will probably be more willing to act than that one."

Based on such distinctions, we are able to rank the suggested target clusters on several dimensions and, by combining these dimensions, indicate those clusters that have the highest probable impact.

A Heuristic Model of Target Cluster Impact

Impact was expressed above in terms of the product of the number of DWI drinkers reached via a target cluster and the probability that a given drinker will desist from DWI behavior. The number of drinkers reached is a function of the drinker groups targeted, the intermediaries deciding to intervene and the frequency with which they do so. The probability of a change in behavior by drinkers who are reached is a function of the drinkers' own social and psychological characteristics, the setting, the type(s) of intervention and the characteristics and behavior of the intermediary. The intermediaries reached and their resulting behavior are, in turn, a function of the source, media and content of the "messages" being used to convince them to intervene and to tell them how to intervene. The intervention behavior of potential intermediaries is also influenced by the drinkers themselves. Here we will discuss the definition of impact and the factors influencing it.

Impact Definition. As formulated above, the impact of a cluster is expressed in terms of the numbers of drinkers who otherwise would have engaged in DWI trips but were dissuaded from doing so. But measuring impact is considerably more complex than this. The basic problem is that all drinkers are not equal. Dissuading drinkers who frequently drive while intoxicated would be a more valuable outcome than dissuading drinkers who only occasionally drive while intoxicated. Similarly dissuading heavy drinkers (with high BAC'S and greater accident risk) would be a more valuable outcome than dissuading lighter drinkers. Finally, since exposure and accident risk are presumably related to the length of time that the drinker is driving, a composite output measure would be something like "reduction in aggregate BAC-trip-minutes or BAC-trip-miles."

This formulation of the problem is useful because it focuses attention on different ways of achieving the same impact. Dissuading a small number of heavy drinkers who frequently engage in DWI could be as valuable as dissuading a large number of light drinkers who only infrequently engage in DWI. So, although we talk in the following discussion about achieving maximum impact in terms of the largest number of drinkers dissuaded from DWI behavior, we must keep in mind that in reality all drinkers are not the same and that dissuading certain drinkers will be more valuable or important than dissuading others.

Model Components. For the purposes of discussion and analysis, the factors associated with a target cluster's impact can be grouped into four general areas: drinker factors, setting factors, intervention factors and intermediary factors. Choices also will have to be made about how potential intermediaries can best be reached, so it is also necessary to consider the message source and the content and media of messages intended to influence intermediaries.

Each potential target cluster is made up of a drinker group, a drinking setting, an intermediary (or intermediaries) and some intervention (or interventions). The number of drinkers dissuaded from their DWI behavior for a given cluster is a function of :

- o The number of intermediaries reached,
- o The probability of each intermediary intervening,
- o The number of drinkers reached by each intermediary, and
- o The probability of each drinker who is reached changing his or her DWI behavior (reduced BAC, eliminated trips, etc.).

The first element--the number of intermediaries reached--is, in turn, a function of:

- o The number of message sources,
- o The probability of each source sending a message or attempting to influence intermediaries,
- o The number of targeted intermediaries, and
- o The probability of each intermediary receiving the message.

With validated empirical information it would, in theory at least, be possible to estimate the numbers of persons in these categories and the probabilities associated with these behaviors. Then the choice of a cluster or clusters would be a matter of performing the necessary multiplication and addition to determine which clusters had the greatest impact. Actually, underlying and influencing each of the probabilities are a host of conditions, additional variables and interaction effects. Exhibit III.1 on the next two pages outlines some of the factors influencing each of the elements in this model. In the following section each major component of the model will be analyzed and discussed and the features underlying our recommendations for target cluster definition and selection will be presented.

ANALYSIS AND SELECTION

In this section a summary of the evidence and our analysis of the implications of that evidence for selection of target clusters will be presented. The information is organized in three parts related to the selection of each cluster component: drinker group, drinking setting and intermediary. In addition, a section will present information on intervention techniques and some recommendations for selection of those techniques even though they are not being formally included in the definition of the clusters.

Drinker Group Selection

Criteria. The drinker groups selected for inclusion in the target clusters should constitute significant shares of the population of DWI drivers. Preferably the groups should also be DWI and accident prone in the epidemiological sense of the word, that is, more "at risk" than other segments of the population. The groups selected should be made up of drinkers with whom intermediaries are more likely to intervene. They should also be made up of drinkers who are more susceptible to intervention, that is, drinkers whose behavior is more likely to change if someone does intervene. Members of the target cluster should also be as homogeneous as possible with respect to personal and/or behavioral characteristics related to their drinking behavior (location, amount, etc.). Factors could include: drinking behavior, types of intervention messages likely to be effective and types of credible intervenors.

Analysis. Probability of drinking at all, frequency of drinking, amount consumed, probability of DWI and DWI-related accident risk are all associated with sex. Males rate higher than females in every one of these areas. The second important differentiating characteristic is the age of the drinker. The probability of drinking and patterns of drinking behavior are associated with age. Also both the share of DWI-involved accidents and DWI risk vary among age groups. Males under age 30

Exhibit III 1. Factors Influencing Target Cluster Impact

<u>MODEL COMPONENT</u>	<u>ASSESSMENT OBJECTIVES/ EVALUATION CRITERIA</u>
A. <u>MESSAGE SOURCE</u>	<ol style="list-style-type: none">1. Size of organization. Number of potential intermediaries that can be reached.2. Probability that message will be heard by potential intermediaries. Frequency of communication between message source and potential intermediary.3. Probability that message that has been heard by potential intermediary will be acted upon by same. Receptivity of potential intermediary to information from message source. Legitimacy of message source as conveyor of behavior change information.
B. <u>MEDIUM/MESSAGE</u>	<ol style="list-style-type: none">1. Probability of being delivered by the message source. Consistency of message and source's perception of its own interests. Consistency of message and source's perception of what its audience wants to hear or will tolerate hearing. Compatibility of message and source's available media and resources.2. Probability of message being heard by the potential intermediary.3. Credibility of message and source/medium.4. Probability of changing potential intermediary's behavior.
C. <u>INTERMEDIARY</u>	<ol style="list-style-type: none">1. Size of group. Number of intermediaries.2. Accessibility to message source and medium.3. Susceptibility to intervention message.4. Potential number of drinkers reached by each intermediary.5. The DWI risk of drinkers reached by each intermediary.6. Frequency of contact between each intermediary and drinker.7. Credibility of intermediary to drinker.

Exhibit III 1. (continued)

<u>MODEL COMPONENT</u>	<u>ASSESSMENT OBJECTIVES/ EVALUATION CRITERIA</u>
D. <u>INTERVENTION</u>	<ol style="list-style-type: none">1. Probability of being used by the intermediary.2. Probability of being heard by the drinker.3. Probability of changing drinker's behavior, if used by intermediary and heard by drinker.
E. <u>DRINKING SETTINGS</u>	<ol style="list-style-type: none">1. Number of settings.2. Amount of pre-DWI drinking taking place in setting.3. Number of DWI trips emanating from setting.4. Probability of drinker changing behavior as a result of intervention, due to setting.
F. <u>DRINKER</u>	<ol style="list-style-type: none">1. Size of drinker group.2. DWI involvement of the group. Share of the DWI problem, probability of drinking in settings generating high percentage of DWI incidents.3. Risk of DWI.4. Accident risk of drinker group, if combining drinking and driving. Average BAC level. Risk of accident at a given BAC level.5. Probability of receiving intervention.6. Probability of altering behavior in response to intervention. Susceptability to intervention content and intermediary persuasion.

are implicated in more than half of all accidents that involve DWI. The age-specific risk on DWI has been shown to be higher than average for several age groups: males 18-21 and 25-30. Although little research evidence was available, it seems plausible that drinking amount and regularity would be related to DWI risk and exposure. The frequent drinker is likely to undertake more DWI trips during a given period of time than the infrequent drinker. The heavy drinker (drinks per session) is likely to experience a higher BAC and thus have a greater risk of an incident while DWI. Drinking amount and regularity are also likely to be associated with perceptions of risk, attitudes toward DWI, and attitudes toward intervention. As such they are also likely to be associated with susceptibility to intervention and responsiveness to different specific messages or kinds of intervention.

The data on occupation presented in Chapter 2 suggested that certain aspects of drinking behavior and attitudes toward drinking and driving are associated with the socio-economic status (SES) of the drinker. SES is a proxy measure for factors such as education, income and occupation. For young drinkers, the most relevant distinction is probably education--between college and non-college attending young people. For older drinkers occupation is probably the most relevant distinction--between white collar or professionally employed people and blue collar workers or laborers. SES is likely to be associated with the so-called "culture" or drinking establishments, with norms and attitudes toward drinking and driving and with attitudes toward, or the perception of, various interventions. Higher SES drinkers possibly are more susceptible to so called "rational" arguments against DWI, that is, arguments based on consideration of the risks and probabilities involved. They also may be more susceptible to arguments about social responsibility and collective benefits of desisting from DWI. Lower SES persons may, on the other hand, be more susceptible to fraternal or familial arguments against DWI.

The research also revealed little in terms of the criteria related to the probability of an intermediary intervening or drinker susceptibility to intervention. Although there was no research evidence on this point, it seems intuitively appealing that older intermediaries might be more likely to intervene with young drinkers because of a superior/subordinate authority relationship based on their differences in age.

In terms of drinker susceptibility to intervention, again deductive arguments could be made that one group might be more or less likely to alter its behavior, based on assumed characteristics of the groups. It could be argued that younger drinkers will be less likely to desist from DWI than older drinkers because they are less adverse to risk and thus more willing to drive even knowing they face an increased chance of having an accident. In reply it could be argued that older drinkers will be less likely to desist from DWI because they have had more reinforcement of their DWI behavior through their long

years of successful experience navigating home after drinking. Other factors further confuse the picture; self vs. other directedness, rebellion vs. submission to authority, etc., could be used as evidence that one group or another will be more susceptible to intervention. Without a better empirical basis for evaluation, we really cannot make definitive judgments. Thus, on some of the selection criteria we cannot point conclusively to one group's preferability over another.

Selection. Based on the above discussion, it is our recommendation that the target clusters be limited to males. We further recommend disaggregating the male population into three age groups: adolescent and college age persons (17-22), younger adults (23-34) and older adults (35 and up). The precise dividing lines between these groups are somewhat arbitrary. Some individuals may exhibit drinking behavior more characteristic of people several years older or younger than themselves. Also the choice of three groups as opposed to four or even five is somewhat arbitrary. For some aspects of analyzing potential interventions or drinking settings, a finer differentiation by age may be appropriate. However, at this stage, to keep the potential target clusters down to a manageable number, limiting the age breakdowns makes sense.

Sex and age are the only drinker characteristics to be used in defining clusters at this time. As we further explore potential interventions and how to implement them in Phase II, other ways of categorizing drinkers may become important. Two such typologies that will probably be more important are: SES and drinking frequency/amount. Two obvious categories on the SES dimension suggest themselves: lower SES (generally non-college educated, blue collar/laborer) and higher SES (generally college educated, white collar or professional). Four categories on the frequency/amount dimension appear useful: (1) light-to-moderate occasional drinkers, (2) light-to-moderate regular drinkers, (3) heavy occasional drinkers and (4) heavy regular drinkers.

Drinking Setting Selection

Criteria. The target settings should be ones in which a substantial share of drinking takes place prior to DWI trips for the particular groups selected. DWI trips do not originate from all drinking locations in proportion to the number of people drinking in those settings or the amount of alcohol consumed in them. Some drinking locations serve disproportionately as origin points for DWI trips.

Settings also should be selected that offer some probability that (1) potential intermediaries will be willing to intervene and (2) those interventions will have some probability of being successful.

Analysis. As we have noted in Chapter 2, the trend in alcohol consumption over the last thirty years has been away from on-premise consumption (in bars, taverns, cocktail lounges,

restaurants, etc.) and toward off-premises consumption (at home, in other people's homes and outside of the home--at picnics, sporting events, etc.). Still, the evidence--roadside surveys, DWI arrest histories and DWI accident histories--suggests that a large proportion of DWI trips originate at bars and other on-premise drinking establishments. Intuitively, this makes sense in that persons drinking in their own homes need not drive anywhere. Persons drinking at friends' homes may be more likely to stay over or get rides home with less intoxicated friends; or, if they have to drive, these persons probably drive shorter distances, thereby reducing the risk of accident or arrest.

The evidence also indicated that bars, taverns and cocktail lounges come in a multitude of complexions--ranging from the small, quiet neighborhood tavern to the large, loud, crowded and frenetic disco or singles bar. Such differences in drinking establishments have a bearing on the type and level of interaction between customers and service personnel, and among customers. Such interaction, as well as factors like the reasons people go to particular bars, will in turn have an impact on the likelihood of patrons or service personnel intervening to deter DWI and on the probability of such interventions being successful.

Selection. Based on the above analysis, we are recommending consideration of five potential drinking settings for development of target clusters: (1) bars, taverns, cocktail lounges (Type I), (2) bars, taverns, cocktail lounges (Type II), (3) other persons' homes, (4) restaurants and (5) other places outside the home. The differentiation of bars and similar establishments into two types deserves further comment. Also some explanation is required of the fifth setting--other places outside the home.

Because of the diversity in types of public drinking places, we are recommending that two types of bars, taverns and cocktail lounges be considered for the development of target clusters. For lack of adequate descriptive terminology, we are calling these Type I and Type II establishments. Type I bars fall at the livelier, louder, larger end of the continuum--discos, singles bars, etc. Type II bars cluster at the smaller and quieter end of the continuum--neighborhood taverns, quieter cocktail lounges, etc. The clientele patronizing these bars and the type of possible intervention will differ between these two types of drinking establishments. Thus, it is appropriate to treat them separately for the purposes of target cluster development.

The fifth setting--other places outside the home--is deliberately ambiguous. For different age groups it could be one or more different specific settings. For young people it could be drinking in cars or at a picnic; for older males, it could be drinking as spectators at sporting events. The specific settings under this category will be developed in Phase II, if this setting is one of the selected target clusters.

Intermediary Selection

Criteria. The selection of potential intermediaries is dictated in part by the settings that are chosen. Only certain intermediaries are available to intervene in specific settings. Also, the dynamics of interaction in particular settings can favor intervention by one or another potential intermediary. Intermediaries should be selected who meet several specific criteria. These include: (1) effectiveness: they should have the potential of being effective as intermediaries, (2) motivation: they should already be motivated to intervene or be responsive, and (3) accessibility: they must be reachable through one or more specific medium or communication network.

Analysis. The research on intermediaries summarized in Chapter 2 yielded very little specific evidence on how different intermediaries might be rated on any of these criteria. However, as with our discussion of drinker groups, it is possible to perform some deductive analysis of how potential intermediaries might rate.

In terms of effectiveness, we are looking for intermediaries who can convince potential DWI offenders not to drive drunk. Such effectiveness will in part be a function of the relationship between the drinker and intermediary. This relationship is defined both by their respective roles in the immediate drinking setting and by any historical or personal ties. The degree of formal and informal authority or power held by the intermediary, the legitimacy that the intermediary has as a source of information, the degree of trust that the drinker has in the intermediary, and any friendship between the two should influence positively the likely success of intervention. Additional factors in the immediate drinking setting, such as the probable amount of contact between intermediary and drinker and the number of drinkers with whom he or she comes in contact, will influence the likely effectiveness of the intermediary.

In terms of motivation, we are looking for intermediary groups that can be convinced to intervene to prevent DWI. Intermediaries can be examined from two perspectives: their predisposition to intervene and the incentives, influence or leverage that could increase their willingness to intervene. Some groups may be more favorably predisposed to intervene while other groups, though less predisposed to intervene, may be more easily induced to do so. There may be more points of leverage or incentives that could be brought to bear on the latter groups.

Finally, in terms of accessibility, different categories of intermediaries will be more or less difficult to communicate with and to reach with the message that intervening is desirable or good. Accessibility is a function of the formal and informal channels of communication that can be used to reach potential intermediaries. For example, membership in a trade association or occupational group that regularly communicates with its members and with whom its members identify will provide a formal

link between the potential intermediary and possible sources of messages telling the potential intermediary that intervention is desirable and how to intervene. Without a formal link such as this, obtaining access to, and the attention of, potential intermediaries depends on either the mass media, educational institutions or informal channels of communication.

Selection. For the purposes of target cluster development, three categories of intermediaries have been identified: (1) service personnel or social hosts, (2) friends or family and (3) strangers or other guests/patrons. Each of these categories is a composite of more specific intermediary groups. They are grouped as they are because of the similarities in relationship to the potential DWI offender. The potential effectiveness, motivation and accessibility of each of these groups can be discussed, although the empirical basis for any statements that we make is very limited.

Service personnel and social hosts share the common characteristic of having responsibility for the service of alcoholic beverages and for the well-being of clientele, patrons or guests while they are on the premises or attending the social function. In other respects they are quite different. The effectiveness of the bartender or other service personnel is enhanced by his or her role as formal authority within the drinking setting. It is "his" or "her" bar, either in actuality or as a proxy for the bar manager/owner. The ability to exercise this authority is, of course, highly circumscribed, especially by the bartender's dependence on patrons for business and tips. The potential effectiveness of service personnel as intervenors is also inhibited by their lack of knowledge of how to intervene and by the lack of time to intervene in many drinking settings. In some drinking settings there is also high turnover among service personnel, further inhibiting their effectiveness.

Also service personnel in most drinking settings are not highly motivated to intervene to deter DWI. Intervention takes time away from service to other clientele and, if resisted by the potential DWI offender, may disrupt the convivial atmosphere of the bar. In addition, service personnel may fear that intervention will drive customers away or reduce sales. However, financial incentives in the form of accelerated ABC enforcement or liability laws could be brought to bear to counter-balance some of the disincentives to intervene. Thus, although initial motivation to intervene may be low among service personnel, there may be good potential for increasing that motivation. A factor favoring use of service personnel as intermediaries is their higher accessibility through formal alcohol-related trade associations and professional organizations as compared with non-occupational groups.

Social hosts contrast with service personnel in a number of respects but their potential effectiveness is also rooted in the authority they can exercise as host: it is their home where the

function is being held. They exercise at least nominal control over the dispensing and consumption of beverages. Prior to the beginning of the social function their decisions about the availability of alcohol, how alcoholic beverages are to be served and the timing of beverage consumption will structure the drinking situation and influence the guests' degree of intoxication at the time they depart. Nevertheless, the social host, like the bartender or other service personnel, faces a number of impediments to his or her effectiveness as an intervenor. Most hosts do not know how to intervene effectively or even how to recognize the need to intervene. Many hosts do not play the role of host often enough or to large enough numbers of drinkers to have a big effect on the DWI problem. Moreover, because they are not serving guests that frequently, they have little opportunity to learn or practice intervention techniques. Finally, at many, if not most, social functions guests pour their own drinks, restricting the host's control over alcohol consumption.

The motivation of the social host to intervene is probably somewhat more broadly based than that of the service person, but it is not clear how much that motivation can be manipulated or increased. Most of the guests at a typical social function are friends, family or at least close acquaintances of the host. As such, their safety and well being are of greater interest to the social host than to the typical bartender. This concern can be based either on altruism and genuine caring for the other person or on a more selfish desire not to lose the friend. Intervention could even be motivated by an even narrower form of self-interest--avoidance of the feelings of personal responsibility and guilt that might arise if something were to happen to a drinker who had had too much to drink at the host's social function.

Opportunities for increasing the motivation of social hosts to intervene seem fairly limited. In the few states where there are social host liability provisions under the Dram Shop laws or the common law, these provisions could be publicized to emphasize hosts' responsibility. Unfortunately there are, at present, no legal or economic sanctions that can be brought to bear, as there are for commercial servers.

Friends and family members are the second major category of intervenors. For several reasons, their potential effectiveness as intervenors is higher than either service personnel or social hosts. First of all, in a fairly large number of settings, friends or family members may be the only possible intervenors. When the drinking takes place at home, a friend's home, a picnic or ballgame or a large, loud anonymous bar, club or restaurant, the friend or family member accompanying the potential DWI offender may be the only person in a position to recognize his impairment and to take action that might result in his not driving. Even in settings where there are other potential intervenors, the friends or family members may still be in a position to be the most effective intervenors. They have more

time for intervention and are more knowledgeable of the potential DWI offender's personality and how he might react to a given intervention.

However, these advantages are not without some counterbalancing impediments to effective intervention. The friend or family member's potential intervention occurs within the dynamic context of his or her on-going relationship. The friend or family member may be very hesitant to intervene for fear of creating conflict with or offending the drinker. The risk associated with DWI may, in the eyes of the friend, be small relative to the risk of losing the drinker's friendship or causing a "scene." For family members such impediments to intervention can even be more severe. For a spouse, especially, intervention might just be another round in a long running battle over the potential DWI offender's drinking behavior. As such, the intervention is likely to encounter stiff resistance and may, in fact, precipitate a larger fight over issues unrelated to the immediate DWI situation.

Friends and family members, like social hosts and service personnel, also face a number of practical impediments to effective intervention. They share with these others an inability to recognize impairment and thus have difficulty knowing when to intervene. They also lack knowledge of practical and effective intervention techniques. In terms of motivation to intervene, friends and family members are very similar to social hosts. The main motivating force is presumably concern for the safety of the potential DWI offender.

The third category of potential intermediaries is made up of strangers and other patrons of the on-premise drinking establishment. It would appear that these groups are not likely to be particularly effective as intermediaries nor are they likely to be highly motivated to intervene. Their potential effectiveness is hampered by their lack of knowledge of the potential DWI offender and the resistance they are likely to encounter from the drinker. Strangers and other patrons may be most effective as indirect intervenors, that is, when they become aware of a potential DWI situation, they can alert the bartender or other person in a position to take direct action. The motivation to intervene among these groups is very limited. By definition they are not friends of the potential DWI offender so presumably are not motivated by concern for the individual's safety. Also, because they have no responsibility for the potential DWI offender's drinking behavior they cannot be motivated by fear of liability.

Nevertheless, it is important to note that the climate for intervention--by strangers as well as by service personnel, social hosts, friends or family member--has probably never been better. With growing public awareness of the drunk driving problem, more people--no matter what particular role they play--are likely to be receptive to a call for intervention. Publicity about DWI has probably resulted in an increase in the perceived

risk associated with drunk driving and a heightened awareness of everybody's responsibility to do something about the problem. In this climate it may even be possible to consider intervention by strangers.

In terms of accessibility--that is, the ability to get messages to potential intermediaries, all of the groups we have been discussing aside from service personnel-social hosts, friends, family and strangers or other patrons suffer from a shortage of formal communication channels for reaching them. To reach a large portion of the potential intermediaries, communication--whether motivational or instructional--will have to rely in large part on the mass media. Messages can be tailored to particular drinking settings and to particular intermediary roles; still, use of the mass media is very limited in terms of the numbers reached and the impact on those who are reached. The lack of more formal and direct channels of communication, such as those available for reaching service personnel, have led us to rate lower the accessibility of all these groups.

It is our recommendation that target cluster development distinguish the three broad categories of intermediaries that have been identified and discussed above: (1) service personnel or social hosts, (2) friends and family members and (3) strangers or other patrons; and that cluster development focus on the first two: service personnel and friends or family members.

Intervention Recommendations

Under the original formulation of the cluster concept, the intervention techniques were to be the fourth component of a target cluster, along with the intermediary, drinker and drinking setting. As the summary of available research on DWI intervention techniques presented in Chapter 2 suggested the empirical data on such techniques and evidence regarding their relative effectiveness are extremely limited and disappointing. Driving or offering to drive the potential DWI offender home appears to have the most widespread acceptability. However, these data do not allow us to identify or select the most effective interventions, much less to match possible interventions--which will be discussed more fully below--appearing to have broad potential applicability to a wide range of possible clusters. None of the combinations of drinker, intermediary and setting that we are considering can be eliminated for lack of feasible interventions. Conversely, no such cluster can be rated highly due to the particular effectiveness of an intervention technique that can only be used for that cluster.

Therefore, we are forced to step back from the original objective of matching intervention techniques to clusters, and ask what can be said about these intervention techniques to guide the projected Phase II effort. Instead of abandoning all

attempts to analyze and evaluate potential interventions, a middle course has been chosen. In the sections that follow, we describe and analyze the elements that make up DWI intervention techniques; we suggest several criteria to be used in evaluating such interventions; and we give some examples of intervention techniques that could be used for a hypothetical target cluster. We conclude the section with a discussion of certain principles that should guide the choice of interventions and the matching of interventions to clusters, especially given the fact that so little empirical evidence is available regarding the effectiveness of various interventions.

Intervention Components. In Chapter 1 an intervention was defined as any action taken by an intermediary to deter or prevent a potential DWI offender from driving drunk. For the purposes of discussion and analysis it is useful to think of an intervention as having three components.

- o The substantive contents of the intervention: what the intermediary is telling the potential DWI offender to do as an alternative to DWI;
- o The persuasive argument or appeal: the reason(s) used by the intermediary to convince the drinker that he or she should not drive drunk; and
- o The delivery: the style and technique used by the intermediary to approach the potential DWI offender.

An intervention, frequently thought of only in terms of the first component--what the drinker is supposed to do as an alternative to DWI--is really made up of all three parts. Still, each component and its contribution to the effectiveness of the intervention can be discussed separately.

(a) Intervention Content. The possible options for intervention content fall into a limited number of categories. If the drinker is already impaired, the intermediary can try to delay the drinker's trip until he or she is more sober (Group A), try to have the drinker make the trip other than by driving (Group B), or try to have the drinker eliminate the trip altogether (Group C). If the drinker is not yet impaired, the intermediary can try to keep the drinker from becoming impaired before the trip takes place (Group D). Since eliminating the trip altogether (Group C) will be virtually impossible--even if the drinker stays overnight he or she will eventually have to travel, this category could also be treated as a subset of Group A, delaying the drinker's trip until he or she is more sober. Some specific interventions falling under these four categories are listed in Exhibit III.2 on the following page.

Exhibit III.2

POTENTIAL DIRECT INTERVENTION CONTENTS,
BY MAJOR CATEGORY

- GROUP A. DELAYING TRIP UNTIL DRINKER MORE SOBER
- Persuading Drinker to Wait (entertainment, food, conversation, etc.)
 - Enforcing a Trip Delay (taking Keys, Immobilizing car, etc.)
- GROUP B. ARRANGE FOR TRIP OTHER THAN BY DRINKER DRIVING
- Friend Drive Drinker Home
 - Drinker Walk
 - Call Cab for Drinker
 - Drinker Use Public Transportation
- GROUP C. ELIMINATE DRINKER TRIP ALTOGETHER
- Drinker Stay Overnight
 - Convince Drinker to remain at one bar instead of "bar hopping."
- GROUP D. PREVENT IMPAIRMENT
- Reduce Absolute Amount of Alcohol Consumed
 - Slow Consumption (spread same consumption over a longer period of time)

All of these options are what can be considered direct interventions--something the intermediary suggests or imposes on the potential DWI offender. A person in the immediate drinking situation (we hesitate to call him or her an intermediary) can also take indirect action that could result in an effective intervention. A bar patron could call the bartender or manager to report an impaired drinker; or a person at a party could call the police to report a drunk leaving the party by car. If the bartender, manager or police officer then intervenes to prevent or stop the DWI trip, that indirect action has been effective. Although use of this indirect form of intervention could be a very potent component of an overall strategy, we will not discuss it further here since our main concern is direct intervention techniques.

(b) Persuasive Argument or Appeal. How the intermediary attempts to convince the potential DWI offender not to drive drunk may be as important to intervention effectiveness as is the specific alternative proposed. Whether or not the drinker is convinced not to drive drunk will depend not only on the feasibility and attractiveness of the proposed alternative but also on how it is "sold" to him. Of course, some forms of intervention may involve no attempt to sell or persuade. Taking the drunk's keys by force or removing him from the drinking setting are purely removing him from the drinking setting are purely physical interventions. We do not rule them out as possibilities, but they exist outside of the framework of this discussion.

Persuasive arguments or appeals can be categorized according to the basis for that appeal. Such appeals can be based on many factors. Exhibit III.3 suggests some of the factors on which appeals can be based and provides examples of the language that an intermediary using these approaches might employ. Other variations on these themes can be imagined. Most of these appeals could be used with the majority of the substantive alternatives to DWI.

The appropriateness and likely success of a particular appeal will depend on the personality, belligerency and degree of intoxication of the drinker, the role and personality of the intermediary, the relationship between drinker and intermediary and many characteristics of the drinking setting. In fact, within the intervention episode, the appropriateness and likely success of particular appeals may change from minute to minute as the episode unfolds and the drinker and intermediary confront one another. A successful intervention may require several different appeals as the episode develops.

(c) Approach or Delivery. No matter what substantive alternative to DWI is proposed and no matter what persuasive appeal is employed, successful intervention is still in part dependent on the way the intermediary approaches the drinker. The particular words chosen and the subtle mix of authority, coercion, cajolery, flattery and good humor will have an

Exhibit III.3

POTENTIAL PERSUASIVE APPEALS BY INTERMEDIARIES
TO DETER DWI

Category of Appeal

Example

Rational appeal

"Look Bill, the chance of your having an accident is X times as high when you are drunk as when you are sober."

Legal appeal

"The cops are really cracking down, Joe. Driving in your condition is going to get you in big trouble. You can't afford to be without your license for three months."

Social conformance

"Come on Harry. Nobody's driving when they're drunk these days."

Emotional appeal

"Hey Sam. Think of your family. What would Mary and the kids do if you got yourself smacked up?"

Friendship or love appeal

"O Honey, just for me, let me have the keys so I can drive us home."

Social or collective good appeal

"Hey listen John, if you drive us home in your present state we could cause a heck of a lot damage

Embarrassment appeal

"Now Marv, you really don't want your name on the back page of the Montgomery Journal next month" (in the listing of convicted drunk drivers).

Coercion or threat-of force appeal

"If you don't give me your keys, Bob, I'm going to knock you out and put you to bed myself!"

Invocation of authority appeal

"OK pal, have it your way, but if you walk out of here like that and I see you try to drive off, I'm calling the police."

Self-interest of intermediary appeal

"Look friend, the beverage control people are really on my tail. If you get stopped after leaving my place drunk, I'll have inspectors in here for the next six months."

important bearing on the success of the effort. Some intermediaries are going to be better than others at tailoring their approach to the drinker's personality and immediate state of mind. This is inevitable. And unfortunately, it is very difficult to teach people how to be more effective in this domain.

The major thrust of the program therefore, would be to equip potential intermediaries with sound and feasible alternatives to DWI as well as a set of plausible arguments for drinkers desisting from DWI. The matter of its delivery, however, will probably vary depending on the potential intermediaries' ability to establish rapport, determine the "best" approach and sell the idea of alternative behavior.

Evaluation Criteria. Although no empirical data are available on which to make the necessary assessments, a number of criteria for evaluating both the content of the intervention and the persuasive arguments or appeals can be suggested. In addition to the intervention's feasibility for the particular setting, two considerations require evaluation: first, whether or not the intermediary uses the intervention, and second, whether or not the drinker does something different as a result of having the intermediary intervene. A third important concern is whether the intervention is something that public and private organizations can endorse, advocate and support. We will set aside the last criterion for the moment to consider the two primary issues. We would like to be able to assess (1) the probability of an intermediary using the intervention and (2) the probability of a drinker complying with the suggested alternative behavior.

(a) Intermediary Utilization. The likelihood that an intermediary will use a particular intervention is a function of a number of factors. Among these, we have identified the following:

- o The ease of use for the intermediary,
- o The degree of disruption in the intermediary's normal flow of work or other activities,
- o The monetary cost of the intervention to the intermediary,
- o The emotional costs of the intervention to the intermediary,
- o The time cost of the intervention to the intermediary, and
- o The amount of knowledge or expertise required of the intermediary by the intervention.

(b) Drinker Response. The probability of a drinker complying with a particular intervention is also related to a number of intervention characteristics. Among these are:

- o The monetary costs of compliance to the drinker,
- o The time costs of compliance to the drinker,
- o Whether or not compliance required any action on the part of the drinker,
- o If compliance does require drinker action: how much, how complex and how much forethought required, and
- o The psychological "cost" of compliance with the intervention. By this we mean the degree to which the intervention allows the drinker to save face. Cooperation should not result in a loss of self-esteem, or status and regard among friends, family or drinking buddies.

It would be possible to examine each of the substantive intervention contents and each of the persuasive arguments in terms of these criteria, but without more knowledge of the specific circumstances in particular settings, it would be extremely difficult to say that one intervention is superior to another. This leads us to the need for some broader guidance on the selection of intervention(s) for particular target clusters.

Principles of Intervention Selection. As pointed out above, our current state of knowledge does not allow us to select or recommend an intervention for each combination of drinker, intermediary and setting. There are no empirical data on the effectiveness of different interventions, much less such data disaggregated by, or matched to, drinker/intermediary/setting clusters.

However, it is important to realize that even if we had better research results suggesting that particular interventions "worked" in a particular experimental situation, it would still probably be a mistake to make simplistic links between interventions and clusters. Only the most sophisticated research designs can begin to control for the many variables affecting success. With our target clusters we cannot anticipate the particular chemistry of a specific drinking situation and the personality match or mismatch between drinker and intermediary in particular settings.

Given our state of knowledge, attempting such a selection would reflect a misguided "top-down" planning mentality. The objective should be to offer potential intermediaries a range of choices--a menu of alternatives. These would be options that they can try in order to see what works best for them with different guests or patrons in different situations. Suggesting "one best" or even "two best" interventions for a given target cluster may actually create a tendency toward failure among intermediaries. When the one or two best are tried and they fail, the intermediary is likely to give up. Success is more likely if the intermediary thinks about what makes sense as an alternative to DWI in a particular drinking setting. Also, success is more likely when intermediaries make some judgments about the arguments or persuasive tactics with which they are most comfortable and that are likely to work best for the drinker in question. With a range of options and an understanding that everything cannot be expected to work, the host or bartender is more likely to regard the bar or party as an experimental situation in which the approach, the argument and the alternative actions have to be varied to improve the success rate. Such freedom to experiment and choose is also more likely to get the support and participation of potential intermediaries.

POTENTIAL TARGET CLUSTERS

There are 45 potential target clusters formed by all the possible logical combinations of the three primary dimensions (age, setting and intermediary) for male drinkers. Exhibit III.4 shows these logical possibilities. Twenty-five clusters have been identified that appear--based on the analysis presented in the preceding section--to offer some promise for further development. These are indicated by the cells containing X's in the exhibit.

The analysis resulting in these 25 possible clusters followed three steps. First, the three age groups were defined. Second, for each age group, data on drinking location and DWI trip origins were examined to select the appropriate drinking settings for that age group. Finally, for each drinker age/drinking setting combination, the intermediaries that could play a significant role in DWI deterrence for that group in that setting were identified.

Consideration of Secondary Dimensions

It would be possible to further differentiate the target clusters based on the secondary dimension--drinker SES and drinking amount/frequency. The SES secondary dimension appears to be most important for several clusters. Youth and younger adults drinking in Type I bars or in others' homes may be successfully influenced by very different intervention techniques depending on whether they are a college or white collar/young professional crowd or a blue collar/working class crowd. The

Exhibit III 4. Potential and Recommended Target Clusters

DRINKING SETTING	INTERMEDIARY	MALE DRINKERS		
		AGE CATEGORIES		
		Youth (17-22)	Younger Adults (23-34)	Older Adults (35 & Up)
Type I Bars	Service Personnel	X	X	
	Friends/Family	X	X	
	Strangers	X	X	
Type II Bars	Service Personnel		X	X
	Friends/Family		X	X
	Strangers		X	X
Restaurants	Service Personnel			X
	Friends/Family			X
	Strangers			
Others' Homes	Social Hosts	X	X	X
	Friends/Family	X	X	X
	Strangers			
Elsewhere, Out of Home	Service Personnel/Host		X	X
	Friends/Family	X	X	X
	Strangers			

secondary dimension of drinking amount/regularity appears to be most important for the clusters made up of older adults. Heavier regular drinkers are likely to require different types of intervention than light or irregular drinkers. For example, the feasibility of intervention and the specific intervention techniques used by bartenders in either Type I or Type II bars for "regulars" is likely to be different than for the one-time or occasional patron. Similarly, because of the difference in bar culture and interaction patterns between higher SES bars and lower SES bars, it may be necessary to suggest different types of intervention by bartenders or friends in these settings. Likewise, in terms of the motivation of intermediaries, different messages or message sources may be necessary to convince intermediaries to intervene in these different settings.

Despite the obvious relevance of these secondary dimensions, it would be premature to subdivide all the identified clusters into SES or amount/frequency subgroups. The secondary dimensions are only important for some of the primary clusters. Also, using these dimensions across all of the primary target clusters would result in at least a doubling or quadrupling of the number of clusters. We recommend that the secondary dimensions be ignored in the initial selection of clusters, but that these dimensions be considered again when specific interventions and techniques for motivating potential intermediaries are considered in Phase II. Exhibits III 5-7 show--for each age group--the proposed settings and intermediaries, and indicate some factors that must be considered in the development of the clusters.

Target Cluster Reduction

It is our objective to recommend a limited number of clusters for Phase II development and testing. Many of the 25 clusters that have been identified share with one or more other clusters some significant attribute--such as, the likely mechanism for encouraging the intermediary to intervene, or the kind of message the intermediary might use to deter DWI. Therefore, the 25 clusters have been grouped together based on these common attributes. The lines encircling sets of X's in Exhibit III.4 represent these groupings of target clusters. In every instance the groupings combine individual target clusters across age categories. With these groupings taken into account, there are 14 cluster combinations recommended for NHTSA's consideration. They are listed in Exhibit III.8 not necessarily in order of priority.

RATINGS AND TARGET CLUSTER RECOMMENDATIONS

The above analysis and evaluation have generated 14 clusters that appear to offer potential for using intermediaries to deter DWI. A much more limited number of clusters must be selected for Phase II. It is the responsibility of NHTSA to select these clusters but the data that have been collected and the analysis

Exhibit III 5. Potential Cluster Analysis - Youth

DRINKER GROUP	DRINKING SETTING	INTERMEDIARY	COMMENTS/ANALYSIS
Youth (Ages 17-22)	- Type I Bars	<ul style="list-style-type: none"> - Service Personnel - Bartenders - Friends - Strangers 	<p>Young drinkers have less experience with drinking and less experience with driving. They are less likely to be able to "hold" their liquor and more likely to have an accident at given BAC's. It may be easier for potential intervenors to determine that young drinkers are impaired because of their lack of drinking experience.</p> <p>Youth drinking is concentrated in bars, other people's homes and secondarily in other places outside of the home. In those settings bartenders or other service personnel, friends, social hosts and secondarily strangers can serve as potential intermediaries. There may be some serious limitations on bartender intervention in Type I bars.</p>
	- Others' Homes	<ul style="list-style-type: none"> - Host - Friends 	
	- Elsewhere, Out of Home	<ul style="list-style-type: none"> - Friends - Service Personnel 	

Exhibit III 6. Potential Cluster Analysis - Younger Adults

DRINKER GROUP	DRINKING SETTING	INTERMEDIARY	COMMENTS/ANALYSIS
Younger Adults (Ages 23-34)	- Type I Bars	<ul style="list-style-type: none"> - Bartenders - Friends/Family - Strangers - Service Personnel 	<p>Some of the drinkers in this age category will, like their younger counterparts be relatively inexperienced with alcohol. Young adult drinking outside of own home is fairly evenly divided among bars, restaurants, other persons homes and elsewhere. Drinking in restaurants tends to be drinking by females, hence omission of restaurants among the target settings for this age group. The division of on-premise drinking in this age group between Type I and Type II bars is unknown, but a significant proportion of drinking is believed to occur in each setting.</p>
	- Type II Bars	<ul style="list-style-type: none"> - Bartenders - Friends/Family - Strangers 	
	- Others Homes	<ul style="list-style-type: none"> - Social Host - Friends/Family 	
	- Elsewhere, Out of Home	<ul style="list-style-type: none"> - Friends/Family - Service Personnel 	

Exhibit III 7. Potential Cluster Analysis - Older Adults

DRINKER GROUP	DRINKING SETTING	INTERMEDIARY	COMMENTS/ANALYSIS
Older Adults (Ages 35 & Up)	- Type II Bars	<ul style="list-style-type: none"> - Bartenders - Service Personnel - Friends/Family - Strangers 	<p>This older male population represents a smaller share of the DWI population, but its risk (percentage of males in the age group engaging in the behavior) is high. These drinkers are the most experienced with both drinking and driving. They are the least likely to show outward signs of impairment. They are also likely to have the lowest subjective perception of accident risk associated with DWI and thus may be some of the hardest to convince not to drive.</p> <p>Older male drinkers drinking outside of their own homes tend to be evenly divided between bars, restaurants, other persons homes, and elsewhere out of the home.</p>
	- Restaurants	<ul style="list-style-type: none"> - Service Personnel - Friends/Family 	
	- Others Homes	<ul style="list-style-type: none"> - Social Host - Friends/Family 	
	- Elsewhere, Out of Home	<ul style="list-style-type: none"> - Service Personnel - Friends/Family 	

Exhibit III 8.
TARGET CLUSTER COMBINATIONS

1. Drinker Group: Youth and Younger Adults
Setting : Type I Bars
Intermediary : Service Personnel
2. Drinker Group: Youth and Younger Adults
Setting : Type I Bars
Intermediary : Friends/Family
3. Drinker Group: Youth and Younger Adults
Setting : Type I Bars
Intermediary : Stranger/Other Patrons
4. Drinker Group: Younger and Older Adults
Setting : Type II Bars
Intermediary : Service Personnel
5. Drinker Group: Younger and Older Adults
Setting : Type II Bars
Intermediary : Friends/Family
6. Drinker Group: Younger and Older Adults
Setting : Type II Bars
Intermediary : Strangers
7. Drinker Group: Older Adults
Setting : Restaurants
Intermediary : Service Personnel
8. Drinker Group: Older Adults
Setting : Restaurants
Intermediary : Friends/Family
9. Drinker Group: Youth
Setting : Others' Homes
Intermediary : Social Host
10. Drinker Group: Youth
Setting : Others' Homes
Intermediary : Friends/Family
11. Drinker Group: Younger and Older Adults
Setting : Others' Homes
Intermediary : Social Host
12. Drinker Group: Younger and Older Adults
Setting : Others' Homes
Intermediary : Friends/Family

Exhibit III 8.
Target Cluster Combinations
Continued

- 13. Drinker Group: Younger and Older Adults
Setting : Elsewhere, Out of Home
Intermediary : Service Personnel/Host
- 14. Drinker Group: Youth, Younger and Older Adults
Setting : Elsewhere, Out of Home
Intermediary : Friends/Family

that has been performed have led us to form opinions about the clusters offering the most promise for effective DWI deterrence. From the long list of evaluation criteria suggested in an earlier section of this chapter, we have developed an abbreviated set of criteria on which the 14 clusters can be rated and compared. We have gone through a rating process ourselves and would suggest that NHTSA do the same. The criteria that we have employed are listed and defined below. Based on the application of these criteria, the 14 clusters are grouped into 3 priority categories ranging from most promising to least promising. These groupings of clusters are listed below and the factors accounting for high or low ratings of particular clusters are briefly described.

Evaluation Criteria

The following nine criteria have been used to rate the 14 target clusters. The criteria are not completely independent of one another. For example, DWI involvement (Criterion 2) is in part a function of the size of the drinker group (Criterion 1). An effort has been made, however, to keep the criteria as distinct as possible.

1. Drinker Group Size. The number of drinkers in the age group represented in the target cluster.
2. DWI Involvement/Risk. The share of the overall DWI problem represented by the drinker group and the relative DWI risk of that age group.
3. Likelihood of Drinker Behavior Change. The general susceptibility of the drinker group to changing its DWI behavior as a result of intervention.
4. Setting's DWI Trip Generation Potential. The extent to which the particular setting serves as a point of origin for DWI trips.
5. Setting's Intervention Potential. The degree to which the setting provides an environment conducive to intervention.
6. Size of Intermediary Group. The number of intermediaries of that type in a particular setting.
7. Ease of Reaching the Intermediary. The type and number of communication channels available for reaching the members of a particular intermediary group, and the likelihood of getting potential intermediaries in that group to change their behavior.
8. Drinkers Reached per Intermediary. The number of drinkers at risk of DWI with whom the intermediary comes into contact.
9. Likelihood of Drinker Behavior Change, Given the Setting and the Intermediary. The probable response of the drinker to that intermediary in that particular setting.

A tenth criterion that we did not use but that if used would quite likely change the relative rankings of the clusters is, "Overlap with Other DWI Countermeasure Campaigns."

Cluster Ratings

Applying these criteria to the clusters through a Delphi process, NCSI staff arrived at the following groupings of target clusters. The clusters are presented by group and are ordered on the basis of likely effectiveness. It should be noted that we tried to weigh the criteria equally. Different orderings of clusters could easily emerge if greater weight were given to certain criteria.

Most likely to be Effective

- o Cluster 4. Younger and Older Adult Males in Type II Bars, Service Personnel as Intermediaries.
- o Cluster 5. Younger and Older Adult Males in Type II Bars, Friends and Family as Intermediaries.
- o Cluster 2. Youth and Younger Adult Males in Type I Bars, Friends and Family as Intermediaries.
- o Cluster 10. Male youth, in Others' Homes with Friends/Family as Intermediaries.

Moderate Likelihood of Effectiveness

- o Cluster 1. Youth and Younger Adult Males, in Type I Bars, with Service Personnel as Intermediaries.

This cluster is ranked somewhat lower because of the anticipated difficulty of getting service personnel to intervene in this setting.

- o Cluster 9. Male Youth, in Others' Homes with the Social Host as Intermediary.

This cluster is ranked somewhat lower than the parallel cluster using friends/family because of the smaller numbers of social hosts.

- o Cluster 11. Younger and Older Adult Males, in Others' Homes with Social Host as Intermediary.

- o Cluster 12. Younger and Older Adult Males, in Others' Homes with Friends/Family as Intermediary.
- o Cluster 14. Male Youth and Younger and Older Adult Males in other settings out of the home, using Friends/Family as Intermediaries

Lowest Likelihood of Effectiveness

- o Cluster 3. Youth and Younger Adult Males in Type I Bars, using Strangers and Other Patrons as Intermediaries.
- o Cluster 6. Younger and Older Adult Males in Type II Bars with Strangers and Other Patrons as Intermediaries.

These two clusters are rated lower because of the difficulty of motivating a stranger to intervene and the likelihood of a poor response by the drinker to stranger intervention.

- o Cluster 7. Older Adult Males, Drinking in Restaurants with Service Personnel as Intermediaries.
- o Cluster 8. Older Adult Males, Drinking in Restaurants with Friends/Family as Intermediaries.

These two clusters are ranked lower because of the smaller number of drinkers in restaurants, the relatively low frequency of highly impaired DWI trips originating from restaurants and the presumed resistance to change among older drinkers.

- o Cluster 13. Younger and Older Adult Males, Drinking Elsewhere out of the Home with Service Personnel or Hosts as Intermediaries.

This setting is ranked low because of the small size of the potential intermediary pool, the poor potential for intervention in such settings, and the low probability of drinker behavior change in such settings.

IV. PRIVATE/PUBLIC INITIATIVES

In this section of the report methods for reaching and motivating intermediaries to take action are discussed. Identification of potentially effective target clusters and action scenarios is only half of the problem of using intermediaries in a DWI situation. The other half is finding ways to stimulate the intermediary to take action. Stimulating action will probably require national, top-down initiatives; such initiatives must be designed to overcome the many impediments to action by intermediaries.

THE PROBLEM OF ENCOURAGING INTERMEDIARY ACTION

Resistance to change is always present, prevalent, and persistent. There are many reasons why an intermediary might not want to intervene in a DWI situation. We first discuss these reasons and then address changes that could overcome this intermediary resistance.

There are several reasons why any intermediary may be reluctant to intervene:

- o The ambiguity of the situation; nature of one's obligation toward friends, patrons, strangers, etc: e.g., "what's in it for me?"
- o Lack of knowledge of what to do,
- o Inability to judge the extent of intoxication or recognize impairment,
- o Failure to perceive the risk associated with DWI,
- o Perception of intervention being socially unacceptable: e.g., unmanly, meddling, or simply a "pain in the neck."

For owners and bartenders, there are the additional risks of lost business and the possibility that customers and friends will take their patronage elsewhere. Similarly, waitresses could lose tips by intervening. Bartenders may believe that other bars do not encourage intervention. Many individuals do not want to interfere in drinking situations that are "none of their business." Owners prefer not having their establishments labeled as hostile or unfriendly to "good time drinking," much as a host does not wish to be considered inhospitable or "uptight."

However, bartenders, owners, and hosts also do not wish to be identified, either publicly or privately, as the source of a DWI incident that resulted in a crash and loss of life. A contrasting set of social perceptions, perhaps in the formative stage and fostered by the recent increased awareness of the consequences of DWI, could lead to more intervention by individuals present in drinking settings.

To enhance this phenomenon, the following types of changes in perceptions and attitudes must take place:

- o Reduction in the ambiguity of potential intervention situations,
- o Reduction in the perceived "cost" of intervention,
- o Increase in the perceived social acceptability of intervention so that a person will not fear social or personal ostracism,
- o Increase in the perceived social costs of not intervening.

For owners and bartenders these changes include:

- o Less worry about loss of patronage,
- o Increased awareness that other drinking establishments are participating in DWI countermeasures,
- o Increased perception and understanding of the negative consequences of DWI losses and penalties, as well as loss of community standing, if their tavern is involved in serving drinks to patrons who drive, and
- o Increased perception that social responsibility, when exercised in a DWI situation, is good for business and consistent with a convivial atmosphere.

In short, intervention should be viewed as socially desirable behavior that prevents the negative consequences of DWI and results in a large degree of personal satisfaction for the intervenor for having done the "right thing."

The two remaining obstacles, knowledge of how best to intervene and ability to determine extent of impairment, appear to be matters of increasing information about the effects of alcohol and the psychodynamics of handling potentially belligerent inebriated individuals. However, in addition to

knowing what to do and when to do it, intervenors must also feel confident that they can carry off the intervention.

In many respects these changes in attitude are analogous to prevention of smoking by individuals who do not wish to be subjected to cigarette smoke. Ten years ago, few people would have intervened in this situation; today, the prevailing norm and social ethic encourages intervention, prevention, and creation of non-smoking sections in commercial establishments. Although non-smokers have a more direct, vested interest in preventing smoking than participants in a drinking setting have in preventing DWI, a precedent has been set that intervention in a social situation is socially acceptable, legitimate, and can be accomplished without loss of business. Public health and safety--particularly when viewed as matters of personal hygiene and responsible behavior--can be perceived as socially correct and--using communication techniques--can be imbued as American social ethics.

To penetrate and change the prevailing attitudes of potential intervenors, the sources of messages about DWI must be respected, authoritative, trusted, and legitimate. Sources must convey more than just information. They must strike the proper balance between intrusion in personal behavior and performance of an act for the public good. The current political climate favors private sector initiatives over government programs, and where possible, decentralized, local approaches over national campaigns and directives. Imagery associated with these values may be more important than the actual method used to disseminate the message that intervention in a potential DWI situation is an appropriate action. If private distribution methods are used, however, the message probably should be predominantly positive (e.g., "know your friend's limits") and not seriously detrimental to the economic interests of the private sector.

In this chapter we discuss three general approaches to encouraging intervention by intermediaries: (1) legal and regulatory encouragement of intervention, (2) use of alcohol beverage trade and professional associations to develop and to serve as targeted communication channels for dissemination of information and motivation, and (3) mass media-based public information campaigns. Of course, many potential intermediaries may be unwilling to intervene because of anticipated resistance to their intervention from drinkers. We precede the discussion of the approaches to intermediaries with some consideration of the ways to encourage intervention by systematically seeking to reduce resistance to intervention among target drinkers.

REDUCING RESISTANCE TO INTERVENTION

Intermediaries are understandably reluctant to intervene in most potential DWI situations because of the resistance they anticipate receiving from the drinker. One strategy for overcoming reluctance among intermediaries is to reduce the

resistance to intervention among potential DWI offenders.

Drinker resistance to intervention has a number of sources. Such resistance stems from the attitudes and values that drinkers hold toward both drinking and driving. Gusfield (1981) and Kotarba (1977) document some of these values as they relate specifically to drinking and driving, while ethnographers such as Cavan (1966) document more general attitudes toward drinking and tavern sociability. Potential DWI offenders resist intervention because the alternatives to DWI are seen as costly and inconvenient, while DWI itself is not perceived to be either particularly dangerous or risky. Many potential DWI offenders also resist intervention because they consider their drinking (and driving) behavior to be nobody's business but their own, regardless of the risk to themselves or danger to other people. These individuals find intervention to be a real intrusion into what they regard as their private affairs. They believe it is nobody's--certainly not a bartender or stranger's--legitimate business to be concerned with their drinking and driving.

Finally, many potential male DWI offenders resist intervention because of their attitudes toward drinking and toward operating an automobile. Being able to drink uninhibitedly and then "to hold" one's liquor are positive masculine virtues. Also, competence, skill and mastery are defined by successful operation of an automobile. The automobile is an extension of the self. Anybody who intervenes with such a person in a potential DWI situation is not only questioning the drinker's ability to hold his liquor but also his capacity for driving a car. Such intervention may be strenuously resisted because it represents a threat to deeply ingrained self images.

Although resistance probably can never be overcome completely, there are a number of strategies that could be adopted to reduce it. Such strategies can be grouped by the source of resistance they seek to overcome:

- o Reducing the perceived costs of the alternatives to DWI,
- o Informing and educating potential DWI offenders of the legitimacy of intervention by others in potential DWI situations, and
- o Trying to counteract the attitudes that heavy drinking, "holding one's liquor," and driving are desirable male virtues.

Reducing the Cost of Alternatives to DWI

One way to reduce the cost of DWI alternatives is to develop other less costly ways for drinkers to get home from their drinking situations. Better late evening public transportation connecting entertainment and restaurant districts to residential areas would provide an alternative to driving home. Although the

economics of each situation will differ, in many cities so-called "entertainment districts" are high generators of DWI trips so such service could be provided without too great a subsidy. In less densely settled areas, a dial-a-ride service for door-to-door transportation home using taxicabs, minibuses or vans could provide a viable alternate to potential DWI offenders' use of their private automobiles. To be acceptable such a service would have to be low cost (but not necessarily free) and convenient (available within a short period of time of the drinker's decision to go home). Such service would have to be planned locally and would require the input and cooperation of local tavern and restaurant owners, cab driver and owner associations, the local public transportation agency and local police and ABC representation. A variation on this strategy for large night clubs, cocktail lounges or bars could be a transportation-home service provided by the club, lounge or bar management for its patrons. This could be offered freely or at a nominal charge and would have the additional advantage of being fully supported and promoted by the management and staff of the bar providing the service.

Other strategies for cost reduction could involve tax credits or tax deductions to bar or tavern owners and private individuals for all or part of the taxi fares home for intoxicated patrons or guests. The tax revenues lost from such a scheme or the direct government expenditures needed to fund late night public transportation improvements or public-private dial-a-ride services could be funded from a state or local alcoholic beverage tax.

Increasing the Costs of DWI

A variety of strategies could also be used for increasing the costs and the perceived costs of DWI. The three most important factors here are the perceived probability of apprehension and arrest for DWI, the likelihood of conviction, and the penalties associated with DWI conviction. Well publicized DWI "crackdowns" have resulted in at least temporary declines in traffic accidents and fatalities associated with drunk driving. It seems reasonable, therefore, to expect that with higher perceived probabilities of apprehension and conviction and more severe penalties, potential DWI offenders would be more susceptible to intervention.

Increased Perception of the Legitimacy of Intervention

Intervention is frequently resisted because the potential DWI offender does not think his or her drinking or his or her driving is anybody else's business. In reality a person's drinking and driving are matters of public concern and welfare because of the potential damage, injury and death they can cause. Not only will an accident result in costs to the persons suffering the injury or damage (very likely including the drinker) but the public will bear costs associated with the action. These will include law enforcement, accident

investigation and emergency health care costs, as well as pain and suffering.

Public information and education campaigns using broadcast and print media and directed toward the potential drunk driver should emphasize the legitimacy of intervention, based on a presentation of the costs that others are likely to bear as a result of the drunk driving behavior. These campaigns could include references to the drinker's self-interest as a taxpayer who must share in the public costs resulting from an accident caused by a drunk driver. Driving while intoxicated must come to be viewed as anti-social rather than tolerated social behavior.

Counteracting Male Drinking and Driving Attitudes

This last area is one where attitudes may be most difficult to change. For many males being able to drink, to hold one's liquor and to drive are closely related to their self concept. Accepting someone's intervention implies an acknowledgement that the drinker is unable to hold his liquor and/or is unable to drive; both admissions contradict the masculine self image.

To counteract these attitudes, including the acceptability of certain forms of risk taking such as DWI, an effort needs to be made to loosen the association between male self-concept and drinking/driving behavior. This implies, of course, a long term and fundamental restructuring of attitudes. But there may be some specific short-term activities that could contribute to this objective. Television spots that portray the drunk as a slob rather than as the cool and sexy fellow or spots that parody the masculine "drive your car" image could at least stimulate the drinking driver to re-examine and consider how he is influenced by those attitudes and values. This, in turn, could reduce his resistance to intervention in an immediate drunk driving situation.

LEGAL AND REGULATORY ENCOURAGEMENT OF INTERVENTION

One component of any effort to get intermediaries involved in DWI deterrence should be to make full use of existing legal and regulatory mechanisms that might influence the attitudes or behavior of potential intermediaries. There are several laws and regulations already on the books that can be used for this purpose. All states have some form of alcoholic beverage control (ABC) law which in most if not every state prohibit, among other things, the sale or service of alcoholic beverages to intoxicated persons. Some states also have explicit "Dram Shop" acts or provisions in their common law that allow individuals who have suffered personal or property damage caused by an intoxicated person to sue the owner(s) of the establishment that served alcoholic beverages to that intoxicated person.

The possibility of being held liable for injury or property damage under a Dram Shop law or under common law, or the possibility of being fined or having a liquor license revoked or suspended are incentives for DWI intervention that really only apply to commercial establishments and servers of alcoholic beverages--restaurants, taverns and their employees. Such legal mechanisms do not apply to or provide any incentive for intervention by friends, strangers, or other bar patrons or people at a party where drinking is going on. Only in a very limited number of states do they provide any incentive for so-called "social hosts" to intervene. In the following discussion this limited applicability of present legal incentives must be kept in mind. Also, some thought needs to be given to innovative legal approaches to encouraging intervention by these other categories of potential intermediaries.

Dram Shop Acts and Common Law Liability

In 32 states either an explicit Dram Shop act, the common law, or both, provide that commercial servers of alcoholic beverages can be held liable for injuries, death, or property damage arising from their illegal service to minors, habitual drunkards, or intoxicated persons. As we have discussed in another paper*, there is tremendous diversity among states in the specific provisions of their Dram Shop acts and their common law. Who can recover, the type of damage or injury for which recovery can be sought, the types of beverage servers who can be held liable, the elements of proof needed to establish a connection between the damage or injury and the serving of alcohol, the categories of drinkers to whom service can provide a basis for legal action and the types and amounts of recovery which are permitted vary among states having these laws. This variability means that the potential effectiveness of Dram Shop laws or common law liability will also vary widely among the states. And of course, in 18 states no such laws are on the books or incorporated through judicial decisions in the common law.

The incentive for intervention by a potential intermediary in a DWI situation comes from the possibility of being sued and facing a large adverse settlement. In theory, the liquor vendor or his or her employees assess the risk that serving more alcohol to a drinking patron will result in the patron injuring someone or damaging something after leaving the bar, and, such damage or injury having taken place, that the injured party will sue the

*Marvin Wagner and William A. Cozzens, "Dram Shop Acts, Common Law Liability and State Alcoholic Beverage Control (ABC) Enforcement as Potential DWI Countermeasures", Washington, D.C.: National Captiol Systems, Inc., April, 1983.

vendor successfully to recover for damages. Based on that assessment of risk, the vendor or employee decides not to serve that person, or alternatively, having already served that person beyond the point of intoxication, the vendor decides to call a cab or in some other way help the person get home safely.

It is reasonable to argue, however, that the incentives for intervention provided by Dram Shop and common law liability are not particularly strong. Realistically, the probability of an accident taking place as a result of illegal service is quite small, and the probability of recovery by an injured party is smaller still. Moreover, the losses that a tavern owner might suffer as the result of losing such a suit would be quite small, given the liability insurance that the tavern probably carries. Whatever incentive remains to intervene, or at least not to serve the intoxicated patron, is further counterbalanced by the strong incentives to continue serving that patron. Not only are tavern revenues directly related to the amount of alcohol that patrons consume, but also refusing service may lead customers to take their patronage elsewhere.

Enforcement of State ABC Laws and Regulations

Virtually all states have an alcoholic beverage control (ABC) law restricting, among other things, the sale of service or alcoholic beverage to intoxicated persons. Violation carries with it the risk of a fine, license suspension, or even license revocation. Enforcement of the laws and regulations on service to intoxicated persons can be, depending on the particular state, carried out by local police, state police, and/or state ABC agents. Apparently in most jurisdictions, the laws and regulations regarding service to intoxicated persons are not enforced vigorously by either the investigative staff of the ABC agencies or state or local law enforcement agencies. Shortage of staff and resources needed to conduct these investigations and the low priority given by law enforcement agencies to these types of investigations and arrests seem to account for the low levels of enforcement.

Clearly there is room for improvement in the level of enforcement of the laws and regulations regarding service to intoxicated persons. Such augmented enforcement could serve as a significant DWI countermeasure. Under stronger ABC law enforcement, licensees that violate the law by serving intoxicated patrons would face an increased risk of detection and imposition of some penalty: a fine, license suspension, or license revocation. A simple fine might be only a minor financial burden but having a liquor license suspended or revoked could be a disaster, even if the license is suspended for a limited period of time. In addition to the immediate loss of revenue, customers might go elsewhere and establish new drinking habits, resulting in long term financial losses, even after the establishment reopens.

Augmented ABC enforcement, if accompanied by appropriate publicity, would increase the licensee's perceived risk of apprehension. Based on that increase in the perceived risk of apprehension, the vendor or his or her employees--as in the Dram Shop liability model--would decide to cut off or slow down service or assist the already intoxicated patron to find alternative means home. These steps could, in turn, reduce the number of DWI offenders on the road and their levels of intoxication (with the exception of persistent drinkers who go to another bar and continue to consume alcoholic drinks).

Augmented ABC enforcement appears to have several advantages over the use of Dram Shop and common law liability as a DWI countermeasure. Most importantly, the connection between a licensee's illegal service and his or her suffering some adverse consequence is much more direct and less tenuous. An accident need not occur, and a party suffering injury or damage in such an accident need not sue successfully. The illegal service itself puts the liquor vendor directly at risk rather than indirectly at risk through a tenuous string of low probability events that might follow the illegal service. Moreover, liability insurance offers no protection to the liquor vendor fined or closed down as a result of such illegal service.

Other advantages of augmented ABC enforcement relate to its political and administrative feasibility. In all 50 states and the District of Columbia there are ABC statutes on the books which in virtually every case contain provisions restricting the sale or service of alcoholic beverages to intoxicated persons. No new legislation would be required to step up ABC law enforcement. Additional or redeployed resources or manpower would be required in many jurisdictions, but with growing popular support nationwide for effective reductions in DWI, obtaining such resources should be possible.

A criticism of augmented ABC enforcement is that many drinkers' driving abilities are significantly impaired before they become intoxicated enough for the bartender to withhold further service. Stepped up enforcement provides no incentive for intervention with these impaired, but not yet intoxicated, patrons. There are at least two responses to this criticism.

First, if as argued in Chapter 2, the overall objective is to reduce total BAC trip minutes, then a reduction in the BAC levels of patrons when they leave a bar is in itself a beneficial outcome. If bartenders across all drinking establishments are observing the prohibition on serving intoxicated patrons so that patrons cannot simply "bar hop" to continue drinking, stepped up ABC enforcement would result in a decrease in the BACs and the impairment of drunk drivers, although not necessarily a decrease in the number of impaired drinkers.

The second response to this criticism is that accelerated ABC enforcement will have beneficial side effects in terms of

increased bartender and licensee awareness of the problems of DWI. If the accelerated ABC enforcement is accompanied by other efforts directed toward encouraging bartenders to intervene, the accelerated ABC enforcement may make bartenders more receptive or attentive to these messages.

Innovative Legal Remedies

Alcoholic beverage control laws are on the books in every state. Many states also already have in place some form of Dram Shop law or common law liability. As we have noted, both of these offer some promise for at least encouraging the commercial servers of alcoholic beverage to get involved in DWI prevention through changes in their serving practices. It is useful to speculate somewhat on other, more innovative legal approaches to involving potential intermediaries in DWI prevention. We have not spent much time or resources during Phase I of this study investigating such approaches but, in the course of our work, we have either come across suggestions by others or have thought of some possibilities ourselves.

Two broad areas appear to deserve legal attention and development. The first area is strengthening the incentives for commercial servers of alcoholic beverages and their agents to intervene. The second area is trying to create some incentives for intervention along with some reduction in the costs of intervention for other potential intermediaries--non-commercial servers, friends, other patrons, etc. The most promising suggestion made in the first area--strengthened incentives for commercial servers--is the extension of ABC regulations to the liquor licensee's agents, namely the bartenders, waiters, and cocktail hostesses. In almost all states it is the licensees themselves, not their agents, who are fined or who have their licenses revoked or suspended when a violation occurs. Bartenders and other service personnel would probably be more attentive to the degree of intoxication of their patrons if they faced the risk of personally being fined or otherwise held accountable for liquor law violations.

For the non-commercial servers of alcoholic beverages, a few states hold social hosts liable for injury or damage under the provisions of their Dram Shop laws or their common law. A general extension of this concept to other states would be possible but is probably not likely. More radical still would be a law that levied fines on the hosts of private parties or other functions who allowed guests to drive away drunk. A law with such broad scope and general applicability would be difficult to enforce and probably unconstitutional. More practical and more defensible would be a law that levied fines or other penalties on hosts at functions where young people are served or allowed to consume alcoholic beverages and then allowed to drive away drunk. Most states prohibit service to minors so it could be argued that hosts and especially adult hosts at functions where youth are drinking have a special responsibility to ensure that no DWI behavior ensues.

Other potential legal remedies could be attempted to reduce the costs of and create positive incentives for intervention. For example, a lack of alternate means of transportation for the drinker is a real impediment to intervention by an intermediary. Most alternatives to the private automobile are very costly or time consuming for either the drinker or the intermediary who gets involved. In urban and fairly densely settled suburban areas some form of subsidized transportation system for drinkers could be practical and not too expensive. A publicly supported late night dial-a-ride cab or jitney service with costs shared by the drinking establishments could provide an alternative means home for the drinker too intoxicated to drive safely.

These ideas by no means exhaust the possible legal innovations that could support and encourage intervention by intermediaries. Whatever is done, it seems clear that intervention will be easier to bring about if the legal system--both conventional ABC enforcement and any more innovative approaches that are possible--support the practice of intervention by those in positions to do so.

In the sections that follow, two general approaches to encouraging intervention will be considered: using the communications networks that the alcohol beverage industry and related trade associations have established and using media-based public education and information campaigns. Each of these approaches to motivating intermediaries and disseminating information has its own advantages and disadvantages.

USING THE ALCOHOL INDUSTRY AND TRADE ASSOCIATIONS

The alcohol beverage production and service industries represent a latent network of communication channels for reaching potential intermediaries and influencing them to intervene. All retail outlets for alcoholic beverages--for on- or off-premise consumption--rely on producers, wholesalers and distributors for the beverages that are sold or served. This production and distribution network could also be made to function as an information network. Also, many of the private firms involved in production, distribution or retail sale of alcoholic beverages belong to one or more trade association or professional organizations. These trade and professional organizations have well established lines of communication to their members through newsletters, journals, press releases and meetings. Such lines of communication are regularly used to inform their members of developments in the trade as well as legislative or regulatory activity that could have an impact on the trade. Not infrequently the networks are used to mobilize members to support or oppose legislative or regulatory actions that affect the industry.

In this section of the report, discussion will focus on the potential use of the alcohol beverage industry and alcohol-related trade associations as vehicles for reaching tavern owners, bartenders and other potential intermediaries. Three specific topics will be addressed: a consideration of the factors favoring industry and trade association involvement, a review of past experience with industry and trade association involvement in DWI deterrence and a discussion of some specific ways the alcoholic beverage industry and trade associations could become involved in encouraging intermediaries to intervene.

Factors Favoring Industry Involvement

A number of factors favor use of the alcoholic beverage industry and related trade and professional organizations for dissemination of information and motivation of intermediaries. First, as noted above, these firms and organizations have well developed communication networks either for reaching potential intermediaries or for reaching the people who can reach potential intermediaries.

Second, these firms and organizations have a strong interest in "responsible alcohol use" so long as such use does not result in reduced overall consumption of alcoholic beverages. Their interest in such use stems, at least in part, from a desire to avoid detrimental regulatory or tax policies. They do not want concern over drunk driving to result in laws or regulations restricting the availability or increasing the price of alcoholic beverages.

Third, the manufacturers and distributors of alcoholic beverages, the trade associations that represent them and the organizations representing related service sectors and professions (tavern owners, restaurant owners, bartenders, etc.) have a high degree of credibility among their members and among persons in related service industries. Consequently, these organizations are in a very good position to encourage intervention. They also enjoy a certain degree of built-in legitimacy and credibility where urging moderation or responsible use. A message that appears to run counter to the perceived self-interest of the person delivering the message demands attention and respect.

Fourth, and finally, the manufacturers and distributors of alcoholic beverages and the trade associations that represent them have access to considerable financial resource that could be used to encourage intervention. In 1980, the most recent year for which such statistics are readily available, expenditures for space and airtime to advertise beer, wine and liquor on television and in magazines and newspapers came to just under \$740 million (Census 1981, Tables 984, 985 988, 999). The figure does not include the costs of preparing advertising copy or producing commercials. If only one percent of the resources that are now spent on advertising were put into an anti-drunk driving fund, close to \$10 million per year would be available for

encouraging intermediary intervention. Clearly, if the limited public funds available for encouraging intervention are to have the most impact, efforts need to be made to get cooperation and actual financial support from the private sector.

Past Industry Involvement in DWI Intervention

If there are, as has just been suggested, strong arguments for private sector involvement in encouraging intermediary intervention, is there any experience with such involvement, and if so, what has it been? Although there seems to be support among the trade associations for their involvement in encouraging tavern owner and bartender participation in activities to deter DWI, examples of such involvement in the literature are scarce and poorly documented. Several state level efforts for which some information is available are discussed below.

In Michigan, the Licensed Beverage Association (MLBA) and the State Office of Substance Abuse jointly sponsored a series of 36 seminars for licensees based on the "Know Your Limits" campaign promoted by the Distilled Spirits Council of the United States (DISCUS). Even though the MLBA is the state wide association of tavern and liquor store owners, attendance was poor. The seminars included a film debunking myths about alcohol and demonstrating its effect, a Breathalyzer demonstration to illustrate the amount of alcohol needed to reach .10% BAC and to demonstrate the behavioral indications that a person is at that level, and introduction of local alcoholism program personnel. In addition to the poor attendance, the seminars did not have any apparent effect on the service behavior of licensees. There were no more referrals of problem drinkers in the month after the seminars than there had been in the month before. And in a very limited and statistically unrepresentative sample of bars owned by licensees that attended or even participated actively in the seminars, the service personnel did not cut off service to obviously intoxicated patrons (American Businessmen's Research Foundation, 1978).

Other state level programs in Pennsylvania and Wisconsin on which some evidence is available seem to show equally discouraging results (Smith, 1973; Fernan, 1978). In part the licensees seemed to resist efforts to get them involved because of their perception of self-interest--feared loss of revenues and profits (American Businessmen's Research Foundation, 1978). Also the programs ran up against the considerable lack of information as well as misinformation among licensees and bartenders. One analysis of educating and training bartenders to act as gatekeepers found bartenders to be uninformed about the effects of alcohol and the law. For example, bartenders did not know the legal blood alcohol level for drunk driving, they were under the assumption that beer and wine have less intoxicating effect on the body than liquor, and they expressed belief in a sizable number of myths regarding sobering up a person by serving coffee, cold showers or walking the person around (Cowen, 1977).

Specific Suggestions for Industry and Trade Association Involvement

Ideally, cooperation from alcohol-related trade associations and professional organizations should have a number of components. At the national level, the executive offices or boards of directors should adopt policy statements endorsing anti-drunk driving efforts in general, and intervention by specific intermediary groups in particular. State and local boards, councils and executive offices should be encouraged to adopt similar policy statements. Both the national offices and any state or local branches of these organizations should commit a portion of their own budgets to development and dissemination of information related to intermediary intervention.

Organizations that have corporate members (manufacturers, wholesalers, retailers, etc.) should seek additional financial support from their members (a percentage of advertising budget, for example), either turned over to the association for association-sponsored efforts or committed by the corporation to a campaign it develops independently. The national and state or local offices of these associations should use their regular communication networks with members (newsletters, journals, press releases, conferences, conventions, etc.) to transmit information on DWI intervention techniques. The national offices should support the development of training materials that could be implemented locally. This private organizational support not only multiplies the public resources committed to DWI prevention, but also lends legitimacy and credibility to the effort among many of the target intermediaries.

What specific actions could alcohol trade associations do to have a greater impact on tavern keepers or other potential intermediaries regarding their responsibility to their customers? First of all, the associations' national headquarters and the state associations can announce to state officials that their resources are available for cooperative efforts to increase the awareness of the drunk driving problem among alcohol dispensers. Second, the associations can provide sponsorship to encourage participation in training programs for tavern owners and bartenders. Third, the associations can join directly in public information and education campaigns for all types of potential intermediaries. Fourth, they can participate more actively in the development and distribution of brochures and other informational devices covering alcohol related topics. The associations can also reach social hosts by having store personnel include inserts in bags when purchasing alcohol. The inserts list action steps to take to prevent drunk driving from originating at the host's home.

To avoid the lack of interest and lack of effectiveness that seem to have plagued programs like the Michigan licensee seminars, in the future the design of such programs will have to be more realistic about, and pay more attention to licensee behavior and incentives. The implied threat of an enforcement crack down may be necessary to get licensees' attention. Also,

provisions will have to be made for making sure that whatever information going to licensees gets communicated to the service personnel who are actually in a position to influence patron behavior.

PUBLIC INFORMATION AND EDUCATION CAMPAIGNS

In Chapter 2 we reviewed some of the evidence on the effectiveness of public information and education campaigns directed toward general DWI deterrence and toward encouraging intermediary intervention. As noted there, such information and education campaigns have some inherent limitations. Nevertheless, for certain classes of potential intermediaries--especially people such as friends, family members or social hosts, who cannot be reached through some formal communication network-- a mass media-based information or education campaign may be the only way to influence their attitudes or behavior. Such campaigns should, when possible, be combined with other more direct efforts to encourage intervention. Variations on the "Friends Don't Let Friends Drive Drunk" campaign should be explored. The social psychology literature suggests that moderate apprehension combined with specific concrete action alternatives is most successful in stimulating behavior. (However, beyond some difficult-to-determine threshold, increased apprehension inhibits behavior). Campaigns should focus on the previously identified impediments to intervention by intermediaries:

- o Specific actions to take in an imminent DWI situation,
- o How to determine whether your friend or guest is impaired,
- o Social acceptability/desirability of intervention, and
- o Reassurance on the potential reactions to intervention by the drinker.

Support for development and implementation of such campaigns should come from the private groups and alcohol trade associations as well as the public sector.

CONCLUDING NOTE

Successful encouragement of intermediary involvement in potential DWI situations will require close cooperation between public agencies--such as NHTSA at the national level and ABC units and law enforcement agencies at the state and local level-- and private organizations--from DISCUS and its members down to local bars and taverns. A multi-pronged effort that includes

strengthening of the legal framework supporting intervention, dissemination of information to potential intermediaries and parallel steps to reduce resistance to intervention from potential DWI offenders is most likely to result in successful intervention against potential drunk driving. The evidence that has been reviewed indicates that there is probably not "one best" approach to achieving these ends. Some techniques and strategies probably hold more promise than others, and Phase II of this project is devoted to turning these techniques and strategies into promising field evaluable programs.

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