

TRANSPORTATION RESEARCH
CIRCULAR

Number 437

February 1995

**Strategies for
Dealing with the Persistent
Drinking Driver**



STRATEGIES FOR DEALING WITH THE PERSISTENT DRINKING DRIVER

Group 3 Council
OPERATION, SAFETY, AND MAINTENANCE
OF TRANSPORTATION FACILITIES

Jerome W. Hall, *Chairman*
Group 3 Council
University of New Mexico
Albuquerque, New Mexico

COMMITTEE ON ALCOHOL, OTHER DRUGS, AND TRANSPORTATION

Barry M. Sweedler, *Chairman*
Carol Lederhaus Popkin, *Secretary*

Marcelline Burns
William E. Collins
Grady C. Cothen, Jr.
Kurt M. Dubowski
James Hedlund
Ralph Hingson
Hans Laurell
Roy E. Lucke
Adrian K. Lund

Susan E. Martin
A. J. McLean
Judy Z. Meade
James F. O'Hanlon
Raymond C. Peck
David F. Preusser
Laurence Ross
Stephen M. Simon

Herbert M. Simpson
Anthony C. Stein
Lawrence R. Sutton
Maria E. Vegega
Evelyn Vingilis
Robert B. Voas
Alexander C. Wagenaar
Elizabeth Wells-Parker
Jean R. Wilson

Richard Pain, Transportation Research Board Staff

Subscriber Category
IVB safety and human performance

Transportation Research Board
National Research Council
2101 Constitution Ave., N.W.
Washington, D.C. 20418

The Transportation Research Board is a unit of the National Research Council, which serves as an independent advisor to the federal government on scientific and technical questions of national importance. The Research Council, jointly administered by the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine, brings the resources of the entire scientific and technical community to bear on national problems through its volunteer advisory committees.

FOREWORD

The traffic safety problem caused by the persistent drinking driver--the driver who frequently drives while impaired often at high blood alcohol levels--represents only a portion of the human and economic costs of impaired driving. This group, however, does present special challenges and require innovative approaches. In putting together the panel of experts for this TRB workshop and in preparing this report, I have attempted to address all aspects of the persistent drinking driver problem and all domains in which solutions may be found. The strategies outlined in the circular summarize the best research and expert opinion currently available. I hope that by presenting these promising and practical approaches, we can encourage states to take action and thus further reduce the tragic toll of impaired driving.

Barry M. Sweedler
Chairman

Committee on Alcohol, Other Drugs, and Transportation

ACKNOWLEDGMENTS

A sincerest thank you to the people who participated in the workshop and contributed to the development, production, and publication of this circular.

Editing of the circular was expertly accomplished by Barb Valenti, Editorial Services, TRB. Production of the final manuscript was graciously done by Sonia R. Lott, Office of Safety Recommendations, National Transportation Safety Board.

TABLE OF CONTENTS

INTRODUCTION	1
CHAPTER 1-KEY FEATURES FOR DEALING WITH THE PERSISTENT DRINKING DRIVER	2
CHAPTER 2-PROMISING STRATEGIES FOR DEALING WITH THE PERSISTENT DRINKING DRIVER	8
REFERENCES	11
APPENDIXES	14
A. PROGRAM OUTLINE FOR THE WORKSHOP	14
B. LIST OF WORKSHOP PARTICIPANTS	15
C. WORKSHOP BACKGROUND PAPERS	16
C1. Who is the Persistent Drinking Driver? Part 1: USA	16
<i>James Hedlund, Ph.D.</i>	
C2. Who is the Persistent Drinking Driver? Part II: Canada and Elsewhere	21
<i>Herb M. Simpson, Ph.D.</i>	
C3. Environmental Strategies to Reduce Chronic Driving While Intoxicated	25
<i>Ralph Hingson, Sc.D.</i>	
C4. Media Approaches to the Persistent Drinking Driver	32
<i>Nancy E. Isaac, Sc.D.</i>	
C5. Enforcement Strategies for the Persistent Drinking Driver	38
<i>Susan E. Martin, Ph.D., and David F. Preusser, Ph.D.</i>	
C6. Driver License Strategies for Controlling the Persistent DUI Offender	43
<i>R.C. Peck, R. Jean Wilson, Ph.D., and Lawrence Sutton, Ph.D.</i>	
C7. Vehicle-Based Sanctions - An Overview	49
<i>H. Laurence Ross, Ph.D., Kathryn Stewart, and Anthony C. Stein, Ph.D.</i>	
C8. Streamlined Vehicle-Based Sanctions: Specific and General Deterrence Effects	51
<i>Kathryn Stewart</i>	
C9. Can Administrative Programs Control the Persistent Drinking Driver?	52
<i>Robert B. Voas, Ph.D.</i>	
C10. A Brief History of the Use of In-Vehicle Devices for Preventing Alcohol-Impaired Driving	56
<i>Anthony C. Stein, Ph.D.</i>	
C11. Evaluating Alternative Sanctions for Multiple-Offender DWIs - A Description of Some Prior and Current Research	59
<i>Ralph K. Jones, John H. Lacey, and James M. Byrne, Ph.D.</i>	
C12. Rehabilitation of the Persistent Drinking/Drugging Driver	63
<i>David S. Timken, Ph.D, Michele A. Packard, Ph.D, Elisabeth Wells-Parker, Ph.D., & Bradford Bogue</i>	
C13. Citizen Activists' Assessments of the DUI Problem, Public Attitudes, and Selected Responses to the Persistent Drinking Driver	68
<i>Anne Russell</i>	
D. Summary of Minnesota Repeat DWI Offender Plate Impoundment Law	72
<i>Stephen M. Simon</i>	

INTRODUCTION

During the past decade, substantial reductions have occurred in drinking and driving in the United States and throughout the industrialized world. In 1982, 57 percent of all highway fatalities in the United States were related to alcohol; by 1993, that figure had been reduced to 44 percent. In that same period, the number of alcohol-related fatalities dropped from 25,165 to 17,461 -- a reduction of 31 percent (NHTSA 1993).

Progress appears to have resulted in large part from tougher laws, better enforcement, and greater public awareness. In addition, the raising of the drinking age has had a significant effect on young drivers (Stewart and Voas 1994). Although this progress is encouraging, the tragic toll of drinking and driving is still much too high and there remains a group of persistent drinking drivers who do not appear to be deterred by the threat of social disapproval or legal punishment. Additional measures must be taken to further reduce the overall toll of drinking and driving. It is important to recognize that while the problem of the persistent drinking driver is a serious one, many alcohol-related fatalities involve drivers who have never been arrested before, and the traditional strategies that have been effective with this group must not be neglected. But whereas these countermeasures will continue to be effective for most drivers, more innovative measures must be taken to change the behavior of the persistent drinking driver.

Before strategies to deal with this group can be suggested, the target must be defined. In other words, who is the persistent drinking driver? It is difficult to develop a precise definition, but we all think we know who this driver is: the person who drinks and drives again and again, week after week, month after month, year after year; the person whose drinking and driving behavior has not been changed by information and education, who has not been deterred by drinking and driving laws and enforcement, and perhaps even by arrest and punishment for violating drinking and driving laws. He (almost always he) has been called hard-core, problem drinker, alcoholic, antisocial. He appears periodically in the press after a tragic crash in which he kills innocent victims and prompts repeated calls to "do something" about him (Hedlund 1994). A good definition of the target group appears to include persons who repeatedly drive after drinking, especially with high blood alcohol concentrations (BACs). Obviously, repeat offenders of driving while intoxicated (DWI) are an important part of the target group.

Using this broad definition (persons who repeatedly drive after drinking, especially with high BACs), persistent drinking drivers represent an estimated 65 percent of fatally

injured drinking drivers, or about 30 to 35 percent of all drivers killed in the United States each year. About 15 to 20 percent of all drivers injured each year also fall into this category. This amounts to 7,000 dead drivers and 250,000 injured drivers each year. These figures do not take into consideration the other people who die or are injured in the crashes involving those persistent drinking drivers as occupants of the same or another vehicle, or as pedestrians (Simpson 1994). (For additional information and data about the characteristics of the persistent drinking driver see the background papers prepared by Hedlund and Simpson found in Appendix C.)

Obviously, no single solution will bring this problem under control. There are definite, practical, cost-effective steps that each state can take, however, to deal with the persistent drinking driver. These suggested strategies are based primarily on evaluations of ongoing and pilot programs and, where such research is not available, on the consensus of experts in the field who attended a TRB Workshop on the Persistent Drinking Driver. The workshop was sponsored by the TRB Committee on Alcohol, Other Drugs, and Transportation and cosponsored by the International Council on Alcohol, Drugs, and Traffic Safety; the National Highway Traffic Safety Administration; and the National Institute on Alcohol Abuse and Alcoholism. It was held at the National Academy of Sciences Study Center at Woods Hole, Massachusetts, in July 1994.

The workshop addressed strategies to reduce the problem of the persistent drinking driver in seven domains: environmental strategies, media approaches, enforcement strategies, driver's license penalties, vehicle-based sanctions, alternatives to incarceration, and rehabilitative approaches. Each of these domains deals with a different way of persuading, deterring, apprehending, incapacitating, or treating the persistent drinking driver. In the following two chapters, those approaches with the greatest research and expert support are outlined.

The first chapter describes the key features of a comprehensive system for dealing with the persistent drinking driver. These features are based, in most part, on research that shows their effectiveness and on practical experience. The second chapter discusses additional features that appear promising on the basis of more limited research and expert opinion. This chapter also describes approaches that may be promising but that require further research. The background papers prepared for the workshop and modified on the basis of discussion at the workshop are included in Appendix C.

CHAPTER 1

KEY FEATURES FOR DEALING WITH THE PERSISTENT DRINKING DRIVER

This chapter lists the key features of a comprehensive system that each state should consider adopting to deal with the persistent drinking driver. A brief discussion follows for each of the features, including, where appropriate, the research on which the suggested feature is based.

Key Features

The cornerstone of any program to address the problem of the persistent drinking driver is a comprehensive and efficient system for imposing and enforcing license penalties. Such a system includes the following components:

- The basic foundation of providing for prompt and certain revocation of the driving license for first and repeat offenders is needed. This is the sanction found to be most effective. Administrative license revocation (ALR) is the best way to achieve this goal.
- Improve traffic records and the delivery system for information to the courts and the police officers on the road. In this way, prosecutors and judges will have access to the complete prior record of the offender when charging and sentencing. In addition, the officer coming in contact with a driver will have the ability to quickly ascertain if that driver is legally licensed to drive and if that driver has been involved in an alcohol-related driving offense in the past. This information will allow officers to accurately identify, at the scene, repeat offenders and those who are driving illegally. The officer then can apply the full range of administrative sanctions the state permits to be taken against these offenders.
- Driving while a license is suspended, revoked, or otherwise invalid because of a DWI or a related offense, such as for a refusal to submit to a breath test, should be treated as a very serious offense.
- Eliminate programs that permit those drivers arrested for DWI to avoid losing their licenses by entering a treatment or education program. Any treatment or education program should be in addition to the loss of license. Entering such programs could help shorten the suspension period or be made a condition of relicensure. In the same vein, entering such a program should not result in the DWI arrest not appearing on the driver's record.
- For those drivers who persist in driving with a suspended license for a DWI offense, the next step is to separate them from the vehicle they were driving when caught driving illegally, and possibly from any other vehicle to which they might have access. As has been proven effective with the licensing sanction, this vehicle sanction should be

applied administratively, although it may take a number of forms. For example, the vehicle can be impounded, immobilized, or confiscated, or the license plates can be seized.

Other key or promising features of an effective program include:

- Licenses reinstated following a DWI conviction should carry a lower legal BAC limit. Alcohol detected at or above this lower limit would be a basis for re-revoking a driver's license.
- At checkpoints, officers should check for valid licenses.
- Carry out special enforcement campaigns aimed at the persistent drinking driver, such as the "Hot List" of multiple DWI offenders or the "Stakeout" of drivers who have lost their licenses, to check if they are driving.
- All juvenile DWI offenders should be prosecuted as adults, and the record of these offenses should be preserved after the offender reaches adulthood. These actions will permit early identification of young adults who are becoming persistent drinking drivers.
- If a driver refuses to take a breath test apply the same or greater administrative penalty as a positive test result.
- Reduce the legal BAC for all drivers to .08 percent. This measure reduces drinking and driving among all drivers, including persistent drinking drivers.

Discussion of Key Features

Each key feature is listed below with a discussion of the rationale and research support for the feature.

The basic foundation of providing for prompt and certain revocation of the driving license for first and repeat offenders is needed. This is the sanction found to be most effective. Administrative license revocation (ALR) is the best way to achieve this goal.

Administrative license revocation has been found to be effective both as a general and as a specific deterrent. It is agreed generally that the best way to maximize the general deterrence effects of a law is to increase the certainty and swiftness of punishment. Unfortunately, the usual penalties applied through the judicial process to drinking drivers are far from swift or certain. The judicial process is slow under the best of circumstances, and a determined offender can engage in delaying tactics that can postpone punishment almost indefinitely. The average length of time between the offense

and the imposition of any penalty can be 6 months (Stewart et al. 1987). Often, no penalty will ever be exacted. Offenders can plea bargain down to a lesser offense. Charges may be dismissed or offenders judged not guilty because of technical problems in the case. Even when offenders are found guilty, penalties may be suspended or the offenders may enter diversion programs that allow them to escape punishment. In one study carried out in Louisiana before the adoption of administrative revocation, a sample of arrest records of offenders testing over the state's .10 percent blood alcohol limit was collected. Driving license records of these offenders were then examined. In 44 percent of the cases, there was no record of any license penalty. Following the adoption of administrative revocation, a similar sample indicated that 90 percent of arrested offenders received a license penalty (Stewart et al. 1989).

Research has shown that administrative revocation is effective in discouraging people in the general public from driving after drinking. In one study carried out for the Insurance Institute for Highway Safety (Zador et al. 1989), the number of traffic crashes in states with administrative revocation laws was compared with the number of crashes in states without such laws. The study concluded that these laws reduced fatal nighttime crashes (which are likely to involve alcohol) by about 9 percent. These findings were supported by another study of 17 states with administrative revocation laws (Sigmastat 1989) that found a 6 percent average reduction in fatal crashes. In a recent study carried out for the AAA Foundation for Traffic Safety in Minnesota, New Mexico, and Delaware, administrative revocation was found to reduce both nighttime fatal crashes and the proportion of drivers with a significant amount of alcohol in their blood who were involved in fatal crashes. A 14 percent reduction in Delaware was the most dramatic (Ross 1991).

Even more important in deterring the persistent drinking driver is license revocation. Research repeatedly has shown that license revocation (whether imposed administratively or by courts) is the most effective penalty in reducing traffic crashes and offenses among arrested offenders (e.g., Peck 1991). All too often, however, it is never applied in the judicial process.

Research further has shown that administrative license revocation has reduced the likelihood of a subsequent arrest. In one evaluation significant decreases in rearrest were found in two of three states included in the study. In the third state, though there was no decrease in rearrest for impaired driving, there was a decrease in other traffic offenses. The decrease in rearrest continued beyond the period of revocation, indicating that the punishment may have a lasting effect on the driving habits of offenders (Stewart et al. 1989). Ross (1991) also found that drivers whose licenses had been revoked maintained a safer driving record even after their licenses were eligible for reinstatement.

Improve traffic records and the delivery system for information to the courts and the police officers on the road. In this way, prosecutors and judges will have access to the complete prior record of the offender when charging and sentencing. In addition, the officer coming in contact with a driver will have the ability to quickly ascertain if that driver is legally licensed to drive and if that driver has been involved in an alcohol-related driving offense in the past. This information will allow officers to accurately identify, at the scene, repeat offenders and those who are driving illegally. The officer then can apply the full range of administrative sanctions the state permits to be taken against these offenders.

Common sense suggests that courts should have access to accurate driver records so that the appropriate penalties can be applied. It also makes sense that the easier it is for a police officer to determine the past alcohol-related traffic history of a driver stopped for a DWI offense, the more effective that officer will be in identifying those drivers who have prior DWI convictions or a record of DWI administrative actions. Easier determination of past alcohol-related traffic histories will allow the officer to apply the appropriate sanctions to the offender. One example in which an improved records system would have improved the application of sanctions was found by Ross, et al. in their evaluation of the Minnesota administrative-based plate impoundment law for third offenders. They found that one of the main reasons that the Minnesota police issued impoundment orders to only one-third of the eligible offenders was the difficulty the police had in analyzing drivers' records to determine if the offenders they had arrested were eligible to receive an impoundment order. Based on this finding they plan to recommend that Minnesota's Department of Public Safety reprogram their driver's license data base so that police officers can obtain impoundment eligibility information with a simple, short computer query (i.e., requiring only one or two keystrokes).

Driving while a license is suspended, revoked, or otherwise invalid, because of a DWI or a related offense, such as for a refusal to submit to a breath test, should be treated as a very serious offense.

This feature is one of the major areas needing attention. Although license suspension has been shown to be one of the more effective driving under the influence (DUI) countermeasures, driver compliance with the law is poor and enforcement is low. Among the problems identified through a series of California studies are (1) approximately 75 percent of suspended drivers at least occasionally drive while suspended, (2) the majority of traffic convictions and accidents that occur during periods of suspension/revocation are not prosecuted as suspension violations, (3) minimum

mandatory fines and jail sentences often are not levied against those drivers convicted of suspension violations. There is also a frequent failure to increase or graduate sanctions as a function of a number of prior convictions, even when statutory requirements mandate graduated sanctions. This problem is prevalent in many states (Peck et al. 1994).

Analysis of Fatal Accident Reporting System (FARS) data for California for 1991 and 1992 indicates that 13 percent of all fatal-accident drivers were suspended or revoked at the time of their accident. Data from California's driver record files indicate that approximately 6 percent of all drivers are suspended at any point in time. Unfortunately, the preceding figures are not broken down by type of suspension, but it is known that drunk driving actions comprise a substantial percentage of all suspensions and revocations in California, this fact is presumably true of most states and provinces. It therefore seems clear that effective strategies for increasing suspension compliance offer much potential.

In some states prosecution for driving while suspended is hampered by the lack of proof that the driver was officially notified of the suspension. In California there is evidence that increasing the signed proof of service of suspension increases conviction rates for driving while suspended. Gebers and Hanley (1987) and DeYoung (1990) used a certified mail strategy, which increased signed service rates from 25 percent to 70 percent. This, in turn, led to a substantial increase in court convictions of suspension violators.

Eliminate programs that permit those drivers arrested for DWI to avoid losing their licenses by entering a treatment or education program. Any treatment or education program should be in addition to the loss of license. Entering such programs could help to shorten the suspension period or be made a condition of relicensure. In the same vein, entering such a program should not result in the DWI arrest not appearing on the driver's record.

There are programs in use in a number of states that permit certain DWI offenders to be diverted from the traditional sanctions, including license suspension, and into alcohol education or treatment programs. Although these programs have the apparent benefit of encouraging persons to seek treatment for drinking problems, the programs are too often used in place of sanctions with known effectiveness in reducing crashes and violations. Furthermore, these programs can result in major distortions in an individual's record. The National Transportation Safety Board (NTSB) (1984), the Presidential Commission on Drunk Driving (1983) and others have recommended that these diversion or supervision programs not be used in place of license revocation and that court and motor vehicle records reflect participation in diversion/supervision programs. According to recent information gathered from the *Rating the States*

survey, programs allowing for presentence diversion still exist in 15 states, and 10 states have probation before judgment programs. These programs allow offenders to avoid the usual sanctions for an offense and typically prevent or delay information about an offense from appearing on their driving record (Russell 1994).

There is no doubt that mandatory license suspension is more effective than discretionary suspension in reducing total crashes and violations (Nichols and Ross 1990; Preusser et al. 1988). This is largely due to its greater perceived certainty and the reduced influence of judicial discretion. The evidence is also very clear that diversion to treatment (with either unrestricted or limited license) leads to higher accident and violation rates than full license suspension (Nichols and Ross 1990). A number of studies report that full license suspension also reduces DUI recidivism (e.g., Peck et al. 1984; Vingilis et al. 1990), but the evidence is less consistent. However, the traffic safety effects are almost, if not completely, explained by reduced exposure on the part of suspended drivers. During the suspended period, offenders are driving less or more cautiously or both, than drivers not suspended. The period of effectiveness may extend beyond the suspension period because some drivers fail to reinstate their license or pay insurance surcharges.

For those drivers who persist in driving with a suspended license for a DWI offense, the next step is to separate them from the vehicle they were driving when caught driving illegally, and possibly from any other vehicle to which they might have access. As has been proven effective with the licensing sanction, this vehicle sanction should be applied administratively, although it may take a number of forms. For example, the vehicle can be impounded, immobilized, or confiscated, or the license plates can be seized.

Persistent drinking drivers have demonstrated by their repeated violation of the law that they are not affected by the loss of their driving license or other sanctions routinely applied to offenders (Ross et al. 1994). Other steps must be taken to separate these individuals from the vehicles they might drive. Imprisonment would, of course, be most effective in preventing further driving—at least during the period of incarceration. Moreover, jail would have the advantage of symbolizing the seriousness with which the community views drunk driving. Judges, however, are usually unwilling to incarcerate for lengthy periods those drunk drivers—the vast majority—who have not caused a crash or harmed someone else. In addition, the cost to the public treasury of such incarceration, along with the cost of lost income to the families and therefore of public welfare, would not be acceptable. Moreover, there would be a principled reluctance to imprison for an extended period a person guilty only of exceeding the blood-alcohol standard, even if this offense was the third or more of similar offenses.

A more socially acceptable and cost-effective approach to separating the persistent drinking driver from a vehicle is by making access to a vehicle more difficult. The most straightforward approach to intervening between a drinker and a vehicle is some variation of temporarily or permanently taking the vehicle as part of the punishment for a repeat drunk driving offense. At the most extreme, the vehicle used in the offense, if owned by the offender, is confiscated by the state. A less severe penalty is to immobilize the vehicle for some time, through impoundment either in a tow lot or on the offender's property using a "club" or "Denver boot" technology. A variation on impoundment is removal of the vehicle's license plate, which makes it impossible to drive the car without attracting police attention, or sticking the plate to achieve the same effect (Ross et al. 1994). Arrangements can be made for family members or friends who may own the vehicle driven by an unlicensed driver to obtain the right to drive the vehicle under certain conditions, basically with the clear understanding that if the unlicensed driver is again caught driving the vehicle, it will be confiscated and sold.

Although laws allowing for vehicle-based sanctions for repeat offenders are widespread, their use has been quite limited (Voas 1992). These laws generally require action by the courts, which rarely apply them. A major reason for the limited use of the sanctions is the logistical and legal problems involved, including the problem of applying penalties in the case of an "innocent owner" who may have unknowingly allowed an unlicensed or intoxicated driver to use a vehicle. In any event, because of the great amount of discretion that judges enjoy and because of the limited resources available, the courts are not effective managers of systems designed to control the driving of offenders. Another option is to apply the vehicle sanction administratively as most states are now applying the driving license sanction. Law enforcement and vehicle licensing agencies could administer this penalty without involving the courts.

Perhaps the best evidence for the superiority of administrative actions against vehicles compared with court administered programs was provided by the study conducted by Rodgers (1994), who measured the effectiveness of a 1988 license plate impoundment law for third DUI offenders in Minnesota; the law was managed by the courts, compared with an administrative impoundment procedure that began when the law was amended in 1991. During the 29 months that the law was managed through the judicial system, only 464 (6 percent) of the 7,698 eligible third-time violators had their license plates impounded. During the 21 months after the 1991 amendment, when the law was administered by the Department of Public Safety (DPS), 3,136 (68 percent) of the 4,593 third DUI offenders had vehicle plates impounded. Under this law, the arresting officer, acting as an agent of DPS, destroys the license plates of the vehicle used in the violation, even if the vehicle is registered to someone else.

Analysis of the recidivism records of these offenders indicated that there was no difference during the time the program was managed by the court between offenders whose plates had been impounded and offenders who had not received this sanction. In contrast, during the period when the program was managed administratively, Rodgers found that in the group of violators with three "DWI/implicit consent" violations on their record, violators who received a police-issued impoundment order had one-half the recidivism rate (8 percent at 12 months and 13 percent at 24 months) compared with violators in this group who received no impoundment order.

Thus, the administrative impoundment system not only resulted in a more complete application of the penalty but also made the penalty more effective in protecting the public against repeat offenders. A summary of the Minnesota DWI Offender Plate Impoundment Law, prepared by Stephen M. Simon, can be found in Appendix D. Other vehicle sanction programs, discussed in the background papers by Ross, Stewart and Voas, can be found in Appendix C.

Licenses reinstated following a DWI conviction should carry a lower legal BAC limit. Alcohol detected at or above this lower limit would be a basis for re-revoking a driver's license.

When the State of Maine lowered its legal BAC from .10 percent to .08 percent in 1988, it also lowered its BAC to .04 percent for persons with a previous operating while impaired conviction. As noted previously, Hingson in press examined the results of the law by comparing the experience in Maine with those in New Hampshire and Vermont for the first 3 years after the law went into effect. Nighttime fatal crashes involving drivers with previous operating while impaired convictions declined 38 percent in Maine during the 3 postlaw years, whereas they increased 50 percent in New Hampshire and Vermont, a highly statistically significant difference.

At checkpoints, officers should check for valid licenses.

Checkpoints offer the opportunity to detect persons driving with a suspended or revoked driver's license because result of a drinking and driving conviction. These checkpoints may be safety, traffic, belt-use, or sobriety checkpoints.

In most states, officers at a checkpoint may examine the license of every driver or a random sample of drivers passing the checkpoint location. The license examination provides an opportunity to apprehend individuals who might be driving in violation of their license sanction. Often, when this technique is used at sobriety checkpoints, more unlicensed than impaired drivers are found.

Carry out special enforcement campaigns aimed at the persistent drinking driver, such as the "Hot List" of multiple DWI offenders or the "Stakeout" of drivers who have lost their licenses, to check if they are driving.

A number of special programs have been designed to apprehend drivers who, even though they were prohibited from driving, continue to do so. The state of Ohio, as part of its Habitual Offender Program, instituted in 1991 the Habitual Offenders Tally, or "Hot" sheet, which lists offenders who have been convicted of DUI five or more times and whose driving privileges are currently suspended. Hot sheets for each county are tabulated and shared with each state trooper, local police departments, and sheriffs' offices for more effective targeting of those who continue driving while under suspension (Perlman 1994). The Ohio Department of Public Safety (DPS) distributes *Hot Sheet News*, a monthly newsletter to law enforcement agencies, judges, courts, and other interested parties. The publication reviews all multiple offenders who are apprehended and the agencies involved in the arrests. A special law enforcement awards program also recognizes the efforts of officers who have made an arrest of a multiple offender. From August 1, 1991, to May 1, 1994, 1,398 habitual offenders were arrested. This program has contributed to a 30 percent reduction in alcohol-related crash deaths in Ohio from 1990 to 1993 (Ohio DPS 1994).

Another program, known as "Stakeout" is in use in some states, including New York. Using lists of repeat offenders who have lost their licenses, police officers watch the homes of these offenders, usually at times when people would leave or return from work. If the offenders were observed driving, they would be arrested.

All juvenile DWI offenders should be prosecuted as adults, and the record of these offenses should be preserved after the offender reaches adulthood. These actions will permit early identification of young adults who are becoming persistent drinking drivers.

Current laws in many states treat impaired drivers under 18 differently from adults. In particular, they may allow the young driver to be diverted into an education program that results in the offense being removed from the driving record. Although this type of program may seem like a good way to give a young driver a second chance, it may instead prevent the driver from being identified as a problem drinking driver and receiving needed penalties and treatment.

This is not a new concept. In its 1984 study on repeat offenders, the NTSB recommended that all state governors work to develop record systems in their states that preserve records of alcohol-related traffic offenses committed by juveniles after the offender reaches adulthood (Sweedler and Smith 1984).

If a driver refuses to take a breath test apply the same or greater administrative penalty as a positive test result.

With increased penalties for second and subsequent DWI offenses, some persistent drinking drivers are refusing to submit to the requested BAC tests. Because obtaining a conviction of the DWI offense is more difficult without the results of a test, the arrested offender may believe that he or she may receive a lesser penalty if the test is refused. Laws should be such that refusals result in at least the same penalty as a positive test result does or in an even greater penalty. For example, if failure of the test would result in a 90-day administrative suspension of the driver's license, refusal might carry a 180 day suspension. In addition, the offender's record should show the refusal, and it should count as a positive test result for determining, on subsequent arrest, whether the driver is a first or repeat offender.

Reduce the legal BAC for all drivers to .08 percent. This measure reduces drinking and driving among all drivers, including persistent drinking drivers.

Evidence is beginning to emerge that lowering BAC for adults to .08 percent, will result in reducing drinking and driving among the general populations, as well as among the persistent drinking driver. Currently, 12 states in the United States have reduced their BAC limit to .08 percent. Almost all other industrialized countries have BAC limits of .05 to .08 percent, with some of them having even lower BACs.

The National Center for Statistics and Analysis in the NHTSA has recently released a report that analyzed 6 different measures of driver involvement in alcohol-related fatal crashes in each of 5 states; 30 comparisons in all (NHTSA 1994). It found statistically significant decreases in 9 of the 30 comparisons, non-significant decreases in 16, and non-significant increases in 5. The report concludes: "This preliminary assessment appears to indicate that the implementation of 0.08 BAC laws and other associated activities (such as public information campaigns drawing attention to the change) are associated with reductions in fatal crash driver alcohol involvement."

The largest state to reduce the legal BAC limit is California, which lowered its BAC to .08 percent in January 1990. Six months later California also passed the Administrative Per Se Law that permitted police to administratively suspend a driver's license. A preliminary analysis for the NHTSA (1991) found a 12 percent decline in alcohol-related fatal crashes during the first year after the law, compared with the previous 4 years. Declines occurred for drivers at all BAC levels, indicating that the persistent drinking drivers also were deterred. No decline in nonalcohol-related fatal crashes was observed during the same period. Unfortunately, because only 1 year of postlaw data were analyzed and no comparison area was monitored, the results must be regarded as preliminary. Further, the

effects of the .08 percent regulation are difficult to separate from the administrative per se provision effects.

Rodgers (1993) recently summarized time-series analyses examining 36 months after the .08 percent BAC law in California. She did not find any significant effect of the law on trends in nighttime fatal and injury crashes relative to daytime fatal or injury crashes. Nighttime fatal compared with daytime fatal crashes did not decline significantly after the law. However, she found a significant reduction in fatal crashes for which police indicated a driver had been drinking after the .08 percent law. An analysis of fatal - injury crashes from 2:00 a.m. - 3:00 a.m., immediately after bar closings, also revealed a significant decrease.

In August 1988 Maine lowered its legal blood alcohol limit from .10 percent to .08 percent. Maine already has an administrative per se law, so the .08 provision was incorporated into that law. New Hampshire and Vermont were examined as comparison states with Maine because they have similar weather, population, and economic conditions and neither had a .08 law during the timeframe of this analyses.

Hingson (1994) reported that Maine experienced a 19 percent decline in nighttime fatal crashes during the law's first 3 years whereas New Hampshire and Vermont experienced a 3 percent increase. Nighttime fatal crashes declined from a prelaw annual average of 80 to a postlaw average of 65. In contrast, in New Hampshire and Vermont, the prelaw average was 89 and the postlaw average was 91. In contrast, daytime fatal crashes in Maine showed no decline. No significant decreases in daytime crashes were observed in New Hampshire or Vermont.

Finally, the average number of alcohol-related traffic deaths each year has declined 35 percent from 112 to 76, since Maine's lower BAC limits were passed. The proportion of fatal crashes in Maine that involve alcohol declined from 53 percent during the 5 years before the law to 37 percent during the 4 full years after the law.

Both New Hampshire and Vermont also have adopted a .08 percent legal standard.

CHAPTER 2

PROMISING STRATEGIES FOR DEALING WITH THE PERSISTENT DRINKING DRIVER

In this chapter, strategies will be discussed that appear promising as ways of reducing the problem of the persistent drinking driver. These strategies include some approaches that have been shown to be effective in the general driving population and for which there is reason to believe that they are also effective for the persistent drinking driver. Some other strategies have not been well researched, but there is suggestive evidence of their effectiveness for this population.

Steps to limit youth access to alcohol should be taken. This action includes enforcement of minimum drinking age laws and the implementation of a "zero tolerance" law that requires loss of license for drivers under 21 who drive with a BAC over a minimum level (e.g., .01 or .02 percent).

Numerous studies have found that raising the minimum drinking age to 21 significantly reduced fatal crashes. (General Accounting Office 1987; O'Malley and Wagenaar 1991) The NHTSA estimated that 14,000 deaths involving people 18 to 20 years old have been prevented by these laws. Research has shown (NHTSA 1993) that many more people who begin drinking as teenagers become problem drinkers than those who begin drinking as adults. Some studies have estimated that 10 percent of those who start drinking as adults develop alcohol problems but that 30 percent of those who start drinking as juveniles develop alcohol problems. (NTSB 1984)

Detering young people from drinking will reduce drinking problems later in life and therefore reduce the number of persistent drinking drivers (Wagenaar 1991). To do this, loopholes in age 21 drinking laws should be eliminated, vigorously enforce these laws, and implement "zero-tolerance" laws for drivers under 21 (NTSB 1993). These laws have been found very effective in reducing alcohol-involved crashes among the affected age group.

An analysis of the first 12 states to lower legal blood alcohol limits for youth revealed that, during the postlaw period, the proportion of fatal crashes that involved single vehicles at night declined 16 percent among young drivers targeted by those laws, whereas the proportion rose 1 percent among drivers in nearby comparison states. Lowering BACs to .00 percent or .02 percent (zero-tolerance laws) produced a 20 percent greater decline than in comparison states, but no significant reduction occurred in states that lowered to .04 percent to .06 percent relative to comparison states. (Hingson,

in press). A study in Maryland found that when a targeted enforcement and publicity campaign is added to the implementation of such a law, the reduction in cases reaches 50 percent.

Twenty-nine states and the District of Columbia have set lower legal blood alcohol limits for young drivers under the age of 21 than for adults.

Consider significant increases in taxes on alcohol.

Research indicates that increases in the cost of alcohol can reduce alcohol-related traffic fatalities (Chaloupka 1993). Whereas the evidence does not indicate to what extent price increases affect the persistent drinking driver specifically, research does indicate that increases in price decrease cirrhosis death rates, indicating that even chronic, addictive drinking, like that expected among persistent drinking drivers, can be influenced by tax increases. Thus, alcohol tax increases are likely to improve traffic safety and may decrease impaired driving by the persistent drinking driver. (For more information, see the background paper by Hingson in Appendix C.)

Consider taking steps to encourage the adoption of responsible service practices by retail alcohol outlets, including legal action against establishments that serve alcohol to intoxicated persons.

The single largest point of departure for alcohol-impaired drivers in the United States is bars and restaurants. Thus, any strategy that can decrease the likelihood that impaired patrons will leave drinking establishments and drive can affect on drinking and driving rates. Strategies can include the following:

- **Responsible service practices.** This strategy involves training the management and service staff in bars and restaurants to adopt service practices that discourage drinking to intoxication, for example, by avoiding reduced-price drinks, promoting the service of food, and teaching servers to recognize signs of intoxication and thus refuse service to intoxicated patrons.
- **Enforcement of laws that prohibit the sale of alcohol to intoxicated patrons.**
- **Adopt dram-shop laws that hold servers liable in cases which intoxicated patrons later cause harm.**

Research evidence indicates that each of these strategies can have a traffic-safety impact. The degree to which the persistent drinking driver is particularly affected by these strategies is not known. It seems likely, however, that these drivers would be likely to be influenced. The degree to which these strategies affect the persistent drinking driver is an area that could benefit from further research. (For more information, see Hingson's background paper in Appendix C).

Take steps to control the geographic density of alcohol outlets and the number of outlets per capita.

Gruenewald et al. (1993) have reported that the greater the geographic spread between people and outlets and the lower the ratio of outlets to people, the lower the observed sales of alcohol. A state-level 10 percent increase in outlet density results in a 4 percent increase in sales of spirits and a 3 percent increase in sales of wine. Research by Rush and colleagues (1986) and Watts and Rabow (1983) suggests the greater physical availability of alcohol is related to higher arrest rates for public drunkenness and drunk driving.

Dull and Giacomassi (1988) examined alcohol control regulation (wet versus dry) and outlet density in 95 counties of Tennessee. After analytically controlling for population size, percent change in population, urbanization, and percent nonwhite, they found both outlet density and absence of restrictions on alcohol sales were associated with increased motor vehicle mortality.

Whereas the effect of changes in density on the persistent drinking driver, in particular, is not known, it seems likely that controls on density would have an effect on this group. (For more information, see Hingson's background paper in Appendix C.)

Targeted media campaigns designed specifically to affect the persistent driver should be attempted and evaluated.

Two types of media campaigns appear to be particularly promising. First, publicity to heighten awareness of enforcement campaigns and the potential consequences of violating the law has repeatedly been shown to increase the effectiveness of enforcement (Atkin 1988; Voas and Hause 1987; and Atkin et al. 1986). Second, media campaigns that provide motivation and models for intervention by significant others (e.g., wives and girlfriends) into the behavior of high-risk drinking drivers have been shown in formative research to be promising as an approach to reach this population. (For further details, see Isaac's background paper in Appendix C.)

Treat first offenders with extremely high BACs (e.g., above .20 percent) as repeat offenders, both with respect to punitive sanctions and rehabilitation.

There are two reasons for implementing this strategy. First, the risk of a crash becomes much greater at high BACs. For example, a driver with a BAC of .08 is estimated to have a nine-times greater probability of involvement in a crash than a driver with no alcohol. A driver with a BAC at or above .15 has a risk of crashing 300 to 600 times greater (Zador 1991). Thus, driving with high levels should be treated as a very serious offense. Second, driving with an extremely high BAC indicates that the offender has a high alcohol tolerance and hence is likely to be a severe problem drinker. Therefore, penalties should be applied that help to prevent the offender from drinking and driving in the future through license and vehicle sanctions. In addition, the offender is likely to need significant treatment for the alcohol problem. A two-level system of penalties tied to BAC level has been implemented in some Scandinavian countries for many years.

Consider requiring vehicle interlock devices as a condition of probationary driver's license reinstatement for repeat offenders. Combine use of interlocks with treatment and periodic monitoring. Interlocks should *not* be used as a substitute for license revocation or suspension.

The higher crash and offense rates demonstrated by reinstated DUIs (Voas and Tippetts 1994A) suggests the need for a transitional system that will reduce the crash risk of those returning to licensed status. The alcohol safety interlock system is being offered in some states (California and West Virginia, for example) as a means for offenders to return to licensed status following a minimum period of full suspension. In theory this system provides a number of potential benefits. The offender is allowed to use the vehicle for vocational purposes while the public is protected from being victimized in an alcohol-related crash. Strong evidence for the effectiveness of the interlock is lacking because, perhaps, the programs that have been evaluated to date have been managed through the courts. Courts generally lack the personnel and resources to administer the programs properly (EMT Group 1990; Marques and Voas 1993. See, however, Elliot and Morse 1993; Jones 1993; Collier 1994). Assigning responsibility for program administration to the state motor-vehicle licensing agencies should improve the programs' application and, provide evidence of their effectiveness.

Recently, Marques and Voas (1994) have suggested integrating a case management system with an interlock program. A test of this concept will begin later this year in Alberta, Canada. This procedure provides that following a 1 year suspension, multiple DUI offenders can enter an interlock program. The program includes treatment, installation of the interlock, and interviews with a case manager each month at the time the interlock unit is read and serviced. Participation in the program allows the offender a limited license to drive instead of an additional year of full suspension. The case manager will have the results of diagnostic measures collected during the treatment program. Thus, the case manager will be in a position to refer the client to a broad range of health and social services to support recovery from the alcohol/drug problem that produced the license suspension. The information from the interlock data recorder assists in this process by highlighting the problems that the client may be having in maintaining sobriety, thereby allowing an early intervention by the case manager. This procedure appears to provide a model by which a Department of Motor Vehicles responsible for ensuring treatment attendance and managing an interlock program can combine the two successfully.

Require drinking drivers who have multiple offenses or are arrested with very high BACs to participate in a rehabilitation program of adequate duration and intensity and that includes frequent monitoring. Consequences should be imposed for failure to comply with the rehabilitation program.

Analysis of previous research on the effectiveness of rehabilitation programs for impaired driving offenders indicates that, overall, programs have a modest effect on reducing incidence of alcohol-related driving recidivism and crashes (7- to 9-percent decrease). This effect is smaller for "severe" or "high problem" drinking drivers (the definitions of these terms varied from study to study) (Timken et al. 1994). More intensive programs involving incarceration combined with treatment and frequent followup monitoring have been found to have more marked effects (Voas and Tippetts 1994). It is possible that improved techniques used in programs could increase the effectiveness of rehabilitation, but evaluations have not yet been carried out to measure the effects. More research is needed to determine the components and length of the optimum rehabilitation program. As discussed in earlier sections of this report, licensing sanctions have the best proven record of effectiveness. Therefore, it is important that rehabilitation be combined with license sanctions for all convicted offenders. In addition, research suggests that strategies combining some education and therapeutic interventions along with followup monitoring (usually through probation) are more effective than education and therapy alone or monitoring alone.

A promising, but as yet unevaluated, treatment model is described in the background paper by Timken et al. in Appendix C. This model combines incarceration, vehicle immobilization, and license restraint in a year-long treatment program. The treatment includes cognitive restructuring, behavioral skills building, relapse prevention, and the community reinforcement approach originally developed by Hunt and Azrin (Azrin et al. 1982).

Drivers involved in alcohol-related crashes, even those who are not charged with impaired driving, also should be considered as candidates for rehabilitation. Physicians and emergency medical facilities could screen and refer such patients to appropriate programs. This concept has been recommended by the Ontario (Canada) Medical Association (OMA) (OMA 1994).

Evaluate victim impact panels fully to determine their effects on the persistent drinking driver.

Courts in a growing number of states are sentencing DWI offenders to attend victim impact panels, usually as a requirement of probation. As many as 200 counties in 34 states now hold panels, bringing groups of offenders together with victims or their family members.

The results of these panels have not been evaluated rigorously, but data are available from a number of programs. There seems to be some evidence that attendance at these panels may reduce recidivism and results in behavior change. The background paper by Anne Russell found in Appendix C reviews the results of programs in Dallas, Texas; Washington and Klackamus counties, Oregon; and Portage County, Ohio. More extensive evaluation of victim impact panels currently is being conducted by NHTSA and the National Institute on Alcohol Abuse and Alcoholism. If the results of the ongoing studies are positive, these panels should be more widely used.

Alternative sanctions need to be evaluated further to determine the potential role they play in deterring the persistent drinking driver.

With jail overcrowding becoming a national problem, a number of alternative sanctions to incarceration have received considerable attention. These include intensive supervision probation, boot camps/shock incarceration, day reporting centers, day fines, and house arrest. Some have been suggested as countermeasures for dealing with the persistent drinking driver. The evaluations conducted to date on these alternative sanctions have either found no measurable reductions in recidivism or have not been conducted appropriately to answer the question of how effective they might be for the persistent drinking driver.

An evaluation is currently being conducted for NHTSA on an intensive supervision probation program, an electronic monitoring/home detention program, and a weekend intervention program. It is hoped that this evaluation will

provide guidance on which of these programs, if any, is useful in deterring the persistent drinking driver. (For additional information about past and current research on these issues, see the background paper by Jones, et al. in Appendix C. Another program, currently implemented in Anoka County and 10 other counties in Minnesota, combines a particularly intensive supervision program with treatment and aftercare. This program model shows promise and should be evaluated fully.

REFERENCES

- Atkin, C. K. *Mass communication effects on drinking and driving*. Surgeon General's Workshop on Drunk Driving. Background Papers. U.S. Department of Health and Human Services, Dec. 1988.
- Atkin, C. K., Garramone, G. M., and Anderson, R. Formative evaluation research in health campaign planning: The case of drunk driving prevention, presented at International Communication Association Annual Conference, Chicago, IL, 1986.
- Azrin, N. H., Sisson, R. W., Meyers, R., and Godley, M. Alcoholism treatment by disulfiram and community reinforcement therapy. *Journal of Behavior Therapy and Experimental Psychiatry*, Vol. 13, 1982, pp. 105 - 112.
- Chaloupka, F. Effects of price on alcohol related problems, *Alcohol, Health and Research World*, Vol. 17, 1993, pp. 46 to 54.
- Collier, D. W. Second generation interlocks lead to improved program efficiencies. Presented at 73rd Annual Meeting of the Transportation Research Board, Washington, D.C., 1994.
- DeYoung, D. J. Development, Implementation and Evaluation of a Pilot Project to Better Control Disqualified Drivers. Report No. 129, California Department of Motor Vehicles, Sacramento, 1990.
- Dull, R. T., and Giacopossi, D. J. Dry, damp and wet: Correlates and presumed consequences of local alcohol ordinances. *American Journal of Drug and Alcohol Abuse*, Vol. 14, No. 4, 1988, pp. 499 to 514.
- EMT Group, Evaluation of the California Ignition Interlock Pilot Program for DUI Offenders (Farr-Davis Driver Safety Act of 1986). EMT Group, Inc., Sacramento, California, 1990.
- Elliott, D. S., and Morse, B. J., In-Vehicle Test Devices as a Deterrent to DUI. NIAAA Final Report, Jan. 1993, pp. 18 to 21.
- Gebers, M. A., and Hanely, M., Proof-of-service rates for suspended or revoked drivers as a function of mailing contact strategy: Interim report of "Post-Disqualification Control of DUI Offenders Report No. 120, California Department of Motor Vehicles, Sacramento, 1987.
- General Accounting Office, *Drinking Age Laws: An Evaluation Synthesis of their Impact on Highway Safety*, General Accounting Office, March 1987, pp. 87 to 100.
- Gruenewald, P., Miller, A., and Treno, A., Alcohol availability and the ecology of drinking behavior. *Alcohol, Health and Research World*, Vol. 17, 1993, pp. 39 to 45.
- Hedlund, J., Who is the persistent drinking driver? part I: USA. Transportation Research Board Workshop on the Persistent Drinking Driver. Background Paper, Woods Hole, Mass., July 1994.
- Hingson, R. Environmental Strategies to reduce chronic driving while intoxicated. Transportation Research Board Workshop on the Persistent Drinking Driver. Background Paper. Woods Hole, Mass., July 1994.
- Hingson R., Heeren T., and Winter M., Lower legal blood alcohol limits for young drivers. *Public Health Reports* (in press).
- Jones, B. The effectiveness of Oregon's ignition interlock program, Proc. 12th International Conference on Alcohol, Drugs and Traffic Safety-ICADTS-T92, Cologne, Germany, September 1992 TUV Academie: Rhineland, Germany, 1993.
- Marques, P. R., and Voas, R. B., Setting performance priorities for breath alcohol ignition interlock devices. *Journal of Traffic Medicine*, Vol. 21, No. 3, 1993, pp. 127 to 132.
- Marques, P. R., and Voas, R.B., *Case-managed alcohol interlock programs: A bridge between the criminal and health systems*. (under review), 1994.
- National Highway Traffic Safety Administration, NHTSA Traffic Safety Facts. Washington, D.C., 1993.
- National Highway Traffic Safety Administration, Examine the Effects of a Legal Change of the Blood Alcohol Concentration Level in California from 0.10% to 0.08%, HS 807 777, Washington, D.C., 1991.
- National Transportation Safety Board, *Report of Youth Involvement in Traffic Crashes*, Washington, D.C., 1993.
- National Transportation Safety Board, *Safety Study: Deficiencies in Enforcement, Judicial, and Treatment Programs Related to Repeat Offender Drunk Driver*, NTSB/SS-84/04, Washington, D.C., 1984.
- Nichols, J. L., and Ross, H. L., The effectiveness of legal sanctions in dealing with drinking drivers. *Alcohol, Drugs and Driving*, Vol. 6 No. 2, 1990, pp. 33 to 60.
- Ohio Department of Public Safety, *Hot Sheet News*, Columbus, Ohio, June 1994.
- O'Malley, P., and Wagenaar, A. C., Effects of minimum drinking age laws on alcohol use, related behaviors and traffic crash involvement among American youth, *Journal of Studies on Alcohol*, Vol. 52, No. 5, 1991, pp. 478 to 491.
- Ontario Medical Association, Drinking and Driving, draft position paper of the Committee on Injury Prevention and Control, Ontario, Canada, 1994.

Peck, R. C. The general and specific deterrent effect of DUI sanctions: A review of California's experience. *Alcohol, Drugs and Driving*, Vol. 7, No. 1, 1991, pp. 13 to 42.

Peck, R. C., Wilson, R. J., and Sutton, L., Driver license strategies for controlling the persistent DUI offender. The Transportation Research Board Workshop on the Persistent Drinking Driver. Background Paper. Woods Hole, Mass. July 1994.

Peck, R. C., Sadler, D. D., and Perrine, M. W., The comparative effectiveness of alcohol rehabilitation and licensing control actions for drunk driving offenders: A review of the literature. *Alcohol, Drugs and Driving*, Vol. 1, No. 4, 1984, pp. 15 to 39.

Perlman, E. Moving toward none for the road. *Governing*, September 1994.

Presidential Commission on Drunk Driving. *Final Report*, GPO, Washington, D.C., 1983.

Preusser, D. F., Blomberg, R. D., and Ulmer, R. G. Evaluation of the 1982 Wisconsin drinking and driving law. *Journal of Safety Research*, Vol. 19, 1988, pp. 29 to 40.

Rodgers, A. Effect of Minnesota's license plate impoundment law on recidivism of multiple DWI violators. *Alcohol, Drugs, and Driving*, Vol. 10, 1994, pp. 127 to 134.

Rogers P. The long term effectiveness of California's administrative per se law, 2nd interim report. OTS Project #AL9101, Research and Development Section Program Policy Administration, California Department of Motor Vehicles, Sacramento, CA 1993.

Ross, H. L., Stein, A. C., and Stewart, K., Vehicle-based sanctions. Transportation Research Board Workshop on the Persistent Drinking Driver. Background Paper. Woods Hole, Mass., July 1994.

Ross, H. L., Simons, S., and Cleary, J. License plate confiscation for multiple offender DUIs. Forthcoming.

Ross, H. L. *Administrative License Revocation for Drunk Drivers: Options and Choices in Three States*. AAA Foundation for Traffic Safety, Washington, D.C., 1991.

Rush, B., Steinberg, M., and Brook, R. The relationship among alcohol availability, alcohol consumption and alcohol-related damage in the Province of Ontario and the state of Michigan 1955-1982. *Advances in Alcohol and Substance Abuse*, Vol. 5, No. 4, 1986, pp. 33 to 45.

Russell, A., Citizen activist assessments of the DUI problem, public attitudes and selected responses to the persistent drinking driver. Transportation Research Board Workshop on the Persistent Drinking Driver. Background Paper. Woods Hole, Mass., July 1994.

Sigmastat, Inc. Changes in Alcohol-Involved Fatal Crashes Associated with Tougher State Alcohol Legislation. National Highway Traffic Safety Administration, Washington, D.C., July 1989.

Simpson, H. M., Who is the persistent drinking driver? Part II: Canada and elsewhere, Transportation Research Board Workshop on the Persistent Drinking Driver. Background Paper. Woods Hole, Mass., July 1994.

Stewart, K., and Voas, R., Decline in drinking and driving crashes, fatalities and injuries in the United States. Transportation Research Circular 422: The Nature of and the Reasons for the Worldwide Decline in Drinking and Driving, TRB, National Research Council, Washington, D.C., 1994.

Stewart, K., Gruenewald, P., and Roth, T., An Evaluation of Administrative per se laws. Final Report. Grant 86- I- CX- 0081. National Institute of Justice, Washington, D.C. 1989.

Stewart, K., Epstein, L., Gruenewald, P., Laurence, S., and Roth, T., The California First DUI Offender Evaluation Project: Final Report. Pacific Institute for Research and Evaluation, Bethesda, Md., 1987.

Stewart, K., and Laurence, S. Senate Concurrent Resolution Number 27 Report: A Review of the Implementation and Effectiveness of Drinking and Driving Legislation. Pacific Institute for Research and Evaluation, Bethesda, Md., 1987.

Sweedler, B. M., and Smith, L., The repeat offender drunk driver: Where has the system failed? Proc., International Workshop on Punishment and/or Treatment for Driving Under the Influence of Alcohol and Other Drugs, Stockholm, Sweden, October 1984.

Timken, D., Packard, M., Wells-Parker, E., and Bogue, B. Rehabilitation of the persistent drinking/drugged driver. Transportation Research Board Workshop on the Persistent Drinking Driver. Background Paper. Woods Hole, Mass., July 1994.

Vingilis, E. R., Mann, R. E., Gavin, D., Adlaf, E., and Anglin, L., Effects of sentence severity on drinking driving offenders. *Alcohol, Drugs and Driving*, Vol. 6, Nos. 3-4, 1990, pp. 189 to 197.

Voas, R. B., and Tippetts, A. S. Unlicensed driving by DUIs - A major safety problem? Presented at 73rd Annual Meeting of the Transportation Research Board, Washington, D.C., 1994A.

Voas, R. B., and Tippetts, A. S. Assessment of Impoundment and Forfeiture Laws for Drivers Convicted of DWI: phase II report. National Highway Traffic Safety Administration, Washington, D.C., August 1994B, 32 pp.

Voas, R. B., Assessment of impoundment and forfeiture laws for drivers convicted of DWI. Final Report. NHTSA Contract No. DTNH22- 89- 4- 07026, National Highway Traffic Safety Administration, Washington, D.C., 1992.

Voas, R. B., and Hause, J. M. Detering the drinking driver. The Stockton experience. *Accident Analysis and Prevention*, Vol. 19, 1987, pp. 81 to 90.

Wagenaar, A. C. Minimum drinking age and alcohol availability to youth: Issues and research needs. Presented at a National Institute on Alcohol Abuse and Alcoholism workshop. Rockville, Md., Oct. 1991.

Watts, R. K., and Rabow, J., Alcohol availability and alcohol related problems in 213 California cities. *Alcoholism: Clinical and Experimental Research*, Vol. 7, No. 1, 1983, pp. 45 to 58.

Zador, P., Lund, A., Fields, M., and Weinberg, K., Fatal crash involvement and laws against alcohol-impaired driving. *Journal of Public Health Policy*, Vol. 10, 1989, pp. 467 to 485.

Zador, P., Alcohol-related relative risk of fatal driver injuries in relation to driver age and sex. *Journal of Studies on Alcohol*, Vol. 52, No. 4, 1991.

APPENDIX A

**PROGRAM OUTLINE FOR WORKSHOP ON
THE PERSISTENT DRINKING DRIVER**

At the National Academy of Sciences Study Center
Woods Hole, Massachusetts
July 12-13, 1994

Sponsored by:

Transportation Research Board
Committee on Alcohol, Other Drugs and
Transportation

Cosponsored by:

The International Council on Alcohol, Drugs and
Traffic Safety
The National Highway Traffic Safety Administration
The National Institute on Alcohol Abuse and
Alcoholism

Tuesday, July 12, 1994

- 7:30-9:00 Breakfast and Workshop Registration
- 9:00-9:15 **Welcome and discussion of workshop
purpose, objectives and format**
Mr. Barry M. Sweedler
Workshop Chairman
- 9:15-10:30 **Who is the persistent drinking
driver? Magnitude, characteristics of
the problem and trends**
Dr. Herb Simpson and
Dr. James Hedlund
- 10:30-11:00 Break
- What can be done about the persistent drinking
driver?**
- 1:00-12:30 **Environmental and media strategies**
Dr. Ralph Hingson and
Dr. Nancy Isaac
- 12:30-1:30 Lunch
- 1:30-3:00 **Enforcement strategies**
Dr. David Preusser and
Dr. Susan Martin
- 3:00-3:30 Break

- 3:30-5:00 **Licensing strategies**
Mr. Ray Peck
Dr. R. Jean Wilson and
Dr. Lawrence Sutton

- 6:00 pm **National Academy of Sciences
"Clambake"**

Wednesday, July 13, 1994

- 7:30-9:00 Breakfast
- 9:00-10:30 **Vehicle strategies**
Dr. H. Laurence Ross
Ms. Kathryn Stewart
Dr. Robert B. Voas
Dr. Allan Williams and
Dr. Anthony Stein
- 10:30-11:00 Break
- 11:00-12:30 **Incarceration and alternatives to
incarceration**
Mr. Ralph K. Jones
Mr. Stephen M. Simon and
Dr. James M. Byrne
- 12:30-1:30 Lunch
- 1:30-3:00 **Rehabilitation**
Dr. David Timken and
Dr. Elisabeth Wells-Parker
- 3:00-3:30 Break
- 3:30-5:00 **Concluding discussion**

All ICADTS members are welcome to attend the
ICADTS Executive Board meeting at 5:00 pm,
Monday, July 11, 1994, at the Ramada on Falmouth
Square.

APPENDIX B: LIST OF WORKSHOP PARTICIPANTS

Dr. Marcelline Burns
Southern California Research
Institute
11914 W. Washington Blvd.
Los Angeles, CA 90066

James H. Hedlund
Alcohol & State Programs
NHTSA, NTS-20
Washington, DC 20590

Dr. Ralph Hingson
Social & Behavioral Sciences
Boston University
School of Public Health
85E Newton Street #840
Boston, MA 02118-2337

Dr. Nancy Isaac
Harvard School of Public Health
718 Huntington Avenue
Boston, MA 02351

John H. Lacey
Mid-America Research Institute
1106 Roosevelt Drive
Chapel Hill, NC 27514-3242

Mr. Hans Laurell
Swedish Road Administration
S-78187 Borlänge
SWEDEN

Dr. Susan Martin
National Institute on Alcohol Abuse
& Alcoholism
6000 Executive Blvd.,
Suite 505
Rockville, MD 20892-7003

Mr. Dan Mayhew
Traffic Injury Research Foundation
of Canada
171 Nepean Street
Ottawa, Ontario
Canada K2P 0B4

Dr. A.J. McLean, Dir.
NH&MRC Road Acc Res
University of Adelaide 5005
AUSTRALIA

Dr. Herbert Moskowitz
Prof. Emeritus/CA State Univ.
4138 Royal Crest Place
Encino, CA 91436-3435

Mr. Raymond C. Peck

Dept. of Motor Vehicles
Research & Development Section
2415 First Avenue
Sacramento, CA 95818-2606

Ms. Carol Lederhaus Popkin
Natural Resources Envir. Health
Div. of Epidemiology
P.O. Box 27687
Raleigh, NC 27611-7687

Dr. David Preusser
Preusser Research Group, Inc.
7100 Main Street
Trumbull, CT 06606

Dr. H. Laurence Ross
University of New Mexico
Department of Sociology
Albuquerque, NM 87131

Ms. Anne Russell
MADD
511 E. John Carpenter Frwy.,
Suite 700
Irving, TX 75062-8187

Mr. William E. Scott
Office of Program Development
and Evaluation
NHTSA, NTS-30
Washington, DC 20590

Stephen M. Simon
University of MN Law Schl
229 19th Avenue S.
Minneapolis, MN 55455

Dr. Herb Simpson
Traffic Injury Research Foundation
of Canada
171 Nepean Street
Ottawa, Ontario
Canada K2P 0B4

Dr. Anthony Stein
Safety Research Associates, Inc.
4739 La Canada Blvd.
La Canada, CA 91011-2204

Ms. Kathryn Stewart
Pacific Inst for Resrch & Evaluation
Air Rights Center, Suite 1300W
7315 Wisconsin Avenue
Bethesda, MD 20814

Dr. Lawrence R. Sutton
Inst Driver Res & Subst Abuse

P.O. Box 10345
Pittsburgh, PA 15234-0345

Barry M. Sweedler
NTSB
490 L'Enfant Plaza East, S.W.
Washington, D.C. 20594

Dr. David S. Timken
CO Dept. of Health
Alcohol & Drug Abuse Div.
4300 Cherry Creek Dr. South
Denver, CO 80222-1530

Dr. Evelyn Vingilis
Health Intelligence Unit
Faculty of Medicine
University of Western Ontario
London, Ontario
N6A 5C1 CANADA

Dr. Robert B. Voas
Pacific Institute for Research &
Evaluation,
Air Rights Center
7315 Wisconsin Ave., 1300W
Bethesda, MD 20814

Dr. Elisabeth Wells-Parker
Mississippi State Univ.
Social Science Research Center
P.O. Box 5287
MS State, MS 39762-5287

Dr. Allan Williams
Insurance Institute of Highway
Safety
1005 N. Glebe Rd.
Arlington, VA 22201

Dr. R. Jean Wilson
Motor Vehicle Branch
Ministry of Transp. & Hwys
2631 Douglas Street
Victoria, BC Canada V8T 5A3

APPENDIX C

APPENDIX C1

WHO IS THE PERSISTENT DRINKING DRIVER? PART I: USA

James Hedlund, Ph.D.

National Highway Traffic Safety Administration

We all think we know who the persistent drinking driver is: the person who drinks and drives again and again, week after week, month after month, year after year; the person whose drinking and driving behavior has not been changed by information and education, who has not been deterred by drinking and driving laws and enforcement, and perhaps even by arrest and punishment for drinking and driving law violations. He (almost always he) has been called hard-core, problem drinker, alcoholic, anti-social. He appears periodically in the press after a tragic crash in which he kills innocent victims and prompts repeated calls to "do something" about him. He is the subject of this workshop.

Before we can suggest how to deal with him, we first must examine whether our intuitive definition is accurate or is operationally useful. Next, we must understand as much as we can about the persistent drinking driver: who he is, what he knows and thinks, how he acts. This paper gives a brief overview of recent data and studies on the persistent drinking driver primarily from the United States. Herb Simpson's companion paper does the same for persistent drinking drivers in the rest of the world.

Persistent drinking drivers in crashes -- FARS data

The most objective data on drinking drivers in crashes come from FARS, NHTSA's Fatal Accident Reporting System. FARS data are limited in several important respects. FARS includes only fatal crashes. FARS contains only information from official sources, such as police reports and driver records, and consequently is silent on many important issues. Within these limitations, the data are quite accurate and complete.

Can we identify persistent drinking drivers in FARS? FARS records drivers with prior DWI convictions. This is a narrow definition: convictions, not arrests, within the past three years only. Alcohol-positive drivers with a prior DWI conviction probably are persistent drinking drivers, since they have been caught and punished for this offense recently. However, many persistent drinking drivers have not been convicted recently, as we shall see shortly.

Here's what FARS (1992) says about the 2,252 drivers with a prior DWI who were involved in fatal crashes. Tables in the appendix give more complete data and compare prior

DWI drivers to drivers without a prior DWI ("other drivers"). In both instances, drivers with unknown prior DWI status (3% of the total) are excluded.

- They are infrequent:
4% of all drivers in fatal crashes have a prior DWI
11% of drivers with BAC .01 and up have a prior DWI
13% of drivers with BAC .10 and up have a prior DWI
- They usually are impaired when they crash:
72% of drivers with a prior DWI have a BAC .01 and above
(compared to 35% of other drivers)
63% have a BAC of .10 and above (compared to 27%)
- They are overwhelmingly male: 91% (compared to 74%).
- They typically are aged 21-34: 59% (28% age 35-54; only 7% under 21); other drivers have a similar age distribution.
- They drive passenger cars (54%), light trucks and vans (33%), or motorcycles (9%) in much the same proportions as other drivers.
- They drive older vehicles: 33% are 13 years old or older, compared to only 18% for other drivers; 60% are 8 years old or older, compared to 40% for other drivers. This probably implies that they are poorer than other drivers.
- They are often in single-vehicle crashes: 55%, compared to 38% for other drivers.
- They frequently crash on weekend nights: 42%, compared to 26%;
 - and in rural areas: 62%, compared to 56%;
 - and on 50-55 mph roads (54%), similarly to other drivers.
- They usually don't wear seat belts: 75%, compared to 48%.

Some of these observations are familiar characteristics of drinking-driver crashes. The appendix takes these data one level further, to compare drinking drivers with and without a prior DWI. The prior-DWI drinking drivers are older; more frequently male, drive older vehicles, wear belts less frequently, and have more rural crashes than the no-prior-DWI drinking drivers.

The only other method we could think of to look for persistent drinking drivers in FARS is to examine drivers

with very high BACs -- say .20 and above. To do this as accurately as possible we examined only fatally-injured drivers from the 25 states that recorded BAC levels for over 80% of all fatally-injured drivers. FARS says:

17% of very high-BAC dead drivers have a prior DWI;

52% of prior-DWI dead drivers have a very high BAC.

So, while they overlap considerably, these two groups are far from identical. In particular, most of the high-BAC dead drivers do not have a prior DWI conviction within the past three years. Compared to the prior-DWI drinking drivers, the very high-BAC dead drivers are younger, less frequently male, drive newer cars, have more single-vehicle and more nighttime crashes, and wear belts less frequently.

Both FARS data sets give only a partial view of the persistent drinking driver. Drivers with a prior DWI who are involved in a fatal crash are a small subset of all persistent drinking drivers. Very high-BAC drivers involved in a fatal crash may not all be persistent drinking drivers.

Persistent drinking drivers in state data

As noted above, FARS data underestimate the proportion of drivers in fatal crashes with a prior DWI since FARS considers only convictions within the past three years. Another view of the size of the repeat offender problem comes from state records of DWI arrests or convictions. Twelve states responded to a recent NHTSA request for information on repeat offenders as follows.

Repeat DWI Convictions

Repeat	State	Period	Years
21%	Iowa	6 years	1992
24	Louisiana	5 years	1989-93
26	Nebraska	30 yrs	1985-94
31	Wisconsin	5 years	1984-88
32	North Carolina	7 years	1988
33	Ohio	5 years	1980-93
34	California	7 years	1991
47	New Mexico	30 yrs	1990

Repeat DWI Arrests

24	South Dakota	5 years	1993
26	Colorado	5 years	1989-91
36	Texas	10 yrs	1987-90
46	Minnesota	30 yrs	1993

The "repeat" column gives the percentage persons arrested or convicted who are repeat offenders. The "period" column gives the length of time used to determine a repeat offense, and the "years" column gives the time period over which the data were taken. Note that, in general, the longer

the time period, the higher is the proportion of repeat offenders. Note also that states may not account accurately for prior offenses that occurred in another state.

From these data it appears that from one-quarter to one-third of all DWI offenders in a typical state are repeat offenders. Conversely, two-thirds to three-quarters have no prior DWI offense on record.

Persistent drinking drivers in the literature

Several review papers in the last 15 years have summarized available literature on drinking driver characteristics. A recent review of more than 130 original and review papers (B.P. Kennedy, "Characteristics of Drinking Drivers: Literature Review, Injury Control Center, Harvard School of Public Health, 1993) summarizes key information as follows. (Numerical estimates below are approximate ranges from the majority of studies reviewed.)

DWI Demographics

- age: median 30, majority are 20-45
- gender: 80-95% male
- education: high school or less
- occupation: 49-79% blue collar
- marital status: single (46-55%), divorced or separated (22-41%)
- race: white

DWI personality and attitude (compared to all drivers)

- frequently aggressive and hostile
- more frequently sensation-seekers
- more likely to have histories of other criminal behavior
- minimize the risks of impaired driving -- they do not consider impaired driving a serious issue and rarely feel that they are too impaired to drive

DWI drinking behavior

- at least 2-3 times a week; 13-38% daily drinkers
- frequently have 5 or more drinks at a time (35-60%)
- mean BAC 0.18 - 0.28
- drink beer (64-79%)
- drink in licensed establishments (40-60%) more frequently than in private homes (18-34%)
- frequently had a previous problem due to drinking -- marital or family difficulties (30-49%), previous DWI (20-28%)
- frequently problem drinkers (54-74%)

This summary doesn't specifically address the persistent drinking driver. However, it's clear from the description of their drinking behavior that these persons are persistent

drinkers, and it's fairly safe to infer that most are persistent drinking drivers as well.

A survey of persistent drinking drivers

One way to find out who persistent drinking drivers are, how they act, and what they think, is to ask them. A 1993 NHTSA national survey of drinking and driving attitudes and behavior did just that. From a weighted sample of 4010 persons aged 16 and above contacted in the random digit dial survey, 56 said that they were frequent drinking drivers in that they drank on at least 12 days, and drove after drinking on at least 8 days, in the month before they were surveyed. (By this definition, 1.4% of the adult population admits to being persistent drinking drivers.) With the twin cautions that the sample size is relatively small and the information is self-reported, here's what these 56 frequent drinker-drivers said.

Demographics and drinking behavior:

- 38% are aged 30-45; 33% aged 46-64, only 16% aged under 30.
- 91% are male.
- All drank at least weekly and 49% drank almost every day in the past year.
- 67% drank beer, 17% wine, and 16% spirits.
- 58% typically drank 2 or 3 drinks at one sitting; 24% drank 4 or 5; only 8% drank 6 or more.
- 61% usually drank at home, 24% at bars or taverns.
- 39% felt they should cut down on their drinking; however only 11% have been annoyed by criticism by others about their drinking and only 13% have felt bad or guilty about their drinking.
- 52% have driven after drinking 13 or more times in the past month.

Attitudes about drinking and driving

- 69% think that most drinker-drivers are not alcoholics or problem drinkers.
- 85% think that drinking and driving by non-alcoholics is a serious highway problem, and 53% think that drinking and driving by others is a serious threat to the personal safety of themselves and their family.
- 58% think it is very important that something be done to reduce drinking and driving; another 35% think it is somewhat important.
- 83% think that people cannot drive safely after drinking too much even if they are careful.
- 32% think they can drink more than most people and still drive safely; 66% think they can drink about the same as most people.
- 3 drinks in 2 hours -- affect driving 41%; too dangerous to drive 10%;

5 drinks in 2 hours -- affect driving 78%; too dangerous to drive 40%;

7 drinks in 2 hours -- affect driving 92%; too dangerous to drive 72%.

(For a 170 lb. male, 3 drinks in 2 hours is approximately a BAC of 0.03; 5 drinks is approximately 0.08, and 7 drinks is approximately 0.12.)

Attitudes on drinking and driving laws and enforcement:

- 69% think current laws and penalties are effective in reducing drinking and driving.
- 67% think the DWI enforcement level is about right; 15% think it too low and 19% too high.
- 73% would like to see DWI enforcement increased at least somewhat.
- 52% think they are at least somewhat likely to be stopped by police if they are driving after they have had too much to drink.
- If stopped, 93% think they are likely to be charged with DWI (52% say "almost certain").
- If charged, 96% think they are likely to be punished (67% "almost certain").
- If punished, 92% think the sanction will be severe (52% "very severe").
- But: only 44% have been stopped on suspicion of DWI; of these, only 18% were convicted of DWI (that's only 7% of the total).
- 33% think DWI sanctions should be made more severe; 44% think they should stay about the same.
- 54% favor the use of checkpoints and 66% have seen one in operation.
- 72% disagree with a "zero tolerance" concept that people should not be allowed to drive if they have been drinking any alcohol at all.

These respondents certainly fit our definition of persistent drinking drivers: they drink frequently (almost every day) and drink and drive frequently (more than twice a week). But they differ in important respects from the crash-involved drinking drivers in FARS and in the literature. They are somewhat older, they drink at home rather than in bars or taverns, and they don't drink as much at one sitting. They believe that drinking and driving is an important highway safety problem and they seem to accept DWI laws at approximately current BAC levels. They also have a far higher expectation of detection, arrest, and sanction if they drink and drive than occurs in practice. Again, these results must be interpreted with caution. They are self-reported data from a small sample in a telephone survey. In particular, persons who drink at home may be over-represented because they were at home to answer their telephone.

Conclusions

These data suggest that persistent drinking drivers are far from homogeneous. Most American adults drink (64% in the NHTSA survey), and 15% admit to driving after drinking in the past month. The data presented above help identify the most persistent of these drinker drivers -- those who admit to driving after drinking almost every other day. But even these very persistent drinker-drivers differ in important respects from drinker-drivers who are involved in fatal crashes.

The persistent drinker-driver as defined in the NHTSA survey fits our intuitive definition precisely: he drinks and drives regularly and repeatedly. But he may not be our most appropriate target. He seems to behave as a generally responsible member of society; in particular, he is rarely convicted of DWI (and, by inference, rarely involved in a crash). We may instead wish to focus on an even higher-risk group, as defined in the FARS data and the literature, who appear to be heavier drinkers, more anti-social, and more difficult to affect through traditional traffic safety measures. A proposed definition:

Persistent drinking drivers are persons who:

- have driven after drinking repeatedly,
- especially with high BAC levels.

Persistent drinking drivers are likely to be resistant to change, since their behavior has persisted despite drinking and driving prevention and deterrence activities.

Repeat DWI offenders are a subset of persistent drinking drivers who require special attention. They comprise 1/4 to 1/3 of all DWI offenders in a typical state.

Appendix
Drivers involved in fatal crashes -- FARS 1992

	<u>No prior DWI*</u> (n=47,880)		<u>Prior DWI*</u> (n=2,252)	
	<u>Total</u>	<u>BAC > 0</u> (n=12,551)	<u>Total</u>	<u>BAC > 0</u> (n=1,627)
<u>Age</u> < 21	15%	14%	7%	10%
21-34	37	51	59	59
35-54	29	27	28	29
<u>Sex</u> Male	74%	84%	91%	91%
<u>Vehicle</u>				
Car	58%	58%	54%	57%
Light truck	28	32	33	32
Motorcycle	5	8	9	10
<u>Model year</u>				
< 80	18%	24%	33%	36%
80-84	22	24	27	28
85-89	39	34	27	26
> 89	20	18	11	11
<u>Single vehicle</u>	38%	62%	55%	64%
<u>Time</u>				
Weekday	38%	12%	18%	10%
Weeknight	21	31	27	30
Weekend day	14	8	12	10
Weekend night	26	48	42	49
	<u>No prior DWI*</u> (n=47,880)		<u>Prior DWI*</u> (n=2,252)	
	<u>Total</u>	<u>BAC > 0</u> (n=12,551)	<u>Total</u>	<u>BAC > 0</u> (n=1,627)
<u>Rural</u>	56%	58%	62%	64%
<u>Speed limit</u>				
25-35	21%	23%	22%	21%
40-45	20	18	18	18
50-55	51	53	54	48
65	6	3	4	3
<u>No seat belt</u>	48%	72%	75%	82%

* Data exclude 1,749 drivers with unknown prior DWI status.

APPENDIX C2

WHO IS THE PERSISTENT DRINKING DRIVER?

PART II: CANADA AND ELSEWHERE

Herb M. Simpson, Ph.D.

Traffic Injury Research Foundation

Who, or What, Is a Persistent Drinking Driver?

This paper and the companion one by Jim Hedlund attempt to define the problem of the "persistent drinking driver," determine its magnitude and characteristics, and track changes in it over time. Hedlund has reviewed the U.S. experience, although data cited in the latter part of his paper are drawn from studies conducted in many other countries. This paper endeavours not to repeat but rather to supplement what is provided in that other paper by adding further data from Canada and other jurisdictions. Moreover, this has left space at the outset to pursue in more detail what is a central issue to the deliberations -- problem definition: determining who or what is a "persistent drinking driver."

This is a critical first task, for in the absence of some degree of consistency in the use of this term, estimates of the magnitude of the problem and suggestions as to how to deal with it will have little meaning. This is particularly important when a new word or term is coined -- such is the case with the phrase "persistent drinking driver," which is by no means common in the road safety lexicon. Indeed, a cursory review of other papers prepared for this workshop will illustrate the diversity of interpretations given to "persistent drinking driver." Terms such as "multiple offender," "high-BAC driver," and "chronic repeat drinking driver" are used often but left undefined.

The assumption appears to be that "we all know who or what the persistent drinking driver is" -- this may indeed be founded in a common definition and for some purposes a general sense of the target population may be all that is needed. On the other hand, there may be substantial variability in interpretations. At the very least there is a need to achieve some agreement on what the term means to ensure that deliberations on how to deal with it are productive. While an operational definition may be difficult to provide, a somewhat less precise working definition may be feasible and in the next few paragraphs, this issue is explored more fully.

To explore this issue requires a brief historical excursion. The original title of the current workshop was "The Hard Core Drinking Driver," borrowing from that of a 1991 report of the same name by Simpson and Mayhew (1991). They had, in turn, borrowed the phrase from others (e.g., Andenaes 1988; L'Hoste and Papoz 1983) who had used it in a similar manner to describe *those individuals who repeatedly (often) drive after drinking, especially with high blood alcohol*

concentrations (BACs) and who seem relatively resistant to changing this behaviour.

The term "hard core" has, of course, the advantage of economy of language and strong connotative impact. Its disadvantages are twofold. First, it lacks operational specificity. Is the "hard core" synonymous with high BAC, or with repeat offender, or both, or something else? Second, some have objected to the term "hard core" on the grounds that it incorrectly implies such individuals are impervious to change, rather than being simply resistant. As evidence that this group can be affected, the critics cite the decline during the 1980s in the proportion of drivers with BACs in excess of .15 (the U.S. convention for reporting BACs is used throughout).¹

To redress these concerns, the organizing committee for this workshop decided to abandon the term "hard core" and adopt the term "persistent drinking driver." It was felt that the latter phrase addresses the key issue more accurately because it emphasizes the problematic behaviour -- continuing to drink and drive -- and avoids the undesirable connotations elicited by the "hard core." We shall see if this is true.

In fact, the confusion has not been eradicated altogether by the use of the term "persistent." The denotative meaning of "persistent" would portray the behaviour of concern -- i.e., driving after drinking -- as "enduring or continuing without change." In the context of the overall drinking and driving problem, "persistent" may not, however, be an appropriate adjective, since the declines witnessed during the 1980s would suggest that the behaviour is not at all persistent. On the other hand, given that so many people still drink and drive in the face of so much publicity and so many diverse efforts that have been ongoing for so long, it could be argued that the behaviour is indeed persistent. This latter description

¹ Actually, the "critics" usually phrase this in a more casual and troublesome manner, such as, "we did have an impact on this group." This conclusion is not warranted; while changes may have occurred during the 1980s (descriptive), it is perhaps inappropriate to ascribe such changes to drinking-driving programs or policies introduced during the 1980s (explanatory). This is an interesting side-bar because it speaks volumes about the cavalier attribution of cause in this area (see Simpson, 1993a and 1993b for a discussion).

is, I believe, closer to the meaning that the organizers hoped to capture by the term "persistent." And, it is perhaps even more appropriate at the level of individual behaviour -- the persistent drinking driver continues to do so in spite of opposition or warning. Moreover, such use of the term does not directly impute motive to the individual (stubborn, tenacious, ignorant, recalcitrant), nor does it imply that the behaviour cannot be changed, simply that it has not yet done so. This would seem to capture the problem the workshop is intended to address and what seduced the committee into choosing the term "persistent."

Despite the apparent descriptive advantages of the phrase "persistent drinking driver," however, this new term is not without ambiguity and can also be misleading, suffering from many of the same drawbacks as the phrase "hard core drinking driver." To illustrate, consider that population surveys in Canada (Simpson, et al. 1992) and in the U.S. (see the paper by Hedlund) suggest that drinking and driving is still a reasonably common practise; 25 percent of adults in Canada report that they drove at least once in the past year after consuming two or more drinks (that projects to three million Canadians as drinking drivers each year). Moreover, 54 percent of these individuals say they do so at least three times a month. It might be argued that this is reasonably persistent behaviour.

But many of these people -- the ones who persist in drinking and driving -- do so with low BACs. Indeed, roadside surveys show that about 90 percent of drinking drivers have BACs below .05 (e.g., Beirness et al. 1991). In other words, there are many people who, despite all the warnings, still drive after they have had some wine with dinner at a restaurant, or a few beers at the ballpark, or some drinks at a friend's house. They continue to do so and, therefore, by definition are persistent drinking drivers. Yet, it is also well established that these drivers are the least risky -- they are far less likely to be involved in a serious road crash. Although some safety professionals would still argue that this persistent behaviour is problematic, it does not appear to fit the profile of what this workshop has as its focus.

Indeed, the background material for the workshop states that, "while significant reductions in drinking and driving have occurred during the last decade... repeat offenders and drivers with high blood alcohol levels continue to pose a major threat to traffic safety." This phraseology implies that persistent drinking drivers are not really those who drive with low BACs, *even if they do so repeatedly*. Rather, they are repeat offenders (generally taken to mean persons convicted of a drinking driving offence more than once) and drivers with high BACs (sometimes meaning BACs in excess of .10 but more usually referring to BACs in excess of .15).

Does this definition -- repeat offenders and drivers with high BACs -- clarify who or what the target group is? Perhaps. But, while repeat offenders are, by definition, persistent, those with high BACs may or may not be. Indeed, it was for such reasons that Simpson and Mayhew (1991) referred to the target group of concern as those who *repeatedly* drive after drinking, *especially* with high BACs (as it turns out the two will be shown to be highly correlated). This working definition includes repeat offenders and in particular those with elevated BACs. As well, Simpson and Mayhew's use of the term "offender" was liberal, encompassing those who engaged in the target behaviour, not just those who were apprehended and convicted for doing so (the relevance of this is brought out later in this paper). Furthermore, their working definition generally *excluded* the group referred to earlier -- those who may persist in driving after drinking but only with low BACs.

How then is the phrase "persistent drinking driver" more acceptable than the phrase "hard core?" It would appear as though we have come full circle? If the term "persistent" excludes the more "social" group of drinking drivers, who still continue to drive after they have been drinking but with low BACs, yet it includes repeat offenders and people with high BACs, is it then more accurate than the phrase "hard core?" Moreover, persistent also implies resistant to change, a criticism previously directed at the term "hard core." The difference between "hard core" and "persistent" seem trivial at best. Both suffer from similar limitations, while generally describing the same target population.

Accordingly, this paper adopts a working definition of the persistent drinking driver that is virtually synonymous with that of the hard core as described by Simpson and Mayhew (1991) -- individuals who repeatedly drive after drinking (not operationalized, but certainly more than once a year and likely as often as two to three times a month), especially with high BACs (.15 or greater). This definition *excludes* people who rarely or infrequently drink and drive; it *also excludes* those who continue to drive after drinking but only at low BACs. Whether or not persistent drinking drivers are less likely to change their behaviour than other groups of drinking drivers (i.e., they are resistant, persistent drinking drivers) remains to be determined.

Windows on the Problem

Anyone familiar with traditional secondary data sources in this field knows that determining the number of people who repeatedly drive after drinking with high BACs is not at all straightforward -- indeed, it is virtually impossible. The limitations of existing data systems make it difficult to provide precise estimates of the magnitude of the problem. However, reasonable estimates may be possible if one

assumption is made -- namely, that there is a strong positive relationship between BAC and "persistence." If this assumption is tenable, then it may be possible to use high levels of alcohol as a surrogate measure for defining the persistent drinking driver.

And, there is some evidence to support this approach. Simpson and Mayhew (1991) showed that with increases in BAC there was a consistent and substantial increase in the likelihood of a fatally injured driver having a prior DWI. Moreover, the BAC distribution among dead drivers with a prior DWI conviction is decidedly different from that among drivers with no previous conviction. To illustrate, while less than half of the dead drivers with no prior DWI were positive for alcohol, 85 percent of those with a prior DWI had been drinking at the time of their crash. And, 80 percent of these had BACs in excess of .15 -- i.e., most of the drivers with a *prior* DWI had been drinking at the time of their crash and most had very elevated BACs. Similarly, Gjerde and Morland (1990) showed that while 22 percent of arrested drivers with a BAC below .10 had a prior conviction, 61 percent of those with an arrest BAC in excess of .25 had a prior conviction.

The strong positive relationship between BAC and prior DWI involvement suggests that either index may be used as an admittedly imperfect but reasonably useful measure of the persistent hard core. Despite their limitations, high BACs and multiple DWI convictions provide reasonable windows on the target group and are used in this paper as a means to assess the magnitude and characteristics of the problem as well as changes over time.

It should also be noted that if such indicators are used, under some circumstances they lead to the erroneous conclusion that the group of concern is not large. For example, as indicated in Jim Hedlund's paper, FARS data suggest that the group of persistent drinking drivers is very small -- only 13 percent of dead drivers with a BAC of .10 and over have a previous DWI; only 17 percent with a BAC of .20 or above have a prior DWI. However, these seemingly low figures are largely a function of limitations in the driver record data contained in FARS. More complete tracking systems consistently show that at least 35-40 percent of fatally injured drinking drivers have a prior DWI.

Magnitude of the Problem

This section examines data from several sources that provide various windows on the persistent drinking driver. It attempts not to duplicate but to supplement the information provided in the paper by Jim Hedlund. The conclusion is that the persistent drinking driver represents a significant problem. To illustrate, it is estimated that about 65 percent of fatally injured drinking drivers, or about 30-35 percent of

all the drivers killed each year, and about 15-20 percent of all drivers injured each year fall into the category of the hard core or persistent drinking driver. In the U.S., this translates into about 7,000 dead drivers and 250,000 injured drivers each year. This does not take into consideration the other people who die or are injured in the crashes involving those persistent drinking drivers as occupants of the same vehicle, another vehicle, or as a pedestrian.

At the same time, it is also true that the vast majority of collisions do not involve a death or an injury and that alcohol is far less frequently involved in such events. To illustrate, there were nearly four million collisions involving only property damage in the U.S. in 1992, compared to 34,928 fatal collisions -- i.e., fatal collisions comprise less than 1 percent of all crashes each year. Furthermore, the incidence of alcohol and of high BACs in these property-damage-only crashes is far less than it is in more serious collisions. For this reason, some have suggested that the problem of the persistent drinking driver is insignificant and that attention devoted to it inappropriately draws resources away from more important problems. Such an interpretation fails to recognize that the economic consequences of serious road crashes are far more profound than those involving property damage. For this reason as well as moral and humanitarian ones, society places far more value on deaths and injuries than on property damage. From a social, political and cost-benefit perspective, prevention of fatal or injury-producing crashes is more important than the prevention of property damage crashes. The value of life vastly outweighs that of property. It is therefore, inappropriate and untenable to argue that the problem of the persistent drinking driver is small and hardly worthy of concern. On the contrary it is a costly and visible problem that warrants action.

Fatally injured drivers. As in the U.S. the most reliable data in Canada on alcohol involvement in road crashes is derived from persons, primarily drivers, who are killed. The TIRF Fatality Database is the Canadian form of the U.S. FARS. It contains a wide range of information on drivers killed in Canada and is historically intact to 1973.

In 1992, 48 percent of the drivers killed in Canada had been drinking (BAC of .01 or greater). Among these drinking drivers, the vast majority -- 84 percent -- had BACs in excess of the statutory limit (.08). Moreover, 64 percent had high BACs -- in excess of .15; and 42 percent had BACs over .20. The mean BAC among fatally injured drivers was .17 over twice the legal limit. These figures are very comparable to those for the U.S. and many jurisdictions around the world (see Simpson and Mayhew 1991 for a discussion).

Briefly, among drivers killed in road crashes, high BACs predominate -- the so-called hard core represents a very

significant part of the alcohol-fatal crash problem. About 65 percent of drinking drivers and 30-35 percent of all drivers killed have BACs in excess of .15.

Injured drivers. Research on persons surviving road crashes has traditionally been hampered by legal and ethical constraints. However, the few studies that have been done which also report various BAC levels, provide results that are consistent with those based on persons who are killed. While the incidence of alcohol is less among the injured population (ranging from about 25 to 30 percent), there is a strong relationship between the severity of injury and the likelihood of detecting alcohol and, of more relevance, to the level of alcohol. For example, Stoduto et al. (1992) examined the presence of alcohol in persons treated in a trauma unit in a major metropolitan area, for injuries sustained in a road crash. As in the case of fatalities, Stoduto et al found that 62 percent of the injured drinking drivers had BACs in excess of .15. The problem of the high-BAC driver is not unique to fatal crashes. Indeed, the target population could account for some 15-20 percent of *all the drivers injured* in road crashes.

Arrested drivers. The BACs among arrested drivers are usually quite high and the average is reasonably comparable across jurisdictions, despite differences in such things as the level of enforcement. In Canada, the mean BAC among arrested drivers is .17 and some 67 percent have BACs in excess of .15. The mean BAC among arrested drivers for other selected jurisdictions is as follows:

British Columbia	.17
Minnesota	.18
Washington	.17
Suffolk County, N.Y.	.18
Nassau County, N.Y.	.14
Great Britain	.14
Finland	.18

As mentioned earlier, there is also a strong positive relationship between BAC and frequency of conviction. Very high BACs are common among multiple offenders. Many of the characteristics of drinking drivers (see section 5.0 below) are derived from studies of arrested drivers, since more indepth information, particularly socio-psychological information, can be obtained from them than from dead drivers. It is also clear from the literature that the probability of being arrested for drunk driving is quite low (from 1 in 500 to 1 in 2,000 trips). It follows that the group of arrested drivers on which our profiles are based may in fact be unique. It is possible that the drunk drivers with high-BACs, who are detected, arrested and convicted, differ in important ways from those who are not. If so, these differences could have important implications for the detection process and, if suitably enhanced, for the downstream processing of this

evasive, persistent drinking driver?

Characteristics of the Problem

The paper by Jim Hedlund presents the results of a recent review of the characteristics of drinking drivers. While the review did not focus specifically on the persistent drinking driver, given the data sources used in the study (e.g., fatalities, arrested drivers, etc.), the findings seem very relevant. Jim Hedlund concludes that many or most of these individuals are likely members of our target group.

It is not necessary to repeat the characteristics outlined in that paper (see pages 3-4). Nor is there much that can be added to this extensive review. Suffice it to say that national household surveys, similar to the one described by Hedlund, have also been conducted in Canada. Indeed, the most recent one (Simpson et al. 1992) surveyed more than twice the number contained in the U.S. sample. A group of persistent drinking drivers also emerged in the Canadian survey. We estimate there are about 4.5 million drinking-driving trips made each month in Canada, but about 55 percent of these (2.5 million) are accounted for by about 11 percent of the drinking drivers. This small segment has been profiled by Hedlund and the Canadian data are quite comparable -- 75 percent are men; 20 percent are 20-24 years of age, 35 percent are 25-34 and 22 percent are 35-44; they are less likely to wear their seat belt; they drink more often and consume more when they drink; they drive more (this is an interesting finding -- their exposure is much greater than non-drinking drivers); and they have different reasons for drinking (more do so because their friends are drinking, puts them in a party mood, makes them happy, do so because they feel sad lonely or depressed).

Changes over Time

It has been shown that the incidence of alcohol in fatal crashes declined during the 1980s (Beirness et al. 1994). This trend has slowed in recent years in the U.S. and there has actually been an upturn in Canada in 1991 and again in 1992. Moreover, the decline was not limited to any one BAC group. In fact, decreases were observed among the high BAC groups as well. However, the observed decreases were neither equivalent nor uniform across BAC groups. For example, there were decreases in the proportion of fatally injured drivers with very high BACs (.20 and above) during the early 1980s but an increase in the later half of the 1980s. Drivers with low BACs (<.10) showed the opposite trend. These changes defy simplistic explanations.

As apparently inexplicable as these changes may be at present, there remains a need to explore the issue fully since it has direct relevance to our understanding of just how

persistent the persistent drinking driver is and whether different subgroups are differentially resistant.

REFERENCES

1. Andenaes, J. The Scandinavian experience. In: *Social Control of the Drinking Driver*. M.D. Laurence, J.R. Snortum, and F.W. Zimring (Eds.). Chicago, Illinois: University of Chicago Press, 1988, 43-63.
2. Beirness, D.J.; Simpson, H.M.; Mayhew, D.R. and Wilson, R.J. Trends in Drinking Driver Fatalities in Canada. *Canadian Journal of Public Health*, 1994, 85, 19-22.
3. Beirness, D.J.; Simpson, H.M. and Mayhew, D.R. Assessment of the Impact of the 1985 Amendments to the Drinking and Driving Section of the Criminal Code of Canada. Ottawa: Justice Canada, 1993.
4. Gjerde, H. and Morland, J. Repeat Offences Among Arrested Drunken Drivers. *Journal of Traffic Medicine*, 1990, 18, 175-178.
5. L'Hoste, I. and Papoz, L. The role played by acute and chronic alcoholism in road accidents: The results of an epidemiological study conducted in France. In: S. Kaye (Ed.) *Alcohol, Drugs and Traffic Safety*. Washington, D.C.: NHTSA, 1985, 841-858.
6. Mayhew, D.R.; Simpson, H.M.; Beirness, D.J. and Warren, R. Drinking and Driving in Canada. *Alcohol, Drugs and Traffic Safety - T92*. Cologne: Verlag TUV Rheinland.
7. Mayhew, D.R.; Simpson, H.M. and Brown, S.W. Alcohol Use by Persons Fatally Injured in Motor Vehicle Accidents: Canada, 1992. Ottawa: Transport Canada, 1994.
8. Simpson, H.M. Drinking and Driving in the 1980s: Did Things Really Get Better? *Journal of the Alcoholic Beverage Medical Research Foundation*, 1993a, 3, 75-78.
9. Simpson, H.M. Decline in drinking and driving crashes, fatalities and injuries in Canada. Paper presented at the Conference on Traffic Safety on Two Continents, Hague, Netherlands, September 22-24, 1993b.
10. Simpson, H.M. and Mayhew, D.R. The Hard Core Drinking Driver. Ottawa: Traffic Injury Research Foundation, 1991.
11. Simpson, H.M.; Mayhew, D.R. and Beirness, D.J. National Survey on Drinking and Driving. Ottawa: Health and Welfare Canada, 1992.

APPENDIX C3

ENVIRONMENTAL STRATEGIES TO REDUCE CHRONIC DRIVING WHILE INTOXICATED

Ralph Hingson, Sc.D.

Boston University School of Public Health

Summary

Chronic drunk driving is often exhibited by persons who have not been arrested for driving while intoxicated (DWI). Analyses of ways to reduce this behavior must go beyond analyses of specific deterrence and reeducation and treatment of arrested offenders. This paper reviews environmental interventions to reduce persistent driving while intoxicated.

Several environmental interventions have been demonstrated to reduce driving while intoxicated and related fatal crashes:

- the minimum legal drinking age of 21
- increased taxes on alcohol
- server intervention and legislation requiring server intervention training is a condition of alcohol sales licensing
- active enforcement of server training laws targeting alcohol sales outlets
- dram shop legislation
- maintaining state monopoly control over sales of alcoholic beverages
- reducing alcohol outlet density on a geographical and per capita population basis
- lowering legal blood alcohol limits particularly to .00-.02 percent for drivers under 21. Preliminary studies also suggest lowering to .08 percent for adults and .04 percent for repeat offenders can produce some declines in alcohol related fatal crashes.

Problem Chronic Driving While Intoxicated

In 1992 in the United States 1.6 million individuals were arrested for driving after drinking. Although precise estimates are not available, at least 20-30 percent had been previously arrested on the same charge in the past 10 years. Among persons jailed for DWI, more than half had been previously incarcerated for DWI. (Cohen, 1992)

In 1992, 11,359 drivers in fatal crashes had blood alcohol levels above .10 percent the legal level of intoxication in most states. Of drivers in fatal crashes 2,252 (20 percent) had received a citation for driving while intoxicated in the previous 3 years. (U.S. Department of Transportation, 1993) Probably 30 percent or more of drivers in fatal alcohol related crashes have at some point in their lives been arrested for DWI.

Of course, not all persons who frequently drive above the legal limit have been previously arrested. A 1993 statewide

Massachusetts random digit dial survey of adults aged 20 years and older N=1,714 revealed that in the previous month 6 percent drove after drinking 5+ drinks, 3 percent did more than once and nearly 1 percent at least weekly. Yet less than 1 percent were arrested in the previous year. Based on these estimates for every drunk driving arrest there are more than 200 drunk driving trips in that age group.

Among 1,056 16-19 year olds in Massachusetts also surveyed using random digit dialing the same year 4 percent reported driving after 5+ drinks, 3 percent did so more than once, and 2 percent reported driving after 5+ drinks at least once per week. Yet, only one teenager reported being arrested. The rate of arrest for teens per drunk driving trip was substantially lower than among adults 1/600 drunk driving trips.

The clear and inescapable conclusion is that a great deal of chronic repeat drunk driving occurs that does not result in arrests and that many frequent repeat drunk drivers escape arrest altogether.

Environmental Approaches

Because many chronic repeat drunk drivers are never or rarely arrested, strategies to alter repeat driving must look beyond the literature on specific deterrence of convicted DWI offenders. Several types of environmental strategies can be considered. These interventions can reduce persistent impaired driving in two ways. First, they can limit the overall proportion of the population that drives while impaired which in turn reduces the numbers of persons who may become persistent impaired drivers. Second, these approaches may directly limit repeat impaired driving among those who have already driven while impaired.

Minimizing Legal Drinking Age

First, are policies to reduce the availability of alcohol to persons who drive. The General Accounting Office reviewed results from 14 studies meeting their methodologic requirements and concluded that the minimum purchase age of 21 reduced alcohol involved fatal crashes 5-28 percent. (General Accounting Office, 1987) Studies of the minimum alcohol purchase age of 21 have found that this measure reduced fatal crashes among 18-20 year olds by 12 percent and prevents over 800 deaths involving drivers in that age group each year. (National Highway Traffic Safety Administration, 1991)

O'Malley and Wagenaar (1991) found that raising the drinking age was associated with lower rates of drinking not only when individuals were under the age of 21, but also during the ages of 21-25. (O'Malley and Wagenaar, 1991)

Taxes

Between 1975 and 1990 the real prices declined for distilled spirits by 32 percent, wine 28 percent and beer by 20 percent. Chaloupka (1993) has recently summarized the work of Cook 1981, Saffer and Grossman 1987a, 1987b which consistently found that alcohol tax increases can reduce alcohol related traffic fatalities. Of note Cook found that a \$1 increase in state excise tax on distilled spirits lowered both per capita consumption and cirrhosis death rates at the same rate. That means that even heavy chronic addictive drinking likely to be found among persistent drinking drivers can be influenced by tax increases.

Grossman and colleagues (1991) examined motor vehicle fatalities using a time series of annual state cross sections covering the 48 contiguous states from 1982-1988. Three different fatality rates were examined both for the overall population and for young people age 18-20. The effect of the recent 1991 tax increase on alcohol was simulated. They reported that had the 32¢ per six pack tax been present throughout the period, an estimated 1,744 fewer people might have died each year and 671 of those each year would have been 18-20 year olds. They further estimated that if beer tax had been set at 81¢ per six pack from 1982-1988 (based on a tax of 25¢ per ounce of pure alcohol) an estimated 7,142 fewer people of all ages would have been killed annually, 2,187 of whom would be youth and young adults, a considerably greater life saving in the 18-20 year old age group than has been attributed to the minimum legal drinking age of 21.

Server Intervention

The largest single point of departure of alcohol impaired drivers in the U.S. is bars and restaurants (McKnight, 1993). Between 1/3 and 1/2 of intoxicated drivers consumed their last alcohol at these locations based on drivers given alcohol tests in roadside surveys (Palmer 1988 and Foss 1990) and drivers injured in automobile crashes (Santone and Martinez, 1992). Breath tests given patrons leaving bars have revealed that approximately 1/3 have BAL's above the legal limit (Werch 1988, Stockwell, 1992).

Yet servers rarely refuse drinks to intoxicated patrons. McKnight (1991) reported that in more than 1,000 visits to 238 drinking establishments in 8 states research personnel simulating obvious signs of intoxication were refused a drink only 5 percent of the time. In the 1993 Massachusetts survey 14 percent of respondents age 20 and older reported drinking 5+ drinks in the previous month at a bar while 30 percent of them drove after drinking that much at a bar, yet less than 1 percent of them were asked not to drive by a server and only 2 percent of them reported being refused service.

During the 1980's server training programs proliferated and in some communities and in some states server training became a condition of licensing.

McKnight divides server training programs into awareness, server and manager programs. Awareness courses seek to persuade community leaders of the need for these courses. Server courses help servers avoid serving alcohol to minors and intoxicated patrons. Management courses discuss ways to enhance hospitality that do not encourage over drinking.

Evaluations of server training have produced mixed results but some studies show they can modify serving practices that help reduce the rate and amount of alcohol consumed by patrons (Salz, 1987) (Russ and Geller, 1987).

The first controlled evaluation of server training was completed by Salz (1987) in a naval base bar in San Diego. Compared to a matched bar which received no server training, the bar that experienced reductions in self reported consumption of customers and actual BAL levels. Geller, Russ and Delphos (1987) and Gliksman and Single (1988) in separate studies found server training yielded more direct interventions with intoxicated customers.

Hennessey (1991) evaluated server training in civilian alcohol establishments in 2 Northern California communities. He found lower BAL's among customers in one community but no effect in others. McKnight (1987) found server training yielded more interventions with customers following training in Michigan but not Louisiana.

The magnitude of change however, is not always large. McKnight (1991) compared 100 establishments in 8 states given extensive server training to 138 establishments that did not receive training. He reported that the rate of refusal of service to researchers simulating intoxication increased only from a baseline of 5 percent to a post training 7 percent while intervention with truly intoxicated patrons from 3 percent to 6 percent.

Holder and Wagenaar (1994) published the first evaluation of mandated server training on a statewide level that examined the effects of the law on single vehicle night time crashes. Oregon in 1985 became the first state to mandate server training. Effective January 2, 1987, all new applicants for beverage service permits were required to successfully complete a state approved server training course. The bill also required all persons holding alcohol retail licenses or applying for new licenses to complete management training programs on the 5 year anniversary when their permit expired resulting in all license holders being trained by 1991. By the end of 1988 36,000 servers and 6,000 owner managers had completed the course and an additional 13,000 new servers completed it each year.

An ARIMA time series analysis comparing Oregon to the rest of the contiguous U.S. states from 1976-1990 indicated

that in the first 6 months of the law SVN crashes declined 4 percent. The decline increased to 11 percent by the end of the first year, 18 percent the end of the second year and 23 percent the end of the third year.

Unfortunately, the authors did not have direct evidence of changes in alcohol server behavior although 68 percent of those who completed the course self reported changes in their behavior (Oregon Liquor Control Commission). This makes it difficult to assess whether all of the substantial 23 percent reduction can be directly attributed to this specific legislation.

Sanctions Against Service to Intoxicated Persons

Active enforcement can enhance the effects of server training laws. All states have either criminal or civil sanctions against serving patrons who are obviously intoxicated. (Holder, 1992) McKnight (1992) found that frequency of service intervention or termination with intoxicated patrons dropped from 84 percent to 47 percent after visits and warnings by law enforcement. It then rose to 58 percent several months later. There was a corresponding drop in the percentage of persons arrested for DUI who came from a bar or restaurant from 32 percent to 23 percent.

Dram Shop Laws

All but seven states recognize some form of server liability either by legislative enactment or by common law principally. These regulations permit persons to sue for damages they may have incurred as a result of service to a minor or intoxicated patron.

Wagenaar and Holder (1991) studied single vehicle night time motor vehicle crashes that resulted in injury or death following major dram shop cases in Texas in 1983 and 1984 and reported declines of 6.6 percent and 5.3 percent respectively when compared in a time series analysis to the rest of the contiguous United States. The reductions occurred when the cases were filed not when the verdicts were reached suggesting pre trial publicity had an impact on server behavior in establishments throughout the state.

State Monopoly vs. Privatized Sales Outlets

Eighteen states have some form of monopoly control.

Gruenwald in a recently review (1993) concluded physical availability of spirits is greatest in license states and least in monopoly states. Physical availability of beer is greatest in monopoly states and least in license states and alcoholic beverage prices tend to be greatest in monopoly states.

However, relatively little research has examined the impact of state alcohol sales regulation on alcohol use or related problems. Implementation of liquor by the drink in North

Carolina resulted in an increase in spirits sales between 6 and 7 percent. Police reported alcohol related accidents and single vehicle night time accidents both rose 16-24 percent (Blose and Holder 1987, Holder and Blose 1987).

Conversion of Iowa and West Virginia from monopoly to license states (allowing private retail sales of wine and spirits) resulted in increases sales of alcoholic beverages in both states (Wagenaar and Holder, 1991, Holder and Wagenaar 1990). Unfortunately, those analyses did not examine the impact of increases sales on alcohol related traffic crashes thus leaving questions about the effects of these policies.

Outlet Density

Gruenwald et. al. have also reported that greater the geographic spread between people and outlets and the lower the ratio of outlets to people the lower the observed sales of alcohol. A state level 10 percent increase in outlet density results in a 4 percent increase in sales of spirits and a 3 percent increase in sales of wine. Research by Rush and colleagues (1986) and Watts and Rabow (1983) suggests the greater physical availability of alcohol is related to higher arrest rates for public drunkenness and drunk driving.

Dull and Giacomassi (1988) examined alcohol control regulation (wet vs. dry) and outlet density in 95 counties of Tennessee. After analytically controlling for population size, percent change in population, urbanization and percent non-white they found both outlet density and absence of restrictions on alcohol sales were associated with increased motor vehicle mortality.

Lower Legal Blood Alcohol Limits

There is increasing evidence from four types of studies that blood alcohol concentrations well below the current .10 percent legal standard in most states impair a variety of physiologic responses that in turn impair driver performance.

First, experimental laboratory studies have shown that at .08 percent, a level reached by a 150 pound person consuming four drinks in an hour on an empty stomach, there is:

- reduced peripheral vision
- poorer recovery from glare
- poor performance in complex visual tracking
- reduced divided attention performance

(Moskowitz and Burns, 1990)

Second, driver simulation and road course studies have revealed poorer parking performance, driver performance at slow speeds and steering inaccuracy (Mortimer and Sturgis, 1975).

Third, roadside observational studies have identified increased speeding and breaking performance deterioration

(Damkot et al.1975).

Fourth, in a very important study (Zador, 1991) obtained breath alcohol samples from 2,850 drivers stopped in a national, probability sample survey of 34 localities in 1986. Although participation was voluntary, 92 percent of the drivers stopped provided samples. These breath test results were compared to the breath test results of drivers killed in single vehicle traffic crashes in 1986 in the U.S. Department of Transportation's Fatal Accident Reporting System. Data were taken only from 29 states that test at least 80 percent of fatally injured drivers. To match driver fatalities to the roadside breath testing exposure, crash times, days and roadway types were restricted to those used in the survey.

They found that each .02 increase in BAC limit of a driver nearly doubles the risk of being in a single vehicle fatal crash. For each .02 percent increase in BAC the fatal crash risk rises even more for younger drivers and for female drivers, a finding also reported by Mayhew and Simpson. For drivers under 21, impairment begins with the first drink. But in all age and sex groupings in the study at BAL of .05 to .09 percent, the likelihood of being a fatally injured driver was at least 9 times greater than at zero BAL.

Effects of Lowering Blood Alcohol Limits Lower BAL's for Minors

Twenty-nine states and the District of Columbia have set lower legal blood alcohol limits for young drivers under the age of 21 than for adults.

An analysis of the first 12 states to lower legal blood alcohol limits for youth revealed that during the post law period the proportion of fatal crashes that involved single vehicles at night declined 16 percent among young drivers targeted by those laws while it rose 1 percent among drivers in nearby comparison states. Lowering BAL's to .00 percent or .02 percent (zero tolerance laws) produced a 20 percent greater decline than in comparison states, but no significant reduction occurred in states that lowered to .04 percent-.06 percent relative to comparison states. Based on the magnitude of results observed one can estimate that if all states adopted .00 percent or .02 percent BAL limits for drivers 15-20 at least 375 single vehicle night fatal crashes involving teenage drivers would be prevented each year (Hingson, in press).

Adult Drivers

Of course, it is important to remember that each .02 percent increase in blood alcohol level disproportionately creates greater crash risk for teen drivers than it does for adults. Consequently it is important to study whether lowering legal blood alcohol limits will have as sharp an impact among

adults as it does among adolescents.

Evidence is beginning to emerge in the U.S. that lowering BAL among adults to .08, will have some beneficial effect. Australia and New Zealand as well as many European nations have lowered the legal blood alcohol limit to .05. In the United States, 12 states have implemented .08 percent blood alcohol limits, seven within the past year.

California's .08 Law

The largest state to reduce the legal BAC limit is California which lowered it to .08 in January 1990. Six months later California also passed an Administrative Per Se Law that permitted police to administratively suspend a drivers license. A preliminary analysis for the National Highway Traffic Safety Administration (1991), using time series analysis ARIMA modeling (which controlled analytically for mileage driven and economic conditions as measured by unemployment rates) found a 12 percent decline in alcohol related fatal crashes during the first year after the law compared to the previous four. No decline in non alcohol related fatal crashes was observed during the same time period.

Unfortunately, because only one year of post law data were analyzed, and no comparison area was monitored the results must be regarded as preliminary. Further, the effects of the .08 regulation are difficult to separate from the administrative per se provision effects.

Rogers (1994) recently summarized time series analyses examining 36 months of post .08 percent law in California. She did not find any significant effect of the law on trends in night fatal and injury crashes relative to day fatal or injury crashes. Nor did night fatal compared to day fatal crashes decline significantly after the .08 percent law. However, she found a significant reduction in fatal crashes where police indicated a driver had been drinking after the .08 percent law. An analysis of fatal-injury crashes from 2:00 am - 3:00 am immediately after bar closings also revealed a significant decrease.

Maine's .08 percent law and .04 percent for Operating Under the Influence (OUI) Offenders

In August 1988 Maine lowered its legal blood alcohol limit from 10 percent to .08 percent. Maine already has an administrative per se law so the .08 provision was incorporated into that law. Maine also lowered its legal BAL limit to .04 percent for persons with a previous OUI conviction. The first three years after Maine's .08 law were compared to the previous five. New Hampshire and Vermont were examined as comparison states to Maine because they have similar weather, population, and economic conditions as

Maine and neither had a .08 law during the time frame of this analyses.

Maine experienced a 19 percent decline in night fatal crashes during the law's first three year while New Hampshire and Vermont actually experienced a 3 percent increase. Night fatal crashes declined from a pre law annual average of 80 to a post law average of 65. In contrast, in New Hampshire and Vermont, the pre law average was 89 and the post law average was 91 ($p < .03$ based on testing using log linear analysis). In contrast, day time fatal crashes in Maine showed no decline, 126 to 126, after the law was passed in Maine and an 11 percent decline was observed in New Hampshire and Vermont (178 to 158). These shifts in daytime crashes were not significant.

Further, night fatal crashes involving drivers with previous OUI convictions declined 38 percent in Maine during the three post law years while they increased 50 percent in New Hampshire and Vermont, also a highly significant difference ($p = .02$). To assess whether these findings may have been influenced by differential shifts in mileage driven in Maine relative to New Hampshire and Vermont, we obtained mileage data for each state from the Federal Highway Administration. In both areas travel miles have increased at a comparable rate since 1983, ruling that out as a potential confounding factor.

Finally, according to the Highway Safety Bureau in Maine for the past 10 years 1983 - 1992, the average number of alcohol related traffic deaths each year has declined 35 percent since the Maine lower BAL limits were passed from 112 to 76. The proportion of fatal crashes in Maine that involve alcohol declined from 53 percent during the five years before the law to 37 percent during the four full years after the law.

Taken together, these data clearly show reductions in Maine in alcohol related fatal crashes after the BAL limits for all drivers and OUI offenders were lowered.

Both New Hampshire and Vermont have now also adopted a .08 percent legal standard.

Other Environmental Intervention at the Community Level

Wittman (1993) has identified several other environmental interventions that several communities are currently implementing that can plausibly reduce drinking and persistent drunk driving but for which a body of scientific empirical data have not been collected. These include:

- 1) Alcohol free public events - fairs or festivities where no alcohol is served (e.g. New Years public celebrations, sport events or rock concerts).

- 2) Local public ordinances such as beer keg identification laws Purchase of a keg requires a deposit and serial tags

affixed to kegs to permit tracing of the purchase of kegs used by minors.

3) Local general ordinances that allow localities to manage drinking in public places or events and to use nuisance abatement procedures against owners of private property who permit AOD use/sales on their property in ways that violate civil and criminal laws.

4) Voluntary agreements - informal agreements and mediation that are a first try effort to resolve differences between parties directly involved in an alcohol or other drug availability problem.

5) Organized collaboration between multiple agencies within city, county, state or federal government to develop an overall cohesive plan to reduce drinking and driving. At the community level such efforts could involve cooperation between police, schools, health, engineering and parks and recreation departments, as well as concerned private citizens and organizations.

A comprehensive 5 year community intervention using the type of organized collaboration described above was recently implemented in Massachusetts to reduce alcohol related fatal crashes (the Saving Lives Program). Task forces of private citizens and public officials from multiple city departments organized school based and public education, publicity about police enforcement, alcohol server training programs, speed watch telephone hot lines, pedestrian safety initiatives and beer keg registration and liquor outlet surveillance to reduce under age drinking. Fatal crashes declined 33 percent during the 5 program years compared to the previous 5, a significantly greater decline than the 12 percent reduction observed in the rest of the state. Fatal crash declines were particularly marked (over 40 percent) among drivers under age 25 and in fatal crashes involving alcohol. Several other community projects with similar organizational design are currently being studied in other areas of the country.

Summary - Environmental Approaches

Some environmental interventions have clearly been demonstrated to reduce persistent driving while intoxicated including raising the minimum drinking age to 21, and active enforcement of that law, increasing taxes on alcoholic beverages, zero tolerance laws for youth and administrative license revocation.

There is also evidence that a number of other interventions will probably reduce persistent driving while intoxicated: lowering legal blood alcohol limits for adults to .08 percent, server intervention programs including legal mandates for server intervention, dram shop laws, lowering alcohol outlet density, monopoly sales of alcohol, improved alcohol outlet

management such as requiring sales of food at bars not selling cold beer at gasoline stations or banning happy hours and the use of conditional use permits to regulate location and hours of sale. Community organizing of multiple city departments with the involvement of private citizens is currently being studied and has produced some positive benefits.

Several other types of interventions are plausible and promising but as yet have received minimal research attention: ordinances requiring beer keg registration, alcohol free public events, and lowered legal blood alcohol limits for persons previously convicted of DWI.

Many of these are legal and regulatory interventions at the state level. Others can be implemented at the community level. Active enforcement and education about all these interventions has to also be undertaken at the community level for them to achieve their fullest effects.

REFERENCES

1. Blose, J.; Holder, H.D. Liquor by the Drink and Alcohol Related Traffic Crashes: A Natural Experiment Using Time Series Analysis, *Journal of Studies on Alcohol*, 48(1):52-60, 1987.
2. Chaloupka, F. Effects of Price on Alcohol Related Problems, *Alcohol, Health and Research World* 17:1999, 46-54.
3. Cook, P.J. The Effect of Liquor Taxes on Drinking, Cirrhosis and Auto Accidents in Moore, M.H. and Gerstein, D.R. eds. *Alcohol and Public Policy: Beyond the Shadow of Prohibition*, Washington, D.C. National Academy of Sciences, 1981, pp 225-285.
4. Damkot, D.K.; Perrine, M.W.; Whitmore, D.G.; Todissie, S.R. and Geller, H.A. On the Road: Driving Behavior and Breath Alcohol Concentration Vol. I and II (Technical Report) DOT HS 364 37567.
5. Dull, R.T.; Giacomposi, D.J.; Dry, Damp and Wet: Correlates and Presumed Consequences of Local Alcohol Ordinances, *American Journal of Drug and Alcohol Abuse*, 14(4):499-514, 1988.
6. Foss, R.D.; Voas, R.B.; Bierness, D.J.; Wolfe, A.C. Minnesota 1990 Statewide Drinking and Driving Roadside Survey, Contract No. 525493, St. Paul, Minnesota, Office of Traffic Safety, Minnesota Dept. of Public Safety, 1990.
7. Geller, E.S.; Russ, N.W.; Delphos, N.A. Does Server Intervention Make a Difference? *Alcohol, Health and Research World*, 11:64-69, 1987.
8. General Accounting Office. Drinking Age Laws: An Evaluation Synthesis of their Impact on Highway Safety, GAO/PEMD, 87-100, March 1987.

9. Gliksman, L.; Single, E. A Field Evaluation of a Server Intervention Program: Accommodating Reality, paper presented at the Canadian Evaluation Society Meeting, Montreal, Canada, May 1988.
10. Grossman, M.; Saffer, H.; Chaloupka, F. Alcohol Regulation and Motor Vehicle Mortality, Final Report for Grant No. SRO1AA07593 Rockville, MD National Institute on Alcohol Abuse and Alcoholism, 1991.
11. Gruenwald, P.; Miller, A.; Treno, A. Alcohol Availability and the Ecology of Drinking Behavior, *Alcohol, Health and Research World*, 17:39-45, 1993.
12. Gruenwald, P.J.; Ponioiki, W.R.; Holder, H.D. The Relationship of Outlet Density to Alcohol Consumption: A Time Series Cross Sectional Analysis, *Alcoholism: Clinical and Experimental Research*, (In press).
13. Hennessy, M.; Seltz, R.F. The Situational Riskiness of Alcoholic Beverages, *Journal of Studies on Alcohol*, 51(5):422-427, 1990.
14. Hingson, R., et.al. Impact of the Saving Lives Program on Alcohol Related Traffic Injuries and Deaths (In review).
15. Hingson, R.; Heeren, T.; Winter, M. Lower Legal Blood Alcohol Limits for Young Drivers, *Public Health Reports* (In press).
16. Holder, H.D. Prevention of Alcohol Involved Traffic Crashes: Research Implications of Alcohol Accessibility, Price and Mass Communication, Prepared for the National Transportation Safety Board Conference on Research Opportunities to Reduce Alcohol Involved Traffic Problems, Irvine, CA, 1992.
17. Holder, H.D.; Blose, J. Impact of Changes in Distilled Spirits Availability on Apparent Consumption: A Time Series Analysis of Liquor by the Drink, *British Journal of Addiction*, 82(6):623-631, 1987.
18. Holder, H.D.; Wagenaar, A.C. Effects of the Elimination of a State Monopoly on Distilled Spirits Retail Sales: A Time Series of Iowa, *British Journal of Addictions*, 85:1615-1625, 1990.
19. Holder, H.D.; Wagenaar, A. Mandated Server Training and Reduced Alcohol Involved Traffic Crashes: A Time Series Analysis of the Oregon Experiences, *Accident Analysis and Prevention*, 26:89-97, 1994.
20. Mayhew, D.R.; Donelson, A.C.; Bierness, D.J.; Simpson, H.M. Youth, Alcohol and Relative Risk of Crash Involvement, *Accident Analysis and Prevention*, 18:273-287, 1986.
21. McKnight, A.J. Development and Field Test of a Responsible Alcohol Service Program Volume 1: Research Findings, Report No. DOT HS 807 221, Washington, D.C., 1987.
22. McKnight, A.J. Factors Influencing the Effectiveness of Server Intervention Education, *Journal of Studies on Alcohol*, 52:389-397, 1991.
23. McKnight, A.J. Server Intervention: Accomplishments and Needs, *Alcohol, Health and Research World*, 17:76-84, 1993.
24. McKnight, A.J.; Streff, F.M. The Effect of Enforcement upon Serving of Alcohol to Intoxicated Patrons of Bars and Restaurants, *Alcohol, Drugs and Traffic Safety*, T92: Proceedings of the 12th International Conference on Alcohol, Drugs and Traffic Safety, Cologne, Germany Varlog TUV, Rheinland, pp. 1296-1302, 1993.
25. Mortimer, R.G.; and Sturgis, S.P. Effects of low and moderate levels of alcohol on steering performance. In: Israelstam S. and Lambert S., eds. *Alcohol, Drugs and Traffic Safety*, Toronto: Addiction Research Foundation, 1975. pp. 329-345.
26. Moskowitz, H.; Burns, M. Effects of alcohol on driving performance. *Alcohol, Health and Research World*, 14:12-14, 1990.
27. National Highway Traffic Safety Administration. *Traffic Safety Facts* 1992, DOT HS 808 022, 1993.
28. National Institute on Alcohol Abuse and Alcoholism. Eighth Special Report to the U.S. Congress on Alcohol and Health, From the Secretary of Health and Human Services. Washington, DC: U.S. Department of Health and Human Services; September 1983.
29. O'Malley, P.; Wagenaar, A.C. Effects of Minimum Drinking Age Laws on Alcohol Use, Related Behaviors and Traffic Crash Involvement Among American Youth, *Journal of Studies on Alcohol* 52(5):478-491, 1991.
30. Palmer, J.W. Minnesota Roadside Survey Alcohol Positive Drivers, *Journal of Traffic Safety Education*, 35(2): 10-13, 1988.
31. Relch, B.R.; Gliksman, L.; Brook, R. Alcohol Availability, Alcohol Consumption and Alcohol Related Damage, The Distribution of Consumption Model, *Journal of Studies on Alcohol*, 47(1):1-10, 1986.
32. Rogers, P. The Long Term Effectiveness of California's Administrative Per Se Law, Second Interim Report, OTS PProject #AL9101, December 1993. Research and Development Section Program Policy Administration, California Department of Motor Vehicles.
33. Saffer, H.; Grossman, M. Beer Taxes, the Legal Drinking Age and Youth Motor Vehicle Fatalities, *Journal of Legal Studies*, 16(2):351-374, 1987a.
34. Saffer, H.; Grossman, M. Drinking Age Laws and Highway Mortality Rates: Cause and Effect, *Economic Inquiry*, 25:403-417, 1987b.

35. Saltz, R.F. The Role of Bars and Restaurants in Preventing Alcohol Impaired Driving: An Evaluation of Server Intervention, *Evaluation and the Health Professions*, 10(1):5-27, 1987.

36. Santana, J.R.; Martinez, R. Alcohol Purchase and Consumption Site Prior to an Automobile Collision. 4th Proceeding of the Association for the Advancement of Automotive Medicine, Des Plaines, Illinois: The Association, 1992.

37. Stockwell, T.; Rydcon, P.; Giannette, S.; Jankis, E.; Ovendar, C. and Syed, D. Levels of Drunkenness of Customers Leaving Licensed Premises in Perth Western Australia: A Comparison of High and Low Risk Premises, *British Journal of Addiction*, 87:873-881, 1992.

38. U.S. Department of Transportation

39. Wagenaar, A.; Holder, H.D. Effects of Alcoholic Beverage Server Liability on Traffic Crash Injuries, *Alcoholism: Clinical and Experimental Research*, 15:942-947, 1991.

40. Wagenaar, A.; Holder, H.D. A Change from Public to Private Sale of Wine: Results from Natural Experiments in Iowa and West Virginia, *Journal of Studies on Alcohol*, 52:162-173, 1991.

41. Watts, R.K.; Rabow, J. Alcohol Availability and Alcohol Related Problems in 213 California Cities, *Alcoholism: Clinical and Experimental Research*, 7(1):45-58, 1983.

42. Werch, C.E.; Bakema, D.; Ball, M.; Lee, D. Categorizing Blood Alcohol Level and Alcohol Consumption Data in Field Settings Feasibility and Findings, *Journal of Studies on Alcohol*, 49(6):561-566, 1988.

43. Wittman, F. Environmental Approaches to Community Level Prevention of Alcohol and Drug Problems. Presentation to the Center for Substance Abuse Prevention, PEPS Advisory Panel, December 15, 1993.

44. Zador, P. Alcohol related relative risk of fatal driver injuries in relation to driver age and sex. *Journal of Studies on Alcohol*, 52:301-10, 1991.

APPENDIX C4

MEDIA APPROACHES TO THE PERSISTENT DRINKING DRIVER

Nancy E. Isaac, Sc.D.

Harvard School of Public Health

INTRODUCTION

The media's potential to influence knowledge, attitudes and behavior makes it a natural candidate as a mechanism to address drinking and driving. Although there have been some

extensive reviews of mass media approaches (Vingilis & Coulters, 1990; Atkin, 1988; Haskins, 1985), these contain little discussion or empirical data specific to the persistent drinking driver. Nonetheless, there are ways to apply existing knowledge to generate at least a partial picture of how the media may influence this subgroup of people who drink and drive.

While the assumption that persistent drinking drivers constitute a single "target" is an oversimplification, for the purposes of this discussion, we take as the largest common denominator of persistent drinking drivers those individuals who are most likely to be killed in fatal alcohol-involved accidents: young white males of a predominantly blue collar background.

The demographics of this population are favorable as regards exposure to multiple media outlets. The persistent drinking driver target audience is a frequent consumer of television (particularly sports), radio (country & rock), and movies (action, adventure, thrillers).

As to whether or not persistent drinking drivers are a receptive audience amenable to change is much less clear. Evidence that persistent drinking drivers are likely to have antisocial tendencies (Sutker et al., 1980; Donovan & Marlatt, 1982; Argeriou et al., 1985; Harwood & Leonard, 1989) suggests that they will be less susceptible than a general audience to messages that appeal to conscience. Prior studies have also indicated that those who drink and drive are characterized by high risk-taking proclivity and a sense of invulnerability (Jonah, 1986; Lastovicka, 1988; Farrow, 1989; Arnett, 1990), which may limit the impact of safety-based strategies. For that subset of the persistent drinking driver population that is alcohol dependent, their ability to follow instructions to limit their intake ("Know when to say when") is in question.

Laughery and Brelsford (1991) report on relevant characteristics of message receivers in a review of safety communications. The traits associated with non-receptivity to safety messages parallel the profile of persistent drinking drivers: male sex; young; perceives little hazard or risk; and is familiar with the consumer product.

Given this broad picture of persistent drinking drivers as media targets, the remainder of the discussion will briefly review five media strategies and their potential relevance to persistent drinking drivers: 1) public service announcements; 2) depiction of alcohol use in the popular media; 3) news coverage/publicity; 4) alcohol warning labels; and 5) restriction of alcohol advertising.

In addition, an ongoing project at the Harvard Injury Control Center that is particularly relevant to the persistent drinking driver will be briefly described.

Public Service Announcements

Research has determined the ability of PSAs to reach an audience (answering the questions "Is it seen?" and "Is it remembered"), but is much less conclusive as to whether long-term attitudinal or behavior change occurs (Walsh & Elinson, 1992; Vingilis & Coultas, 1990; Blane 1988).

No research has addressed the specific question of whether PSAs reach or influence persistent drinking drivers. If, as seems to be the case, these individuals often have a serious problem with alcohol, the likelihood that 30-second television spots, magazine ads, or radio announcements are going to alter their behavior appears minimal. Given that evaluations to date of media campaigns addressing drinking and driving have found modest effects on behavioral outcomes (Vingilis & Coultas, 1990), the hope of directly influencing what may be the most recalcitrant subset of the population, persistent drinking drivers, appears unfounded.

Influencing the persistent drinking driver may call for more indirect strategies, such as PSAs addressed to individuals surrounding the persistent drinking driver and motivating them to intervene, or PSAs intended to alter broad social norms that modify the incidence of persistent drinking and driving on a more global scale.

While PSAs themselves are not technically difficult to produce, a common weakness of PSA campaigns is poor coverage, with ads running infrequently and in suboptimal programming slots (i.e., late at night). PSA campaigns can be improved through collaborative efforts where businesses, non-profits and media outlets work together to provide resources and time slots that enhance the likelihood of good coverage. "Cause-related marketing" is a term that is sometimes applied to these alliances, whereby a private enterprise provides funding to a public service campaign, paying for advertising time in return for a tag line attached to the PSA ("This message brought to you by..."). The corporation receives positive publicity, the media outlet sells more ad space, and the non-profit obtains greater coverage for

its message. The same strategy can be used to support other media events (e.g., television specials related to the topic of the campaign) that may provide greater impact than PSAs alone.

Another potential weakness of PSA campaigns is the failure base the campaign on sound formative research. Although PSAs have become a common media-based strategy aimed at reducing drinking and driving, historically their development has been based largely on a creative sense of what imagery, language and message will be effective. There has often been little explicit definition of the target audience -- all drinkers, all drinking drivers, persistent drinking drivers, etc. -- and no rationale for how best to reach and influence the intended target. This rationale should be based on some understanding of the target's attitudes, beliefs, norms, value system and behaviors, or what is often referred to in marketing research as "psychographics." Both formative research and pilot testing of candidate PSAs may improve the impact of the campaign, particularly if the goal is to alter the behavior of a specific subset of the population (e.g., persistent drinking drivers).

Depiction of Alcohol in the Popular Media

A strategy that straddles both PSAs and depictions of drinking in the media is the Harvard Alcohol Project's promotion of the designated driver concept (DeJong & Winsten, 1990; Winsten, 1992). Use of designated drivers has been encouraged directly through PSAs (featuring such spokespeople as President Clinton); as well as by embedding the use of designated driver into the plot lines of television entertainment programming. The latter is considered a more subtle but possibly more effective approach to establishing the use of designated drivers as a social norm.

Winsten (1992) reports on findings from Roper polls in 1989 and 1991 on the use of designated drivers. Specific findings that may be relevant to the persistent drinking driver are replicated here:

Drinker Category	Have been a designated driver		Have been driven home by a designated driver	
	1989	1991	1989	1991
Frequent (5+ glasses/week)	36	51	43	54
Regular (1-4 glasses/wk)	39	49	27	35
Occasional (not in past week)	31	40	18	21

It appears that "frequent" drinkers are as likely to have been designated drivers as are "regular" drinkers, and are even more likely to have been driven home by a designated driver. The survey questions appear to have measured "ever" use of these strategies, and so provide no information as to the frequency with which this intervention is employed. In addition, some concerns have been raised about the designated driver concept, including that it condones or even encourages heavy drinking by individuals in a group who are not the designated driver (DeJong & Wallack, 1992). However, no empirical evidence has been offered to substantiate this claim.

In addition to using entertainment programming to model prosocial actions (choosing a designated driver), popular media portrayals may function to highlight the serious negative consequences of excessive alcohol use. Breed and DeFoe (1985-86) selected 37 examples of drinking/driving depictions from 700 hours of prime-time television during the period 1976-86. They conclude that there was a consistently negative attitude toward driving under the influence.

Interest in media portrayals of alcohol is also based on concern that alcohol use is often glamorized, which may encourage consumption through modeling and association with positive outcomes. An analysis by Holder (1987), for instance, found that characters on popular television drink more often and in greater quantities than does the public. Grube (1993) notes that drinking characters often have desirable characteristics, such as professional status and wealth.

There has been little empirical investigation of the impact of media portrayals on attitudes or behaviors related to alcohol. Surveys have indicated a correlation between heavy television viewing and higher prevalence of drinking and positive beliefs about drinking among adolescent boys (Tucker, 1985; Neuendorf, 1985). However, these studies do not provide clear descriptions of their recruitment methods or response rates, and the temporal relationship of the associations is not clear. Experimental studies have involved artificial conditions that severely limit their generalizability (Kotch et al., 1986; Rychtarik et al., 1983).

While it appears that there is no compelling evidence that media portrayals make a difference, it is possible that they constitute an important part of the social environment, by turns censoring or condoning the use of alcohol in hazardous circumstances. However, measurement of the influence of such portrayals on persistent drinking drivers is apt to remain an elusive scientific goal.

News Coverage and Publicity

News coverage related to drinking and driving includes coverage of personal tragedies, updates and reviews of statistical trends, and reporting of new legislative or other prevention strategies.

Atkin states that the most important role of news coverage is in agenda setting, since frequent coverage "raises the salience of drunk driving, stimulates public discussion, and serves to legitimize the seriousness of the problem and attempts to address it" (1988, p. 22).

There are indications that publicity surrounding heightened enforcement may be especially effective at increasing the public's perceived risk of being stopped and arrested for drunk driving. Voas & Hause (1987) reported on changes in alcohol-involved traffic crashes in Stockton, CA resulting from an increase in enforcement efforts that received wide media attention. As media interest declined with the age of the program, crash levels remained below baseline, but when the enforcement effort ended crashes trended back to pre-program levels. The authors conclude that both improved enforcement strategies and public information campaigns that spread word of these efforts are required to produce a perceived risk of being apprehended among the public. Other work has verified that newspaper and television news are a frequent source of information for the general public on the risks of arrest, conviction and penalties associated with driving after drinking (Atkin et al., 1986).

An important consideration regarding persistent drinking drivers, however, is that their own experiences (of making frequent trips while intoxicated and seldom if ever being stopped) may reduce the credibility of these enforcement/publicity efforts. Maintaining a high level of perceived risk among persistent drinking drivers may call for particularly stringent enforcement strategies targeted to this specific subgroup.

The persistent drinking driver may also be influenced, though less directly, by the effects that news coverage has on policy debates, agenda-setting and social norms regarding drinking and driving. For instance, news coverage of an accident resulting in several fatalities caused by a persistent drinking driver (e.g., someone with several prior DWI convictions) may provide an impetus for new legislative and/or enforcement initiatives directed at repeat offenders, and create a local political environment that facilitates implementation of such initiatives.

Alcohol Warning Labels

All alcoholic beverages sold or distributed in the U.S. have been required since 1989 to carry a warning label that addresses three types of alcohol-associated risk: birth defects; "health problems"; and impairment of the ability to drive a car or operate machinery.

Most research on alcohol warning labels has dealt with the ways in which the design and location of the label influence whether it is noticed (NIAAA, 1993). Studies examining the influence of labels on knowledge or beliefs (Mayer et al., 1991), or on the prevalence of drinking and driving (Kaskutas & Greenfield, 1992), have shown no apparent effect.

Despite the opportunity for persistent drinking drivers to experience frequent exposure to warning labels, effectiveness is apt to be limited for several reasons: the warning becomes an integral part of the beverage label and loses impact; its message is not relevant (pregnancy or "health problems" are of little concern to most young males); and the message is too general and therefore too easy to ignore (alcohol impairs driving ability). The fact that warning labels actually contain several messages, with only one of them relating to drinking and driving, may also dilute their impact on this behavior.

Restriction of Alcohol Advertising

In the United States, television advertising of hard liquor is banned by federal law, and some state and local statutes place additional restrictions on advertising of liquor or other alcoholic beverages.

Although a variety of studies have attempted to assess the influence of alcohol advertising on consumption, none has proven definitive due to assorted methodologic flaws (Atkin, 1987; Partanen & Montonen, 1988). Studies have found, however, that exposure to advertising increases youths' positive drinking attitudes and likelihood to drink (Atkin & Block, 1981; Grube, 1993), and drinking in conjunction with driving (Atkin et al., 1983; Atkin et al., 1984). Smart (1988) concluded in a review of studies on alcohol advertising that the extent of advertising appears to have little impact on sales, that the best designed experimental studies show no effect of advertising on consumption, and that efforts are better expended on controlling price and availability.

Although there have been no studies on the specific effect of advertising on repeated drinking and driving, Strickland (1983) did find that there was no association between advertising and abusive or hazardous drinking (e.g., drinking and driving).

The primary influence of advertising on persistent drinking drivers is likely to be one of reinforcement of drinking

through creation of an environment that associates alcohol with pleasant sensations and outcomes. Banning advertising, while it would probably have little impact on an established persistent drinking driver's decision to drive given that drinking has occurred, might have a subtle effect on consumption patterns (perhaps in terms of beverage choice rather than overall levels of consumption). But this supposition has yet to be addressed, let alone proven, in scientific research.

Advertising bans may hold more promise as a tool for primary prevention, reducing the number of young male drinkers who go on to become persistent drinking drivers. Future bans may provide naturalistic experiments under which such a hypothesis could be tested.

"Strategic Advertising Plans to Deter Drunk Driving"

Dr. John Graham of the Injury Control Center at the Harvard School of Public Health is principal investigator of a research project entitled "Strategic Advertising Plans to Deter Drunk Driving," which is funded under a cooperative agreement with the National Highway Traffic Safety Administration (NHTSA). The project is developing formative research as background to the national media campaigns undertaken by NHTSA and the Ad Council. Focus group and survey work within this project has specifically targeted a "high risk" population that corresponds to the demographic and behavioral profile of a large subset of persistent drinking drivers: young (21-34), white males who are blue collar workers, drink beer regularly, drink in bars at least once a week, have recently driven after 5 or more drinks, and feel they can drive safely after five or more drinks.

The major focus of the research is to assess the feasibility and potential impact of a media strategy based on encouraging others to intervene with the drinking driver.

Nearly all of the high risk male focus group participants have experienced intervention by another person who was attempting to influence their drinking or drinking and driving behavior or intentions. The individuals who most commonly intervene are friends and female partners (wives, fiancées, or girlfriends), and further probing indicated that these are the individuals most likely to influence the targets. These individuals are good candidate interveners because the target individuals respect their opinions, believe that they care about the target, and know the target well enough to recognize the behavioral cues that the target has "had too much."

Contrary to the stereotype that most heavy drinking by men takes place in the context of all-male get togethers at bars, both men and women in focus groups report that the female partner is often present. At times she has been brought along

deliberately to function as a designated driver or a moderating influence on behavior that might otherwise get "out of control." Women who are partnered to high-risk target males describe intervening quite frequently, though they are clearly a heterogeneous group with respect to their comfort with this role. Barriers to intervention include concern with being labelled a "nag," a desire not to interfere with other peoples' "right to have a good time," as well as more serious fears of potential verbal or even physical retaliation by male partners. The potential for alcohol to precipitate or exacerbate abusive episodes between intimate partners will require a sensitive approach to media strategies that encourage intervention by women.

That women are often present and may provide the opportunity to intervene was confirmed by a telephone survey of young white males who drink and drive. Among blue-collar white males 21-34 years old who had driven at least once after five or more drinks in the past 2 months, 49 percent said their wife or girlfriend is with them most of the time or always when they are out drinking; another 33 percent said a wife or girlfriend is sometimes present. When this group of men was asked "In your opinion, who is the best person to convince you not to drive after drinking?" 56 percent said their wife or girlfriend, 18 percent said a friend would be best, and smaller percents named other individuals.

Most male focus group participants also describe having acted as interveners themselves, which is not surprising given that they are likely to socialize with other heavy drinkers. These findings partially validate the appropriateness of a tag line such as "Friends don't let friends drive drunk." However, this tag line may also have the unintended consequence of subtly undermining women's resolve to intervene, communicating to them that this is a task best left to their male partners' buddies.

Based on findings from the early focus groups, the remainder of the project will probe further into the issue of female partners as interveners, and will test candidate media messages with both high-risk target males and women who are partnered with high-risk males. The media message will be intended to increase the probability that the receiver will subsequently intervene with others who drink and drive.

Current PSAs contain a tag line with this intended effect ("Next time your friend insists on driving drunk, do whatever it takes to stop him"). Early focus groups indicate that the message to intervene (as opposed to the message "don't drink and drive") does not always come through as clearly as it might. Findings from the focus groups may suggest ways of refining the current campaign to clarify the message and to facilitate the behavior.

Recommendations

Wallack (1984) stressed that the use of media in isolation is far less productive than its application as part of a comprehensive approach to impaired driving. Media strategies to address persistent drinking and driving must be viewed as one component of a multi-system response to this problem. Specific campaigns should be designed with consideration for the social, legal and political context within which this behavior occurs, and this analysis must be done at the local level if that is where the media campaign is to be implemented.

Although there is a dearth of evaluation research to guide detailed policy or program initiatives, the following are some general recommendations concerning the potential role of the media in addressing persistent drinking and driving:

- *Expand strategies based on motivating those surrounding the persistent drinking driver to intervene with drinking/driving behaviors.*

Although empirical evidence for behavioral impacts is lacking for any media strategy, it seems likely that some programs (e.g., designated driver) have played an important role in the reductions in drinking and driving over the past decade, whether through their impact on social norms or through specific deterrence.

There is some research evidence suggesting that significant female partners (wives, girlfriends) and good friends are the most likely to make the best interveners. Media programs based on increasing the frequency and effectiveness of intervention by these individuals deserve consideration and should be evaluated.

- *Publicity should be used as an adjunct to enforcement programs to increase awareness of the content of the law and potential sanctions, and to heighten the perceived risk of detection and penalty among persistent drinking drivers.*

It is very important that the publicized enforcement strategies are indeed rigorously carried out. Otherwise the publicity will be viewed as a bogus attempt to instill fear of retribution and may only reinforce the persistent drinking driver's cynicism and disdain for legal authority.

- *General media programs that address drinking and driving serve to maintain the social norm that this is a serious criminal offense as well as a major social and public health problem. They function to keep drinking and driving high on the agenda of social problems requiring resources and help maintain a climate where legislative initiatives can be carried through. Such programs should continue.*

While the impact of general media programs on the persistent drinking driver will continue to be extremely difficult to assess empirically, the role of such programs in maintaining a social environment that will facilitate more targeted strategies (e.g., intervention by others) makes them worthy of consideration within the context of programs to address the persistent drinking driver.

REFERENCES

1. Argeriou, M.; McCarty, D.; Blacker, E. Criminality among individuals arraigned for drinking and driving in Massachusetts. *Journal of Studies on Alcohol* 1985;46:525-530.
2. Arnett, J. Drunk driving, sensation seeking, and egocentrism among adolescents. *Personality and Individual Differences* 1990;11:541-546.
3. Atkin, C.K. Alcoholic-beverage advertising: Its content and impact. In: Holder HD (Ed.). *Control Issues in Alcohol Abuse Prevention: Strategies for States and Communities*. Advances in Substance Abuse. Supplement 1, Greenwich, CT: JAI Press; 1987; pp. 267-287.
4. Atkin, C.K. Mass communication effects on drinking and driving. *Surgeon General's Workshop on Drunk Driving. Background Papers*. Washington, DC: December 14-16, 1988. U.S. Department of Health and Human Services.
5. Atkin, C.K.; Block, M. Content and Effects of Alcohol Advertising. Report No. PB-82-123142. Washington, DC: Bureau of Tobacco, Alcohol, and Firearms; 1981.
6. Atkin, C.K.; Garramone, G.M.; Anderson, R. Formative evaluation research in health campaign planning: The case of drunk driving prevention. Paper presented to International Communication Association Annual Conference, Chicago; 1986.
7. Atkin, C.K.; Hocking, J.; Block, M. Teenage drinking: Does advertising make a difference? *Journal of Communication* 1984;Spring:157-167.
8. Atkin, C.K.; Neuendorf, K.; McDermott, S. The role of alcohol advertising in excessive and hazardous drinking. *Journal of Drug Education* 1983;13:313-325.
9. Blane, H.T. Research on mass communications and alcohol. *Contemporary Drug Problems*. 1988;15:7-20.
10. Breed, W.; DeFoe, J. Television portrayals of drinking and driving. *International Quarterly of Community Health Education* 1985-86;6:273-283.
11. DeJong, W.; Wallack, L. The role of the designated driver programs in the prevention of alcohol-impaired driving: A critical reassessment. *Health Education Quarterly* 1992;19:429-442.
12. DeJong, W.; Winsten, J.A. The use of mass media in substance abuse prevention. *Health Affairs* 1990;9:30-46.
13. Donovan, D.M.; Marlatt, G.A. Personality subtypes among driving while intoxicated offenders: Relationship to drinking behavior and driving risk. *Journal of Consulting and Clinical Psychology* 1982;50:241-249.
14. Farrow, J.A. Personality factors associated with driving while intoxicated: A comparison study of adolescent drivers. *Journal of Alcohol and Drug Education* 1989;34:21-32.
15. Grube, J.W. Alcohol portrayals and alcohol advertising on television: Content and effects on children and adolescents. *Alcohol Health and Research World* 1993;17:61-66.
16. Harwood, M.K.; Leonard, K.E. Family history of alcoholism, youthful antisocial behavior and problem drinking among DWI offenders. *Journal of Studies on Alcohol* 1989;50:210-216.
17. Haskins, J.B. The role of mass media in alcohol and highway safety campaigns. *Journal of Studies on Alcohol* 1985; Suppl. 10:184-191.
18. Holder, H.D. Overview and Introduction. Alcoholic-beverage marketing and promotion. In: Holder HD (Ed.). *Control Issues in Alcohol Abuse Prevention: Strategies for States and Communities*. Advances in Substance Abuse. Supplement 1, Greenwich, CT: JAI Press; 1987; pp.261-265.
19. Jonah, B.A. Accident risk and risk taking behavior among young drivers. *Accident Analysis and Prevention* 1986; 18:255-271.
20. Kaskutas, L.; Greenfield, T. First effects of warning labels on alcoholic beverage containers. *Drug and Alcohol Dependence* 1992; 31:1-14.
21. Kotch, J.B.; Coulter, M.L.; Lipsitz, A. Does televised drinking influence children's attitudes toward alcohol? *Addictive Behaviors* 1986;11:67-70.
22. Lastovicka, J.L. Speculations on the social psychology of young male drinking driving. International Symposium: The Social Psychology of Risky Driving. *Alcohol, Drugs and Driving* 1988;4:255-232.
23. Mayer, R.N.; Smith, D.R.; Scammon, D.L. Evaluating the impact of alcohol warning labels. *Advances in Consumer Research* 1991;18:1-9.
24. National Institute on Alcohol Abuse and Alcoholism. Eighth Special Report to the U.S. Congress on Alcohol and Health, From the Secretary of Health and Human Services. Washington, DC: U.S. Department of Health and Human Services; September 1983.
25. Neuendorf, K.A. Alcohol advertising and media portrayals. *Journal of the Institute of Socioeconomic Studies* 1985; 10:67-78.

26. Partanen, J.; Montonen, M. Alcohol and the mass media. World Health Organization. Regional Office for Europe, Copenhagen. *EURO Reports and Studies* 108; 1988.
27. Rychtarik, R.G.; Fairbank, J.A.; Allen, C.M.; Foy, D.W.; Drabman, R.S. Alcohol use in television programming: Effects on children's behavior. *Addictive Behaviors* 1983;8:19-22.
28. Smart, R.G. Does alcohol advertising affect overall consumption? A review of empirical studies. *Journal of Studies on Alcohol* 1988;49:314-323.
29. Strickland, D.E. Advertising exposure, alcohol consumption, and misuse of alcohol. In: Grant M, Plant M, Williams A (Eds). *Economics and Alcohol: Consumption and Controls*. New York: Gardner Press; 1983;201-222.
30. Sutker, P.B.; Brantley, P.J.; Allain, A.N. MMPI response patterns and alcohol consumption in DUI offenders. *Journal of Consulting and Clinical Psychology*. 1980;48:350-355.
31. Tucker, L.A. Television's role regarding alcohol use among teenagers. *Adolescence* 1985;20:593-598.
32. Vingilis, E.; Coultres, B. Mass communications and drinking-driving: theories, practices and results. *Alcohol, Drugs and Driving*. 1990;6:61-81.
33. Voas, R.; Hause, J.M. Deterring the Drinking Driver. The Stockton Experience. *Accident Analysis and Prevention* 1987;19:81-90.
34. Wallack, L. Drinking and driving: Toward a broader understanding of the role of mass media. *Journal of Public Health Policy*. 1984;5:471-496.
35. Walsh, D.C.; Elinson, L. Effectiveness of measures to prevent alcohol-related problems: An update. 1992.
36. Winsten, J.A. The designated driver movement in the United States: Promoting a new social norm. Presented at the 36th International Congress on Alcohol and Drug Dependence. Glasgow. August 21, 1992.

APPENDIX C5 ENFORCEMENT STRATEGIES FOR THE PERSISTENT DRINKING DRIVER

Susan E. Martin, Ph.D.

National Institute on Alcohol Abuse and Alcoholism

David F. Preusser, Ph.D.

PRG, Inc.

(The opinions, findings and conclusions presented in this paper are those of the authors and do not necessarily represent the opinions of the National Institute on Alcohol Abuse and Alcoholism or of PRG, Inc. This paper was revised in response to suggestions made at the Workshop. We gratefully acknowledge the contributions of Workshop

participants.)

The persistent drinking driver is an individual who continues to drink and drive repeatedly, often at very high blood alcohol levels. The goal of the present paper is to discuss possible enforcement strategies for dealing with such individuals, impediments to implementation of these strategies and ways to facilitate more effective efforts. It addresses efforts by police and considers the impact of expanded enforcement on the courts.

Background

Any single drinking and driving event will not likely lead to a drinking and driving arrest. However, continued drinking driving over an extended period of time can lead to a paper trail of drinking and driving activity. This trail can include license suspensions, license revocations and DWI convictions. An indication of this trail can be seen in the Fatal Accident Reporting System (FARS) of the National Highway Traffic Safety Administration.

FARS data were analyzed with respect to driver BAC, license status and prior DWI convictions. During 1992, there were 16,350 fatally injured drivers for which both license status and BAC were known. Of these, 2,403 did not hold a valid license typically because their license had been suspended (N=1,027), revoked (N=346) or canceled (N=38). The Figure on the following page shows the BAC distributions for those drivers who did and did not hold a valid license.

As shown in Figure 1, 57 percent of those drivers with a valid license were at .00 percent BAC as compared with only 30 percent of those without a valid license. The two groups were similar for BACs in the range from about .01 percent through .09 percent. The two groups began to diverge at about .10 percent. BACs of .25 percent and higher were about twice as common among unlicensed as opposed to licensed drivers (18 percent versus 8 percent).

The most common reason for not having a valid license is that the license has been suspended or revoked. Often, suspension or revocation is the result of a DWI conviction(s). For the year 1992, there were 1,033 fatally injured drivers, with known BAC, with one or more prior DWI convictions on their driving record. The second Figure compares the BAC distributions for those drivers (licensed and unlicensed) with and without a prior DWI conviction.

As shown in Figure 2, 56 percent of those drivers with no prior DWI convictions were at .00 percent BAC as compared with only 12 percent of those with one or more prior convictions. BACs of .25 percent and higher were about three times as common among the prior conviction group as

opposed to the no prior conviction group (28 percent versus 8 percent).

These results suggest that enforcement designed to combat the persistent drinking driver could be targeted against those individuals who continue to drive following an alcohol related license suspension or revocation. Alternatively, or in addition, enforcement could be more generally targeted at high-BAC (.15 percent+) drivers.

Enforcement Strategies

Traffic enforcement operations can generally be classified into three major types. The first, and by far the most common, is patrol activity including responding to crash scenes. The second is special operations and the third is checkpoints.

Patrol and traffic officers will encounter the persistent drinking driver as part of crash investigations. Crash involved unlicensed drivers can be cited at the crash scene or as part of a follow-up investigation. Similarly, high-BAC drivers can be cited and/or arrested though DUI arrest at the crash scene is secondary to obtaining medical attention for the injured and clearing the roadway.

The better patrol strategy would be to intervene before the crash occurs. Such interventions require detection of the persistent drinking driver from among the entire traffic stream.

One possible aid to detection is the *special license plate or license tag*. Special plates or tags are issued for the car(s) owned by the convicted driver. The plates or tags permit family members to continue to operate a vehicle that might otherwise have been impounded or had its registration suspended or revoked. Police are permitted to stop tagged vehicles and ensure that they are not being operated by someone violating the terms of an imposed drivers license sanction. Such programs are known to have been implemented in Washington and Oregon (see Voas paper in this report). Similarly, Ohio distributes a "hot list" to local authorities listing those drivers in their county with suspended licenses following five or more DWI convictions; Virginia distributes lists of habitual offenders; and New York has a program to deal with Persistent Revoked Operators (PRO).

It may also be possible, through research, to identify a set of on-road cues to aid in the identification of the persistent drinking driver. Do these individuals drive differently than the typical motorist? Differently than the typical motorist who has been drinking? Differently during those periods when his or her license has been suspended or revoked? Has the persistent drinking driver modified his or her behavior after years of drinking and driving and years of attempting to avoid the police? Answers to these and similar questions

could aid patrol officers in the detection of the persistent drinking driver within the overall traffic stream.

Special Operations include any enforcement strategy which is markedly different from routine operations and is specially designed to deal with drinking drivers and/or persistent drinking drivers.

One such special operation is the saturation patrol where large numbers of officers blanket a given, typically high risk, area for some number of hours. Saturations have been successful in obtaining arrests and enhancing public awareness of DWI enforcement efforts. However, the saturation is, essentially, a patrol operation and thus the officer still has the problem of identifying the persistent drinking driver from among the entire traffic stream.

Another special operation strategy is the "stakeout." The home of a convicted drinking driver is observed one or more times during the term of the imposed license suspension or revocation. The most common time of day for the stakeout is in the morning when the driver might be expected to leave home headed for work. Any person fitting the description of the convicted person and leaving the home as the driver of a vehicle would be stopped and asked to produce a valid drivers license. This technique was tried some years ago as part of the Nassau County Alcohol Safety Action Project. DWI officers would often devote the last hour of their tour to stakeouts. Their results were not specifically evaluated. However, while labor intensive, the technique seemed to have merit and could serve as a deterrent both for the original DWI behavior and for subsequent driving with a suspended or revoked license.

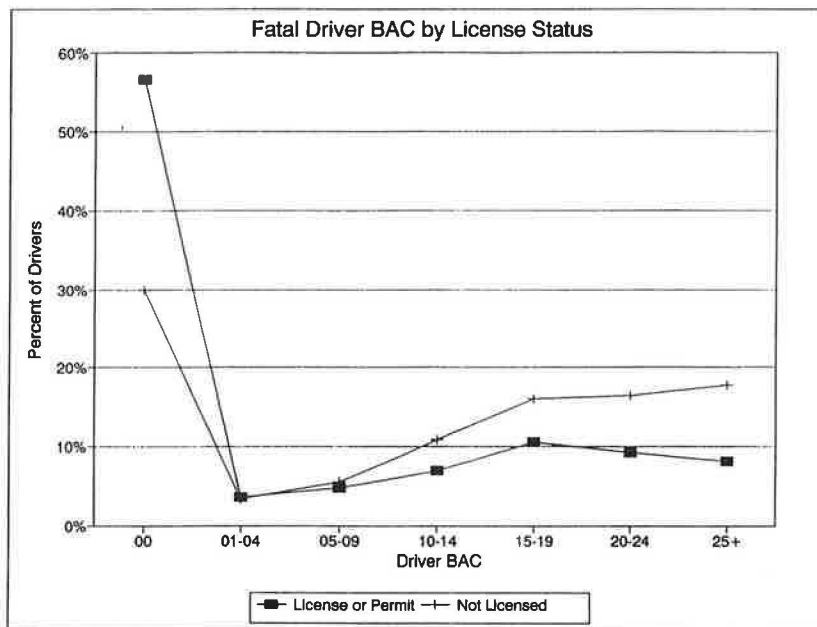


Figure 1

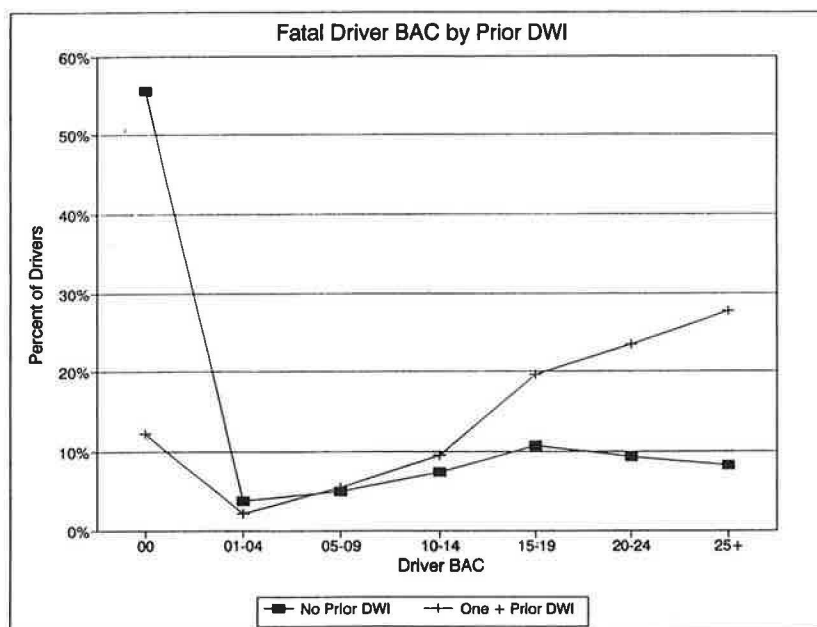


Figure 2

Two other types of special operations may also be worth considering in the present context. One involves the Dram Shop Laws which make it illegal to serve obviously intoxicated persons. Depending on where the drinking occurs, and the signs of intoxication provided by a persistent drinking driver, enforcement of these laws may make it more difficult for the persistent drinking driver to obtain large amounts of alcohol. A second is to target bars and taverns particularly around closing time. Legal concerns will probably require that such procedures be implemented randomly (or systematically based on known occurrences of alcohol related crashes or alcohol related violations) such that no single bar or tavern is singled out indiscriminately for special treatment.

Checkpoints offer the opportunity to detect persons driving with a suspended or revoked drivers license as the result of a drinking and driving conviction. These may be safety checkpoints, traffic checkpoints, belt use checkpoints or sobriety checkpoints.

In most states, officers at a checkpoint may examine the license of every driver, or a random sample of drivers, passing the checkpoint location. The license examination provides an opportunity to apprehend those individuals who might be driving in violation of their license sanction. Often, checkpoints will result in more enforcement actions taken against unlicensed operation of a motor vehicle than against drinking and driving.

Officers at a checkpoint also talk to each driver and make an assessment as to the likelihood that the driver has been drinking. This face-to-face alcohol assessment provides an opportunity to apprehend persistent drinking drivers who may have modified their driving to avoid on-road detection by officers using traditional DWI detection cues and/or traditional DWI patrol deployment strategies.

A recent trend in checkpoint operations is to include a Passive Alcohol Sensor as part of the driver screening process. Officers using these devices, as compared to officers without such devices, are more likely to detect drinking drivers particularly in the BAC range from .05 percent-.099 percent (Kiger et al., 1991) or .08 percent -.10 percent (Ferguson et al., 1993). Officers are also less likely to detain drivers for further processing with zero or low BAC levels (Jones and Lund, 1986). The effect of Passive Sensors for persistent drinking driver enforcement is unknown. Reduced processing time for zero and low BAC drivers and the generally enhanced ability to detect alcohol could lead to more persistent drinking driver arrests. Alternatively, the time spent processing those moderate BAC drivers detected with the Sensor could detract from the time available to find and process the high BAC persistent drinking driver.

We have several **recommendations** to enhance the ability of officers to find and process persistent drinking drivers. First, for crash investigations, all drivers involved in a serious or fatal injury crash should be tested for alcohol. If alcohol above the legal limit is detected, follow-up investigations should identify the source of that alcohol and consider enforcing dram shop laws or taking other appropriate action. Second, at checkpoints, officers should enforce all violations, not just drinking and driving offenses. In particular, officers should check for a valid license so as to ensure that they identify all persons operating a motor vehicle with a suspended or revoked license. Third, penalties for implied consent refusal should be strengthened to further dissuade persistent drinking drivers from choosing not to provide a breath or blood sample. Fourth, licenses reinstated following a DWI conviction should carry a "zero tolerance" alcohol restriction (i.e., any measurable blood alcohol concentration would be a basis for re-invalidating driving privileges).

Enforcement Implementation

Enforcement may mean arresting persistent DWIs; it also may involve deterring this population from drinking and driving as well as deterring persons from making alcohol available to them. Police may increase deterrence by making clear that they are watching commercial establishments and enforcing the minimum purchase age, dram shop, and responsible beverage service laws. Such activities may be carried out so as to take less time than processing an arrest and, if positively reinforced by supervisors, can maintain officer morale.

Familiarizing the police with the techniques for detecting and apprehending the persistent drinking driver will require training plus incentives to act on their new knowledge. What motivates police to enforce DUI laws? A number of studies have found that police exercise wide discretion in decision making and the less serious and visible the offense the greater the officer's latitude. Decisions to enforce DUI laws are influenced by a number of environmental, organizational, situational and individual factors.

Environmental factors are related to local demand for DUI enforcement, particularly from MADD and other politically interested citizen groups, as well as competing pressures for use of officer time. Recent NHTSA data indicate that from 1988 through 1992, nationwide, the number of tickets issued for speeding fell from 7.5 to 7 million (while crashes and fatalities also declined; Washington Post August 15, 1994: A1, A10). The reason for reduced traffic enforcement include reduced police personnel, more calls for service, and a shift

from pure deterrence to an emphasis on public education regarding highway safety.

Organizationally, even a police chief who strongly supports vigorous DUI enforcement must motivate officers with the limited "carrots and sticks" available. The occupational culture of rank and file patrol officers may oppose very active DUI enforcement and condemn as "bounty hunters" and "rate busters" those officers who make many DUI arrests (Mastrofski and Ritti, 1992). This is because the time spent processing DUI arrests removes them from patrol, shifting the work of responding to calls for service to others. Thus, alternative mechanisms for rapidly processing DUI arrests is an important part of stepped up enforcement efforts.

Other factors contributing to low DUI arrest productivity among some officers is lack of skills and their preference for spending time on other activities. This is particularly the case when they regard the laws as too severe and/or lack faith in the ability of the criminal justice system to deliver either proper punishment or adequate treatment. The task, then, is to provide not only the enforcement strategy, but the skills, opportunities and motivation to implement that strategy.

System Variables

Decisions in one part of the criminal justice system have rebound effects on downstream agencies and on demands for resources throughout the system. It is desirable for policy planners to include consideration of these effects and associated costs as part of any recommendations for innovative programming and strategies, and to attend to the unanticipated consequences of public policies that are intended to "do good." Absent a system wide perspective, providing police with more effective techniques and motivations for identifying persistent DUIs may simply make the revolving door of the court house spin faster in dealing with our most frequent type of arrest (FBI, 1992) and "our most commonly prosecuted criminal offense" (Jacobs, 1988: 173).

One study, comparing sentencing practices for third-time DUI offenders in four California counties, concluded that decisions are guided by a "not-too-rational mixture of conflicting goals and policies involving punishment, traffic safety, jail standards, fiscal stability, alcohol problem prevention, and treatment resource development" (Speigman, 1991: 27; see also, Speigman, 1994). How much should enforcement of persistent DUI offenders be expanded in light of jail overcrowding, the limited availability of treatment programs, the lack of proven program effectiveness, fiscal constraints, the competing demands for police attention and resources? What policies and strategies can we recommend?

Similarly, what is the likely resource trade-off and effect on apprehensions of persistent DUIs of the adoption of .08 laws and zero tolerance policy for drivers under 21 that may require different police enforcement strategies? If the police were able to double the number of arrests of high-BAC recidivists, what effect might this have on police and offenders if there is limited follow up in the court or a shortage of available treatment programs in the community? In the fiscally-restrained 1990s we may not be able to have it all. This necessitates making difficult resource trade-offs between these different enforcement strategies. It also suggests that we must be prepared to allocate the necessary resources to catching, prosecuting, and treating the "hard cases" (i.e., the persistent drinking driver) if that is our priority.

Conclusions

We have raised a number of questions related to both policy choices and research needs as well as identifying specific enforcement strategies. Among the factors we suggest should be considered before implementing an enforcement strategy are:

1. Embedding all enforcement focused on persistent DUI offenders within a broader DUI policy and weighing its benefits, costs, and consequences;
2. Weighing tradeoffs that may be necessary by seeking to greatly expand the pool of DUI drivers (by adopting .08 laws and zero tolerance for drivers under 21) versus focusing on the persistent DUI;
3. Examining the perspectives of the Chief and police officers in trying to provide both skills and motivations;
4. Considering the impact of any change in enforcement level or enforcement strategy on the adjudication and rehabilitation systems.

We also urge that any recommendations designed for policy makers include strong support and commitment of funds for process and outcome program evaluations to determine their short and longer term effects.

REFERENCES

1. Ferguson, S.A.; Wells, J.K. and Lund, A.K. *The Role of Passive Alcohol Sensors in Detecting Alcohol-Impaired Drivers at Sobriety Checkpoints*. Arlington, Virginia: Insurance Institute for Highway Safety, December, 1993.
2. Jacobs, J.B. *The law and criminology of drunk driving. Crime and Justice, Volume X*. Chicago, Illinois: University of Chicago Press, 1988.

3. Jones, I.S. and Lund, A.K. Detection of alcohol-impaired drivers using a passive alcohol sensor. *Journal of Police Science and Administration*, 14(4): 153-160, 1986.

4. Kiger, S.M.; Lestina, D.C. and Lund, A.K. *Passive Alcohol Sensors in Law Enforcement Screening for Alcohol-Impaired Drivers*. Arlington, Virginia: Insurance Institute for Highway Safety, June, 1991.

5. Mastroski, S.D. and Ritti, R.R. "You can lead a horse to water ...": A case study of a police department's response to stricter drunk-driving laws. *Justice Quarterly*, 9:465-491, 1992.

6. Speigman, R. Internal and external economies: treatment and custodial infrastructure and restrictions on DUI sentencing. Paper presented at annual meeting of the American Society of Criminology, November, 1991.

7. Speigman, R. Mandated AA attendance for recidivist drinking drivers: ideology, organization, and California criminal justice practices. *Addiction*, 89: 859-868, 1994.

8. U.S. Department of Justice, FBI. *Crime in the United States*. Washington, D.C.: U.S. Government Printing Office.

9. U.S. Department of Transportation, NHTSA. *Fatal Accident Reporting System*, 1992. Washington, D.C.

APPENDIX C6 DRIVER LICENSE STRATEGIES FOR CONTROLLING THE PERSISTENT DUI OFFENDER

R.C. Peck

California Department of Motor Vehicles

R. Jean Wilson, Ph.D.

Ministry of Transportation & Highways

Lawrence Sutton², Ph.D.

Institute for Driver Research

Introduction

Any consideration of how driver licensing can be used more effectively in controlling persistent and hard core DUI offenders should begin with an understanding of the control and deterrence mechanisms which reside within the driver licensing process. A review of prior functional analyses of this process (Finklestein & McGuire, 1971; Peck, 1987) reveal the following interfaces between driver licensing and DUI control.

² This paper represents the opinions and conclusions of the authors as independent agents rather than as representatives of their respective organizations. The recommendations may therefore not reflect the opinions and policy perspectives of the State of California or the Province of British Columbia.

1. Pre-licensure: The screening out and nonlicensing of applicants with uncontrolled substance abuse problems.

2. Problem Identification: The use of the driver record file to identify high risk DUI offenders.

3. License actions: The imposition of license restrictions, alcohol education, alcohol treatment and license withdrawal as a means of reducing public safety risk.

4. Compliance monitoring: Determining whether the sanctions and treatments in (3) have been complied with. Suspending the license of drivers not completing treatment and identifying suspension violators.

5. Re-entrance: Reinstating license privilege of suspended DUI offenders.

In this paper, we will not consider process number 1 because it is judged to offer the least payoff potential for impacting the persistent DUI offender. Although most jurisdictions inquire about the presence of disqualifying medical conditions, including substance addiction, at the time of initial application, there are a number of practical difficulties in obtaining correct answers and determining what action to take upon receiving information of a "problem." Perhaps an even more fundamental limitation is that most novice drivers are too young for a drinking problem to have materialized to the point of representing "a persistent DUI problem."

Process number 2 will only be touched on lightly since it is being addressed by another background paper to this workshop (Simpson). Its connection with driver licensing strategies, however, cannot be ignored since driver license action severity is functionally related to the number of prior DUI offenses and other factors identifiable from state driver record file. In some instances, the driver licensing agency is both the risk identifier and delivery system agent for triggering and monitoring control actions, as implied by figure 1 taken from Peck (1992). Similarly, alcohol education and rehabilitation programs, which are being discussed in another background paper (Timken and Wells-Parker), are sometimes given as alternatives to license suspensions and they also often modify the terms of a suspension and determine the offenders reinstatement eligibility.

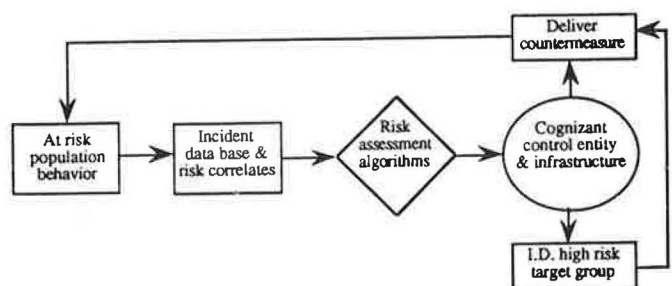


Figure 1.--Simplified model of target group and countermeasure delivery system process

There can be little doubt that the power of the drivers license as a DUI countermeasure resides in the state's authority to withdraw the license. This process involves three components of deterrence: special, general and incapacitation. In this paper, we will explore what is presently known about controlling the persistent DUI offender through driver licensing. This will entail a description of currently used DUI countermeasures—both their strengths and weaknesses. Weaknesses will be summarized along with proposals that have been previously advanced for increasing the effectiveness of driver licensing in controlling the hard core DUI offender.

A license may be suspended, revoked or canceled and the driving privilege itself withdrawn. While these practices have different administrative implications, the main difference to the individual concerns the permanence of the action, and the steps that need to be taken for reinstatement or return of privileges. Thus such requirements as reinstatement fees, reapplication, retesting, completion of alcohol rehabilitation programs, and submitting proof of liability insurance influence the number of drivers that remain permanently unlicensed.

Description of an Illustrative State System

Since all states and provinces differ in some respects in their laws, sanctions and licensing policies with respect to DUI offenses, it is impossible to describe a typical system. We have therefore arbitrarily decided to use California as an example since there is a great deal of published information on California, and one of the authors is familiar with that state. Detailed description of the California system can be found in Peck (1987) and Automobile Club of Southern California (1992).

The California system is extremely complex, and it is not the purpose of this paper to perform a process analysis of California's DUI laws and policies. We will, however, summarize some of the more important elements and sanction dimensions embodied in the California system because many are typical of other states.

- Mandatory increase in sanctions as a function of number of priors.
- Discretionary authority for courts to enhance sanctions for BACs above .20.
- Mandatory jail sentences for repeat offenders but authority to use community service in lieu of some or most of jail sentence.
- Three-time offenders are revoked for at least 3 years and must also complete an 18-30 month treatment program to be reinstated.
- Two-time offenders can avoid a postconviction license suspension and receive a restricted license by enrolling in a certified treatment program.

- All drivers suspended for two or more DUIs must complete a certified treatment program before their license privilege can be reinstated.

- Administrative per se (preconviction) suspension can be reduced to 30 days (with license restriction) for first offenders enrolling in a treatment program.

- Court has discretion to impound vehicles in certain cases.

- Court has authority to require ignition interlock for repeat offenders.

- Minors are subject to a conviction, mandatory revocation and mandatory alcohol education programs at BAC $\geq .05$ percent.

- Drivers under 21 are subject to administrative license suspension under zero-tolerance law (BAC $> .01$ percent). These incidents do not have the status of a criminal offense.

- Courts are subject to plea bargaining constraints.

- Suspended and revoked repeat offenders cannot be unconditionally reinstated until proof of insurance is filed and maintained.

Although the above sanction components represent a wide array of sanctions and interventions, embodying virtually every mechanism that has been proposed in the literature, Peck (1987) has pointed out several limitations in the California system. For the most part, these relate more to lack of coordination between agencies and failure to implement existing sanctions, rather than to intrinsic limitations in the sanctions themselves. The vehicle impoundment sanctions and ignition interlock sanctions are seldom used. Nor are sanctions consistently enhanced for offenders with BACs of .20+ (Tashima, 1986). In addition, the authority to conduct presentence investigations (PSI) as a means of assisting the court in assessing the offender's need for treatment is seldom used. Finally, a number of California studies have corroborated: 1) Low level of enforcement of license suspension laws; 2) inconsistent monitoring of treatment program compliance; 3) frequent nonreporting of juvenile DUI convictions; and 4) wide regional variations in DUI conviction rates and sanctions.

Some Past Proposals

In addition to the California studies, policy reviews have been conducted by other organizations, most notably MADD, the American Bar Association (ABA), and the National Commission Against Drunk Driving. Although policy advocacies do not, in themselves, constitute evidence, they can provide insights into the characteristics of an improved driver licensing system for deterring DUI offenses. Those of the ABA and the above California study (Peck, 1987) relating to high risk DUI offenders are summarized below.

Analysis of Fatal Accident Reporting System (FARS) data for California for 1991 and 1992 indicates that 13 percent of all fatal-accident drivers were suspended or revoked at the time of their accident. Data from California's driver record files indicate that approximately 6 percent of all drivers are suspended at any point in time. Unfortunately, the above figures are not broken down by type of suspension, but we do know that drunk driving actions comprise a substantial percentage of all suspensions and revocations in California and this is presumably true of most states and provinces. It therefore seems clear that effective strategies for increasing suspension compliance offer much potential. The operative word, of course, is "effective." The accurate identification of persistent DUI offenders and existence of theoretically effective countermeasures accomplish nothing unless the countermeasures are operationally viable and functionally effective.

An Overview of Impact Studies on License Action Effectiveness

There is no doubt that mandatory license suspension is more effective than discretionary suspension in reducing total crashes and violations (Nichols & Ross, 1990; Preusser, Blomberg and Ulmer, 1988). This is largely due to its greater perceived certainty and the reduced influence of judicial discretion. The evidence is also very clear that diversion to treatment (with either unrestricted or limited license) leads to higher accident and violation rates than full license suspension (Nichols and Ross, 1990). A number of studies report that full license suspension also reduces DUI recidivism (e.g., Peck et al., 1984; Vingilis et al., 1990) but the evidence is less consistent. However, the traffic safety impacts are almost, if not completely, explained by reduced exposure on the part of suspended drivers. During the suspended period, offenders are driving less, and/or more cautiously, than drivers not suspended. The period of effectiveness may extend beyond the suspension period because some drivers fail to reinstate their license or pay insurance surcharges.

McKnight and Voas (1990) compared the results of several studies and concluded that the traffic safety benefits of full license suspension were totally explained by reduced exposure. The studies seemed to show that restricted license action combined with some kind of remedial treatment was more effective in preventing alcohol-related traffic incidents than full suspension. A similar conclusion was reached by Wells-Parker et al. (1994) based on a meta-analysis of a large body of research literature. Therefore, it appears that the traffic safety benefits of license suspension are due to

incapacitation, but there is little evidence that they lead to reform. The reform potential of license restrictions alone is likely to be nil among persistent drinking drivers.

There are many forms of licensing actions, and while one tends to generalize their effectiveness, it is important to note that there are many variations on several dimensions, and these may differ in their impacts.

Duration of Sanction

It appears that license suspension periods of less than 3 months are ineffective (Paulsruide and Klingberg, 1975) and that traffic safety benefits increase with longer periods of suspension (Homel, 1981; Vingilis et al., 1990). However, at some point the benefits drop off due to decreased compliance. Homel suggests that periods of suspension between 12 and 18 months are optimal.

Delay in Application

Administrative license revocation (ALR), now adopted by 43 states and one province, has been credited with a strong general deterrence effect, presumably because it provides a swift and certain punishment (served immediately and effective within 7 to 45 days from date of offense). This is in contrast to court imposed and post conviction sanctions which may separate the offense and the sanction by one year or more. Although one study suggested a possible specific deterrent effect in two states (Stewart, Gruenewald and Roth, 1989), further evaluation is needed to assess the impact of ALR on recidivism for DUI.

License Reinstatement Contingencies and Remediation

One of the more promising strategies appears to be the integration of licensing and remediation actions. What form the remediation should take is dealt with in another workshop paper (Rehabilitation) and will not be pursued here.

In many European countries, removal of the driving privilege is considered a necessary condition for rehabilitation. For example, Sweden introduced a law in 1991 requiring all drivers convicted with a BAC greater than .15 to submit to medical treatment and provide laboratory evidence that they are no longer abusing alcohol, as a condition of reinstatement, after the required period of revocation. The law thus places the burden of proof on the driver. Roos (1992) reports that since the requirement was introduced, DWI recidivism rates fell by 50 percent.

In North America some states have established contingencies for relicensure, but the criterion is usually

completion of a treatment program. Failure to complete a program may lead to indefinite revocation. In addition, California has discretionary authority not to reinstate revoked DUI offenders who have not satisfactorily controlled their alcohol abuse problem. This authority to conduct a reinstatement interview is currently not used, in part because of the requirements for repeat offenders to complete lengthy treatment programs in order to qualify for reinstatement. Yet course completion may be inadequate as the sole criterion for reinstatement eligibility because many persistent drinking drivers may still be alcohol dependent. If a combination of medical, biochemical and psychological criteria, such as those used in Europe, are adopted to determine fitness for relicensure, then the validity of these criteria needs to be established.

If license actions are to be integrated with remediation, then it also makes sense that offenders should be subject to mandatory assessment prior to referral, as noted above in connection with the comments on California programs. In Germany, assessment has a major role in that country's driver improvement program for drinking drivers. However, about one-third of offenders are judged to be unfit to drive and unsuitable for treatment and are permanently revoked from driving (reported in Nickel, 1990). This situation undoubtedly leads to high rates of unlicensed driving.

While selection criteria for remediation programs may be less stringent in North America than in Germany, there is undoubtedly a group of habitual DUI offenders who do not benefit from treatment and who ignore driving restrictions. For this group other approaches involving incapacitation (e.g., vehicle countermeasures, electronic monitoring) are needed to support licensing actions. Some of these measures are addressed in a companion background paper (Vehicle Strategies) to this workshop.

Controlling the Persistent DUI Offender Through Improved Risk Assessment and Driver Control Strategies

Based on the current literature, the following readily available criteria can and should be used in identifying DUI offenders presenting the highest probability of accident and recidivism risk.

1. BAC level,
2. number of priors, including reckless driving convictions and alcohol-involved accidents,
3. total number of accidents and moving violations on the record.

The first two criteria have been firmly established and recognized. The significance of the third is less well accepted

but a number of investigations have shown that DUI offenders who accumulate above average number of moving violations are substantially higher risks than DUI offenders with otherwise clean records (Peck, 1994; Peck, Kerslake & Helander, in press). Peck et al. discuss this result in terms of two paradigms previously proposed by Simpson (1977): the problem driver who drinks vs. the problem drinker who drives. Clearly, the two groups suggest different types of countermeasures.

Identification of additional risk factors and use of customized treatment modalities could be implemented through presentence investigations. As noted earlier, most rehabilitative paradigms emphasize the need to customize treatment to the differing characteristics of drinking offender types, and that some types are not responsive to rehabilitation. Since this relates to another topic, we will not pursue it here other than to point out that license actions should not be lessened for offender types who do not offer rehabilitation potential. (It might also be added that little is served in making nonproblem drinkers enroll in lengthy treatment programs.)

There is, however, a utility to treatment programs that is often unrecognized. Peck et al. (in press) point out that DUI offenders who do not comply with the requirements of treatment programs have much higher accident and reoffense rates than do compliers. Such programs may therefore function as hurdles which filter out high risk persistent offenders, who are then suspended for noncompliance.

Having established the preceding, we would like to conclude with a list of potential driver license strategies for consideration in achieving better control of the persistent DUI offender.

1. Adopt a multitiered system which differentiates between moderate and high BACs. Under this system, BACs of .08 - .12 should receive lighter sanctions than BACs of, say, .12+. Such a system should still retain the option of enhancing penalties for BACs of 0.20+.

2. First offenders with extreme BACs (say above .20) would be treated as repeat offenders, both with respect to punitive sanctions and rehabilitation requirements.

3. Increase the detection and conviction rates for license suspension violations. One component of this objective would be a computerized system allowing police officers to check the license status of all drivers stopped for an infraction.

4. Increase sanctions, including mandatory jail sentences, for being convicted of violating DUI suspensions. (Also see #6.) Graduate sanctions as a function of the number of priors.

5. Give the Department of Motor Vehicles oversight authority to revoke the vehicle registrations for DUI offenders who accumulate moving violations and accidents during suspension.

6. Mandate vehicle impoundment or license plate revocation for any DUI offense or alcohol-involved accident which occurred during period of license suspension or revocation.

7. Require that all juvenile DUI convictions be reported to DMV.

8. Use a 7-year time window in defining the first subsequent DUI offense (e.g., 2 in 7).

9. Use a 10-year time window for defining the second subsequent DUI offense (e.g., 3 in 10).

10. Use lengthy revocations for chronic repeaters: e.g., 4 in 10 = 5 years, 5 in 10 = 10 years (or perhaps lifetime).

11. Allow treatment program enrollment to reduce length of suspension but not replace all of the suspension for first and two-time offenders. Three time offenders should be revoked and also made to complete a treatment program as a condition of reinstatement.

12. Use ignition interlock and periodic medical reports as a condition of probationary reinstatement for three time offenders or as an additional requirement for two-time offenders enrolled in treatment programs. Do not allow ignition interlock as an alternative to license suspension.

13. Adopt administrative per se suspension laws in all states.

14. Require presentence assessment for DUI offenders as a condition for alcohol treatment program assignment.

Strategic Considerations

The following issues must be considered in evaluating the above recommendations. These considerations will inevitably influence the specific form and assessed feasibility of the above policy recommendations.

- public cost
- benefit-cost potential
- public and political acceptability
- legal and constitutional constraints
- objective fairness (is sanction exceeding the seriousness of offense?)
 - perceived fairness - potential for neutralization
 - compliance discrimination - do some of the sanctions exceed the offender's economic ability to comply?

REFERENCES

1. Automobile Club of Southern California. (1992). *None for the road: A guide to California's DUI laws*. Author, Public Safety Department.
2. DeYoung, D. J. (1990). *Development, implementation and evaluation of a pilot project to better control disqualified drivers* (Report No. 129). Sacramento: California Department of Motor Vehicles.
3. Finklestein, R. & McGuire, J. (1971). *An optimum system for traffic enforcement/driver control* [Grant No. DL69-001(002)]. Washington, D.C., National Highway Traffic Safety Administration
4. Gebers, M. A. & Hanely, M. (1987). *Proof-of-service rates for suspended or revoked drivers as a function of mailing contact strategy: Interim report of "post-disqualification control of DUI offenders* (Report No. 120). Sacramento: California Department of Motor Vehicles.
5. Homel, R. (1981). Penalties and the drink-driver: A study of one thousand offenders. *Aust. N.Z. Journal of Criminology*, 14, 225-241.
6. McKnight, A. J. & Voas, R. B. (1990). The effect of license suspension on DWI recidivism. *Alcohol, Drugs and Driving*, 7(1), 43-54.
7. Nickel, W. R. Programs for the rehabilitation and treatment of drinking driving multiple offenders in the Federal Republic of Germany. In Wilson, R. J. and Mann, R. E. (Eds.), *Drinking and Driving. Advances in Research and Prevention*, New York, Guilford Press, 250-266.
8. Nichols, J. L. & Ross, H. L. (1990). The effectiveness of legal sanctions in dealing with drinking drivers. *Alcohol, Drugs and Driving*, 6(2), 33-60.
9. Paulsruide, S. & Klingberg, C. (1975). *Driver license suspension: A paper tiger?* (Report No. 32). Olympia: Washington Department of Motor Vehicles.
10. Peck, R. C. (1987). *An evaluation of the California drunk driving countermeasure system: An overview of study findings and policy implications* (Report No. 112). Sacramento: California Department of Motor Vehicles.
11. Peck, R. C. (1991). The general and specific deterrent effects of DUI sanctions: A review of California's experience. *Alcohol, Drugs and Driving*, 7(1), 13-42.
12. Peck, R. C. (1994, January). *Quantifying the net accident contribution of convicted DUI repeaters: Some methodological issues and preliminary findings*. Paper presented at the 73rd annual meeting of the Transportation Research Board, Conference Session 123A: DWI Methodology—what are the impediments? Washington D.C.: Committee on Alcohol, Other Drugs and Transportation

13. Peck, R. C. (1992, April). *The identification of high-risk target groups*. Paper presented at the Target Group Expert Panel Workshop. Alexandria, VA: National Highway Transportation Safety Administration

14. Peck, R.C.; Arstein-Kerslake, G. W. & Helander C. J. (In press). Psychometric and biographical correlates of drunk-driving recidivism and treatment program compliance. *Journal of Studies on Alcohol*.

15. Peck, R. C.; Sadler, D. D. & Perrine, M. W. (1984). The comparative effectiveness of alcohol rehabilitation and licensing control actions for drunk driving offenders: A review of the literature. *Alcohol, Drugs and Driving*, 1(4), 15-39.

16. Preusser, D. F.; Blomberg R. D. & Ulmer, R. G. (1988). Evaluation of the 1982 Wisconsin drinking and driving law. *Journal of Safety Research*, 19, 29-40.

17. Roos, H. L. (1993). Constitutional rehabilitation of high consumers/ drunken drivers in Sweden. In: Utzelmann, Berghaus, Kroj (Eds.) *Proceedings of the 12th International Conference on Alcohol, Drugs and Traffic Safety - T92*, Cologne, 28 September-2 October, 1992, Verlag TUV Rheinland, Cologne, Germany.

18. Simpson, H. M. (1977). *The impaired-driver problem vs. the impaired problem driver*. Paper presented at the Association of Life Insurance Medical Directors of America. Toronto, Canada.

19. Stewart, K.; Gruenwald, P. & Roth, T. (1989). *An evaluation of administrative per se laws*. Final Report on Grant 86-IJ-CX-0081. Washington, DC: National Institute of Justice, US Department of Justice.

20. Tashima, H. N. (1986). *Final report to the legislature of the State of California: The relationship between blood alcohol concentration level and court sanction severity in drunk driving cases* (Report No. 109). In accord with Assembly Bill 144 Chapter 1256, 1985 Legislative Session. Sacramento: California Department of Motor Vehicles.

21. Vingilis, E. R.; Mann, R. E.; Gavin, D.; Adlaf, E. & Anglin, L. (1990). Effects of sentence severity on drinking driving offenders. *Alcohol, Drugs and Driving*, 6(3-4), 189-197.

22. Wells-Parker, E.; Bangert-Drowns, R.; Allegrezza, J.; McMillen, R. & Williams, M. A. (1994). *Meta-analysis of remedial interventions with DUI offenders*, Manuscript submitted for publication.

APPENDIX C7

VEHICLE-BASED SANCTIONS--AN OVERVIEW

H. Laurence Ross, Ph.D.

University of New Mexico

Kathryn Stewart

Pacific Institute for Research & Evaluation

Anthony C. Stein, Ph.D.

Safety Research Associates, Inc.

Traditionally, social policy directed at drinking drivers attempted to modify the offenders, either through affecting their motivations or loading the illegal act with a punishment threat sufficient to deter. Policy interventions based on this approach have been evaluated and found effective to some degree. However, this is not necessarily the case for the committed and persistent offender, who drinks heavily whenever possible and who, when he has access to a vehicle, drives while impaired.

The persistent offender demonstrates by his repeated violation of the law that he is not affected by the law's deterrent threat. He is also demonstrably immune to the programs routinely applied to offenders, such as education and therapy, and the experience of jail. These facts are not unanticipated, given the commitment to drinking on the part of repeat drunk driving offenders and the notorious weakness of education and therapy among heavy consumers of alcohol. Many of the persistent offenders have attenuated relationships with conforming persons and easily accept the stigmatization and unpleasantness of jail terms because they have nothing to lose in the way of reputation. The most hopeful approach to controlling these individuals is not so much reform as incapacitation, rendering the crime difficult or impossible for those who would otherwise be motivated to commit it.

License suspension and revocation are techniques meant to get the persistent offender off the road. License actions are not without effect, but suspended and revoked drivers rarely refrain totally from driving. Rather, they do less of it, and drive in a more cautious manner, and thus more safely, in order to avoid apprehension. License actions are worthwhile policy, but they fail to remove many dangerous determined drunk driving offenders from the highway.

Imprisonment would of course be a nearly perfect incapacitative policy. Repeat offenders serving lengthy sentences would not be able to recidivate during incarceration. Moreover, jail would have the advantage of symbolizing the seriousness with which the community views drunk driving. However, judges are unwilling to incarcerate for lengthy time periods those drunk drivers -- the vast majority -- who have not caused a crash or harmed someone else. In order to have a significant effect on the casualty rate incarceration would have to be extensive. Minnesota researchers have calculated that if all 36,000 third offenders

in the state were incarcerated for 4 years, some three dozen lives might be saved. However, the cost to the public treasury of such incarceration, along with the cost of lost income to the families and therefore of public welfare, would not be acceptable. Moreover, there would be a principled reluctance to imprison for four years a person guilty only of exceeding the blood-alcohol standard on three or even more occasions.

This paper discusses a family of policies that aim at separating potential drunk drivers (heavy drinkers) from vehicle access. They assume that the persistent offender is an unusually heavy drinker, whether because of addiction and alcoholism or more generally because drinking lies at the center of his social existence. This approach accepts the difficulty of deterring potential offenders as well as reforming them. It attempts to incapacitate them in a less extreme, and therefore cheaper, way than incarceration, by rendering vehicle access more difficult.

The most straightforward approach to intervening between a drinker and a vehicle is some variation of temporarily or permanently taking the vehicle as part of the punishment for a repeat drunk driving offense. Most extremely, the vehicle used in the offense, if owned by the offender, is confiscated by the state. Less extremely, it is immobilized for some time, either impounded in a tow lot or on the offender's property, using "Denver Boot" technology. A variation on impoundment takes the vehicle's license plate, which makes it impossible to drive the car without attracting police attention, or stickering the plate to achieve the same effect.

There is a small literature concerning confiscation of serious offenders' vehicles, most notably in the City of Portland, Oregon (Voas 1992). An important finding is that because vehicles driven by bad drivers tend to be old and of little value, the programs are not self-supporting. However, if they yield significant incapacitation, they may be worth their cost. But application of impoundment and confiscation penalties is not straightforward when, as is typical, the offender is caught while driving a vehicle registered to someone else, such as a spouse or friend or a former owner when registration is not transferred on sale (Ross, Simon and Cleary, forthcoming). Typical statutes permit the registered non-offender owners to recover the vehicles; they also respect the rights of lienholders such as finance companies. (Insurance premiums that would discourage vehicle ownership can also be evaded by the offending driver's registering his vehicle in others' names.) Moreover, as previously noted, multiple offenders tend to be driving old and low-value cars, so the financial penalty associated with confiscation can be disregarded.

When impoundment is left to the criminal justice system it seems to be seldom used. Judges see problems of liability in temporarily storing as well as confiscating vehicles. They

also dislike taking action that they perceive as damaging the offender's employability and the welfare and mobility of an entire family. Impoundment seems to work better when it can be applied administratively by police without the need to obtain a criminal conviction.

There is evidence from Minnesota experience that license plate confiscation applied by police is capable of reducing recidivism of repeat drunk driving offenders, and this can probably be generalized to sticker programs and vehicle immobilization techniques (Rodgers 1994). The effect is far from complete incapacitation, but given the modest cost of the program it would seem to be cost effective.

Interlock devices attempt to incapacitate more narrowly, affecting the repeat offenders only when they are impaired. Interlocks can be based on either breath-alcohol testing technology or performance tests. They can either prevent starting and operating the car, or they can display warnings like flashing headlights and horn blasts that will alert police patrol. The technology of interlocks is improving. However, they are expensive to install and require considerable maintenance, making them unsuitable for the general vehicle fleet. When applied as a condition of probation to vehicles owned by offenders, they can be easily and simply evaded, just like impoundment, by using a different car than the one to which the interlock is applied. Some research has found evidence of considerable incapacitative competence for interlocks (e.g., Elliott and Morse 1993), but the methodology of most existing studies is inadequate to support firm conclusions of effectiveness in light of the potential for avoidance of the penalty (see also Jones 1993).

In sum, vehicle-based sanctions seem to have a part to play in managing the problem of the persistent drunk driving offender. They do not require changing individual motivation or successfully stating a legal threat. They do not require painful, expensive and lengthy incarceration. They have been found to reduce recidivism by an important fraction, although far from perfectly. Most of these sanctions can be applied at relatively modest cost. They appear to be cost-effective measures, if not ultimate solutions to the problem of controlling the persistent offender.

REFERENCES

1. Elliott, D. and Morse, B., 1993. In: *Vehicle Test Devices as a Deterrent to DUI*. Final report to the NIAAA, Rockville, MD.
2. Rodgers, A., 1994. Effect of Minnesota's license plate impoundment law on recidivism of multiple DWI offenders. *Alcohol, Drugs, and Driving*, in press.
3. Ross, H. L.; Simon, S. and Cleary, J., forthcoming. License plate confiscation for multiple offender DUIs.

4. Voas, R., 1992. Assessment of impoundment and forfeiture laws for drivers convicted of DWI. Final report to NHTSA. Washington, DC.

APPENDIX C8

STREAMLINED VEHICLE-BASED SANCTIONS: SPECIFIC AND GENERAL DETERRENCE EFFECTS

Kathryn Stewart

Pacific Institute for Research & Evaluation

Statutes mandating or allowing vehicle-based sanctions for impaired driving exist in many states. These sanctions are usually applied to offenders who repeat the driving while impaired (DWI) offense a certain prescribed number of times within a given time span or who drive while under a license suspension or revocation imposed for an impaired driving offense. Thus, they are of considerable interest as a strategy for dealing with the persistent drinking driver. Some states do include vehicle sanctions on the books for first offenders, but these are rarely, if ever, applied.

Vehicle sanctions are of two general types: One type attempts to remove the vehicle from use by the offender altogether by confiscating, impounding or immobilizing it. The second type of sanction tries to limit use of the vehicle to times, places or circumstances prescribed by law or the sentence of the court (e.g., only to and from work, only while sober). This second type of strategy often involves devices (such as an alcohol interlock or on-board data recorders) attached to the vehicle. These strategies will be discussed elsewhere in this document.

Vehicle-based sanctions are presumed to serve two general purposes: 1) They add to the incapacitating effects of license sanctions by removing at least one vehicle from potential use by the offender; and 2) they serve as general deterrents for others who might drink and drive or who might drive while suspended or revoked. Both the specific and general deterrence effects are most relevant to the population of drivers who are at risk of multiple instances of impaired driving.

As summarized in a review by Voas (1992), laws allowing vehicle-based sanctions are widespread, however, their use has been quite limited. A major reason for the limited use of the sanctions is the logistical and legal problems involved. For example, penalties that involve impoundment or confiscation of vehicles require facilities for storage, which can be quite costly. In cases where vehicles are confiscated and sold, frequently the vehicles are of such little value that the proceeds from the sale do not even compensate for the costs of towing and storage. Similarly, in cases where vehicles are impounded, often it is more economical for the offender simply to abandon them and buy another car rather than to pay the storage fees and fines.

Legal difficulties include the problem of applying penalties in the case of an "innocent owner" other than the offender who may not have knowingly allowed an unlicensed or intoxicated driver to use a vehicle.

Even when the laws are applied, they usually apply only to the vehicle driven in the course of the offense (although Minnesota, for example, applies a penalty to all vehicles owned by the offender). Use of a vehicle penalty does not guarantee that the offender will not have access to other vehicles.

The lack of ability to apply vehicle penalties widely reduces their specific deterrent impact, of course, in that few offenders are actually subjected to the penalties. If the penalties are applied rarely, their general deterrence impact is also likely to be weakened: It is difficult to maintain the credible threat of swift and certain punishment if few offenders receive the punishment.

Two recent projects of the National Public Services Research Institute explore the use of vehicle-based sanctions that attempt to reduce the logistical problems discussed above, thus, it is hoped, increasing the likelihood that the penalties will be applied and therefore increasing the specific and general deterrence effects.

The first project (Voas and Tippetts, 1994), recently completed, evaluated the effects of programs in Oregon and Washington in which special "zebra stickers" were applied to the license plates of offenders who had been convicted of driving on a driver's license that had been suspended or revoked as the result of an impaired driving offense. The penalty had the advantage of being relatively easy to carry out: The arresting officer would simply apply the sticker at the time of arrest. The sticker subsequently served as a signal to police that the vehicle was owned by someone who should not be driving. The sticker constituted probable cause for stopping the vehicle to determine whether the person driving had a valid license.

The sticker law in Oregon was imposed on 31,000 offenders during the one year study period and resulted in measurable specific and general deterrence effects. The sticker law in Washington applied to fewer offenders and was imposed only 7,000 times during the study period. It resulted in no specific or general deterrence effects.

In general, it appeared that this type of penalty was relatively easy to implement, and, if intensively applied, could reduce the extent to which impaired driving offenders drive while suspended or revoked. Thus, at least some portion of the problem of continued drinking and driving by offenders might be reduced.

The second study, now in progress, examines a penalty now being used in some parts of Ohio. Offenders who are convicted of a second impaired driving offense within 5 years or of driving on a suspended license have the vehicle that they

were driving immobilized for a set period (30 days to 6 months). The vehicle is immobilized using a "club" or "boot" device on the property of the offender. This penalty reduces some of the logistical problems associated with vehicle impoundment in that the need for towing and storage facilities is reduced. The immobilization devices themselves are relatively inexpensive. Implementation of the law has been accompanied by a public awareness campaign directed primarily at impaired driving offenders (who would be at risk of immobilization). When the study is completed, it will provide further information on the practicality of this type of vehicle sanction, the types of logistical problems encountered, and the degree to which the countermeasure has specific and general deterrence effects.

Based on the previous studies of vehicle-based sanctions discussed here, as well as other research on impaired driving countermeasures, it appears that:

- Vehicle-based penalties can be implemented that reduce the logistical problems usually associated with such penalties;
- Wide implementation of the penalties is likely to improve both specific and general deterrence;
- Public awareness campaigns are likely to increase general deterrence;
- Cooperation among law enforcement, the courts, and motor vehicle licensing agencies is necessary for effective implementation.

REFERENCES

1. Voas, R. and Tippetts, A., Assessment of Impoundment and Forfeiture Laws for Drivers Convicted of DUI: Phase II Report: Evaluation of Oregon and Washington License Plate Sticker Laws, Technical Report to the National Highway Traffic Safety Administration, Washington D.C., 1994.
2. Voas, R., Assessment of Impoundment and Forfeiture Laws for Drivers Convicted of DUI: Phase I Report: Review of State Laws and Application, Technical Report to the National Highway Traffic Safety Administration, Washington D.C., 1992.

APPENDIX C9

CAN ADMINISTRATIVE PROGRAMS CONTROL THE PERSISTENT DRINKING DRIVER?

Robert B. Voas, Ph.D.

Pacific Institute for Research & Evaluation

INTRODUCTION

In the U.S. impaired driving is managed through a troika program. In the lead are the police on whom all elements of the control system depend. They feed the courts and the driver licensing departments which carry out the sanctioning and educational elements of the program. Given that the perceived risk of apprehension appears to be the most significant factor in producing deterrence (Ross, 1984), enforcement may be the most important element in the system. However, there is considerable feed back from the sanctioning process, which conditions the intensity and efficiency of the enforcement effort. This paper focuses on the processing-sanctioning-educational element of the control system, looking to the extent that executive agencies (ie motor vehicle departments) through administrative procedures can control the persistent drinking driver.

The problem encountered in processing impaired drivers through the lower courts in the U.S. are familiar to all those who have conducted research on the criminal justice system. There are significant delays between the offence and trial or disposition of DUI cases. Plea bargaining and pretrial diversion results in a conviction on a reduced charge which in turn avoids a drunk driving conviction on the driver record. "Mandatory" sentencing guide lines are often ignored and loss of license avoided or reduced in length or a hardship license provided (Ross, 1976). Required attendance at treatment programs is often avoided due to the limited staff available to the court to supervise those on probation. These problems have led to a national movement to persuade all 50 states to pass administrative license revocation laws which provide for immediate suspension of the license of drivers who refuse a BAC test or provide a result over the limit. This places the burden of action on an executive agency, the state motor vehicle department. Just how far can we take this model?

DMV Authority

Traditionally motor vehicle departments have had some limited powers to suspend the licenses of drivers with physical or mental disabilities. They have also suspended "problem" drivers based on high point counts or multiple serious offenses. The largest number of departmental suspensions however have been for financial responsibility. Many of these drivers are DUI offenders who can not afford the higher insurance rates which result from a DUI

conviction. These powers flow from the broad responsibility of the motor vehicle administrator to protect the public from unsafe drivers. The states' power to suspend licenses has been a source of controversy with officials claiming that a driver's license is a "privilege" not a "right." The Supreme Court sidestepped the issue by finding that the license was an important "interest" and that a department was required to provide for a hearing before the license could be suspended.

Recently there has been a trend to extending the powers and program responsibilities of motor vehicle departments in the management of programs for drinking drivers. Such states as New Jersey and California among others have laws which provide that suspended DUIs must complete an education/treatment program in order to be eligible for reinstatement. This effectively shifts from the courts to the DMV the responsibility for supervising attendance at treatment. Minnesota has a law giving the DMV the power to suspend the vehicle registration and seize the vehicle tag of third DUI offenders. Several states have similar laws (Voas, 1992). The States of Washington and Oregon had laws (now sunsetted) that allow the police officer who apprehended an unlicensed driver to seize the vehicle registration and give the driver a 60 day temporary registration and to place a "Zebra" sticker on the vehicle tag. The presence of this sticker authorized any officer to stop the vehicle at any time and check the license of the operator (Voas and Tippetts, 1994B).

Until recently, all alcohol safety interlock programs have been implemented under the supervision of the courts. However, a recent NHTSA report (Voas and Marques, 1993), recommended that because of their complexity and the limited staff available to the courts, that interlock programs should be managed by state agencies. Recently there has been a trend in this direction with states such as Maryland, California and West Virginia assigning this function to the motor vehicle department. Ohio has assigned to the motor vehicle department the responsibility for collecting the "service charge" for installing and removing the "Club" immobilization device placed on the cars of multiple DUI offenders (Stewart and Voas, 1994.) The Ohio DMV also has its own enforcement department with officers located around the state who are empowered to seize license plates of DUIs and drivers who fail to establish financial responsibility (Voas, 1992).

The Suspended Driver Problem

This growth in functions being assigned to motor vehicle departments leads to the question of how far this trend can take us in the development of effective DUI control procedures? Does it offer a method for avoiding the problems encountered in using the criminal justice system as the primary method for handling drunk drivers? Before we deal

directly with this question, it is important to be aware of the approaching crisis presented by growing numbers of suspended drivers. It has been recognized for over 30 years that many, if not most, of the offenders whose licenses are suspended continue to drive at least to some extent (Sadler and Perrine, 1984). Over the years the number of suspended operators driving illicitly has grown as DUI enforcement intensified and the frequency with which the suspension penalty was imposed increased. Voas and Tippetts (1994A) have reported that in the state of Washington, where the suspension is 90 days for first offenders, over half remain suspended after 5 years! suspended.

The unlicensed multiple offender who kills an innocent motorist produces a sharp public outcry about the lack of control repeat DUI offenders. Never the less, relatively little attention has been devoted to this problem by safety professionals because suspended drivers have a lower crash rate since they drive less frequently and, perhaps, more carefully. Voas and Tippetts (1994) have shown that suspended DUIs have crash and offence rates less than half of those of reinstated offenders. Satisfaction with this state of affairs must be tempered with the knowledge that many of these illicit drivers are uninsured. Since they are driving with impunity outside the driver control system, they are a challenge to the credibility of the driver licensing system. Their growing number demonstrates our inability to enforce driver licensing laws.

CURRENT ADMINISTRATIVE ACTIONS

Administrative license revocation

The most effective use of the administrative power of the state to date has been in the implementation of administrative license revocation (ALR) laws. The best application of this system which has been adopted by 38 states, allows the officer to seize the license on the spot if the driver provides a breath sample over the legal BAC limit, has been demonstrated to be effective in reducing alcohol related fatal crashes (Klein, 1989). It increases the certainty and speed of punishment and thereby increases deterrence. It strengthens the hands of the officer, and where the required hearing system is handled properly, it reduces the time officers spend outside their enforcement activities compared to the requirements of the judicial system.

Actions against vehicle tags

Unlicensed drivers can be apprehended only if there is probable cause to stop their vehicle. Since there is no external indication of whether the driver is licensed, interest has increased in laws which provide for the administrative

withdrawal of registration, seizure and destruction of vehicle tags or at least the marking of vehicle plates owned by convicted DUIs and driving under suspension offenders (Voas, 1992). Several states, including Ohio and Virginia, provide for the withdrawal of the registration of the offender's vehicle for the same period of time as the driver's license suspension. Such laws are only partially effective because the notice of registration suspension is sent out after conviction and it is difficult to obtain the return of the vehicle tags, so that the offender can continue to use the car. The state of Ohio has a special enforcement unit in the Department of Motor Vehicles (DMV) with offices across the state who are responsible for finding suspended motorists who do not respond to departmental correspondence.

As noted the states of Washington and Oregon have enacted legislation which allowed police officers who apprehended an unlicensed driver to seize the vehicle registration and mail it to the DMV, leaving the motorist with a temporary sixty day registration. At the same time, the officer placed a "Zebra" sticker over the annual renewal sticker on the license plate. This forced the owner to clear the sticker by demonstrating that he or she was validly licensed. If this was the case, the owner paid a small fee (\$16), and the registration was cleared. However, an unlicensed driver could not clear the sticker and faced withdrawal of the vehicle registration in sixty days. With their cars marked with a sticker which provides the police with probable cause to stop the vehicle they should be deterred from driving while suspended. Voas and Tippetts (1994B) have provided evidence that this law was effective in Oregon. It did not, however, appear to be effective in Washington.

Perhaps the best evidence for the superiority of administrative actions against vehicles compared to court administered programs was provided by the study conducted by Alan Rodgers (1994) who measured the effectiveness of a 1988 license plate impoundment law for third DUI offenders in Minnesota which was managed by the courts with an administrative impoundment procedure which began when the law was amended in 1991. During the 29 months when the law was managed through the judicial system only 464 or 6 percent of the 7,698 eligible third time violators had their license plates impounded. During the 21 months after the 1991 amendment, when the law was administered by the Department of Public Safety, 3,136 or 68 percent of the 4,593 third DUI offenders had vehicle plates impounded.

Analysis of the recidivism records of these offenders indicated that there was no difference during the time the program was managed by the court between offenders whose plates had been impounded and those who had not received this sanction. In contrast during the period when the program was managed administratively, offenders who lost their vehicle plates had a lower rate of recidivism than those that did not.

Thus, the administrative impoundment system that required the officer to seize and destroy the plates at the time of arrest and provided for the Department of Public Safety to back up this action with a mailed impoundment order not only resulted in a more complete application of the penalty but also made the penalty more effective in protecting the public against repeat offenders. The courts because of the great amount of discretion that judges enjoy and because of the limited administrative manpower available, are not effective managers of systems designed to control the driving of offenders.

Interlocks

The higher crash and offense rates demonstrated by reinstated DUIs (Voas and Tippetts, 1994A) suggests the need for a transitional system which will reduce the crash risk of those returning to licensed status. The alcohol safety interlock system is being offered in some states (California and West Virginia for example) as a means for offenders to return to licensed status following a minimum period of full suspension. In theory this provides a number of potential benefits. The offender is allowed to use the vehicle for vocational purposes while the public is protected from being victimized in an alcohol related crash. If the offender was driving illicitly transition to the interlock could reduce crash involvement. Strong evidence for the effectiveness of the interlock is lacking perhaps because the programs which have been evaluated to date have been managed through the courts which lack the personnel and resources to administer them properly (EMT Group, 1990, Marques and Voas, 1993. See however Elliot and Morse, 1993, Jones, 1993, Collier, 1994). Assigning responsibility for program administration to the state DMVs should improve their application and perhaps, provide evidence of their effectiveness.

Treatment/Education

Another traditional feature of the handling of DUIs by the lower courts has been the provision for requiring treatment as a condition of probation (Stewart and Ellingsadt, 1988, McKnight and Voas, 1991). As noted, several states have laws providing that offenders must complete a treatment/education program before they can apply for license reinstatement. While this would appear to be a good means of motivating attendance at treatment programs, it is problematic since as Voas and Tippetts (1994A) have shown, half or more of the DUI offenders do not apply for reinstatement when they are eligible and may remain suspended for some years. Attaching treatment to relicensing results, at a minimum, in delay of any beneficial effects from such programs.

Recently, Marques and Voas (1994) have suggested integrating a case management system with an interlock program. A test of this concept will begin later this year in Alberta, Canada. This procedure provides that following a one year suspension, multiple DUI offenders can enter an interlock program in lieu of another year of full suspension if they complete a treatment program, install the interlock and attend interviews with a case manager each month when they come in to have the interlock unit read and serviced. The case manager will have the results of diagnostic measures collected during the treatment program. Thus, he will be in a position to refer the client to a broad range of health and social services to support recovery from the alcohol/drug problem which produced the license suspension. The information from the interlock data recorder assists in this process by highlighting the problems that the client may be having in maintaining sobriety, thereby allowing an early intervention by the case manager. This procedure appears to provide a model by which a DMV responsible for insuring treatment attendance and managing an interlock program can combine the two successfully.

PROPOSED MODEL ADMINISTRATIVE SYSTEM

These examples suggest that an administrative system for controlling the drinking driver can be implemented with elements which have been demonstrated in one or more states. This administrative system would target two key behaviors; driving while suspended as a result of a DUI offense and repeating the DUI offence within a short period (2 years?) of the original offence. Such a law would have the following provisions:

- 1) Drivers with a DUI conviction within the last 2 years would be subject to having (a) their vehicle plates seized and destroyed (as is done in Minnesota or (b) their vehicle registration seized and their vehicle plates marked (as was done in Oregon and Washington) by the arresting officer, if they were apprehended driving while suspended for the original DUI offence or were apprehended driving over the limit a second time.

- 2) Over-the-limit offenders would be unable to clear their vehicle registrations since they would be suspended. Provisions would be made for "family" plates such as are used in Ohio and Minnesota (Voas, 1992) to allow family members to use the vehicle subject to the police having probable cause to stop the vehicle to check the operators license. Marking the vehicle tag together with suspending the registration for the period of the license suspension should reduce the amount of illicit driving by these offenders and motivate them to reinstate their licenses when eligible.

- 3) If the vehicle belonged to an innocent party the registration could be cleared by owners by showing that they

were validly licensed. These innocent owners would, however, have to sign a document indicating that they understand that if the offender is apprehended driving their vehicle while still suspended or while over the BAC limit, they, the innocent owner, will be barred from clearing the vehicle registration a second time.

- 4) Suspended offenders following a minimum period of suspension, could be given the option of reinstating their licenses (and vehicle registrations) early if they agree; a) to attend a treatment program, b) install an interlock and c) to attend regular sessions with a case manager. This element of the program would be designed to bring offenders back into legal, licensed status through early treatment and supportive services while protecting the public from the consequences of drinking relapses.

THE CRIMINAL JUSTICE SYSTEM

If this administrative system were to become the primary method of dealing with the impaired driver, what would be the role of the courts? Decriminalizing the drunk driving control system would be a mistake because, aside from the need to incarcerate the really bad actors, the criminal law has an educational effect (Andenaes, 1988) which plays a role in establishing normative behavior. An important benefit of the citizen activist movements insistence that drunk driving is a crime and should be punished by incarceration, has been a change in public attitudes regarding driving after drinking which may be as responsible for recent downward trends in alcohol related crashes as the increased enforcement and legislative activity. Therefore, it would appear to be important to maintain the criminal offence of drunk driving perhaps at the .15 BAC level while implementing administrative procedures at .08. Experience indicates that such two level systems have limitations. Drivers with BACs above .15 would undoubtedly be frequently allowed to be processed through the administrative rather than criminal track. This would not be a major problem if the administrative program is well administered. Problem drinkers who escaped criminal penalties would still lose their licenses, their vehicle registrations, be required to attend treatment and install an interlock. Meanwhile the principle that drunken driving is a crime would be preserved.

REFERENCES

1. Andenaes, J. (1988) *The Scandinavian Experience*. In: Laurence, M.D.; Snortum, J.L.R.; and Zimring, F.E., eds. *Social Control of the Drinking Driver*. Chicago: University of Chicago Press, 1988. pp.43-63.

2. Collier, D. W. (1994). *Second Generation Interlocks Lead to Improved Program Efficiencies* (1993). TRB ID No.: CF076. Chicago, Illinois. Paper presented at the 73rd Annual Meeting, Transportation Research Board, January 9-13, 1994.
3. EMT Group, I. (1990). *Evaluation of the California ignition interlock pilot program for DUI offenders (Farr-Davis Driver Safety Act of 1986)*. Sacramento: The EMT Group, Inc. Prepared for The California Dept. of Alcohol and Drug Programs and The California Office of Traffic Safety.
4. Elliott, D. S. & Morse, B. J. (1993). *In-Vehicle Test Devices as a Deterrent to DUI*. NIAAA Final Report, January 1993, pp 18-21.
5. Jones, B. (1993). *The Effectiveness of Oregon's Ignition Interlock Program*. Proceedings of the 12th International Conference on Alcohol, Drugs and Traffic Safety — ICADTS - T'92, Cologne, Hotel Maritim, 1992, September 28 Koln, Germany. TUV Academie: Rhienland.
6. Klein, T. (1989). *Changes in alcohol-involved fatal crashes associated with tougher state alcohol legislation*. Washington, DC: National Highway Traffic Safety Administration.
- 999). Washington, DC: NHTSA.
7. Marques, P. R. & Voas, R. B. (1993). *Setting Performance Priorities for Breath Alcohol Ignition Interlock Devices*. Landover, MD. *J. Traffic Medicine*, 21 (3), 127-132.
8. Marques, P.R. & Voas, R.B. (1994) *Case-managed alcohol interlock programs: A bridge between the criminal and health systems*. Under Review.
9. McKnight, A. J., & Voas, R. B. (1991). *The effect of license suspension upon DWI recidivism*. *Alcohol, Drugs, and Driving*, Vol. 7, No.1, p.43-54.
10. Rodgers, A. Effect of Minnesota's license plate impoundment law on recidivism of multiple DWI violators, *Alcohol, Drugs, and Driving*, Vol. 10, p. 127-134.
11. Ross, H.L. (1976). *The neutralization of severe penalties: Some traffic law studies*. *Law and Society Review*, 10(3), 403-413.
12. Ross, H.L. (1982). *Detering the drinking driver: legal policy and social control*. D.C. Health (Ed.) Lexington, MA: Lexington Books.
13. Sadler, D. D., & Perrine, M. W. (1984). *An evaluation of the California drunk driving countermeasure system: Volume 2 The long-term traffic safety impact of a pilot alcohol abuse treatment as an alternative to license suspensions*. Sacramento, CA: California Department of Motor Vehicles.
14. Stewart, K. & Ellingstadt (1988). *Rehabilitation Countermeasures for Drinking Drivers*. In *Surgeon General's Workshop on Drunk Driving*; Background Papers, HHS, Washington, D.C.
15. Stewart, K. & Voas, R. B. (1993). *Plan for Evaluating the State of Ohio's Vehicle Immobilization Law*. Bethesda, MD. TRB ID No.: CF075. Paper presented at the 73rd Annual Meeting, Transportation Research Board, January 9-13, 1994.
16. Voas, R. B. (1992). Final Report on NHTSA Contract No. DTNH22-89-4-07026 *Assessment of Impoundment and Forfeiture Laws for Drivers Convicted of DWI*. Washington, D.C.: National Highway Traffic Safety Administration.
17. Voas, R. B., & Marques, P. R. (1991, December 23). Final Report on NHTSA Contract No. DTNH22-89-C-07009 *Alcohol Ignition Interlock Service Support*. Landover, MD: National Public Services Research Institute.
18. Voas, R. B., & Tippetts, A. S. (1994A). *Unlicensed Driving by DUIs - A Major Safety Problem?* TRB ID No.: CR077. Landover, MD. Paper presented at the 73rd Annual Meeting, Transportation Research Board, January 9-13, 1994.
19. Voas, R. B., & Tippetts, A. S. (1994B). *Assessment of Impoundment and Forfeiture Laws for Drivers Convicted of DWI: Phase II Report*, Washington D.C., National Highway Safety Administration, August 1994, 32pp.

APPENDIX C10

A BRIEF HISTORY OF THE USE OF IN-VEHICLE DEVICES FOR PREVENTING ALCOHOL-IMPAIRED DRIVING

Anthony C. Stein, Ph.D.
Safety Research Associates, Inc.

Other papers in this series have discussed vehicle sanctions which, in some manner, separate the driver from his or her vehicle. There is an alternative to this action when it is determined that the convicted drunk driver should be allowed to retain either limited or unrestricted vehicle use. There are situations where arguments can be made that allowing the convicted drunk driver to retain use of his or her vehicle has less impact on society than vehicle seizure. Also, there are cases where seizure or impoundment of a vehicle only keeps the driver from the targeted vehicle, but where vehicle alternates are available.

One thing is certain, however, we do not want to allow the convicted drunk driver to operate a motor vehicle when (s)he is drunk.

There are alternatives to seizure or impoundment which allow the driver to drive, but which prevent impaired vehicle operation. These systems are installed in the individual's vehicle; and, depending on the device, determine the presence

of alcohol in the driver or measure the operators "fitness for duty." The basic idea behind these devices is that the driver must pass a test before each drive.

There are two issues which must be decided to determine what type of system will be installed -- or in a broader context, what type of system will be recommended for large scale implementation.

The first issue is concerned with the type of test to be administered. There are two methodologies currently available. The first uses a sensitive breath testing device to determine the presence of alcohol on the drivers breath; the second uses a psychomotor test to determine the operators performance level, and determines if an individualized performance criteria has been met.

The second issue deals with what happens to the vehicle if the test is not passed. Again, there are two possibilities: the first method prevents the car from starting unless the test is passed; the second activates some form of alarm system which will alert other drivers on the road if the vehicle is driven. Figure 1 is a matrix of the various possibilities.

The purpose of this paper is to give a historical perspective of the use of in-vehicle devices to prevent drunk driving trips, and to discuss the research which has been conducted using these devices.

Snyder (1984) provides a comprehensive background of the NHTSA experience with in-vehicle devices. In the late 60's and early 70's NHTSA asked manufacturers to submit devices or testing to determine their suitability for implementation as an in-vehicle testing device. After testing 10 of the 12 first generation devices submitted, they came to the conclusion that none could be used "as is."

	TEST TYPE	
	Breath Test	Performance Test
SYSTEM TYPE		

Figure 1.--In-vehicle Device Matrix

Four devices were retained from what was described as "second generation" testing during the mid 70's. The NHTSA

testing found three of the four devices offered better performance than those first tested and that pass/fail criteria and test strategies could be developed for these devices. They also concluded that two of the devices could provide the required alcohol detection without penalizing the sober driver.

At this time NHTSA reached other significant conclusions which dictated the type of test they would attempt to develop and the type of system to be used. Their determination that breath testing devices were subject to test taker compromise, and that an interlock which disabled the vehicle could lead to potential liability implications resulted in the decision to pursue a performance based system which used alarms.

NHTSA then contracted with Systems Technology, Inc. (STI) to develop and test a Drunk Driving Warning System (DDWS). This research required taking an existing test, the Critical Tracking Task (see Jex, et al, 1967) and developing alcohol sensitivity curves, training regimes, and tamper-proof hardware. From the sensitivity curves and training data an impairment detection strategy was developed (IDS) which had the dual purpose of maximizing detection of the alcohol impaired driver while minimizing the likelihood of failing an unimpaired driver.

The resulting test device and strategy (described in Stein and Allen, 1986) resulted in a system which required a driver to take a performance based test each time (s)he entered the car. Various methods were incorporated to make sure the person taking the test was the person driving. When the vehicle ignition was turned on as series of alarms were activated. These alarms consisted of the 4-way emergency flashers operating all the time, and the horn honking once a second if the vehicle was driven over 10 mph. To deactivate the alarms the driver was required to pass the test. If the test were failed, the driver needed to wait 10 minutes before retaking it.

Field tests were conducted to assess the feasibility of this type of system. A total of 20 convicted second offense drunk drivers were participants in the study. The purpose of the study was to determine implementation feasibility through the court system, acceptability of the system by the user and other interested parties, and the effectiveness of the system in reducing implied drunk driving trips. A laboratory experiment was also conducted to determine the sensitivity of the IDS.

The field tests proved successful. The involved courts found the system effective and found no barriers to implementation as a sentencing tool. The subjects, their families and other interested parties universally praised the system as being beneficial; and, while test failure was a rare

event³ there were only two cases when subjects drove with the alarms activated (<1 percent of implied drunk failures). In one case the subject had not been drinking but a passenger's behavior caused the system to think the driver was attempting to allow someone else to take the test in his place; and in the other case the driving action did not occur until over 4 hours after the first failure, and the vehicle was driven to a new parking place around the corner to prevent it being towed from a rush hour no-parking location.

The laboratory tests showed discriminability which equalled the statistical projections. The IDS had been set to detect 80 percent of the individuals at a BAC of 0.15 percent and to fail no more than 2.5 percent of the unimpaired subjects.

With no further government funding for system improvements or large scale testing, the idea of vehicle based detection systems languished for many years. In the late 80's the idea of vehicle based systems resurfaced. This came about for two reasons. First, low-cost, accurate and portable breath testing devices became a reality; and second, testing operator impairment to determine "fitness-for-duty" was considered as an alternative to mandatory urine testing by some individuals.

At the same time STI was studying the effectiveness of the DDWS, the Canadians were looking at the effectiveness of another performance testing device (Noy, 1986). This research found that the Tracometer was at least as effective as the test used in the DDWS (the CTT), and could be incorporated in an in-vehicle system.

The advent of low-cost breath testing devices and a major change in the public perception of the acceptability of drunk driving resulted in "Breath Alcohol Ignition Interlock Devices" (BAIID) becoming an acceptable methodology. This change in policy appears to be both product driven and a result of citizen groups, such as MADD, lobbying all involved parties to incorporate BAIIDs as a sentencing tool. This pressure has resulted in state legislation which allows BAIID's to be used both as a sentencing tool, or to be administratively required by the DMV.

NHTSA's response to this pressure was the development of a model specification/guideline for BAIID's which can be easily adopted by states in their legislation (Federal Register, 1991). Research has been conducted to determine the acceptability and perceived potential usefulness of BAIIDs (Linell, 1991). In general, the response to BAIIDs has been positive, with the majority of respondents providing positive

comments, and with the systems' preventing drivers with positive alcohol levels from driving. The same drawbacks were observed as with the DDWS (e.g., cost, no proven effect, ability to bypass, etc.).

More recently the idea of using some form of performance based fitness-for-duty testing device as a means of detecting impaired driving, or as an alternative to workplace urine testing has been proposed.

Development and evaluation of a Truck Operator Proficiency System (TOPS) was conducted in the late 80's and early 90's (Stein, et al. 1990). This system uses a performance based test to determine operator impairment, and has been conducted in the workplace with a device based on the same test with excellent results (Miller, 1993). It is appealing to contemplate the use of the same test device both in the workplace and in a vehicle.

This brief historical perspective should provide the background to answer the following questions in the workshop:

- Should in-vehicle devices be considered as an alternative to prevent the persistent drinking driver from operating a motor vehicle?
- Should such a device measure the presence of alcohol, or should it measure impairment?
- In either case, how should the pass/fail criteria be determined?
- If the test is failed, should the vehicle's ignition be disabled, or should a warning system concept be employed?

REFERENCES

1. Federal Register (1991). Model specifications for breath alcohol ignition interlock devices (BAIIDs), Federal Register, 56 (79), April 24, 1991 (56 FR 18857).
2. Jex, H.R.; McDonnell, J.D. and Phatak, A.V. A "critical" tracking task for man-machine research related to the operator's effective delay time. Part I: Theory and experiments with a first-order divergent controlled element. Washington, DC: National Aeronautics and Space Administration.
3. Linell, R.H. and Mook, S.J. (1991). Ignition interlock devices: An assessment of their applicability to reduce DUI. Washington, DC: AAA Foundation for Traffic Safety.
4. Noy, Y.I. (1986) A comparative evaluation of the tracometer and the critical tracking task as tests of alcohol intoxication. Downsview, Ontario, Canada: Defense and Civil Institute of Environmental Medicine.

³Interviews with subjects' indicated they usually didn't attempt the test when they knew they were impaired.

5. Snyder, M.B. (1984) The drunk driving warning system - status review. Washington, DC: Transportation Research Board.

6. Stein, A.C.; Parseghian, Z. and Allen, R.W. (1990) The development of a low-cost portable system for the detection of truck driver fatigue. In E. Petrucelli (ed.) Proceedings of the 34th Annual Conference of the AAAM. Des Plaines, IL: Association for the Advancement of Automotive Medicine.

7. Stein, A.C. and Allen R.W. (1986). The use of in-vehicle detectors to reduce impaired driving trips. In D.C. Viano (Ed.) Alcohol, Accidents, and Injuries. Warrendale, PA: Society of Automotive Engineers, P-173.

APPENDIX C11

EVALUATING ALTERNATIVE SANCTIONS FOR MULTIPLE-OFFENDER DWIS-A DESCRIPTION OF SOME PRIOR AND CURRENT RESEARCH

Ralph K. Jones

John H. Lacey

Mid-America Research

James M. Byrne, Ph.D.

University of Massachusetts at Lowell

In this paper, we describe some current research we are conducting to evaluate some alternative sanctions to jail that are being used for multiple-offender DWIs.

BACKGROUND

For many years, the *legal approach* to controlling alcohol-crash risk was essentially the only approach of any significance. Then, it was devoted almost entirely to the applying the theory of legal deterrence. Now, the legal approach also includes the regulation of the availability of alcohol (Jones and Lacey, 1989). A major component of the Traffic Law System that attempts to deter drunk driving and other unsafe driving behaviors proscribed by law is what we have called elsewhere the Traffic Case Disposition System. *The Traffic Case Disposition System is composed of the judicial agencies and administrative agencies that determine the guilt or innocence of accused drunk drivers and impose legally authorized sanctions as punishment on those found guilty.*

Traditionally, these sanctions have been in the form of a fine, incarceration, or a suspension (or revocation) of the driver license. When a law permits a convicted drunk driver to be incarcerated (even for a short time), adjudication and sanctioning must be performed by a judicial agency as a criminal proceeding, and the law violation is called a crime.

Since every State has laws authorizing (and in some cases mandating) incarceration, all DWI cases covered by these laws are heard by a judicial agency. However, licensing sanctions are often imposed by a non-judicial (administrative) agency. Administrative proceedings are generally more efficient for "processing" accused drunk drivers, since they do not have to provide the full protection required in a criminal proceeding.

For many years, judges have experimented with *alternative sanctions* for drunk driving. Most commonly, these involved referral of drivers to treatment and education, and such referrals have now become "legitimized" by statutes in many States. The process of diagnosing, referring, treating, and supervising DWIs (or accused DWIs if parts of the process are performed prior to conviction) is performed by a number of Traffic Law System and Public Health System agencies. Following Filkins (1969), we have used the term *Health / Legal System* to describe the collection of agencies that participate together in this process (Jones, Joscelyn, and McNair, 1979).

Other alternative or non-traditional sanctions that have been tried for DWI (and also legitimized in some instances) include community service in lieu of or in addition to jail, impoundment or forfeiture of vehicles or license plates, victim restitution, visits to a hospital emergency room that treats traffic accident victims, and using license plates that identify the vehicle owner as a DWI, among others. Often, these sanctions have been used in combination with traditional sanctions, a practice that makes their evaluation more difficult.

More recently, alternatives to incarceration have received considerable attention as a sanction because of the lack of jail space for holding offenders and also with the inappropriateness of incarceration for many kinds offenses. Much interest is being given to a class of such alternatives called intermediate sanctions (Morris and Tonry, 1990), and the U.S. Department of Justice has been studying such alternatives for a wide range of offenses under its intermediate sanctions program (U.S. Department of Justice, 1990). The term "intermediate sanctions" is used to describe the range of post-adjudication sanctions (note that pre-trial diversion is not included) to fill the gap between traditional probation and traditional jail or prison sentences. In their recent review of the evaluation literature on intermediate sanctions, Byrne and Pattavina (1992) provided brief descriptions of several of the sanctions along with their conclusions about the effectiveness of the sanctions, viz.:

- Intensive Supervision Probation - Intensive supervision probation (ISP) provides probation agencies with the ability to work more intensively with select probationers.

This is accomplished by higher levels of surveillance of probationers and / or more treatment services geared to probationer needs. Intensive probation programs are characterized by smaller caseload sizes, generally ranging from 15 to 75 probationers per officer, depending upon the agency. With smaller caseloads, more intensive surveillance and treatment services can be offered than through the normal caseloads of nearly 300 probationers per officer. However, solid evaluations conducted to date of high-risk offenders have not indicated measurable reductions in recidivism, and the hypothesis that these programs accomplish diversion from prison or net-widening to include persons likely to be on less intensive probation has not been unequivocally accepted.

- **Boot Camps / Shock Incarceration** - Boot camps are correctional programs that are characterized by military-style boot camps (e.g., discipline, strict rules, drills, and physical training). These programs are similar to previous shock incarceration programs because of their focus on short, intensive periods of incarceration. They are similar to military training because of their intensity and their emphasis on rigorous training and discipline. They are often a component of a split sentence incorporating intensive supervision after release. These programs have only recently gained popularity and little is known about their effectiveness. MacKenzie and Parent (1992) report the results of a study utilizing a quasi-experimental design that shows no effect and caution that much more needs to be learned about the effectiveness of this type of approach before it is more broadly embraced.

- **Day Reporting Centers** - A day reporting center (DRC) provides a structured non-residential program that can consist of supervision, treatment services, and sanctions. DRCs can be developed into a continuum of correctional services to augment intensive supervision, residential programs (e.g. halfway houses, work release centers, etc.), and regular supervision. The centers can provide a setting where services are available and offenders can come into continuous contact with their supervising agent. Little is yet known about the effectiveness of this type of sanction.

- **Day Fines** - A day fine is a unit penalty which is derived from consideration of the severity of the offense (as expressed by the number of "units" attached to the offense) and the monetary value of one day's salary. The day fine can be used as a sole sanction or it can be used in combination with other sanctions, e.g. probation, incarceration, etc. Systems have used the day fines concept for low income offenders. The emphasis of evaluations to date has tended to be on effectiveness of the collection strategy and little is known about this type of sanction's effect on offender behavior.

- **House Arrest / Electronic Monitoring** - House arrest involves using the offender's home as a "prison." The offender is required to remain in residence at given hours. Generally, the offender can not leave without the permission of the supervising agent. Some programs use electronic technology to monitor the whereabouts of the offender. House arrest / electronic monitoring can be used in combination with other intermediate sanctions and is frequently used with intensive supervision programs. Baumer and Mendelsohn (1992) indicate a random assignment study of this sanction failed to discern an effect and argue that the appropriate research has not yet been done in the effectiveness of this category of sanction as a front-end intermediate sanction.

Some other alternative sanctions have been developed and adapted specifically for DWI offenders. These include treatment combined with incarceration, alcohol interlock devices on vehicles, license plate confiscation, restrictive license plates, and vehicle impoundment and forfeiture, among others.

ALTERNATIVE SANCTIONS BEING EVALUATED BY MID-AMERICA

Mid-America is currently conducting evaluations of three alternative sanctions programs for repeat DWI offenders. This research is being sponsored by NHTSA under Contract DTNH22-92-C-05174 entitled "Evaluation of Alternative Programs For Repeat DWI Offenders." The three programs are:

- **Intensive Supervision Probation** - The Milwaukee County Pretrial Intoxicated Driver Intervention Project
- **Electronic Monitoring** - The Los Angeles County Electronic Monitoring/Home Detention Program
- **Weekend Intervention Program** - The Wright State University Weekend Intervention Program

The Milwaukee County Pretrial Intoxicated Driver Intervention Project is coordinated by the Wisconsin Correctional Service (a non-profit corporation) in cooperation with the District Attorney's office. It is designed to deter repeat DWI offenders from continuing to drive while intoxicated. The program is an early intervention program aimed at engaging the offender in treatment shortly after arrest with ongoing monitoring and supervision throughout the pretrial period. This period varies according to case backlog, but is typically of the order of six months. Caseworkers monitor the offenders bi-weekly during this period.

The program uses several new and traditional interventions while the offender is under intensive supervision by WCS case workers. These interventions include alcohol and

drug abuse treatment, in-vehicle breath alcohol testers, home detention, victim impact panels and community supervision. The specific components of an individual's program are recommended by a representative from the pre-trial program and must be agreed upon by the DA and the offender, but all components employ ISP.

The Milwaukee program became operational in October 1992 and currently has approximately 500 participants. A full caseload will be 600 clients annually, with 50 new clients entering the program monthly. Participation is voluntary but strongly encouraged by all segments of the system. Offenders who participate are told that successful completion of the program will be considered by the judge at time of sentencing. The Wisconsin DWI law requires a mandatory jail sentence for second offense DWI, but allows considerable judicial discretion in the length of the jail sentence. Thus, the "carrot" offered (but not promised) prospective participants is a significant reduction in their jail sentence.

The *Los Angeles County Electronic Monitoring/Home Detention Program* is coordinated by the Los Angeles Pretrial Services Division. The program engages offenders immediately after conviction and sentencing with ongoing home monitoring and supervision as ordered by the courts. This particular EM program is of interest because it was developed as a public/private partnership. As such, it is designed to be self-sufficient with program costs paid by the offenders, relieving the burden of tax monies being spent on incarceration or other publicly funded EM programs. Rates charged to offenders to cover program costs are assessed on ability to pay; wealthier offenders pay higher rates, covering the costs of indigent offenders.

Los Angeles County Probation Programs Services provides supervision of the private companies and ensures accountability for the services provided. At time of conviction, the Court refers the offender to the Pretrial Services Division. The offender is interviewed, his/her complete criminal history is accessed, a risk assessment scale is completed and a determination is made as to the offender's suitability for program participation. The comprehensive screening is designed to provide community protection by excluding offenders with a history or convictions of violence, sex crimes against children, drug manufacture or sales.

After screening, the offender returns to court with a recommendation from Pretrial Services on suitability. If found suitable, the offender is ordered to report to a private monitoring company to complete a specific program designed by Probation and the private company.

The Los Angeles County program became operational in October 1992 and has had approximately 1,000 participants to date.

The *Wright State University Weekend Intervention Program*, (WIP) was developed by Harvey Siegal and associates at Wright State and placed into operation in 1978. It is an intensive, three-day residential program to which persons involved in a drug or alcohol offense may be remanded by a court or other supervising agency. It bases its methods on "marathon" substance-abuse counseling sessions using a cognitive-behavioral-oriented approach combined with presentations structured around a modified health belief model. WIP participants become involved in small-group and individual counseling sessions during which they explore the consequences and risks resulting from their involvement psychoactive drugs. During these sessions, participants provide the professional staff the data necessary to evaluate their status and to formulate assessments for the referring courts and or agencies.

The counseling staff complete a comprehensive report on each individual. The report includes an assessment built around the American Psychiatric Association's schema presented in the third edition of its Diagnostic and Statistical Manual (DSM-III-R). The report includes a recommendation of the most appropriate treatment for that individual. The primary therapeutic goal for each is total abstinence from alcohol or other mood-altering drugs not provided under a strictly-supervised medical regimen.

The weekend sessions are conducted in a closed facility at which the participants must remain during the three-day period. Participants are referred from 124 different courts in Ohio, with most of the participants being referred from Dayton area courts. A total of about 1,600 participants are currently being referred annually to WIP, and roughly 700 of those are multiple offenders.

The general approach we are taking to the evaluation of the above three alternative sanctions programs is described below.

MID-AMERICA'S EVALUATION APPROACH

The overall objective of the evaluation is to determine the effectiveness of each alternative sanctions program as an alternative to jail. Effectiveness is to be measured in terms of the incidence of drunk driving or some appropriate surrogate of drunk-driving incidence. Spillover effects on some other unsafe driving behaviors will also be examined. The evaluation will include both an effectiveness component and a process / administrative component. The operational environment of the program will also be monitored and factored into the overall analysis of the program.

Effectiveness Evaluation

The major research question to be addressed by the *effectiveness* evaluation of each program is:

What is the recidivism for offenders participating in the alternative sanctions program and how does it compare with the recidivism for offenders given traditional sanctions?

The term "recidivism" is used in a broad sense in this project. Normally, recidivism is defined as the probability of a re-arrest (and / or re-conviction, depending on the nature, completeness, and reliability of available data) for a given offense (in this case, DWI) on or before time T. We are modifying this definition to include arrests or convictions for several other types of offenses including refusal to take a breath-alcohol test, major traffic offense (DWI or breath-test refusal or reckless driving or hit and run), and various types of criminal offenses. Accidents as a measure of recidivism will probably not be feasible for this project because of the time lag between the accident and entry of the accident data into the driver records file. However, if up-to-date accident data are available, we will use them in the analysis.

The recidivism of the treatment group will be compared to that of a "control" group that did not participate in the alternative program. Since random assignment to the treatment and control groups will not be possible, the control group will be selected to match the treatment group as closely as possible on variables known to have a strong effect on DWI / refusal recidivism, including age, sex, and number of prior arrests / convictions for alcohol-related traffic offenses. We will also be considering other variables for matching, including marital status, employment status, BAC at time of arrest, number of prior accidents, zip code as an indicator of socio-economic status, and a dummy variable that will indicate which judge heard the case. The actual matching will be accomplished using statistical models (see discussion below).

The number of subjects in each treatment group will be at least 1,000, the actual number depending the particular sanction being evaluated. The control group will have approximately the same number of subjects as the treatment group and will be selected from repeat DWI offenders charged either during or shortly before the period immediately preceding the start of the program.

Process / Administrative Evaluation

The *process* evaluation is designed to describe the process (client intake, referral, treatment, and supervision) that was followed in executing the program. The *administrative* evaluation is designed to determine the *extent* to which the program's activities were performed. Of major concern is client flow through the alternative sanction "system" and the frequency of interventions.

The process / administrative evaluation will be based on a formal "system description" of the program. We will use the *functional analysis* technique for developing this description. This technique envisages a "system" as a collection of resources and procedures that are required for accomplishing one or more specific objectives. To accomplish these objectives, the system must perform certain functions following specified procedures that require resources in the form of personnel, equipment, and facilities. The term "functional analysis" derives from the analysis of these functions and their interrelationships.

Another component of the process/administrative evaluation will be the staff's perception of the program and its performance. We will measure this perception through two mechanisms, first, through informal discussions with staff, and second, by administering a short questionnaire to staff.

An ancillary part of the process/administrative evaluation will be the determination of community awareness and support of the program. Community support is critical if the concept is to be transferrable to other jurisdictions. It will be measured by a short questionnaire to be administered by program staff in cooperation with the pertinent DMV at driver license stations.

SUMMARY AND CONCLUSIONS

In light of the expense and overcrowding of jails and the perception the jail is an ineffective deterrent for multiple DWI offenders, a number of alternative sanctions have been proposed and are being tested and evaluated for this high-risk group. The results of the Mid-America evaluations and others reported at this seminar will be useful to policy makers and practitioners in more effective management of the alcohol-crash risk in their jurisdictions.

REFERENCES

1. Anonymous. (1992). *Americans behind bars*. New York: The Edna McConnell Clark Foundation.
2. Armstrong, Troy L. (ed.). (1991). *Intensive interventions with high risk youths: promising approaches in juvenile probation and parole*. Munsey, NY: Criminal Justice Press.
3. Baume, J.L. and Mendelsohn, R.I. (1992). Electronically monitored home confinement: does it work? In: Byrne, J.; Lurigio, A. and Petersilia, J. (eds.). *Smart sentencing: the emergence of intermediate sanctions*. Newbury Park, CA: Sage Publications.
4. Byrne, J.M. and Pattavina, A. (1992). The effectiveness issue: assessing what works best in the adult community corrections system. In: Byrne, J.; Lurigio, A.; and Petersilia, J. (eds.). *Smart sentencing: the emergence of intermediate sanctions*. Newbury Park, CA: Sage Publications.
5. Byrne, J.; Lurigio, A. and Baird, C. (1989). The effectiveness of the new intensive supervision programs. *Research in Corrections* 2(2):1-48.
6. Jankowski, L. (1991). *Probation and parole 1990*. Washington, DC: U.S. Department of Justice, Office of Justice Programs.
7. Jones, R.K. and Lacey, J.H. (1992). *Review of the literature evaluating the effect of countermeasures to reduce alcohol impaired driving (1980-1989)*. Washington, DC: National Highway Traffic Safety Administration.
8. Jones, R.K.; Joks, H.C. and Wiliszowski, C.H. (1991). *Implied consent refusal impact*. Washington, DC: National Highway Traffic Safety Administration.
9. Jones, R.K. and Joks, H.C. (1991). *A study of alcohol-traffic safety interventions in Tennessee*. Winchester, MA: Mid-America Research Institute.
10. Jones, R.K. and Lacey, J.H. (1989). *Alcohol and highway safety 1989: A review of the state of knowledge*. Washington, DC: National Highway Traffic Safety Administration.
11. Jones, R.K.; Joks, H.C.; Lacey, J.H. and Schmidt, H.J. (1988). *Field evaluation of jail sanctions for DWI*. Washington, DC: National Highway Traffic Safety Administration.
12. Jones, R.K.; Joscelyn, K.B. and McNair, J.W. (1979). *Designing a health/legal system: A manual. Final report*. Washington, DC: National Highway Traffic Safety Administration.
13. Lacey, J.H.; Jones, R.K. and Stewart, R.J. (1991). *Cost-benefit analysis of administrative license suspensions*. Washington, DC: National Highway Traffic Safety Administration.
14. McKenzie, D. and Parent, D. (1992). Boot camp prisons for young offenders. In: Byrne, J.; Lurigio, A. and Petersilia, J. (eds.). *Smart sentencing: the emergence of intermediate sanctions*. Newbury Park, CA: Sage Publications.
15. Morris, N. and Tonry, M. (1990). *Between prison and probation. Intermediate punishments in a rational sentencing system*. New York: Oxford University Press, Inc.
16. Petersilia, J. and Turner, S. (1990). *Intensive supervision for high-risk probationers. Findings from three California experiments*. Santa Monica, CA: The RAND Corporation.
17. Petersilia, S. (1986). Exploring the option of house arrest. *Federal Probation* June:50-55.
18. Skelton, D.T. and Renzema, M. (1990). Use of electronic monitoring in the United States: 1989 update. *NIJ Reports* (222):9-13.
19. U.S. Department of Justice. (1990). *A survey of intermediate sanctions*. Washington, DC: U.S. Department of Justice, Office of Justice Programs.

APPENDIX C12

REHABILITATION OF THE PERSISTENT DRINKING/DRUGGING DRIVER

David S. Timken, Ph.D

Colorado State Department of Human Services

Michele A. Packard, Ph.D

Sage Institute, Boulder, CO

Elisabeth Wells-Parker, PhD

Mississippi State University

Bradford Bogue

Colorado State Judicial Department

INTRODUCTION

Results from a comprehensive meta-analytic review of treatment efficacy for DUI offenders suggested the following points that are relevant to treatment of the persistent offender. (Wells-Parker, et al, 1994):

A. As compared to standard sanctions such as jail or fines or no treatment, rehabilitation showed a generally small but positive influence (7-9 percent reduction) on reducing incidence of alcohol-related driving recidivism and crashes, when averaged across all types of offenders and rehabilitation.

B. Treatments that combined strategies - i.e. education plus therapy plus follow-up (contact monitoring or probation, aftercare, etc.) were most effective for multiple, as well as "first" offenders. These combination strategies were superior to educational programs alone and to contact probation alone in reducing subsequent drinking and driving. Rehabilitation

tended to reduce alcohol-related crashes while licensing actions tended to reduce non-alcohol related crashes: combining rehabilitation with licensing actions produced the most effective reduction in all crashes.

C. In the set of evaluated studies, "severe" or "high-problem" offenders (the definition of which varied across studies) appeared to show a smaller response (i.e. smaller reduction in drinking driving) to treatment than did offenders with more moderate risk levels; however, some of these high-risk groups also tended to receive less effective single focus strategies and programs that focused on abstinence alone rather than broad spectrum goals.

These results suggest the following research needs:

a. A clearer definition of the "high-risk" or "severe problem" offender is needed. It is acknowledged that substantial problems may exist in a unitary definition of risk or problem severity, especially across gender, age, and ethnically diverse sub-groups. Indeed, more than one "profile" may be associated with elevated risk or "persistence" given the diversity of personality, as well as drinking variables, that are likely to contribute to elevated crash risk in the DUI population.

b. A significant need is the evaluation of programs - programs that will likely involve a combination of elements including significant psychotherapeutic intervention, after care/monitoring and incapacitation sanctions - that are tailored to prevent characteristics of high risk profiles.

An intervention that combines the suggested components should be evaluated for "persistent" offenders since most of the components that are suggested have not been evaluated either alone or in combination for DUI offenders.

The remainder of the paper draws on both extensive clinical experience; research and theory on DUI offender characteristics, and evaluation of strategies from the more general alcohol treatment literature to develop components of a treatment model tailored to general characteristics of one offender profile that is likely to be associated with "persistence" in high risk driving, especially driving after drinking.

Background for model:

The persistent offender is much more likely to have been through several mandated treatment programs, been involved in others types of criminal behavior and is more likely to have been involved in a serious crash. (Simpson & Mayhew, 1991)

Treatment for this population has largely aimed to separate drinking and driving behaviors, and has been based primarily on the Minnesota Model of Chemical Dependence which has,

in addition to its disease orientation, the notion that treatment needs to be based only on the level of drinking or use severity.

In addition to the use of a model which has not been demonstrated to be efficacious, the problem has been exacerbated by inadequate assessment. Such assessments have usually dealt with substance use and largely have ignored personality variables and risk taking behaviors. Assessment information has rarely been incorporated into treatment plans. The result has been non-individualized treatment presented in cookie-cutter fashion.

Compounding matters has been the quality of personnel. The majority of people providing treatment have only been schooled in the disease model. The lack of understanding of other models has been complicated by the lack of training in techniques which both the alcohol and Criminal Justice literature have shown to be efficacious. (ADAD, 1993), (Miller & Hester, 1986), (Beck, et al.1993), & (Andrews and Bonta, 1994) In addition, interventions have generally been of too short duration and too low a level of intensity. (Nichols, 1990)

There has been an historical evolution in the conceptualization and treatment of the DUI offender. Research shows that the persistent offender is a distinct subset of the total population of drinking drivers, characterized by a number of deviant behaviors that increase risk of involvement in driving fatalities and risk of re-offending. (Donovan & Marlatt, 1982) A number of theories have attempted to explain the behavior of the high-risk driver. The most parsimonious seems to be that of problem-behavior theory. It suggests that the multiple offender's drinking behavior is only one of a subset of deviant behaviors that occur within a lifestyle context. (Jessor, 1987) Treatment that aims only to separate drinking/driving behaviors may produce limited outcomes. (Kunkel, 1983) An effective treatment paradigm must address the critical lifestyle and personality variables that create, shape, perpetuate and maintain the behavior of this population. The variables include the offender's lifestyle and its environmental context, the offender's driving/related attitudes, their personality system and their substance abuse patterns.

Model:

A. Process-oriented assessment:

Traditional assessment that focuses primarily on drivers' drinking is not sufficient. The research on multiple DUI offenders suggests that social, environmental, interpersonal and individual factors combine to shape the offender's high-risk behaviors. Offenders who evidence interrelated problem

behaviors are frequently characterized by lack of social stability, conceptual rigidity, external locus of control and poor problem-solving skills and in general tend to lack the skills necessary for adaptive functioning. (Institute of Medicine, 1990) Their deficits are cognitive, interpersonal and social. Cognitive factors include their driving-related attitudes, attitudes toward law enforcement and their cognitive set: the manner in which they view their lives, themselves and others. Interpersonal factors include poor social relationships, some of which are characterized by high levels of aggression and risk-taking. Social factors include lifestyle, social network, occupational and leisure functioning.

Assessment would be an integral part of the model program, and comprehensive assessment should be sensitive enough to identify the alcohol and non-alcohol related problems of the offender. In addition to being multifaceted and comprehensive, assessment would also be process-oriented. This type of assessment evaluates offender status throughout treatment in the areas of motivation for change, behavioral coping skills and psychopathology. Assessment data needs to be used as a continuous feedback loop, providing program personnel with information that guides and helps individualize the course of treatment. Assessment needs to be re-iterative in nature. Assessment-as-intervention has been shown to increase motivation in drug/alcohol populations, and shows promise for improving the level and nature of the offender's involvement in treatment. (Miller & Rollnick, 1991)

B. Focus on motivation for change:

Motivation for change has traditionally been considered to be a major obstacle to effective treatment of this population. The work of Prochaska and DiClemente on stages of readiness-for-change (1992) and the work of William Miller on motivational interviewing (1991) (Miller, et al, 1993) are applicable. Miller's work shows that traditional confrontational strategies produce poorer outcomes when compared to motivational strategies and that the more counselors confront, the more clients have been shown to be drinking at follow-up. Retention of these clients in treatment has also been a factor. The research on motivational interviewing shows that it increases the rate of client retention in treatment, client compliance with treatment objectives and client outcomes. Cognitive-behavioral interventions such as the highly-structured Reasoning and Rehabilitation (R&R) 35-session model developed by Ross and Fabiano has been

shown to be highly effective at engaging the client in the treatment process. This suggests that the lack of motivation traditionally attributed to this population has been a function of poor counselor skills and lack of a treatment paradigm that addresses the characteristics and needs of this population. (Ross & Fabiano, 1985) (Ross, et al, 1986)

C. Length, intensity and setting:

The length of this ideal program would be one year. Experience suggests that many judges are sentencing persistent offenders to 6-12 month jail sentences with no treatment. The judicial system is frustrated by the lack of viable and effective treatment options for this population. Although brief-treatment models may be applicable to the general DUI population in which there is considerable diversity as to level and types of problems, the proposed model focuses on a more prescribed group of offenders who are likely to be characterized by heavy consumption of alcohol, repeated instances of criminally involved behavior and high-risk driving incidents. Clinical experience suggests that the particular DUI offenders for whom the program is modeled after are characterized by behavior that is ego syntonic, with an external locus of control and tremendous difficulty forming a relationship of trust. (Donovan, et al, 1986)(Donovan, et al, 1989) (Donovan, 1990) (Donovan & Rosengren, 1992) For this reason, a structured situation is needed at treatment initiation so that the individual becomes "hooked" to participate in an active and involved manner. Jail or a work-release setting would be optimal settings for beginning treatment. Sentences can be modified if the offender successfully completes the first phase. Treatment on an outpatient basis would need to maintain high levels of structure including BAC monitoring. Optimal program length, as well as setting for treatment initiation could be explicitly evaluated in outcome and process evaluation.

D. Goals:

Treatment goals should include (1) increasing motivation for change in the offender's lifestyle and substance-abuse pattern; (2) use of environmental and social interventions to increase motivation for change and reinforce behavior change once it occurs; and (3) develop offender self-efficacy in the areas of problem-solving, communication-skills, conflict-management skills, stress management skills and conceptual flexibility that are linked to the maintenance of pro-social behaviors. The following therapeutic components are targeted toward these goals.

E. Therapeutic components:

1. Cognitive-Behavioral Skills Training:

The component of cognitive-behavioral skills training addresses the driving-related variables and personality factors that combine to shape the offender's drinking-and-driving behavior. The driving-related attitudes of this population include sensation-seeking and thrill-seeking behaviors, positive evaluation of risk-taking, competitive speeding while driving, driving as a means of reducing psychological tensions and as a means of increasing the perception of personal efficacy, status and power. (Donovan, et al, 1983 (Donovan, 1988) Other variables include low respect for the law, an aggressive attitude while driving, through which acute and chronic anger and resentment are expressed, and attribution of the cause of accidents to factors beyond one's personal control. Skills training is based on the evidence that lack of coping skills contributes more to risky driving than anything else. (Chaney, et al. 1978) The impulse-control problems noted in the research make abundantly clear that this population is suffering from skills-deficits and that the latter result in the self-defeating behavioral strategies.

2. Reasoning and Rehabilitation Component:

The Reasoning and Rehabilitation model consists of ten interrelated modules that address the following topic areas: problem-solving skills, creative thinking, social skills, emotion management techniques, values, and critical reasoning. The sequence of sessions has been adjusted for optimal performance based on empirical trials and evaluation. The sessions are experiential, generally non-didactic and expressly designed to be engaging and practical. High levels of participant energy and attention are required to facilitate performance gains in the basic cognitive and self regulation skills. (Ross & Fabiano, 1985)

3. Relapse Prevention:

Relapse Prevention addresses the substance abuse problem with a series of interventions. It focuses on building client-specific coping behaviors designed to inoculate against the use of old strategies. At this phase of treatment offenders who continue to be Pre-Contemplators (Prochaska & DiClemente, 1992) are screened out and placed in a group focusing on motivational interventions designed to identify and resolve obstacles to movement to the next stage of readiness for change. The goals of Relapse Prevention are to (1) increase the range and flexibility of client coping

strategies and (2) to increase client self-efficacy.

4. Community Reinforcement Component:

Community Reinforcement is part of a wider intervention strategy that expands the focus beyond attention on the persistent offender's drinking and personality deficits to include lifestyle and community adjustment. (Azrin, et al, 1982) High relapse rates for this population are related to the post-treatment environment. Persistent drinking drivers are field-dependent and have external locus of control. Clients with these characteristics have been found to be unlikely to use positive supportive resources in the community.

The Community Reinforcement model will focus on those lifestyle factors that can reduce the risk of re-involvement in risky-driving: poor social stability, high levels of job dissatisfaction, lack of family satisfaction, lack of leisure-time satisfaction, and high degree of negative peer influence. The goals of this phase are to (1) significantly impact the style and pattern of drinking by increasing the levels of community involvement and satisfaction; (2) reduce negative peer influence as a function of an increase in satisfaction in all three areas of life functioning: occupational, interpersonal and use of leisure time; (3) managing the reinforcements in the offender's environment in a way that will further reinforce the prosocial values and behavior training that occur in the first two phases of treatment.

These components of treatment overlap in a manner that ensures cohesiveness, congruence and reinforcement of learning from previous sections.

F. Adjunctive components:

In addition to the primary components, the ideal treatment program must have an array of adjuncts. Treatment could be combined with incarceration in different degrees of intensity and various settings, and serious efforts must be made to keep the offender off alcohol and other drugs. Where there is no valid medical contraindication, Antabuse should be used in conjunction with treatment throughout the entire program. Random breath testing can be utilized in cases in which Antabuse can not be used, and when there is evidence of other drugs being used, the offender should be on a random urine testing schedule.

Additional risks associated with the persistent offender indicate the program should include off site monitoring. Random, periodic observation and other types of checks on the offender while at work, school, and home need to be done in order to reinforce expected behaviors as well as to check program compliance. Because of the high risk of illegal driving, a model program should also require that vehicle

immobilization devices be placed on all vehicles over which the offender has control and that interlocks be placed in the vehicles if the offender is to be granted any type of driving privileges.

Potential impediments and possible avenues to solutions:

As with any new, comprehensive program there are bound to be a number of potential impediments. The financial aspects of an intense comprehensive program ideally would be largely borne by the offender. If tax dollars are to be used, they must be kept to a minimum and the entire program should be designed to be self-sufficient. If the National Health Insurance Plan is enacted with the provision that offender treatment is all or in part included, then partnership linkages need to be strengthened between treatment providers and criminal justice agencies so that the systems can better cooperate in providing the needed long term and more intense treatment for this subset of offenders.

Current belief systems of the treatment and criminal justice constituencies, as well as the public will need to be challenged with a goal toward change since many treatment personnel have been schooled exclusively in the disease model, with little training about other approaches and techniques that both the alcohol and criminal justice literature have shown to be effective. (ADAD, 1993), (Miller & Hester, 1986), (Beck, Wright, Newman and Liese, 1993) and (Andrews & Bonta, 1994). Public education and training for treatment and criminal justice agency personnel will need to be modified. Current models of addiction must be taught along with empirically based treatment techniques. The implementation of such a program may well take legislative action. It is important that not only as an educational package for law and police makers be developed but that a broad base of support be developed involving both political parties at the local as well as state and national levels.

Evaluation:

The implementation of an extensive outcome and process evaluation is needed to ensure fidelity of the treatment model. Indeed, well designed outcome measures will need to be made part of the overall program design. In addition to determination of the efficacy of such a comprehensive program as compared to standard sanctions or traditional interventions of similar length and intensity, it would be useful for an evaluation to identify optimally effective and least costly combination of components. For example, comparisons of treatments initiated in facilities such as jails,

as compared to initiation in out-patient settings or comparisons of combinations with similar components but different number of hours would be important.

Summary Recommendations:

Assessment should be process oriented, reiterative in nature and include mental health issues, cognitive functioning and risk taking behaviors as well as substance misuse.

Treatment should combine strategies, i.e., education, therapy, and case management.

Treatment should be provided over time, i.e., a minimum of nine - twelve months.

Treatment should be combined with Antabuse or random breath testing, random urine screens, vehicle immobilization, ignition interlocks, and various alternatives to standard incarceration.

Treatment programs such as outlined in this paper which address driving related variables, lifestyle, and personality factors as well as substance abuse should be thoroughly evaluated.

REFERENCES

1. Alcohol and Drug Abuse Division (ADAD): Colorado Department of Health [Site Visit reports] Unpublished Reports.
2. Andrews, D.A. & Bonta, J. (1994) *The Psychology of Criminal Conduct Cincinnati, OH.* Anderson Publishing Co.
3. Azrin, N.H.; Sisson, R.W.; Meyers, R. & Godley, M. (1982) Alcoholism treatment by disulfiram and community reinforcement therapy. *Journal of Behavior Therapy and Experimental Psychiatry*, 13, 105-112.
4. Beck, A.T.; Wright, F.D.; Newman, C.F. & Liese, B.S. (1993) *Cognitive Therapy of Substance Abuse* New York, The Guilford Press
5. Chaney, E.F.; O'Leary, M.R.; Marlatt, G.A. (1978) Skill Training with alcoholics. *Journal of Consulting and Clinical Psychology* 46(5) 1092-1104
6. Donovan, D.M. & Marlatt, G.A. (1982) Personality subtypes among driving-while-intoxicated offenders: relationship to drinking behavior and driving risk. *Journal of Consulting and Clinical Psychology*, 50(2):241-249
7. Donovan, D.M.; Marlatt, G.A. & Salzbeg, P.M. (1983) Drinking behavior, personality factors and high-risk driving: A review and theoretical formulation. *Journal of Studies on Alcohol*, 44, 395-428

8. Donovan, D.M.; Queisser, H.R.; Umlauf, R.L. & Salzberg, P.M. (1986) Personality subtypes among driving-while-intoxicated offenders: Follow-up of subsequent driving records. *Journal of Consulting and Clinical Psychology*, 54, 563-564
9. Donovan, D.M.; Umlauf, R.L. & Salzberg, P.M. (1989) Derivation of personality subtypes among high-risk drivers. *Alcohol, Drugs and Driving*, Vol.4, No. 3-4, 233-244.
10. Donovan, D.M. (1990) Subtypes among risky and drunk drivers: Implications for assessment and rehabilitation. In: M.W.B. Perrine (Ed.), *Alcohol, Drugs and Traffic Safety-T89*, pp. 106-210. Chicago, Illinois: National Safety Council.
11. Donovan, D.M. & Rosengren, D. (1992) Effectiveness of alcohol treatment and treatment matching: How DUI treatment may be improved by insights from the alcoholism treatment field. *Drinking and Driving Prevention Symposium*, Automobile Club Southern California. Los Angeles, CA.
12. Donovan, J.E. (1988) Lifestyle factors and typologies: their relationship to risky-driving. *Alcohol, Drugs & Driving*, 4(3-4) 245-249
13. Institute of Medicine (1990) *Broadening the Base of Treatment of Alcohol Problems*. Washington D.C.: National Academy Press.
14. Jessor, R. (1987) Risky driving and adolescent problem behavior: an extension of problem behavior theory. *Alcohol, Drugs and Driving*, 3(3-4):1-1.
15. Kunkel, E. (1983) Driver improvement courses for drinking-drivers reconsidered. *Accident analysis and Prevention*, 15, 429-439.
16. Miller, W.R. & Hester, R.K. (1986) The effectiveness of alcoholism treatment methods: What research reveals. In W.R. Miller & N. Heather (eds), *Treating Addictive Behaviors: Processes of Change*. pp. 175-203 New York, Plenum Press
17. Miller, W.R. & Rollnick, S. (1991) *Motivational Interviewing*. New York: Guilford Press.
18. Miller, W.R.; Benefield, G.R.; Tonigan, J.S. (1993) Enhancing motivation for change in problem drinking: a controlled comparison of two therapist styles. *Journal of Consulting and Clinical Psychology*, 61, 455-461.
19. Nichols, J.L. (1990) Treatment versus Deterrence. *Alcohol Health & Research World* 14-1, 44-51
20. Prochaska, J.O.; DiClemente, C.C. & Norcross, J.C. (1992) In search of how people change: Applications to addictive behaviors. *American Psychologist*, 47, 1102-1114.
21. Ross, R.R.; Fabiano, E. & Ross, R.D. (1986) *Reasoning and Rehabilitation: A Handbook for Teaching Cognitive Skills* Ottawa: Cognitive Centre
22. Ross, R.R. & Lightfoot, L. (1985) *Treatment of the Alcohol-Abusing Offender*. Springfield: C.C. Thomas.
23. Ross, R.R. & Fabiano, E. (1985) *Time to Think: A Cognitive Model of Delinquency Prevention and Rehabilitation*. Ottawa: University of Ottawa, Institute of Social Sciences & Arts.
24. Simpson, H.M. & Mayhew, D.R. (1991) *The Hard Core Drinking Driver*. Toronto: Traffic Injury Research Foundation.
25. Wells-Parker, E.; Bangert-Drowns, R.; Allegrezza, J.; McMillan, R. & Williams, M. (1993) *Final Progress Report: DUI Treatment Meta-Analysis and Data Base*. Report to National Institute on Alcohol Abuse and Alcoholism, (NIAAA) Rockville, MD

APPENDIX C13

CITIZEN ACTIVISTS' ASSESSMENTS OF THE DUI PROBLEM, PUBLIC ATTITUDES AND SELECTED RESPONSES TO THE PERSISTENT DRINKING DRIVER

Anne Russell

Mothers Against Drunk Driving

INTRODUCTION

Traffic crashes have long had a major impact on highway safety, representing the greatest single cause of death for Americans aged 6 to 33⁴; alcohol has been involved in approximately half of these deaths in recent decades. Both total traffic fatalities and alcohol involvement in these deaths peaked in the early 1980s, after which deaths began to decline. Except for a period in the mid-1980s, the trend in alcohol involvement has been rather steadily downward.

Since the late 1970s, the impaired driving problem has been the focus not only of federal, state and local highway safety and law enforcement officials, but also of the public. In 1978 a citizen-activist group called Remove Intoxicated Drivers (RID) was started in New York; Mothers Against Drunk Driving was begun in 1980; and various other groups have been formed as well. These groups have played an important role in generating momentum for legislative change and other programs to reduce the involvement of alcohol in traffic crashes. As recently as April 1 of this year, U.S.

⁴ National Highway Traffic Safety Administration, Fatal Accident Reporting System, 1993

Secretary of Transportation Federico Pena acknowledged the role of citizens' activism in improvements in highway safety in announcing a decrease in alcohol-related deaths for 1993.⁵

Aside from legislative action, one area in which activist groups have contributed is that of changing attitudes toward drinking and driving. Efforts by groups like MADD have helped to publicize the dangers of drinking and driving, the special risks faced by inexperienced young drivers, and the importance of countermeasures to the problem. MADD has utilized the experiences of DUI victims not only to work for stricter legislation but also to discourage individual offenders from repeating their impaired driving behavior.

Public Attitudes

In 1990 MADD commissioned a survey by Gallup to determine current public attitudes toward drinking and driving. The telephone survey, with a sample of 9,028 respondents, was conducted during the period of September 1990 through August 1991. Results released in October 1991 indicated that Americans considered drinking and driving or drunk driving to be a major highway safety problem, citing it significantly more often than any other problem (39 percent, compared to 22 percent for speeding, the second most often-cited problem). DUI was identified as the most important of six major highway safety problems, mentioned by 95 percent of respondents.⁶

Other findings were that the factor most likely to discourage people from driving drunk was the fear of injuring or killing others or oneself, followed closely by the fear of jail, loss of license and stiff fines. A majority (55 percent) personally knew someone convicted of drunk driving. Fifty-five percent said they drink on occasion. Nearly one-half (48 percent) felt the penalty for first offense drunk driving was not severe enough; 59 percent felt second-offense DUI penalties were not severe enough, and results were similar for third offenses.

A second survey conducted by the Gallup Organization between February 1993 and February 1994 found similar results. Again, drunk driving was most frequently cited as a major highway problem; of six major highway safety problems, DUI was mentioned by 97 percent of respondents, and drugged driving was next most often mentioned, with 91 percent. A total of 56 percent said they drink at least on

occasion. More than 3 in 5 (61 percent), a statistically significant increase from the previous poll, said they knew someone convicted of drunk driving.⁷

There was also a significant increase in percentages reporting key consequences that might discourage them from driving drunk: realizing one could kill or injure others, or oneself; a jail sentence; loss of license; a substantial fine; vehicle impoundment; and others. The rank order of such factors remained the same as in 1991.

As in 1991, a majority felt that penalties for first, second and third offense drunk driving were not severe enough, with a significant increase in the percentage who felt penalties were not severe enough, per offense. Eighty-nine percent supported or strongly supported bigger fines and longer jail sentences; 77 percent supported impoundment and sale of repeat offenders' vehicles.

Evaluation of State Programs

Also in 1990, MADD began a process to rate the states on DUI laws, programs and other responses to the impaired driving problem. Using "20 By 2000," MADD's package of anti-DUI goals and objectives, and other issues and countermeasures, a task force made up of representatives from universities, research organizations and government agencies in addition to activists developed a questionnaire covering eleven topic areas. The sections included: Governor's Leadership; Statistics & Records; Enforcement; Administrative & Criminal Sanctions; Regulatory Control & Availability; Legislation; Prevention/Public Awareness; Youth Issues; Self-Sufficiency Programs; Innovative Programs; and Victim Issues. This "Rating the States" survey was sent out to the 50 governors, most of whom called upon their Highway Safety Representative to complete it. Results of the survey identifying the top 10 states in each category were released in May 1991, drawing considerable public and media interest.⁸

In order to assess progress, this survey was conducted again in 1993,⁹ with the questionnaire sent to the governor's

⁷ The Gallup Organization, Mothers Against Drunk Driving Executive Summary of 1993 Results, April 1994.

⁸ Rating the States: An Assessment of the Nation's Attention to the Problem of Alcohol- and Other Drug-Impaired Driving. Mothers Against Drunk Driving and Advocates for Highway & Auto Safety, 1991.

⁹ Rating the States: An Assessment of the Nation's Attention to the Problem of Alcohol- and Other Drug-Impaired Driving. Mothers Against Drunk Driving and Advocates for Highway & Auto Safety, 1993.

⁵ U.S. Department of Transportation, press release, April 1, 1994.

⁶ The Gallup Organization, Mothers Against Drunk Driving Executive Summary of 1991 Results, September 1991.

highway safety representatives for completion on behalf of the governor. On the 1991 survey, MADD's state organization representatives also completed the survey for comparison, based on information at their disposal or requested from various state agencies. In 1993, MADD leaders received a copy in order to help monitor progress and communicate with officials to facilitate completion but were not asked to complete it. The data received from the states was complemented by information from the National Highway Traffic Safety Administration Fatal Accident Reporting Section and State Digest of Alcohol Highway Safety-Related Legislation and FBI Uniform Crime Reporting Section. Based on information from these sources, the states were evaluated and given a report card on their status with regard to laws and programs dealing with impaired driving.

Certain information gathered from the survey may be especially relevant to efforts to deal with the driver who persists in drinking before driving. This information was drawn from survey questions about retention of DUI records, alcohol problem assessment and treatment, and attendance at Victim Impact Panels.

Driver Records and Identification of Persistent Drinking Drivers

The principle method for identifying the persistent drinking driver is through records on repeat offenses. Availability of adequate and complete records on DUI offenses is therefore important, and the length of time offenses are maintained on driver records can affect identification of these drivers. It can also impact the nature and severity of sanctions meted out, as well as affecting the likelihood of appropriate treatment for alcohol problems. As an example, recently the driver convicted in the death of the MADD founder's daughter in 1980 was arrested on a new offense and, because records had been expunged, he was sentenced once again as a first offender, despite his earlier history.¹⁰

According to information gathered from the "Rating the States" Survey, there is considerable disparity from state to state as to policies for maintaining offenses on these records, and the definition of a repeat offender may vary accordingly. Only 4 states maintain data on prior DUI offenses in perpetuity. Twenty other states and D.C. maintain such records for 10 or more years, including 8 states for 20 or more. Twenty maintain records for 3 to 7 years. Five other

states have variations; for example, in Louisiana, criminal records are maintained for 10 years, but for administrative offenses, are referenced for only 5 years. Georgia maintains the information on the record, but does not use the information for classification of drivers as repeat offenders beyond 5 years.

Programs allowing for pre-sentence diversion exist in 15 states, and 10 states have Probation Before Judgment (PBJ) programs. These programs allow offenders to avoid the usual sanctions for an offense and typically prevent or delay information about an offense from appearing on their driving record. Diversion may prevent offenders from recognizing and dealing with the seriousness of their offense.

For those states which maintain records for the shorter periods, as well as for the states allowing pre-sentence diversion or PBJ, offenders may escape appropriate consequences.

One of the beliefs about persistent drinking drivers is that they have an alcohol problem, which leads to an inability to control drinking and results in DUI arrests and even crash involvement. One approach to dealing with these offenders is to require treatment as a part of probation or incarceration. "Rating the States" data indicate that as many as 34 states report that they require those arrested for DUI to be evaluated for alcohol problems. Of these, 32 states require alcohol problem assessment on a first offense, 33 on a second offense and 34 on a third or subsequent offense. Additional states conduct such evaluation by policy rather than statute. Thirty-two states report that they mandate treatment for a first offense and 39 for a second or subsequent offense; additional states require treatment at judicial discretion.¹¹

Evaluation of Victim Impact Panels

Courts in a growing number of states are sentencing offenders to attend a Victim Impact Panel, usually as a requirement during probation. As many as 200 or more counties across the country in as many as 34 states now hold panels, bringing groups of offenders together with victims or their family members. For the victims, speaking as part of a Victim Impact Panel provides an opportunity to influence others to avoid driving after drinking in order to spare others the tragedy that has befallen them. As an added benefit, a recent

¹⁰ USA Today, October 16, 1992, pg. 3A.

¹¹ Unpublished information from the "Rating the States" 1993 survey.

report indicates that anxiety and depression are reduced and psychological well-being improves for victims participating in these panels.¹²

The results of this sentencing method have not been extensively evaluated, but data are available from a number of programs. For the courts, the panels may help focus the attention of DUI offenders on the potential results of their own behaviors, with the hope of increasing awareness and reducing recidivism, and anecdotal reports provide examples of the impact on individual offenders. Evidence of attitudinal change comes from a study conducted in March 1990 in Dallas, Texas, which looked at attitudes pre- and post-panel attendance for 94 offenders attending panels between November 1989 and March 1990. Prior to attendance, 87.1 percent stated that they would continue to drink and drive or were undecided. Following the panel, 90 percent stated they would not drink and drive again.¹³

More significant than change in attitudes is behavior change, as indicated by reduced recidivism. A study conducted in 1989 in Washington County, Oregon, examined a randomly selected group of 90 offenders who had attended a Victim Impact Panel. While some of these individuals were first offenders, others were classifiable as persistent drinking drivers, based on prior offenses. Prior to the arrest for which they were sent to a panel, the offenders had from zero to four arrests. A review of driving records one year after attendance at a panel revealed a recidivism rate of 8.8 percent compared to the general re-arrest rate of 40 percent to 50 percent. Of the 8 who re-offended, 7 were males and 1 was female, and the ages ranged from 24 to 56. The length of time between attendance at a panel and arrest for a subsequent offense varied from 7 to 21 months.¹⁴

¹² Mercer, Dorothy, Rosanne Lorden and Janice Lord. Victim and Situational Characteristics Facilitation or Impeding Post-Victimization Functioning, Preliminary Report on First-Year Findings of a Three-Year Project, Drunken Driving Victim Impact Panels: Victim Outcomes. Presentation at the International Society for Traumatic Stress Studies, San Antonio, Texas, October 27, 1993.

¹³ Sprang, G. Analysis of Pre and Post-Test Responses to Victim Impact Panel: November 1989 through March 1990. Results reported to the Board of Directors, MADD, Dallas County, April 2, 1990.

¹⁴ Satterfield-McLeod, Carole. An Evaluation of the Washington County Victim Panel for Intoxicated Drivers. Washington County, Oregon, Sheriff's Department, April 1989.

A larger study conducted in 1990 in Clackamas County, Oregon, compared recidivism rates of 534 offenders who attended a Victim Impact Panel and 741 offenders who did not. The recidivism rate for non-panel offenders during the following year was three times the rate of those who attended panels.¹⁵

In Portage County, Ohio, 3,026 individuals were arrested for drunk driving between January 1, 1990, and July 31, 1991. Approximately 30 percent were repeat offenders, with at least one prior within 5 years. During this time frame, 346 first offenders attended Victim Impact Panels. At the time of the report, the re-arrest rate for this group was 3 percent, or 12 offenders.¹⁶

Summary

Efforts by citizen activists have contributed to progress against drunken driving in the areas of legislation and public awareness; these efforts have been cited as contributing to lower alcohol involvement in traffic crashes, deaths and injuries. Knowledge about public attitudes and understanding of impaired driving risks and solutions as well as about the status of anti-DUI efforts nationally and at the state level has been compiled through programs like the "Rating the States" project and public attitude polls, providing information useful to examinations of the persistent drinking driver problem.

Definitions of repeat offender or persistent drinking drivers are dependent on records on their involvement in traffic violations and other DUI-related offenses. Better records on these offenses, maintenance of offenses on driver records for longer periods, and elimination of pre-sentence diversion would provide for a more accurate and consistent identification of the persistent drinking driver.

In addition, citizen activist programs which involve victims telling their stories to offenders appear to help reduce recidivism but should be evaluated further for their effect on persistent drinking drivers. More in-depth evaluation could indicate more clearly which offenders are most likely to benefit from attendance at a panel; whether persistent drinking drivers tend to be affected by panel attendance; whether recidivism is reduced; and whether the impact lasts

¹⁵ O'Laughlin, Linda Hetrick. Drunk Driving - The Effects of the Clackamas County DUII Victim Impact Panel on Recidivism Rates. MADD, Clackamas County, Oregon City, OR 97045, 1990.

¹⁶ Victim Impact Panels: A Creative Sentencing Opportunity, Mothers Against Drunk Driving, 1991.

over time. Even if the group of offenders for whom recidivism is lowered over time were found to be small, that effect could potentially prevent some deaths due to impaired driving and would therefore be worthwhile.

APPENDIX D

SUMMARY OF MINNESOTA REPEAT DWI OFFENDER PLATE IMPOUNDMENT LAW

Stephen M. Simon

University of Minnesota

Administrative Impoundment of Plates, Minnesota Statutes Section 168.042

The law is based primarily on the implied consent administrative license revocation experienced by repeat DWI offenders. The law requires that the commissioner of public safety issue an impoundment order for the vehicle registration plates of the **vehicle driven by the repeat DWI violator** (regardless of who owns the vehicle) at the time of the "driving incident" that triggers the issuance of the impoundment order and all vehicles owned individually and jointly by a person whose driver's license or privileges have been revoked three times within 5 years or four times or more times within 15 years for an **impaired driving** violation. Impaired driving violation is defined as:

a) A **criminal conviction** for violating Minnesota's DWI laws or drivers license laws applicable to DWI offenders whose driver's license are cancelled (offenders with 3 plus DWI violations of record)

b) An **administrative revocation** for a civil violation of Minnesota's implied consent law (administrative alcohol related license revocation).

The impoundment order can be issued at the time of the arrest of the DWI offender. The impoundment order can be issued by the police officer who invoked Minnesota's implied consent law and the person either failed or refused an implied consent alcohol concentration test. (Minnesota's implied consent law authorizes pre-hearing revocation for failure or refusal of an implied consent test).

THIS IS THE CENTRAL AND KEY PART OF THE PLATE IMPOUNDMENT LAW

The pre-hearing implied consent administrative revocation notice issued by the arresting officer at the time of arrest and test failure or refusal is the basis for and "triggers" the issuance of the pre-hearing administrative plate impoundment order.

The police officer is authorized by the statute to act as the commissioner's agent and issue the impoundment order in the same manner that they act as the commissioner's agent in issuing administrative license revocations.

The commissioner also issues, by mail, impoundment orders to drivers who should have received such an order from the arresting officer but did not do so.

After issuing the impoundment order and seizing the plates the officer issues a temporary vehicle permit to the driver. The permit is valid for seven days if the driver owns the vehicle. The permit is valid for forty five days if the vehicle is owned by someone other than the driver.

The temporary permits allows the owner of the vehicle to remove the vehicle from the street if legally parked after the arrest or the impound lot if the vehicle was towed after the arrest of the driver. The longer period for vehicles not owned by the driver allows the non-driver owner time to obtain new plates (see # 6 below).

All plates impounded by police officer pursuant to the impoundment law are to be destroyed by the police department that impounds them. This is authorized by statute and eliminates the problem of storage of plates or transmittal of the plates to the state.

The owner, if not the violator, can obtain new plates at no cost by filing with the commissioner of public safety a statement containing the following information:

- a) that they are the registered owner of the vehicle;
- b) that they currently own and possess the vehicle;
- c) the date the violator obtained the vehicle from the owner;
- d) the residence addresses of the registered owner and the violator on the date the violator obtained the vehicle from the owner;
- e) that the owner was not passenger in the vehicle at the time of the violation; and
- f) that the owner knows that the violator may not operate a vehicle without a valid driver's license.

The owner is not entitled to receive new plates if they knew or had reason to know that the violator did not have a valid driver's license on the date they obtained the vehicle from the owner.

The cost of implementing plate impoundment is very low. Issuing an impoundment order takes only minutes of an officer's time. Removal of plates is often done by tow lot personnel at the direction and request of the arresting officer after the officer has ordered a tow for the driver's vehicle after the arrest. Storage of plates by police departments is not a problem because the plates are destroyed.

One problem that does exist in the present system is impoundment of plates from vehicles not owned by the

violator. The department of public safety is reissuing a significant percentage of plates for these vehicles because they perceive the language in the current law to require it unless they can prove that the owner was a passenger in the vehicle at the time of the violation or knew the violator did not have a valid license at the time of the violation. Dr. Ross and I found that approximately 27 percent of repeat DWI violators were driving a vehicle registered in someone else's name. We believe, based on our interviews with repeat DWI violators, that a very high percentage of these vehicles were either 1) in fact owned by a spouse of the violator who had knowledge of the violator's lack of a valid driver's license or 2) were owned by the violator but purposely kept registered in the name of the previous owner. (In this situation the violator would buy a vehicle from an "innocent" seller and never transfer the registration from the seller into the violator's name, when the registration expired the violator would sell the vehicle and "jump" the vehicle registration from the previous seller to the new buyer without indicating that the violator owned the vehicle for a significant period of time)

I believe that this problem could be addressed by a statutory change that would denied re-issuance of plates impounded from a vehicle, owned by someone other than the violator, and driven by a repeat DWI violator if the violator did not have valid driver's license as of the date the vehicle was obtained by the violator from the registered owner. This statutory change will be recommended to the 1995 Minnesota legislature by the Minnesota DWI criminal Justice System DWI Task Force.