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APPENDIX D4
IMPAIRED DRIVING DETECTION AND ENFORCEMENT

David F. Preusser, Robert G. Ulmer, and Carol W. Preusser

Enforcement of impaired driving laws is conducted by police officers who are members of municipal departments, state police agencies, highway patrols, sheriff's department and a variety of other police agencies. Collectively, these agencies have more than 500,000 sworn personnel and make approximately 1.8 million arrests each year for "driving under the influence" (FBI Uniform Crime Reporting estimates). Arrest rates have been relatively stable at this level during the 1985-90 period.

Many of these arrests are being made by officers assigned to police entities whose primary mission is traffic. The officers may be part of the highway patrol, other state police agencies dedicated to traffic, the traffic division of a municipal or county level department or a dedicated DWI Patrol. Such officers comprise only a portion of the total complement of sworn personnel. Regular or precinct patrol officers may or may not be conducting impaired driving enforcement depending on their training, their department's emphasis on impaired driving enforcement and the demands placed upon them for other types of police services.

The purpose of the present paper is to provide a framework for the discussion of research and development activities that may assist these officers in their efforts to enforce impaired driving laws. The paper provides a brief history of impaired driving enforcement, followed by current issues and suggested research topics. The reader is cautioned that a complete discussion of these issues would require several volumes and thus the present paper is only an overview as seen from the authors' perspective.

Throughout this paper, the term DWI encompasses driving while intoxicated; driving under the influence; operating while intoxicated; operating under the influence; and similar. It should be noted that this general use of the term DWI obscures important distinctions between each charge as defined uniquely in the laws of each state. The term DWID is used to

generally refer to similar charges involving drugs other than alcohol.

HISTORY

1960s

Laws relating to DWI offenses have undergone considerable change during the past three decades. In the 1960s, the presumptive threshold for DWI, generally, was a Blood Alcohol Concentration (BAC) of 0.15 percent, with blood specimens as the common means for BAC determination. Typical sanctions involved monetary fines and license suspensions or revocations. While the possibility of jail terms existed, they were rarely imposed. A major milestone in combatting DWI behavior was the U.S. Department of Transportation's report to Congress on the nature and extent of alcohol involvement in the overall highway safety problem. By the close of the decade, breath testing was replacing blood for evidentiary purposes, presumptive thresholds were being reduced, usually to 0.10 percent BAC, and Federal funding was beginning to support research, development, demonstration, system support and other programs aimed at reducing the alcohol crash problem.

1970s

The 1970s began with the Alcohol Safety Action Projects (ASAPs). These were high-profile programs established in many communities across the country. They provided substantial funding for the development, implementation and evaluation of enforcement, adjudication, driver rehabilitation and public information countermeasures. They had a significant and long-term influence on impaired driving enforcement and related legislation.

In the late 1970s, a vocal public constituency regarding the alcohol crash problem began to emerge through organizations such as MADD and RID. Formed initially around individuals who had directly suffered the consequences of alcohol-related crashes, these groups called into question existing court and licensing agency practices in dealing with DWI offenders. Examples were cited of crash involved DWI drivers who had previous arrests but had not experienced license withdrawal or who were not charged as repeat offenders because of existing processing practices. Inadequate record systems, plea bargaining to non-alcohol related charges and referrals to treatment in lieu of adjudication and/or license withdrawal were among the practices criticized.

In this same time frame, there was a growing belief that the only demonstrable impacts on the alcohol crash problem were being achieved by well publicized and intensive law enforcement efforts. A model emerged which suggested that reductions in alcohol-related crashes required deterring potential offenders from undertaking DWI behavior. Such "general" deterrence involved creating a plausible risk of being apprehended followed by the perception of certain and swift application of relatively severe sanctions.

By themselves, the specific treatments or sanctions applied to those actually apprehended would not solve the alcohol-related crash problem as the majority of the crash involved were previously unknown to the criminal justice system. The deterrence model, therefore, suggested that the primary goal of the arrest and adjudication system should be to support general deterrence by certainly and swiftly applying relatively severe sanctions. General deterrence would create the perception among drivers that they would be well advised not to attempt driving after drinking.

1980s

The 1980s can be characterized as a decade of "tougher" DWI laws and sanctions as well as attempts to correct identified deficiencies in the processing of DWI offenders. State laws began to appear which mandated the application of particular sanctions, guaranteed license withdrawal and eliminated or restricted plea bargaining. At the Federal level, H.R. 6170 (Barnes) became law in 1982. Among the provisions of this bill was authority given to the Secretary of Transportation to make basic and supplementary grants to the states. Grant eligibility requirements included: increased DWI enforcement efforts and publicizing such enforcement; adopting an illegal per se statute; mandatory jail or community service terms; and mandatory license withdrawal periods. Various innovations were introduced during the 1980s to further increase the certainty of penalties. Illegal per se statutes began to appear which simplified the elements of the offense which had to be proven. Administrative license revocation statutes were introduced to insure certain and swift license withdrawal. States also began to introduce new sanctions to broaden the penalties and treatments that could be applied. Some of these (e.g., restitution) were responsive to victims' rights, some (e.g., community service and house arrest) were alternatives or adjuncts to jail sentences, and others (e.g., ignition interlocks, vehicle confiscation and/or registration withdrawal) were attempts to specifically deal with repeat drinking and driving behavior.

Youth drinking and driving was a major issue during

the decade. In 1984, President Reagan signed legislation that would have withheld highway safety funds from states that did not set 21 as the minimum purchasing age for alcohol. By July of 1988, all 50 states had a 21 minimum purchasing age requirement. Some states also adopted low or "zero tolerance" presumptive BAC limits for drivers under the age of 21 and "use and lose" laws which linked drug and alcohol convictions, irrespective of motor vehicle involvement, to loss of the driver's license.

The 1980s were also a period of innovation for the detection and arrest of DWI offenders. Officers were routinely trained in DWI detection procedures, Horizontal Gaze Nystagmus (HGN) and other field sobriety tests. Preliminary breath testing devices were improved to the point where they could be placed in routine use. By the close of the decade, passive alcohol sensors had appeared and were being tested under both laboratory and field conditions.

Drug impaired driving enforcement also emerged as a major focus. Drug Recognition Experts (DREs) were trained based on program development work done in Los Angeles. Pilot DRE programs were begun in four states during 1987 and later extended to several additional states. The objective of these programs was to give departments the ability to enforce impaired driving laws in situations where the impairment was caused by drugs other than alcohol. Drinking and driving declined during the 1980s. Fewer alcohol related fatalities were reported by FARS and fewer drinking drivers were seen in roadside surveys (Lund and Wolfe 1989). The reasons for the decline likely involved some interaction of the initiatives described above plus changing social attitudes fostered by citizen pressure to deal with the problem.

CURRENT ISSUES

Current DWI Arrest Patterns

Nationally, the current total of about 1.8 million arrests computes to approximately 10 DWI arrests each year for every 1,000 licensed drivers (FBI, 1989 arrest estimates; FHWA, 1989 license estimates). These arrests are not distributed equally across the regions of the country. As shown in Table 1, arrest rates (per 1,000 licensed drivers) are highest in the west; substantially lower in the east and south.

Regional differences in per driver arrest rates suggest regional differences in enforcement practices. However, some or all of these differences could be due to regional variation in the underlying drinking and driving problem. That is, if eastern drivers drive less and/or drive less after drinking, then lower arrest rates might be expected regardless of enforcement practices.

One measure of the underlying drinking and driving problem can be found in FARS. The second column of Table 1 shows arrest rates by Region computed on the basis of the number of fatally injured drinking drivers. For Region I, the entry (149.3) represents the sum of all 1989 New England arrests divided by the sum of the 1985-89 yearly average of all New England .05 percent + BAC driver fatalities (see Preusser et al. 1992). That is, in New England, there were 149.3 DWI arrests for each fatally injured drinking driver. The comparable ratios in Region IV Southeast and Region VI Southwest were 85.7 and 84.3, respectively. In Region IX, there were 230.8 arrests for every fatally injured drinking driver.

Arrest rates also vary substantially with respect to driver age (see also Voas and Williams 1986). Nationally, as shown in Figure 1, young drivers are greatly underrepresented in the arrest population. There are approximately three times the number of arrests for every fatally injured drinking driver age 25 and older as there are for every fatally injured drinking driver ages 16 and 17. A similar, though less striking, discrepancy exists for young drivers in the 18-20 and 21-24 age ranges. This pattern of results, i.e., low arrest ratios for 16 to 17 year olds, somewhat higher for 18-20 year-olds, much higher for drivers 25 and older, is remarkably similar across states and regions.

It is not known why DWI arrest rates relative to alcohol crash rates would be particularly low in the southeast and southwest. Low youth arrest rates, however, have been the subject of a recent NHTSA study (Preusser et al., 1992). It was suggested that youth do not follow the typical drinking and driving patterns of older drivers. Underage drinking is illegal and, to quote one officer, "drunk or sober, youth drive differently." Enforcement resources, targeted to the typical older driver, may not be well positioned with respect to place or time to find youth. When they do encounter a young driver, officers may not recognize youth impaired driving cues which likely differ from the detection cues used to find older impaired drivers. And, youth impaired driving typically involves lower BAC levels making arrest and prosecution more difficult.

DWI Patrol Strategy

A DWI arrest can result from some patrol activity, a crash investigation, or some special operation such as a sobriety checkpoint or a "DWI saturation." It is felt that patrol activity, including DWI patrols, provide the

greatest number of arrests followed by crash investigations and special operations.

Surprisingly little is known about the efficiency of each of these arrest modes or the characteristics of those drivers found by each mode. Nevertheless, regardless of mode, DWI enforcement is often left to those officers who have traffic as their primary responsibility and/or are specifically assigned to DWI patrols. In general, on a per officer basis, state police and highway patrol agencies and the traffic divisions of county and municipal agencies conduct far more DWI enforcement than regular or precinct officers. In many large municipal departments, for instance, DWI arrests made by the regular or precinct officers are rare and arise only from an extreme set of circumstances.

Specialization of DWI enforcement among traffic and/or DWI officers likely has advantages. However, it also likely affects the selection of those drinking drivers that are arrested from among the many drinking drivers that could be arrested. DWI patrols, for instance, are rarely conducted during daylight hours. They are also less common on Sunday through Wednesday nights. In practice, DWI officers target their patrols to the times and places where they are most likely to find the "typical" drinking driver. This typical driver, however, only represents a subset of all drinking drivers. Similarly, highway patrol officers and officers assigned to municipal traffic divisions target their activities to highways and arterials. They are less likely to patrol residential neighborhoods. Regular patrol officers, who are in the neighborhoods at all hours of the day and night, may or may not be conducting DWI enforcement.

It is felt that there are differences in the characteristics of drinking drivers arrested by various types of patrols. There may also be differences in the arrest population derived from various arrest modes such as crash arrests versus patrol or pickup arrests versus sobriety checkpoint arrests. For example, 23 percent of drivers arrested at Charlottesville, VA checkpoints were under the age of 21 as compared with only 11 percent of drivers arrested by patrol activity during the same period (Voas, et al. 1985).

DWI Detection and Arrest

For patrols, DWI detection relies on officer experience, stopping many motorists for observed moving violations and/or a set of DWI detection cues developed some years ago by the National Highway Traffic Safety Administration. DWI investigation often relies on the Standardized Field Sobriety Test including Horizontal Gaze Nystagmus (HGN). Many of the officers familiar with HGN feel that it is the most important advance in DWI enforcement in recent years. Some departments are using non-evidentiary preliminary breath testing devices as part of their investigation. Some are using in-car video cameras and/or cameras at the booking facility to document their investigation and arrest. Some have DRE programs which facilitate enforcement when the impairment is caused by drugs other than alcohol.

Virtually all of the above techniques can be used for crash investigations and checkpoints. However, particularly at checkpoints, it would appear that preliminary and passive breath testing devices are particularly useful. At checkpoints, the officer has less opportunity to observe on-road behavior and driver interviews tend to be brief because of the need to minimize the delay for nondrinking motorists. Parts of Australia have implemented random roadside breath testing (i.e., checkpoints) using preliminary devices. In this country, the use of passive sensors has been studied at checkpoints in Binghamton, NY (Wells et al. 1992) and Charlottesville, VA (Jones and Lund 1986). Such devices may also have a role in the enforcement of the low BAC laws for youth.

Most of the field sobriety techniques in current use were designed for the enforcement of .10 percent BAC laws. The new .08 percent laws may require some modification in these techniques though changes will likely be minimal. The new low BAC and zero tolerance laws for youth, however, pose a different set of problems. Active enforcement of these laws will likely require the development of different procedures.

DWI Processing

DWI is a serious offense. It can result in fines, jail, loss of license, a substantial increase in insurance premiums, and more. As such, prosecutors require that each element of the detection, investigation and arrest of the suspect be thoroughly documented. For the officer, each arrest requires both time and special skills to correctly perform and document each of these elements. Typically, a single DWI arrest requires 2 to 4 hours or more from the time that the impaired driver is detected until the time that the documentation is complete. It may also require additional time for attendance at hearings and/or court trials. And, from initial detection through adjudication, it requires special skills on the part of the officer.

Streamlining and reducing DWI paperwork and processing is likely possible in some jurisdictions. However, the seriousness of the charge and the need to establish each of its elements, limits the extent to which paperwork streamlining alone can reduce the processing burden.

It is felt that this processing burden fosters DWI

specialization both because of the time requirements and the skill requirements. In terms of time, officers whose primary mission is not traffic are reluctant to leave their patrol areas for the 2 to 4 hours required to deal with one arrest. Police supervisors may be equally reluctant to have the officers away from their areas particularly on Friday and Saturday night when demands for all types of police service tend to be high. These same officers may also be reluctant to work their way through all of the DWI forms and procedures. DWI and traffic officers, on the other hand, may see DWI enforcement as central to their primary mission and thus have a very different attitude relative to the processing burden. They also have a different skill level given that they likely have specialized training and routinely make DWI arrests.

Some departments are reducing the processing burden for regular patrols by providing backup from DWI specialists. Phoenix has DWI vans that travel to the arrest location and take custody of the suspect for all processing beyond the moment of arrest. Various other types of "hand-off" procedures are being used in Denver, other Colorado communities and communities in other states. Some of these procedures have the capability of returning the regular officer to his or her patrol area in 30 minutes or less.

RESEARCH NEEDS

The following paragraphs research topics that could be meaningfully pursued in the near future. The topics presented are not all inclusive nor are they presented in sufficient detail for work to begin. Rather, the list is intended as a "straw person" starting point for a more comprehensive discussion. Also, the list is limited to DWI enforcement despite the fact that alcohol availability, DWI adjudication, DWI sanctioning, DWI rehabilitation, and other variables, are all integral and interactive parts of a total system.

Impaired Driver Detection—Patrol

Most impaired drivers are detected through patrol activity. Existing detection cues concentrate on finding the "typical" impaired driver at a BAC level of .10 percent or higher. Research is needed to respond to emerging trends toward lower BAC limits for all drivers and "zero tolerance" for youth. Research is also needed for the detection of drinking drivers (e.g., youth) who do not follow the "typical" patterns. The following efforts could be considered:

1. DWI detection cues appropriate for .05 percent BAC (impaired laws in several states); .08 percent BAC; as compared with .10 percent BAC.
2. DWI detection cues for youth.
3. Enforcement strategies, possibly to include detection cues and/or passive sensing devices, for the youth "zero tolerance" laws.

Impaired Driver Detection—Crash

The first priority at a crash scene is to help those who may be injured. Next, there are other priorities such as clearing the roadway, interviewing drivers and witnesses, and preparing reports. It may be difficult for the officer to pursue a DWI investigation even when impaired driving may be suspected as a cause of the crash. This is particularly the case when the suspected driver has been injured. A DWI arrest following a crash would have both criminal and civil liability implications. Research is needed to study DWI crash investigation guidelines and procedures as well as locally developed working relationships between the police and emergency room personnel for driver BAC determination.

4. When, how and with what procedures should an officer pursue a DWI investigation following a crash. How are such investigation currently being pursued and under what guidelines. Should legislative initiatives be taken.

Impaired Driver Detection—Checkpoints

Checkpoint proponents claim that they are highly visible activities contributing to general deterrence; provide younger officers with the opportunity to work closely with experienced DWI officers; and apprehend drivers that might otherwise go undetected with traditional on-road DWI detection methods. Opponents claim that they delay travel for the nondrinking driver; are very labor intensive; and, per person hour, do not produce as many DWI arrests as saturation patrols or DWI patrols. Current NHTSA research is examining specific checkpoint programs. Nonetheless, and as a practical matter, departments will continue to make choices between checkpoints and patrols based on their perception of the relative merits of each and the importance of those aspects of DWI enforcement that each is designed to maximize. It would be of interest to examine these choices across a range of departments and a range of operating environments.

5. What are the underlying factors that cause some

departments to conduct checkpoints and others to rely solely on saturations and/or DWI patrols. The study should be conducted across a range of departments; in a range of operating environments; in states that allow checkpoints.

DWI Arrest and Processing

Current DWI processing procedures from arrest through adjudication can be as much a deterrent to officers as they are to offenders. This is particularly true for regular or precinct officers who view DWI as only one part of their overall mission. Streamlining and paperwork reduction in coordination with the prosecutor may be part of the answer. Regular patrol hand-offs to DWI specialists may be another part.

6. Develop model DWI processing systems appropriate to various legislative environments including: Administrative License Revocation; guidelines for hearing and court appearances; step by step paperwork; and required and/or desirable legislative initiatives.

7. Examine the circumstances and operating environments where regular patrol hand-off of DWI arrested drivers to DWI processing specialists may be advantageous. Recommend model hand-off strategies as appropriate.

Funding for DWI Enforcement

For most agencies, DWI enforcement is one of many enforcement missions and is primarily funded with general department budgets. There is current interest in providing DWI enforcement with some form of self-sufficient funding mechanism derived from the fines paid by DWI convicted drivers. Such interest has found support in the "410" incentive grant eligibility formula. Currently, very different self-sufficiency funding mechanisms are in place or are being developed (e.g., Colorado Law Enforcement Assistance Fund versus New York Stop DWI). These different mechanisms may serve different objectives and have very different effects on participating departments.

8. Study existing and developing DWI self-sufficiency funding mechanisms in terms of their impact on participating departments. Impact should consider not only overall enforcement levels, but effects on the characteristics and strategies of department wide enforcement efforts including who is being arrested when and where and by which officers.

Arrest Population

State police, sheriff's department, municipal traffic division and precinct officers each patrol characteristically different roadways. They also, typically, have different patrol missions. Presumably, these differences should lead to a different mix of DWI arrested drivers from among the entire population of all drinking drivers. Differences in the arrest population may also occur across the various arrest modes (patrol, crash and special operations). It would be of interest to determine who is being arrested as a function of arresting department, arresting officer and arrest mode.

9. Compare the characteristics of DWI arrested drivers as a function of:

- Type of arresting department;
- Division/assignment/mission/train department;
- Type of police activity (e.g., DWI patrol, regular patrol, injury crash investigation, property damage crash investigation, sobriety checkpoint, saturation, stakeout).

Identify differences and, as appropriate, recommend strategies and/or training needs.

Recent Legislative Innovation

A variety of legislative innovations are currently being adopted and/or considered by the states. Administrative License Revocation, .08 percent presumptive BAC limit, low BAC limits for youth and "use and lose" are the most prominent. Evaluations of these initiatives have been largely limited to one or a few states and/or the initial implementation periods. A more comprehensive consideration of these laws will be possible in the near future.

10. Compare and evaluate selected legislative initiatives begun in the 1980's and currently in place in several states.

Recent Technological Innovation

A variety of technological innovations are currently in use or are being considered by various police agencies. These include in-car video cameras, passive alcohol sensors and drug testing.

11. Evaluate the application of new technologies in various enforcement environments. Study should distinguish current "state of the art" equipment from earlier or first generation equipment that may have been deployed in the past and may still be in use today.

Statewide Systems

Earlier in this paper, it was suggested that the DWI arrest rate across states and regions was variable. High arrest rates were found in California, Colorado and other western states. Arrest rates in the south and southwest were particularly low in relation to the underlying drinking and driving problem as measured by fatally injured drivers. Arrest data were based on the FBI Uniform Crime Reporting System which relies on the voluntary cooperation of police agencies, not all of which participate. Thus, state to state variance based on these data must be viewed with some caution. Nevertheless, it appears that major arrest rate differences do exist. These differences may be the result of resource allocation, legislation, cultural differences or any number of other factors.

12. Track arrest rates, state by state, overtime; identify reasons for state to state variance; and, if appropriate, recommend actions that states can take to increase rates.

This concludes the list of possible research topics for the near future. As mentioned above, the list is not all–inclusive nor is it sufficiently detailed to permit actual research activities to begin. Rather, the objective was to suggest a starting point for a more comprehensive discussion.

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APPENDIX D5A
DETERRENCE AND REHABILITATION:
SECTION 1 - DETERRENCE

Carol Lederhaus Popkin

INTRODUCTION

The goal of most DWI programs has been to prevent drinking driving behavior. Deterrence theory is predicated on the belief that a behavior can be prevented by the threat of punishment. According to this theory, the effectiveness of the perceived threat depends on the perceived certainty, celerity, and severity of the punishment. The effect of deterrence may be specific or general.

Specific deterrence seeks through punishments, education and treatment to influence the drinking driver who has already been apprehended to refrain from drinking and driving in the future. Roadside surveys indicate that most drinking drivers have low BACs (Lund and Wolfe 1988). In contrast, a significant portion of fatally injured drivers have high BACs (Simpson and Mayhew 1991). Research has shown that drivers fatally injured in alcohol related (A/R) crashes are more likely to have a history of previous DWI convictions (Brewer et al. 1991). Simon (1992) reports that recent studies of DWI recidivism conducted in Minnesota indicate that an increasing proportion of drivers arrested for DWI are recidivists. Furthermore, Minnesota has also experienced an increase in the percentage of drinking drivers