Process Evaluation of the State of Maryland DUI/Drug Court Expansion Project

FINAL REPORT

Introduction

Despite the fact that significant gains have been achieved over the past twenty years both on the national and state level by those committed to reducing the incidence and consequences of driving under the influence, the State of Maryland recognizes that there is still much to be accomplished to cope with this devastating societal problem. It has also recognized that only through the undertaking of new and innovative practices will the achieved gains be furthered. One such innovation is the Driving While Intoxicated (DWI) or Driving Under the Influence (DUI) Court, a distinct court tailored to address the particular needs of high-risk drinking and driving offenders – that is, those offenders with an average Blood Alcohol Concentration (BAC) of .15 or higher at the time of arrest; offenders who are also more than likely have a history of driving while impaired, whether or not they have prior arrests or convictions for their repeat behavior. Based, in part, on the Drug Court Model, the DWI (DUI) Court provides long-term, intensive treatment coupled with amplified compliance monitoring and accountability in an effort to break the DWI cycle in a way that is responsive to the offender as well as to the community at large.

In recognition of the potential benefits of DWI (DUI) Courts – both to participants and society alike – in 2004, the State of Maryland's Drug Treatment Court Commission partnered with three Maryland counties: Anne Arundel, Howard, and Harford, to implement DUI Court pilot programs. In Anne Arundel and Howard counties, the DUI program was coupled with

already existing Drug Court programs and thus, created Hybrid programs and in Harford County, the DUI Court was implemented as a distinct program. [1]

In October 2004, the Drug Treatment Court Commission engaged the University of Maryland's Institute for Governmental Service and Research (IGSR), formerly known as the Bureau of Governmental Research (BGR), to conduct a process and outcome evaluation of its three new DUI/Drug Court (DUI court) programs, as part of an expansion pilot program funded through the Maryland Highway Safety Office. In April 2005, IGSR commenced this process/outcome evaluation, consisting of court observations, personal interviews with team members and clients, reviews of client case files, and official court records. The purpose of this undertaking was to evaluate the efficacy of the implementation of the program as designed, the operational procedures set in place, and the impact of the program on participant progress and outcomes.

In these three pilot sites, eligible candidates for the DUI/Drug Court program are offenders over the age of 18 years, who have been charged with Driving Under the Influence (DUI) or Driving While Intoxicated (DWI), who reside and were arrested in the respective county, are repeat offenders, and who volunteer to participate in the program.

Research Methodology

As part of this evaluation, data was collected from two study groups: (1) Staff (team) members of the DUI court programs in each of the three sites; and (2) DUI court participants. Table 1 describes the data collection. In all, information was obtained from 19 team members (via interviews) and 42 clients (either via interviews, Number (N) =15, or secondary sources e.g., HATS; paper case files; Maryland Judiciary Case Search, N=37). At the time of this evaluation,

[1] Hybrid Court is a term to describe a Drug Treatment Court that includes DUI offenses/cases.

67.6% of clients were still in program, 24.3% had successfully completed the program and graduated, and 8.1% were unsuccessful and had been terminated from the program.

Table 1. Data Collection Sources and Response Rate

	Anne Arundel N	Harford N	Howard N
Personal Interviews, Staff	4 [a]	9	6
Personal Interviews, Clients	1	7	7
Case Coding/MD Judiciary Records, Clients	7	8	22

[a] This number represents only 44% of the team members in this county. Though numerous efforts were made by the research team to contact these team members, they were unresponsive. Conversely, IGSR was able to interview 100% of the team members in both Harford and Howard Counties.

Participation in this evaluation study was voluntary for both team members and clients. All participants signed the approved Institutional Review Board (IRB) consent forms from both the University of Maryland and the Maryland Department of Health and Mental Hygiene (DHMH).[2] All information gathered is kept confidential and no names or other identifying information of participants is reported; all information presented throughout is in the aggregate, either for the DUI client group as a whole across the three sites or by individual site.

Obstacles/Limitations

The original contract period between the University of Maryland and the Maryland Drug Court Commission was from October 1, 2004 to September 30, 2005, but because of a delay with executing the contract the initial start of the evaluation was stalled by several months. Once the contract was executed in April 2005, the Principle Investigator (PI) submitted the application to the University of Maryland's Institutional Review Board (IRB) for research approval. IRB approval was granted in June 2005, and research activities commenced shortly thereafter. However, because of this start up delay the initial contract period was thus extended to end September 30, 2006. Additional obstacles were encountered in January, 2006 when the

[2]Per the requirement for the conduct of research with clients of State funded substance abuse drug treatment programs approval from the Maryland Department of Health and Mental Hygiene IRB must be granted.

PI was informed by the Hartford County Health Department that DHMH IRB approval had to be sought and granted before commencing secondary data research activities for DUI participants attending State funded/sponsored substance abuse treatment programs. Furthermore, the University of Maryland's IRB had to approve any recommended changes to the research methodology made by the DHMH IRB. Thus, the process by which IRB approval was sought and approved by both DHMH IRB and the University of Maryland's IRB proved arduous; taking several months to finalize. Once IRB final approval was granted in April 2006 by both DHMH and the University of Maryland, research activities resumed and completed in Anne Arundel and Howard County by August 2006, but was further delayed in Harford County when the PI was informed that information on DUI participants would not be released to the research team until a Memorandum of Understanding (MOU) was executed between the University of Maryland and the Harford County Health Department. The MOU was signed at the end of September 2006, and a review of client files in Harford County was completed in October 2006.

Overview of the Three DUI Court Pilot Sites

Each pilot site initially documented the criteria for participation in its court program as shown in Tables 2a, 2b, and 2c. Next to the initially documented criteria are presented the characteristics of the participants in the program showing the ability of each program to recruit the target population. While some of the criteria were unable to be evaluated as far as whether or not clients met the threshold initially documented, in all three sites, all clients met the age and residency criteria and most clients met the prior DUI offense history criteria with clients having a mean number of 1.8 prior DUI offenses in Howard County, 2.1 in Harford County, and 1.4 in Anne Arundel County.

Table 2a. Documented versus Actual Characteristics of Program Participants – Howard (N = 22)

Documented Target Population Criteria	Actual Participant Characteristics
18 years or over	Mean = 38.3 years (SD = 13.1) [3]
County Resident	All are County Residents
Preferably 3rd time DUI offenders	Mean = 1.81 prior offenses (SD = .81)
Evidence of prior drug abuse/convictions	All have prior drug abuse issues/convictions
No pending sentences, warrants, detainers	Unable to be determined[4]
Not currently on parole; not currently on probation (unless an approval is granted by the Probation Officer)	Unable to be determined
No history of violent, sex offense crimes	No clients were found to have such a history

Table 2b.
Documented versus Actual Characteristics of Program Participants – Harford (N = 13)

Documented Target Population Criteria	Actual Participant Characteristics
18 years or over	Mean = 39.3 years (SD = 11.7)
County Resident	All are County Residents
Preferably 3rd time DUI offenders	Mean = 2.1 prior offenses (SD = .93)
Not currently on probation for a criminal offense	Unable to be determined

Table 2c.
Documented versus Actual Characteristics of Program Participants – Anne Arundel (N = 7)

Documented Target Population Criteria	Actual Participant Characteristics
18 years or over	Mean = 40.8 (SD = 5.6)
County Resident	All are County Residents
1st, 2nd, or 3rd DUI	Mean = 1.4 (SD = .89)
History of alcohol/ substance abuse	All have prior drug abuse issues/convictions
No pending sentences, warrants, detainers	Unable to be determined
Not currently on parole; no prior felony offenses	Unable to be determined
No propensity for violence	Unable to be determined
No interfering mental health issues	Unable to be determined

[3] Mean refers to the average of the sample population and the standard deviation (SD) of the mean, which shows how close to the mean all the various responses are clustered (the closer the (SD) is to zero, the closer each of the respondent's characteristic is to the mean).
[4] The phrase" Unable to be determined" indicates that the information was unavailable e.g. not included in the program records, or in electronic data files.

In August 2004, Howard County formed a planning committee to plan its Hybrid Court as an enhancement to its existing Drug Court program. There was a five-month planning phase with the committee members meeting approximately once a month. In January 2005, the program was implemented. The designated team members for this program include a judge, a defense attorney from the Howard County public defender's office, a representative from the Drunk Driving Monitor Program (DDMP), a coordinator, a prosecutor, and a County Health Department Representative. [5] The program is a 4-phase structure, with each phase requiring a minimum amount of time to complete (see Table 3a). Graduated sanctions are used and incentives are a significant component of this program.

In June 2004, Harford County coordinated a DUI planning team that met approximately once a month until in January 2005 the program became operational. The designated team members for the program include a judge, a coordinator who also serves as treatment assessor and counselor, a part-time substance abuse treatment counselor, DDMP representative, the prosecutor, the public defender, and a Harford County Health Department representative. This program does not have a delineated phase structure and neither graduated sanctions nor incentives are used; though sanctions have been issued on occasion, they are not delivered in a structured "graduated sanction" manner. Program completion is expected to take one year, and for the one client the researchers were able to track, it took 378 days for program completion to be achieved.

In September 2004, Anne Arundel County began planning its DUI Court. Since it already had an operational Drug Court, it added the DUI program to form its Hybrid Court.

[5] In each of the three sites, different "teams" were created and were comprised of different representatives. The only substantial difference in the composition of the teams, however, was the inclusion of a Drunk Driving Monitoring Program (DDMP) representative who served as the primary case manager in Harford and Howard Counties verses a clinical case manager to serve in this capacity in Anne Arundel County.

Planning continued for about seven months, with approximately five planning meetings, until in the spring of 2005 when the program was fully implemented. The designated team members for the DUI program include a judge, a program coordinator, a clinical case manager supervisor, case managers, a member of the States Attorney's office, a defense attorney from the Public Defender's Office, and the Anne Arundel County Community program director. The program is a 4-phase structure, with each phase requiring a minimum amount of time to complete (see Table 3b). Graduated sanctions and incentives are not a significant component of this program.

Table 3a. Documented Structure versus Actual Phase Advancement by Clients – Howard (N = 37)

Documented Phase Structure	Actual Phase Advancement
PHASE I	**PHASE I**
6 weeks (= 42 days) N = 18	mean = 82.7 days (S=38.9)
PHASE II	**PHASE II**
8 weeks (=56 days) N = 12	mean = 105 days (S=18.8)
PHASE III	**PHASE III**
12 weeks (=84 days) N = 4	mean = 88 days (S=51.1)
PHASE IV	**PHASE IV**
12 weeks (=84 days) N = 3	mean = 58.3 days (S=45.5)
Total Program Length	**Total Program Length**
Total min: 38 weeks (=266 days) N = 7	mean= 275.3 days (S=50.3)

Table 3b. Actual Phase Advancement by Clients – Anne Arundel (N = 13) [Documented Phase Structure was not provided]

Actual Phase Advancement	
PHASE I	mean = 150.8 days (S = 27.3; N = 4)
PHASE II	mean = 151.7 days (S = 115.5; N = 3)
PHASE III	mean = 81.7 days (S = 40.4; N = 3)
PHASE IV	mean = 112 days (S = 65.0; N = 3)
Total Program Length	mean = 441.8 (S = 153.5; N = 4)

In all three sites, representatives from the mental health community, either as part of the County system or a private facility were not at the initial planning table, nor have been a significant part of the teams since the inception of the programs. Although the teams recognize that it would have been beneficial to have a representative from the mental health community as part of the planning process, all feel that the current treatment provider has been able to adequately deal with any mental health issues that have arisen, either directly or through referrals to mental health treatment services.

Three Site Aggregate Characteristics of Participating Clients

Clients in the present study were generally male (95.2%), White (85.7%), and were on average 39 years old when they began the Court program. As a group, they have 1.8 DWI prior arrests and at the time of their instant DWI arrest, their Blood Alcohol Content (BAC) was an average of .17. These characteristics are reflective of findings from other studies involving high-risk DWI offenders. For example, several literature reviews have found that while high-risk offenders are rather diverse (Wieczorek 1995), as a group, average characteristics of these offenders are demographically and behaviorally different from the general population (Jones & Lacey 2000; Siegal et al. 2000; Simpson et al. 2004). According to Jones & Lacey (2000:18): "Repeat offenders are nearly always male, and are typically under age 40, white, low income,

unmarried, not college educated, and employed in non-white collar occupations. Their BAC at arrest is typically slightly higher than that of first offenders, they often have alcohol problems, and they commonly suffer from alcohol addiction." Siegal et al. (2000), in their study of high-risk offenders also found that in their sample, offenders were predominantly male, white, with low education, and low incomes. Additionally, the majority of their sample reported having worked full-time in the year prior to being incarcerated (see Table 4 for client characteristics).

Table 4.
Description of Clients by Site at Point of Entry into the Program

	Howard	**Harford**	**Anne Arundel**	Average across sites
Instant Offense includes a CDS (Controlled Dangerous Substance) charge	9% N = 22	0% N = 13	29% N = 7	10.0%
BAC (Blood Alcohol Content) level at time of Instant DUI	mean = .17 (SD =.07) N = 11	mean = .19 (SD = .06) N = 7	mean = .15 (SD = .03) N = 6	mean = .17 (range = .08 -. 28; median .16)
Length of time (days) from Instant Offense date to DUI Court start date	mean = 160.1 (SD = 101.7) N = 22	mean = 194.5 (SD = 79.8) N = 13	mean = 145.1 (SD = 79) N = 7	mean = 168.3 (SD = 91.8)
Length of time (days) from DUI Court start date to Treatment start date	mean = 22.9 (SD = 44) N = 15	mean = 5.8 (SD = 6.1) N = 7	mean = 32.3 (SD = 50) N = 6	mean = 20.6 (SD =39.5)

Client Findings

A review of the client interviews suggest that the primary reasons clients volunteered to participate in the DUI Court program was to get clean and sober (46.7%) and to avoid being detained (86.7%). Overwhelmingly, they are glad they entered the program (93.3%) and nearly all state that they are either somewhat or extremely satisfied with the program (93.3%). Forty percent (40%) of the clients expressed that the rules of the program were fully and completely

explained to them. However, for those programs with phase movement requirements such as Anne Arundel and Howard, 80% of participants felt that the program rules were fair. Overall, 80% of clients in all three sites feel that graduation requirements are fair.

While clients have significant contact and communication with their supervision officer, meeting with their monitor at least once a week (86.7%), none of the supervision officers ever visited the clients at their place of work, and only 6.7% report having the monitor come by their home. In general, clients feel comfortable speaking with their supervision officer and on a scale of 1 (never) to 7 (always), when asked the following, clients gave following mean scores: I feel that my monitor treats me fairly: 6.3; I feel that my monitor listens to my side of the story when I have a problem or mess up: 5.1; I feel that my monitor makes decisions about how to handle problems in a fair way: 5.5; and I feel that my monitor treats me like others on supervision: 6.4. [6]

Many clients drug tested at least once a week (40%) and at least once a month (20%); clients were tested for alcohol, marijuana, opiates, cocaine, and barbiturates. On average, program participants had 1.32 positive drug tests including alcohol with a range from 0-15 positive tests. While breath test results are available immediately since they were conducted and analyzed on-site, urine test results are analyzed off-site and test results are generally not available on average for 48 hours or longer (see Table 5 for an overview of drug test results by site).

[6] As noted previously, depending on site the supervision was either handled by the DDMP or the clinical case manager. Since findings are reported here in the aggregate that includes clients from all three sites, the person responsible for supervision of the case is referred to as either the supervision officer or supervision monitor.

Table 5. Drug test results by Site

	Howard	Harford	Anne Arundel
Number of positive drug tests	mean = 1.2 (SD = 3.2)	mean = 1.0 (SD = 2.1)	mean = 2.1 (SD = 4.8)
Range of number of positive drug tests	0 to15	0 to 6	0 to 7

Clients also have significant contact with their treatment provider, with all clients reporting that they meet with their counselor at least once a week. All clients also report feeling comfortable speaking with their counselor and 73% report an overall satisfaction with treatment received through the program.

Overwhelmingly, participants are happy they entered the program, though some complained about feeling mislead regarding the required length of time to complete the program and the amount of time required to commit for court, treatment, and supervision meetings. This was particularly the case in the Harford County site and this finding is not surprising given the lack of phase structure and the lack of distributed written documentation to the clients at time of entry into the program. According to some clients, all of the program requirements have hindered them from finding and/or maintaining employment. All in all, however, clients are satisfied with their experience and the fact that they are sober, which they credit the program.

In reviewing the issuance of graduated sanctions and incentives, most clients report receiving neither (see Table 6).[7] Only Howard County uses both graduated sanctions and incentives on a regular basis. When a client did receive an incentive, they responded that they felt happiness and pride (63.6%) and enthusiasm to continue (9%).

[7] It must be noted that this evaluation included a review of *graduated* sanctions, defined as sanctions which are (1) clearly laid out, from less to more severe, as responses to specific negative behaviors and (2) build in severity from one sanction to the next in response to repeated negative behaviors. In some cases, programs issued sanctions in response to particular negative behaviors, but these were neither routine nor graduated (part of a structured graduated sanction scheme).

Table 6. Graduated Sanctions and Incentives by Site

	Howard	Harford	Anne Arundel
Clients receiving a graduated sanction	28% N = 18	0%	14% N = 1
Number of Graduated Sanctions	mean = 2.7 (SD = 1.6)		mean = 5 (SD = 0)
Clients receiving an Incentive	91% N = 21	0%	0%
Number of Incentives received	mean = 3.0 (SD = 1.8)		

The FBI 2005 Uniform Crime Report (UCR) states that there were 23,072 arrests in Maryland for Driving Under the Influence. According to Mother's Against Drunk Driving (MADD), about one-third of all drivers arrested or convicted of driving under the influence are repeat offenders.[8] Considering the high rate of recividism associated with this offense, the re-arrest rate of 8.1 percent of the participants in this study is well below the National re-arrest rates. According to a review of the Maryland Judiciary Case Search Database of all three-study sites, there were only three documented rearrests, two of which were for DUI and the other for CDS Possession of Marijuana. Two of the arrests occurred approximately five months post program start, with the third arrest occurring about 17 months post program start. Conversely, however, the sample size of 37 in this study is too low to draw any significant inferences of whether the low percentage of re-arrest is due to a positive effect of the DUI/Drug Court program or just due to random chance. Additionally, even if an appropriate population was sought to compare the sample for this study, it is unlikely to find a significant finding, as the

[8] MADD provided information that one third of the U.S. drunk driving arrests are due to repeat offenses. This data deals with all DUI arrests and the proportion of those that are due to repeat offenders, whereas the sample data for this study does not include all DUI arrests, but only DUI arrests among individuals who have already received a DUI. In order to compare the MADD data to the study data, the MADD data would have to exclude individuals without a prior conviction, and include individuals with a prior conviction who have not been re-arrested for a DUI as this study reflects.

sample size is again too low to account for all the variations found in the population (see Observations and Recommendation of this report for further discussion).

Team Member Findings

On average, team members have been part of their respective teams for more than a year: 17 months in Howard and Anne Arundel Counties and nearly 14 months in Harford County. And, each team has at least a few members who have been members since the beginning of the program and were part of the planning process, which allows for continuity. During these interviews several general programmatic issues were raised as well as specific training needs of the teams. Generally speaking, team members feel a lot of financial pressure, particularly since they are aware that they are operating on a "shoe string budget" and that the funding for the program is fluid. They express that they wish the program could be seen as valued enough by decision makers so that funding could become institutionalized, a permanent line item in the budget. At present, the general feeling among team members is that they often focus their energy more on money matters than where it should be, on the clients. Additionally, team members think it would help to figure out a way to get other courts in the county involved, particularly, since many of their clients have multiple and overlapping cases, often times in family court, rent court, divorce court, and criminal court. Despite these general concerns, overwhelmingly, team members feel committed to the program and feel that their hard efforts do pay off. They feel that the program is good for the clients and that the clients see the benefits of participation, and that the target population is appropriately defined. However, team members recognize and are concerned about the fees clients often have to pay to participate, fees which often times puts a financial hardship on the clients and their families.

More specifically, a number of areas were presented where team members felt they needed more training. Topics of identified trainings include:

- Reviews of relevant laws (as well as policies, procedures, recommendations) passed related to the operation of DUI courts.
- Reviews of new treatment strategies.
- Reviews of theories of addition/research updates/new treatments and technologies.
- Reviews of DUI court operations; roles and responsibilities of team members.
- Team building, communication flow, and team member rapport. Specifically, when asked about the present situation among team members on a scale of 1 to 4 (1 = poor to 4 = great), team members in each site rated the information flow among team members and how well team members get along as generally good. However, the lowest numbers were shown in Harford County with 3.2 on the Information Flow scale and 2.7 on the Get Along scale respectively. [Information Flow: 3.8 Howard; 3.2 Harford; 4.0 AA (but only 4); Team gets along: 4.0 Howard; 2.7 Harford; 4.0 AA (but only 4)].
- Increased cross-trainings between supervision and treatment to discuss and learn about differences in punitive notions and styles and therapeutic ideas.
- Reviews of information/data collection for evaluation purposes.
- Reviews of mental health issues and appropriate responses.

Observations and Recommendations

Programmatic

It is clear, through discussions and interviews with clients, that there is at times a disconnect between what the team members tell the clients about the program for example, length, commitment, expectations and what the clients hear. One way to alleviate this confusion is for each program to revisit their recruitment/client participant packets – or in some instances, to consider developing a client participant packet that lays out, in full and explicit detail, information related to the program, including graduated sanctions, incentives, phase advancement, and graduation requirements. Moreover, the fact that not all sites are using

graduated sanctions, incentives, and a phase structure as intended and recommended by the Drug Treatment Court Commission and the National Drug Court Institute could be a further cause of client confusion and discontent in some instances. It is strongly recommended that each site revisit or in some cases consider creating the program's graduated sanctions, incentives, and phase structure policies and procedures and further, that the Drug Treatment Court Commission assist them with this process. In particular, the Drug Treatment Court Commission might consider implementing the regular conduct of site visits, the requirement of semi-annual reports from each site or other requirements so that they are kept apprised of activities and progress in each site, particularly if there are expectations of either expanding the pilot program or instituting regular, non-pilot court programs.

Data Collection and Management

In all three sites, client records are maintained in paper format, not in a computerized database designed for such purposes (though some sites did attempt to organize some statistics on program numbers in either a word or excel document). Unfortunately, it seems that HATS did not serve these sites well as an information management system. However, sites did not seek out other computer programs to adopt and less than 30% of all team members have sought any form of MIS training (HATS or otherwise). The continued reliance on paper files not only makes it difficult to evaluate program processes and outcomes though some paper files were more organized than others, the use of paper files makes it difficult and often time consuming for coordinators when asked to provide evaluative information to stakeholders.

Additionally, exit interviews with clients are not conducted routinely, if at all, with the clients. The gathering of information during this type of interview – with all clients leaving the program that include successful completers and terminations – would greatly add to each

program's ability to evaluate their program first hand and in real time, particularly when information is compared to that collected during the initial intake interview. A comparison that could easily be made if all information collected from intake through discharge were computerized in an appropriate drug court designed data management program.

Future Evaluation

Because DUI/Drug Court programs are relatively new nationally and locally, data pertaining to recidivism among offenders participating in this program model is very limited. As mentioned previously in this report, the information gleaned from MADD serves as a rough comparison drawing from rudimentary findings from this study. Therefore, it is recommended that as the DUI/Drug Court programs expand their caseload they seek additional funding to conduct a comprehensive outcome evaluation, particularly focusing on recidivism rates among the participants while under program supervision, and after discharge from the program has occurred. The findings from this type of evaluation will assist each jurisdiction to conclude whether or not their program is having an impact on reducing the rate of recidivism in their respective counties among this population of offenders.

Financial Concerns

One way to address the financial concerns of the court programs, at least in the short term, would be the establishment of 501(c)(3) organizations which could collect donations on the program's behalf – even small contributions can go a long way when used for small incentive gifts, certificates of completion, or other small tokens to award client achievement.

References

Fell, Jim. "Repeat DWI Offenders in the United States." Washington, DC: National Department of Transportation, National Highway Traffic Safety Administration Traffic Tech No. 85, February 1995.

Jones, R.K. and Lacey, J.H. 2000. *State of Knowledge of Alcohol-Impaired Driving: Research on Repeat DWI Offenders*. Final Report prepared for the U.S. Department of Transportation, NHTSA, Washington, DC.

P.L.; Lund , A.K.; Fields, M.; and Weinberg, K. Fatal Crash Involvement and Laws Against Alcohol-Impaired Driving. Arlington , VA : Insurance Institute for Highway Safety, 1988. & Nichols, J.L., and Ross, H.L. The effectiveness of legal sanctions in dealing with drinking drivers. Alcohol, Drugs and Driving 6(2):33 55, 1990. Mother's Against Drunk Driving (MADD). Higher-Risk Drivers: The Problem & Proven solutions http://www.madd.org/stats/11001

Siegal, H.A., Falck, R.S., Carlson, R.G., Rapp, R.C., Wang, J., and Cole, P.A. 2000. The Hard Core Drunk Driving Offender. In the *Proceedings of the 15th International Conference on Alcohol, Drugs, and Traffic Safety*. Stockholm, Sweden.

Simpson, H.M., Beirness, D.J., Robertson, R.D., Mayhew, D.R., and Hedlund, J.H. 2004. Hard core drinking drivers. *Traffic Injury Prevention* 5(3):261-269.

U.S. Department of Justice, Federal Bureau of Investigation. 2005. Uniform Crime Reporting. *Crime in the United States* Table 69 [http://www.fbi.gov/ucr/05cius/data/table_69.html]

Wieczorek, W.F. 1995. DWI offenders and alcohol-related crashes. In Kloeden, C.W. and McLean, A.J., eds. *Alcohol, Drugs, and Traffic Safety, Proceedings of the 13th International Conference*. NHMRC Road Accident Research Unit, Adelaide, Australia.