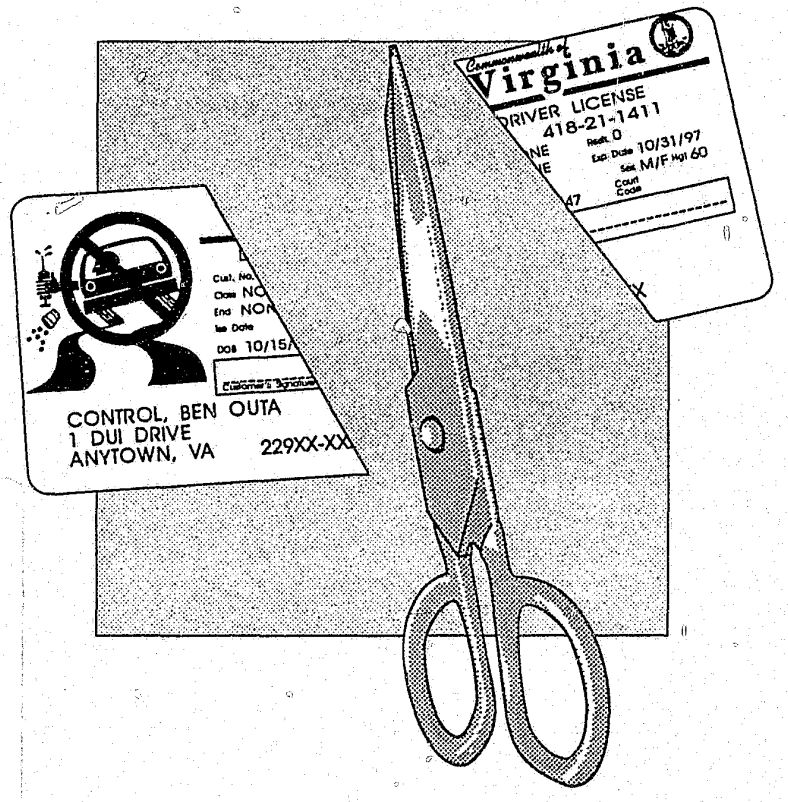
FINAL REPORT

REMOVING THE "HIGH" FROM THE HIGHWAYS: THE IMPACT OF VIRGINIA'S EFFORTS TO COMBAT DRUG-RELATED DUI



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Removing the "High" from the Highways: The Impact of Virginia's Efforts to Combat Drug-Related DUI

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Abstract

Beginning on April 1, 1988, a revision to Virginia law gave police officers the authority to require an individual suspected of drug-related driving under the influence (DUI) to submit a blood sample to be tested for drugs. Concurrent with the implementation of the revised law, Virginia initiated a pilot Drug Recognition Technician (DRT) Program, which concentrates on training police officers to detect the signs of impairment consistent with seven broad categories of drugs. This study evaluated the impact of the revised law and the DRT program on arrests and convictions for drug-related DUI between 1988 and 1990. Additionally, this study investigated whether there was a spillover effect on alcohol-related arrests and convictions and on alcohol-related injury and fatality rates.

Drug-related DUI arrests increased in 1988 but declined somewhat in 1989 and 1990; however, the DUI conviction rate for drug-related cases remained relatively stable. Generally, if a drug was detected, there was a 40% to 70% DUI conviction rate depending on the type of drug(s) detected. If no drug was detected, the DUI conviction rate was less than 25%.

Although the revised law encouraged officers to make more arrests for drug-related DUI, there is no evidence that it functioned to reduce fatalities and injuries. Further, even though the DRT program helped to increase arrests for drug-related DUI, DRT cases were no more likely than non-DRT cases to result in a conviction. However, there is some evidence that the DRT program had a positive influence on the arrest rate for alcohol-related DUI. Several recommendations are made for revitalizing both the DRT program and the statewide emphasis on drug-related DUI.

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(The opinions, findings, and conclusions expressed in this report are those of the author and not necessarily those of the sponsoring agencies.)

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ABSTRACT

Beginning on April 1, 1988, a revision to Virginia law gave police officers the authority to require an individual suspected of drug-related driving under the influence (DUI) to submit a blood sample to be tested for drugs. Concurrent with the implementation of the revised law, Virginia initiated a pilot Drug Recognition Technician (DRT) Program, which concentrates on training police officers to detect the signs of impairment consistent with seven broad categories of drugs. This study evaluated the impact of the revised law and the DRT program on arrests and convictions for drug-related DUI between 1988 and 1990. Additionally, this study investigated whether there was a spillover effect on alcohol-related arrests and convictions and on alcohol-related injury and fatality rates.

Drug-related DUI arrests increased in 1988 but declined somewhat in 1989 and 1990; however, the DUI conviction rate for drug-related cases remained relatively stable. Generally, if a drug was detected, there was a 40% to 70% DUI conviction rate depending on the type of drug(s) detected. If no drug was detected, the DUI conviction rate was less than 25%.

Although the revised law encouraged officers to make more arrests for drug-related DUI, there is no evidence that it functioned to reduce fatalities and injuries. Further, even though the DRT program helped to increase arrests for drug-related DUI, DRT cases were no more likely than non-DRT cases to result in a conviction. However, there is some evidence that the DRT program had a positive influence on the arrest rate for alcohol-related DUI. Several recommendations are made for revitalizing both the DRT program and the statewide emphasis on drug-related DUI.

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INTRODUCTION

In 1987, the Virginia General Assembly revised the law that prohibited impaired driving. Although driving under the influence (DUI) of alcohol and/or other drugs had been illegal in Virginia, blood or breath could be tested only for alcohol. A consequence of having no provision to test for drugs was that a conviction for drug-related DUI was relatively uncommon. In fact, between 1973 and 1984, there was an average of only 11 convictions per year for drug-related DUI in Virginia (Paltell & Booz, 1985).

A key provision of the revised law, which went into effect April 1, 1988, is that police officers can require an individual suspected of DUI to submit a blood sample to be tested for drugs even if an evidentiary breath test for alcohol has been administered. The results of the blood test can be used in court to corroborate an officer's testimony that the suspect had been using drugs and as a supplement to the officer's testimony of the evidence of the suspect's impaired behavior. However, drugs other than alcohol are so chemically complex, and their effects so varied among individuals, that there is no scientific way to relate blood drug concentration to blood alcohol concentration (BAC) or to impairment (Mörland, 1989). Hence, in a drug-related DUI case, the officer's testimony concerning the suspect's behavior is critical because there are no presumptive or per se concentrations of drugs that establish impairment.

BACKGROUND

The effort to bring about a change in the law was begun in the 1984 Session of the Virginia General Assembly with the acceptance of House Joint Resolution No. 10 (HJR 10). HJR 10 was sponsored by Delegate George P. Beard, Jr., of Culpeper and was a response to the perceived need to improve the enforcement of Virginia's law against drug-impaired driving. HJR 10 was also a response to laws passed in Florida in 1982 and in California in 1983 to facilitate the detection, prosecution, and conviction of drug-impaired drivers. HJR 10 further requested that the Department of Motor Vehicles (DMV) develop procedures for detecting and prosecuting persons illegally driving under the influence of drugs.

In response to this directive, DMV established a steering committee to oversee an 18-month study of the problem and develop potential courses of action. The then Deputy Commissioner for Transportation Safety of DMV, John T. Hanna, served as the chairperson of the committee. The other members of the committee were representatives of Commonwealth's Attorneys, the Office of the Attorney General, DMV, state and local law enforcement agencies, the Division of Forensic Science (DFS), medical experts, state and local Alcohol Safety Action Programs (ASAPs), the Armed Forces, and the Virginia Transportation Research Council (VTRC). Several members of the VTRC also served as the staff for the steering committee and wrote the committee's report to the Governor and General Assembly.

During the data acquisition phase of the study, other states' laws and programs were examined. Although a number of states were found to have laws similar to Virginia's, the implementation of many of these laws was found to be less than effective. It appeared that there was significant enforcement in Florida and California; several representatives of the steering committee and the VTRC reviewed the programs in Ft. Lauderdale and Los Angeles (LA), the hub of enforcement for their respective state.

The Ft. Lauderdale program used videotape to record an officer's evaluation of a suspect for use as evidence in court to document signs of impairment. Suspects were also required to submit a urine sample to be tested for drugs. The problems that developed with the program were that, first, although some suspects showed clear signs of impairment to an officer's trained eye, persons with an untrained eye (e.g., judges and juries) often had difficulty detecting signs of impairment from the videotape. Further, videotaping became a problem in the more rural areas of the state where the lack of equipment and trained personnel precluded statewide success of the program. Finally, some courts were reluctant to accept the results of the drug screen of the urine sample into evidence because the metabolites of some drugs can be detected in urine as long as several weeks after the use of the drugs, a much longer time than is true for blood. Thus, the results of the drug screen of a urine sample would not necessarily corroborate the testimony of an officer that a suspect was under the influence of a drug because it does not show that a drug was active in the suspect's system at the time of arrest.

The LA program also used the results of a drug screen of a urine sample to corroborate an officer's testimony that a suspect was under the influence of a drug(s). The California courts have generally been willing to accept such results as evidence of impairment. The LA Police Department (LAPD) developed a specialized group of officers, Drug Recognition Experts (DREs), who had received intensive training in drug detection techniques. By evaluating a number of physiological symptoms associated with various classes of drugs, a properly trained DRE should be able to detect impairment and determine the class of drug that caused it. The LA prosecutors and courts have readily accepted the expert testimony of DREs.

A problem noted with this program was that the results of the drug screen of the urine sample, although accepted by the courts, did not necessarily indicate whether a substance was active in the person's system at the time of arrest. A sec-

ond problem involved the DREs. Even though the DREs had an impressive record of arrests and convictions, the California Highway Patrol (CHP) had difficulties implementing the program statewide. As with any training, if drug recognition training is not used frequently, an officer's ability to detect impairment and classify drugs may be reduced. Thus, the DREs may need to have a large enough pool of suspects to evaluate over time in order to remain proficient. Outside the LA area, in less populated areas of the state with different life styles and demographics, the pool of potential arrestees may be limited. Hence, although the DRE program may be adequate for training officers in detecting drug impairment, there would be a question of whether the program could be successful elsewhere.

After considering the programs in each area, the VTRC's researchers and the steering committee agreed that, even with its limitations, the LA model had the most potential for success in Virginia (Paltell & Booz, 1985). The committee recommended that Virginia adopt an approach much like that used by the LAPD and that the Virginia General Assembly change the law to permit an officer to require a suspect to submit a blood sample, rather than a urine sample, to be tested for drugs. Since drug metabolites may remain in a person's urine long after a drug is taken, the results of chemical tests of a blood sample give a more accurate picture of what was in the suspect's system at the time of arrest. In addition, the committee recommended that an officer be permitted to require a blood sample even after an evidentiary breath test had been administered because an officer often does not suspect drug impairment until after a suspect registers a BAC too low to be consistent with his or her apparent level of impairment.

The committee also recommended that drug recognition training be implemented in only one or two pilot communities where there was a potentially large population of offenders and a commitment on the part of the upper and middle management of the police department. This was recommended because neither the Ft. Lauderdale nor the LA model had been transferred effectively into a statewide program.

After the committee's report was forwarded to the General Assembly in 1986, a proposal for legislation based on its recommendations was defeated. However, during the 1987 Session of the General Assembly, similar legislation was introduced by Senator James P. Jones of Abingdon and received strong support from Attorney General Mary Sue Terry. This bill (SB-645) was passed by the House of Delegates by a margin of 81-18 and by the Senate unanimously and went into effect on April 1, 1988.

In preparing for the implementation of the revised DUI law, the DMV and the Virginia State Police (VSP) established the Task Force to Combat the Impaired Driver, which is composed of representatives of local police departments, the Office of the Attorney General, the National Highway Traffic Safety Administration (NHTSA), and a number of state agencies. The task force decided to supplement the revised law with a pilot Drug Recognition Technician (DRT) Program, which was modeled after the DRE program developed by the LAPD. Both a laboratory evaluation (Bigelow et al., 1985) and a field evaluation (NHTSA, 1986) of a select

group of LAPD DREs found them capable of accurately identifying not only whether an individual had used a drug but also which class of drug he or she had used.

The DRT program is an intensive training program that concentrates on the identification of impaired drivers and the physiological symptoms of impairment caused by seven broad categories of drugs. DRT candidates receive 56 hours of classroom training and at least 40 hours of field training. In addition, DRT candidates must successfully complete 15 instructor-monitored evaluations in order to be certified a DRT.

The program was initially implemented in the Charlottesville and Virginia Beach police departments and in the VSP. Charlottesville was chosen because the task force speculated that college towns might have drug-related driving problems. Additionally, Charlottesville was selected as a pilot site because it allowed for an experimental implementation of the DRT program in a small city. Also, the police chief in Charlottesville worked on the HJR 10 steering committee and he and his officers had a long history of encouraging the enforcement of DUI laws in innovative ways. Virginia Beach was chosen because it represented a large jurisdiction with a police chief and a special enforcement unit dedicated to enforcing laws against impaired driving. The task force believed that the potential for a substantial drug-related driving problem existed in Virginia Beach since it attracts many young people. The VSP was selected as a pilot agency because it has officers in each jurisdiction of the state. Thus, it would be possible to experiment with a large-scale implementation of the DRT program by placing DRTs in various areas of the state. The program has since been expanded to include the counties of Henrico and Prince William and the cities of Chesapeake and Norfolk.

Although the use of DRTs is an innovative method of combating drug-related DUI in several pilot jurisdictions, the enforcement of the revised statute is not limited to these jurisdictions. Thus, in order to accommodate and encourage the statewide enforcement of the revised statute, the various agencies involved in the task force cooperated to develop a statewide program. The DFS developed and distributed statewide standardized regulations, procedures, forms, and information sheets concerning the submission of blood samples for individuals suspected of driving while impaired by drugs. The DMV and the VSP joined with the Commonwealth Alliance for Drug Rehabilitation and Education (CADRE) to publicize the implementation of the revised statute through a public information campaign that included radio, television, and printed public service announcements. The task force also developed several policy guidance memoranda, which were sent to police agencies to encourage enforcement of the revised statute and clarify procedures for its effective use. An additional strategy was to train officers in the use of standardized field sobriety tests (SFSTs). Hence, these strategies mainly comprise an enforcement training program, albeit one supplemented by public information and education (PI&E) efforts.

LITERATURE REVIEW

Studies of DUI countermeasures involving enforcement have generally found that such efforts can be effective. A number of studies have found that enforcement efforts targeting DUI can significantly increase the number of DUI arrests and reduce crash or fatality rates (Foley, 1986; Hingson et al., 1987; Lacey et al., 1986; Sykes, 1984; Voas, Rhodinizer, & Lynn, 1986).

Other studies point to the precarious nature of the effectiveness of enforcement programs. Voas and Hause (1987) found that nighttime crashes, a surrogate measure for alcohol-related crashes, decreased during the implementation of a nighttime DUI special enforcement program. However, the researchers pointed out that the effectiveness of the program was greatest in the early stages of its implementation.

Ross (1982) investigated the success of the Europeans, particularly the Scandinavians, in deterring drunk driving and concluded that the deterrence efforts of these models were not as effective as had been reported. Specifically, although legislative action and other deterrence efforts had an initial impact in reducing drunk driving and fatal crashes, the benefits were only for the short term. Although these countries have more strict laws and harsher penalties than the United States, Ross concluded that social norms are more likely to be at the root of their success in deterring drunk driving—a conclusion echoed in a later, related monograph by Jacobs (1989).

Liban, Vingilis, and Blefgen (1987) examined a number of drunk driving countermeasure programs in Canada. They found that a number of community enforcement efforts were attempted but concluded that these efforts had a limited impact on reducing drunk driving. Further, they concluded that the limited effectiveness was short lived.

In the United States, there are some indications that DUI countermeasures may affect fatality rates, at least in the short run. Hingson, Howland, Morelock, and Heeren (1988) related the flurry of media and public attention and legislative action focused on DUI in the early 1980s to the drop in fatal crashes that occurred between 1980 and 1985. However, they pointed out that this trend soon ended and was, in fact, reversed between 1985 and 1986.

Hingson et al. (1987) studied the impact of legislation in Maine that made driving with a BAC level of 0.10% or higher a per se violation of the state's DUI law. They concluded that the legislation did not have a lasting deterrent effect. One reason was that it failed to change drivers' perceptions that their chances of being apprehended and arrested for drunk driving had increased substantially subsequent to the implementation of the law.

PURPOSE AND SCOPE

The primary objective of the study was to determine the effectiveness of Virginia's program to combat drug-related DUI, particularly the DRT program, in increasing arrests and convictions for drug-related DUI and decreasing traffic injuries and fatalities. The scope of this evaluation was limited to Virginia's drug-related DUI program. These data do not address the potential effectiveness of the DRT program as it might be implemented in other states. That is, the DRT program is itself limited by the laws of the Commonwealth, which may differ from the laws of other states. Further, this study is limited because the extent of the drug-related DUI problem in the Commonwealth is unknown and because there is no way to know how many drug-related DUI cases have been pursued as alcohol-related DUI cases.

Arrests examined in this investigation represent only those arrests in which an officer requested and collected a blood sample to be tested for drugs. Because alcohol-related and drug-related DUI cases are charged under the same statute in Virginia, there is no way to separate them in the absence of a chemical test. Thus, if the officer did not request a blood sample, or the suspect refused to provide one, there was no way the case could be detected in the data base used in this study.

Even if alcohol-related and drug-related DUI charges were separated in the Code of Virginia, without a breath or blood test, an officer or a court would likely suspect alcohol impairment rather than drug impairment. Therefore, a number of drug-related DUI cases, both those that resulted in a conviction and those that did not, would not be identified as such if the suspect refused to provide a blood sample. Given these problems, the researcher and the task force agreed that locating adequate data on refusals was not feasible.

Another limitation to the study was that in Virginia, as in many states, driving with a BAC of 0.10% or higher as shown on an evidentiary breath or blood test is considered per se evidence of impairment. Hence, the vast majority of cases in which the suspect is found to have a BAC of 0.10% or higher (called high-BAC cases) result in a DUI conviction. Additionally, because alcohol impairment and drug impairment are charged under the same statute, the presence or absence of drugs has little influence on the probability of obtaining a DUI conviction in high-BAC cases because a DUI conviction is highly probable given the results of the blood or breath test for alcohol alone. In fact, unless a DRT or DRT candidate was involved in a case, the DFS did not test for drugs in high-BAC cases.

To control for the potential conviction rate bias of considering high-BAC cases in the analysis, the researcher compared only suspected drug-related DUI cases in which either no alcohol was detected or the BAC was less than 0.10% (called low-BAC cases). In effect, this method ensured that conviction rates would not be elevated by case selection, i.e., by simply processing a greater number of high-BAC cases through the drug testing laboratory.

A further limitation of the study is that information on alcohol-related DUI arrests and convictions and alcohol-related injuries and fatalities is available only

by jurisdiction of occurrence. The location of a crash is more important than the agency affiliation of the officer who wrote the crash report. However, because the VSP has troopers who are DRTs located throughout the state, a comparison of DRT and non-DRT jurisdictions is necessarily contaminated to some degree because some non-DRT jurisdictions have a VSP DRT stationed in the jurisdiction.

METHODOLOGY

Whenever a DUI suspect submits a blood sample to be tested for drugs, the sample is sent to the DFS for analysis. In fact, the DFS is the only single agency through which information on drug-impaired driving cases flows. The DFS keeps such information as the suspect's name, the arresting officer's name and police agency affiliation, the jurisdiction of the arrest, the results of the chemical tests, and whether a DRT or DRT candidate was involved in the case. Thus, it is possible to track drug-related DUI cases back to arrest and forward to resolution through DFS data.

One problem with using the records provided by the DFS is that the laboratory is not given notice of the judicial resolution of each case. Thus, DFS data do not include information concerning whether the Commonwealth's Attorney decided to prosecute the case or whether the court rendered a guilty verdict. Thus, cases were tracked through at least one of two avenues. First, beginning in the summer of 1990, court records were checked to ascertain the judicial resolution of each case. Cases that had been resolved and were of record in the local office of the clerk of the court were tracked. Second, for a sample of cases, the arresting officer was contacted and questioned about the resolution of the case. The contact was made in person for 1988 and 1989 cases and by telephone for 1990 cases. The arresting officer was asked the reasons for the verdict rendered and what suggestions he or she would make to improve the program. In some instances, when information about a case was inaccessible from the office of the clerk of the court, the data obtained through an interview were the only data for the case. The data were cross tabulated to determine whether there was a significant relation ($p < .05$) between year of submission to the DFS and whether a DRT was involved in the case.

By cross tabulations, low-BAC cases were analyzed to determine if there was a significant relation ($p < .05$) between the year a sample was submitted to the DFS and (1) whether a DRT was involved in the case, (2) the arresting agency, and (3) the laboratory results. This method was also employed to examine the relation between the laboratory results and whether a DRT was involved in the case.

Next, the researcher examined the DUI conviction rate. DUI convictions included a few that were being appealed when the conviction data were collected. Convictions on non-DUI charges, including a lesser charge of reckless or improper driving, were not counted as DUI convictions but were considered as being resolved. Thus, for example, if 50% of the resolved cases resulted in a DUI conviction, 35% resulted in a conviction on a lesser charge, and 15% resulted in no conviction, the

DUI conviction rate would be 50%. Cross tabulations were used to determine if DRT involvement influenced the relation between the DUI conviction rate and (1) the year of submission to the DFS, (2) the arresting agency, and (3) the laboratory results.

Additionally, the researcher examined whether the emphasis placed on drug-related DUI had a spillover effect on alcohol-related DUI arrests and convictions and alcohol-related injury and fatality rates. Rates were calculated for each jurisdiction per 1,000 licensed drivers. Using the *t* test, the rates for 1986 (the last year before the passage of the revised DUI law) were compared to the rates for 1990 (the most current data available) to determine whether the rates for DRT and non-DRT jurisdictions were significantly different between the 2 years.

Finally, the researcher examined the recommendations made by the sample of arresting officers for how the program might be improved. Based on the results of this data analysis, the researcher developed recommendations for the future of Virginia's program.

ANALYSIS

Arrests for Drug-Related DUI

Table 1 shows that between April 1, 1988, and December 31, 1990, the DFS received 1,199 low-BAC blood samples to be tested for drugs for DUI cases. Overall, 18.3% of the low-BAC samples submitted to the DFS between 1988 and 1990 involved a DRT. In 1988, the first year in which the law was in effect, DRTs were involved in 25.7% of low-BAC samples received by the DFS; by 1990, this percentage had dropped to 14.5%. This decline was statistically significant. Additionally, even though the revised DUI law was in effect for only 9 months in 1988, there were more DRT submissions in that year than in either of the 2 subsequent years.

Table 1
NUMBER OF CASES BY YEAR SUBMITTED TO DFS: BAC < .10%*

Type of Case	1988	1989	1990	Total
Non-DRT	286 (74.3%)	350 (84.7%)	343 (85.5%)	979 (81.7%)
DRT	99 (25.7%)	63 (15.3%)	58 (14.5%)	220 (18.3%)
Total	385	413	401	1,199

*Significant at $p < .05$.

Table 2 shows that there was a significant relation between the agency that submitted a blood sample and the year of submission. In particular, there was a substantial decline in the number of submissions received from Henrico County and Virginia Beach between 1988 and 1990. Further, the proportion of submissions from agencies that had no DRTs increased after 1988, even though the average number of monthly submissions by non-DRT agencies declined from more than 19 per month in 1988 to fewer than 18 per month by 1990. By comparison, average submissions from DRT agencies declined from more than 23 per month in 1988 to fewer than 17 per month in 1989 and 1990.

Table 3 shows the results of the laboratory analysis for the 1,199 low-BAC cases in 1988 through 1990. Overall, a drug(s) was detected in 64.6% of the samples, and no drug was detected in the remaining 35.4%. However, "no drug detected" does not necessarily mean that no drug was present. It is possible that a drug was present for which no test was available, a drug was present but at a concentration too low to be confirmed by the DFS (e.g., the dosage level LSD is too low to be confirmed), or a drug was present at the time of the traffic stop but had metabolized or dissipated before the blood sample was taken.

Table 2
ARRESTING AGENCY BY YEAR SUBMITTED TO DFS: BAC < .10%*

Agency	1988	1989	1990	Total
Charlottesville	4 (1.0%)	5 (1.2%)	6 (1.5%)	15 (1.3%)
Chesapeake	3 (0.8%)	4 (1.0%)	4 (1.0%)	11 (0.9%)
Henrico	18 (4.7%)	17 (4.1%)	4 (1.0%)	39 (3.3%)
Norfolk	4 (1.0%)	1 (0.2%)	5 (1.2%)	10 (0.8%)
Prince William	37 (9.6%)	36 (8.7%)	43 (10.7%)	116 (9.7%)
Virginia Beach	58 (15.1%)	37 (9.0%)	35 (8.7%)	130 (10.8%)
VSP	89 (23.1%)	94 (22.8%)	97 (24.2%)	280 (23.4%)
Other	172 (44.7%)	219 (53.0%)	207 (51.6%)	598 (49.9%)
Total	385	413	401	1,199

*Significant at $p < .05$.

Table 3
LABORATORY RESULTS BY YEAR SUBMITTED TO DFS: BAC < .10%*

Laboratory Result	1988	1989	1990	Total
Multiple drugs	75 (19.5%)	64 (15.5%)	77 (19.2%)	216 (18.0%)
Marijuana	72 (18.7%)	41 (9.9%)	85 (21.2%)	198 (16.5%)
PCP	79 (20.5%)	50 (12.1%)	38 (9.5%)	167 (13.9%)
Cocaine	23 (6.0%)	45 (10.9%)	19 (4.7%)	87 (7.3%)
Other drug	24 (6.2%)	37 (9.0%)	46 (11.5%)	107 (8.9%)
No drug detected, low BAC	56 (14.5%)	78 (18.9%)	71 (17.7%)	205 (17.1%)
No drug detected, no BAC	56 (14.5%)	98 (23.7%)	65 (16.2%)	219 (18.3%)
Total	385	413	401	1,199

*Significant at $p < .05$.

There was also a statistically significant relation between the type of drug detected and the year of submission. Specifically, between 1988 and 1990 there was a marked decrease in the number of samples in which PCP was detected, and there was an increase in the number of cases in which an "other" drug (a single drug other than marijuana, PCP, or cocaine) was detected.

Table 4
CASES BY LABORATORY RESULT: BAC < .10%*

Laboratory Result	Non-DRT	DRT	Total
Multiple drugs	193 (19.7%)	23 (10.5%)	216 (18.0%)
Marijuana	150 (15.3%)	48 (21.8%)	198 (16.5%)
PCP	160 (16.3%)	7 (3.2%)	167 (13.9%)
Cocaine	71 (7.3%)	16 (7.3%)	87 (7.3%)
Other drugs	79 (8.1%)	28 (12.7%)	107 (8.9%)
No drugs detected, low BAC	55 (15.8%)	50 (22.7%)	205 (17.1%)
No drugs detected, no BAC	171 (17.5%)	48 (21.8%)	219 (18.3%)
Total	979	220	1,199

*Significant at $p < .05$.

Table 4 shows that there is a significant relation between whether a DRT was involved in a case and the type of drug that was detected. In particular, cases in which PCP was detected were vastly more likely to be non-DRT cases. Additionally, non-DRT cases were more likely to involve multiple drugs.

Convictions for Drug-Related DUI

As seen in Table 5, there was a significant relation between the year of submission and the result of the case. The percentage of cases resulting in a DUI conviction was highest in 1988, declined in 1989, and declined further in 1990. Table 5 further shows that the DUI conviction rate of DRT cases remained relatively stable, around 40%, but that the DUI conviction rate for non-DRT cases decreased from more than 50% in 1988 to less than 37% in 1990.

Table 6 shows that Chesapeake, Henrico, and Virginia Beach had the lowest overall DUI conviction rates and Prince William had the highest. Interestingly, the overall DUI conviction rates for DRT and non-DRT agencies and for DRT and non-DRT cases were all near 40%.

Table 7 shows that there was a significant relation between the laboratory results and whether a case resulted in a DUI conviction. When PCP was the only

Table 5
DUI CONVICTION RATE BY YEAR SUBMITTED: BAC < .10%

Year	Non-DRT*	DRT	Total*
1988	50.7%	40.5%	47.7%
1989	44.2%	38.0%	43.2%
1990	36.8%	42.4%	37.4%
Total	43.4%	40.1%	42.8%

*Significant at $p < .05$.

Table 6
DUI CONVICTION RATE BY ARRESTING AGENCY: BAC < .10%

Agency	Non-DRT*	DRT	Total*
Charlottesville	0	66.7%	46.2%
Chesapeake	25.0%	—	25.0%
Henrico	23.1%	33.3%	29.0%
Norfolk	33.3%	100.0%	42.9%
Prince William	53.9%	75.0%	55.7%
Virginia Beach	26.7%	32.3%	30.5%
VSP	45.2%	43.1%	44.6%
Other	43.4%	33.3%	43.0%
Total	43.4%	40.1%	42.8%

*Significant at $p < .05$.

Table 7
DUI CONVICTION RATE BY LABORATORY RESULT: BAC < .10%

Laboratory Result	Non-DRT*	DRT*	Total*
Multiple drugs	61.3%	52.9%	60.4%
Marijuana	46.1%	71.4%	52.0%
PCP	69.3%	40.0%	68.1%
Cocaine	42.0%	71.4%	48.4%
Other drug	42.6%	30.0%	39.5%
No drugs detected, low BAC	23.4%	25.0%	23.8%
No drugs detected, no BAC	14.9%	13.9%	14.6%
Total	43.4%	40.1%	42.8%

*Significant at $p < .05$.

drug detected, 68.1% of cases resulted in a DUI conviction; non-DRT cases had a DUI conviction rate of 69.3%, and DRT cases had a DUI conviction rate of 40.0%. The DUI conviction rate was 60.4% when multiple drugs were detected and 52.0% when marijuana was detected; however, DRT cases had a conviction rate in excess of 70% when marijuana was detected. When cocaine was detected, the overall DUI conviction rate was less than 50% but for DRT cases was more than 70%. A finding of an "other" drug resulted in a DUI conviction less than 40% of the time. If no drug was detected and alcohol was detected at a level less than 0.10% BAC, the DUI conviction rate was less than 25%. Finally, when neither a drug nor alcohol was found, less than 15% of the cases resulted in a DUI conviction.

Table 8 shows the breakdown of DUI convictions for DRT and non-DRT cases. About two thirds of the non-DRT drug-related DUI convictions are known to have resulted from a plea of guilty by the defendant, but less than half of the convictions in DRT cases resulted from a plea of guilty. Thus, there is some evidence that DRT cases may have been more difficult to prosecute than non-DRT cases. That is, it is probable that the signs of impairment and evidence against the defendant were more obvious in non-DRT cases. Hence, DRTs may have, in general, pursued more difficult cases.

Table 8
DEFENDANT'S PLEA IN CASES THAT RESULTED IN A DUI CONVICTION: BAC < .10%

Plea	Non-DRT	DRT	Total
Not guilty	18.4%	34.3%	21.2%
Guilty	66.1%	41.8%	61.8%
Plea bargain	4.8%	1.5%	4.2%
Other/Unknown	10.6%	22.4%	12.7%
Total	100%	100%	100%

Alcohol-Impaired Driving

Table 9 shows that the DUI arrest rate per 1,000 licensed drivers declined significantly among the non-DRT jurisdictions from 1986 to 1990. However, in the DRT jurisdictions, there was no significant difference in the arrest rate of 1986 and 1990. Table 9 also shows that the average DUI conviction rate for DRT jurisdictions increased between 1986 and 1990, although the DUI conviction rate for non-DRT jurisdictions declined slightly. However, neither of the changes was statistically significant.

Table 10 shows that the injury rate for alcohol-related crashes decreased significantly between 1986 and 1990 in both DRT and non-DRT jurisdictions. On the other hand, there was no significant change in the alcohol-related fatality rate between 1986 and 1990.

Table 9
AVERAGE DUI ARREST AND CONVICTION RATES

Rate	1986	1990	% Change
Average DUI Arrest Rate			
Non-DRT*	14.19	12.41	–12.5
DRT	13.41	13.48	+ 0.5
Total*	14.16	12.46	–12.0
Average DUI Conviction Rate			
Non-DRT	10.84	10.42	– 3.9
DRT	11.45	12.19	+ 6.5
Total	10.87	10.50	– 3.4

*Significant at $p < .05$.

Table 10
AVERAGE ALCOHOL-RELATED INJURY AND FATALITY RATES

Rate	1986	1990	% Change
Average Alcohol-Related Injury Rate			
Non-DRT*	4.22	3.65	–13.5
DRT*	4.59	3.49	–24.0
Total*	4.23	3.65	–13.7
Average Alcohol-Related Fatality Rate			
Non-DRT	0.20	0.19	– 5.0
DRT	0.10	0.11	+10.0
Total	0.19	0.19	—

*Significant at $p < .05$.

Table 11
RECOMMENDATIONS BY POLICE OFFICERS FOR IMPROVING VIRGINIA'S PROGRAM TO COMBAT DRUG-IMPAIRED DRIVING

Recommendation	N	%
Educate officers on detecting drug-related DUI	55	25.5
Establish presumptive levels of impairment for drugs other than alcohol	30	13.9
Provide information to judges on drug-related DUI	27	12.5
Train more officers as DRTs	21	9.7
Test for drugs, even with high BAC levels	21	9.7
Establish an internal possession of drugs law	17	7.9
Shorten arrest time for drug-related DUI	16	7.4
Produce laboratory results faster	15	6.9
Enforce refusal penalties for refusal to provide a blood sample	7	3.2
Test for caffeine	4	1.9
Videotape arrests	3	1.4
Total	216	100.0

Recommendations by Police Officers

Table 11 shows the suggestions that were offered by the sample of arresting officers on how to improve Virginia's program to combat drug-related DUI. More than 25% thought that officers needed to be better educated in detecting drug-related DUI, and almost 10% thought that Virginia needed more DRTs. More than 20% of the officers thought that the laws against drug-related DUI could be changed to improve the chances of obtaining a conviction in a drug-related DUI case. More than 15% of the officers thought that the DFS could make some changes to help the program. Additionally, more than 12% of the officers thought that judges need to be provided with more information on drug-related DUI cases.

DISCUSSION

Arrests for Drug-Related DUI

Between April 1, 1988, and December 31, 1990, the number of low-BAC samples declined. Hence, the actual number of additional cases that might have been pursued as a consequence of the 1988 revision to Virginia's law declined in the second and third years of implementation. That is, there were fewer cases that would not be covered by Virginia's 0.10% BAC per se level of impairment.

Additionally, the average number of cases submitted monthly by DRTs declined substantially during the second and third years of implementation. Likewise, the average number of monthly submissions from DRT agencies, regardless of whether a DRT was involved in the arrest, declined after the first year of implementation.

These findings are consistent with the literature on enforcement programs. In particular, many enforcement efforts begin by moving toward accomplishing their goals, but the initial emphasis as well as the initial success begins to diminish.

In 1988, both the Charlottesville and Virginia Beach chiefs of police were actively involved in developing the DRT program and working with the task force; by 1990, no chief of police was actively involved. Instead, the program and its development had been allocated to lower administrative levels of the enforcement agencies involved.

Additionally, in Virginia Beach and the VSP, there were initially two sergeants who were among the first to receive DRT training and were the leaders and chief salespeople for the DRT program. For different reasons, both moved on from their initial responsibilities in overseeing the program to other duties. Hence, without these sergeants and the chiefs, the program lost much of its continuity and leadership.

At DMV, responsibility for this program moved from a level of involvement by relatively high management to a lower level of training coordinators. Hence, contact with police agencies came from the lower levels of the agency. Likewise, early in the program's development, there was a flurry of PI&E activity that had all but ceased by 1989.

Statewide, the task force sent out several policy guidance memoranda that were intended to inform officers about the revised law and provide suggestions for pursuing drug-related DUI cases. The last of five memoranda was sent out on March 7, 1989. The task force also held bimonthly or quarterly meetings in 1988 and 1989, but few have been held since.

No individual or agency is necessarily to blame for the drop in the number of submissions to the DFS, the decline in activity, or the delegation of authority. Rather, this drop is characteristic of a program of this type running through a life cycle of enthusiasm to decline. As much of the literature points out, any success of an enforcement program is usually short lived. Much of the success of Virginia's DRT program seems to have likewise been short lived.

An analysis of the laboratory results showed that the finding of "no drug detected" remained relatively constant throughout the 3 years studied. The consistency of these findings provides no indication that the proficiency of officers in suspecting drug impairment has declined over the years. However, it is possible that officers may not be as inclined to consider drug-impairment as they were in 1988.

PCP remained a drug that was detected primarily in Northern Virginia by non-DRTs. However, the number and proportion of PCP cases dropped dramatically

in 1989 and 1990. Since PCP has been found to be the easiest drug for an officer to detect (Bigelow et al., 1985), this drop most likely indicates a decline in the drug's popularity rather than a decline in enforcement or enforcement proficiency.

Convictions for Drug-Related DUI

Between 1988 and 1990, the conviction rate for non-DRT cases declined from more than 50% to less than 37%. Initially, conviction rates were higher for non-DRT cases than for DRT cases. On the other hand, DRT cases had a relatively stable conviction rate of about 40% throughout the 3 years. During the first 2 years, the differences between the conviction rates for DRTs and non-DRTs could largely be explained by the fact that most PCP cases were non-DRT cases (Jernigan, 1992). That is, a PCP case was more likely than any other case to result in a drug-related DUI conviction. Hence, the existence of a substantial number of PCP cases in the non-DRT sample functioned to inflate the DUI conviction rate for non-DRTs. When the DRT and non-DRT samples were made more comparable by consideration of only non-PCP cases, the difference in conviction rates was eliminated. Similarly, the drop in the number of PCP cases submitted by non-DRTs in 1989 and 1990 likely functioned to decrease the overall conviction rate for non-DRT cases simply because other laboratory results yielded lower conviction rates than a positive finding of PCP.

There were few drug-related DUI convictions if the laboratory was unable to detect a drug in the sample. Clearly, laboratory results were related to different conviction rates, but a laboratory result of "no drug detected" resulted in a DUI conviction less than 25% of the time.

Finally, even though the conviction rates for DRT and non-DRT cases were similar, there is evidence that DRT and non-DRT cases were not necessarily similar. In the first year of the program, many non-DRT cases involved the use of PCP, which is relatively easy to detect both behaviorally and chemically. Hence, non-DRT conviction rates were evaluated during the first year because there was no DRT in the area of the state where PCP use was most widely evident. Second, DRT cases were less likely to result in a plea of guilty. Thus, convictions were less certain for DRT cases based on the plea alone. Moreover, more pleas of not guilty indicate that DRTs likely pursued more difficult cases on average than did non-DRTs.

Alcohol-Impaired Driving

Between 1986 and 1990 (2 years before and after the implementation of the revised law), the alcohol-related DUI arrest rate for non-DRT jurisdictions declined significantly but that for DRT jurisdictions remained stable. This indicates that there may have been a spillover effect of the DRT program on alcohol-related DUI arrests. That is, by concentrating training and enforcement on drug-related DUI, it

is possible that the DRT jurisdictions helped to fight off a decline in the DUI arrest rate.

Although the DUI conviction rate for non-DRT jurisdictions declined and the rate for DRT jurisdictions increased, neither change was significant. Thus, there is no indication that either the revised law or the DRT program affected the DUI conviction rate.

The alcohol-related injury rate was down significantly in both DRT and non-DRT jurisdictions, but the decline was greater in DRT jurisdictions. It is possible that the existence of the DRT program and the stable arrest rate for DUI functioned to decrease the alcohol-related injury rate in DRT jurisdictions; however, this causal relation is not likely. In particular, it is unlikely that the decrease in the arrest rate for non-DRT jurisdictions and a stable arrest rate in the DRT jurisdictions would have produced similar significant decreases in the injury rates. It is more likely that some factor unmeasured by this study, such as the economy or societal views on DUI, affected DRT and non-DRT jurisdictions similarly. Thus, these data do not indicate that the revised law or the DRT program produced a change in the alcohol-related injury rate. Likewise, because there was not a significant change in the fatality rate, there is no evidence that the revised law or the DRT program had any impact on reducing traffic fatalities.

Recommendations by Police Officers

More than one third of the officers interviewed thought that officer training was the key to a more successful program. However, the data examined in this study do not indicate that the higher level of DRT training translates into a higher conviction rate for drug-related DUI.

Approximately 14% of the officers thought that Virginia should establish presumptive levels of impairment for drugs other than alcohol. However, such levels are currently not scientifically obtainable (Mörland, 1989). Further, almost 8% of the officers expressed a desire to have a charge of internal possession of drugs established. Were such a law passed, a finding of illicit drugs by the DFS could be considered evidence of guilt in an internal possession case. However, a recent report (Lau, Black, & Jernigan, 1992) concluded that such an approach would not be feasible in Virginia at this time.

Almost 10% thought that the DFS should test for drugs even in high-BAC cases. However, the vast majority of high-BAC cases already result in a DUI conviction. Almost 7% thought that the DFS could help drug-related DUI cases by providing results more quickly. However, comments about the turnaround time were made early in the program's history, and the DFS responded by drastically reducing turnaround time.

Finally, comments concerning judges included specifying a need to inform judges (1) about the types of training officers and DRTs receive, (2) that the law

does not require quantitative results or limits to be established, and (3) that prescription drugs may also illegally impair driving performance. Providing such information would, at least, open a dialogue with judges.

CONCLUSIONS

Arrests for Drug-Related DUI

1. As with so many other enforcement programs, the emphasis on and success in apprehending drug-impaired drivers seem to be declining, especially among DRTs and in some DRT agencies.

2. Because DRTs comprise less than 1% of the statewide enforcement strength and were involved in about 15% of the drug-related DUI cases, there is evidence that DRT training functioned to increase the level of law enforcement.

3. The propensity of officers to make an arrest for drug-related DUI may have decreased, but the data collected for this study do not suggest that the proficiency of officers in detecting drug use has declined.

4. Because the number of PCP cases relative to all other laboratory results has declined, it is likely that PCP use is declining in Northern Virginia and becoming less of a traffic safety issue.

Convictions for Drug-Related DUI

5. It appears that both DRT and non-DRT drug-related DUI cases have a similar chance of resulting in a DUI conviction. However, there is evidence that DRTs may have, in general, pursued more difficult cases.

6. Laboratory results significantly affect the chance of a case resulting in a DUI conviction. Generally, if a drug is detected in a blood sample, there is a 40% to 70% DUI conviction rate. However, if no drug is detected and the BAC is less than 0.10%, there is less than a 25% conviction rate. With neither a drug nor alcohol detected in a sample, the DUI conviction rate is less than 15%.

Alcohol-Impaired Driving

7. The emphasis placed on drug-related DUI may have had some spillover effect on alcohol-related DUI enforcement since the DUI arrest rate was stable in DRT jurisdictions but declined significantly in non-DRT jurisdictions.

8. It is unlikely that the existence of the revised law or the DRT program had an impact on the DUI conviction rate, alcohol-related injury rate, or alcohol-related fatality rate.

Recommendations by Police Officers

9. Addressing some of the issues discussed by police officers is not feasible at this time. However, providing judges with information on the law and on enforcement training might at least open a dialogue on the issue of drug-related DUI.

RECOMMENDATIONS

Both the DRT program and the revised law apparently had an impact on increasing arrests for drug-related DUI. Further, the DRT program may have had a positive spillover effect on alcohol-related DUI arrests. However, the statewide program and the DRT program have fallen short of many expectations.

Since the first year of implementation of the revised law, arrests for drug-related DUI involving DRTs have declined and the conviction rate for DRT cases has not improved. In fact, the conviction rate for both DRT and non-DRT cases is approximately 40%.

Given the limited effectiveness of both the DRT program and the statewide program, the literature on similar enforcement programs indicates that both will likely continue to decline without renewed attention and energy. Consequently, if the DRT program and the statewide program are to continue, each must be revitalized. Perhaps this revitalization could be accomplished through the following:

1. *The task force should rededicate itself to both the DRT program and the statewide program.* The task force has the ability to be a focal point for the education and training that was suggested for officers, DRTs, and judges. Additionally, the task force might help promote an increased emphasis on making drug-related DUI arrests.

2. *At DMV and within all DRT agencies, higher levels of management should show active interest and involvement in the operation of the DRT program.* By involving higher levels of management, officers will know that both the DRT program and enforcement of drug-related DUI laws are important to the agency.

3. *Within each DRT agency, a DRT should become active in the task force and in promoting the DRT program and enforcement of DUI laws across the agency and across the Commonwealth.* By having a local DRT from each DRT agency involved with the task force, the program may be as vi-

tal as in the early days of the program when two sergeants were its leading spokespeople.

4. *PI&E campaigns should be reemphasized in the VSP and DMV.* Because enforcement programs tend to be more effective if they are well publicized, the revitalization effort should include informing the public of the law and its renewed enforcement emphasis. Likewise, all police agencies and officers should be encouraged to look for impaired drivers and be aware of the potential for drug impairment.

5. *SFST training with drug emphasis should be provided for as many police officers as possible—particularly for those in urban areas.* Because the conviction rate for DRT and non-DRT cases is similar, perhaps the best opportunity for non-DRTs is to provide them with training to detect impairment and get them thinking about the possibility of drug impairment if a suspect does not have a high BAC.

6. *Provide information to judges on the letter of the law and the training that officers receive.* There is anecdotal evidence that some judges may be reluctant to pass down a conviction if prescription drugs were involved or because there is no presumptive level of impairment established by law. However, in fact, driving while impaired by prescription drugs is illegal, and there is no requirement for presumptive or quantitative levels.

7. *Investigate possible legal changes to enhance the conviction rate.* In particular, the Governor recently endorsed a "use and lose" law for adults under which people convicted of using illicit drugs would lose their driving privileges. An internal possession statute would be a natural supplement if such legislation were passed. That is, if one could lose his or her license for using drugs, then driving while under the influence of drugs should be punished at least as severely. However, an internal possession statute is currently not feasible in Virginia for the purpose of traffic law enforcement. In the absence of such a law, there may be other legislative options that could be investigated.

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