Interim Report

AN EVALUATION OF THE SHORT-TERM EFFECTS OF THE VIRGINIA DRIVER IMPROVEMENT PROGRAM

by

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Prepared by the Virginia Highway and Transportation Research Council Under the Sponsorship of the Virginia Department of Transportation Safety and in cooperation with the Virginia Division of Motor Vehicles.

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SUMMARY OF FINDINGS

The following statements summarize the short-term effects of the Virginia driver improvement program.

1. The advisory letter, as the initial contact with the negligent operator, was found to be ineffective in improving driver behavior. Although it is relatively inexpensive to produce compared to other types of treatment, its use did not result in reduced conviction or accident experience.

2. The group interview, when preceded by an advisory letter, was also found to be ineffective in reducing accidents and convictions.

3. The group interview by itself, as a first, albeit later, contact with negligent operators, was found to be effective in improving some types of driving behavior. Attendance at a group interview resulted in a reduced number of convictions.

4. The personal interview in combination with other treatments was found to be effective in reducing major (6-point) convictions, but was ineffective in reducing minor (3-4 point) convictions.

5. No treatment was effective in reducing accidents.

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CONCLUSIONS

From this evaluation, the following conclusions were drawn.

1. The advisory letter is not an effective form of treatment for negligent driving in Virginia. As noted in the literature, the lack of impact may be attributable to the content or type of letter used, or it may be that the receipt of any type of warning letter would not sufficiently motivate drivers to change ingrained driving habits. Further study is necessary to determine why the advisory letter is ineffective and to experimentally correct this situation.

2. The group interview as a first, although later, contact with negligent operators was highly effective in improving driving behaviors which lead to traffic convictions. However, when an advisory letter preceded the group interview, the group interview proved ineffective in reducing accidents and convictions. The personal interview, when preceded by any other form of treatment, is effective in reducing the incidence of major convictions. More research is needed to determine which combinations of treatments enhance the personal interview and which weaken its impact.

3. Overall, the driver improvement program has had an impact on the conviction experience of participants. Although it is assumed that behaviors which result in convictions also lead to accidents, which is why drivers are punished for these behaviors, it is common among driver rehabilitation programs for treatment to affect either accidents or convictions but not both. It may be that various aspects of Virginia's program are aimed specifically at changing conviction-related behaviors. A change of focus may be required to develop treatments that reduce accident involvement.

RECOMMENDATIONS

Based upon this evaluation, the following recommendations are put forth.

1. It is recommended that some change in the advisory letter procedure be made to ensure the effectiveness of this entry level treatment. This can be accomplished by —

   (a) abandoning the present 6-point advisory letter in favor of using the group interview as the entry level treatment at 8 points;

   (b) abandoning the present advisory letter for one different in terms of content, style of presentation, amount of threat, and level of intimacy; or

   (c) substituting some other form of treatment for the advisory letter at the 6-point level.

   It should be noted that while the abovementioned actions are the most obvious changes which can be made in the driver improvement program based on available data, they are not the only solutions to the advisory letter problem. In any case, these and any alternative solutions should be instituted experimentally to determine whether they improve the efficacy of the driver improvement system.

2. An analysis of the content of the current forms of treatment should be instituted to pinpoint areas where interviews and classes may be reoriented toward avoidance of accidents as well as a reduction in numbers of traffic convictions.

3. It is strongly recommended that a system for ongoing monitoring of the program be developed to continuously evaluate both the impact of the program and the effects of changes that are made to improve its effectiveness.

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INTRODUCTION

In 1975, the Virginia Division of Motor Vehicles abandoned its strictly punitive system of dealing with traffic offenders in favor of a program of driver improvement. As stated under the provisions of the Virginia Driver Improvement Act (Section 46.1-514.1 of the Code of Virginia), the purposes of this new program included

> to improve and promote greater safety upon the highways and streets of the state; to improve the attitude and driving habits of drivers who accumulate motor vehicle conviction records; to determine whether certain drivers possess mental, physical or skill deficiencies which may affect their ability to safely operate a motor vehicle; to establish a Uniform Demerit Point System which will identify those drivers who are considered by the accumulation of demerit points to be habitual reckless or negligent drivers and frequent violators of the laws regulating the movement or operation of motor vehicles....

(For the full provisions of the Driver Improvement Act, see Appendix A.) Obviously the program designed to meet the above objectives embodies a multifaceted and comprehensive approach to eliminating aberrant driving, and consists not only of a point system for the identification and referral of chronically negligent drivers but also a system of remediation designed to treat these drivers. The treatments are advisory letters, group and personal interviews, driver improvement clinics, periods of probation, and any combination of these treatments. Among program participants, the old sanctions of suspension and revocation of the driving privilege are invoked only as a last resort, being reserved for cases in which the extensive system of remediation has proven unsuccessful in modifying unsafe driving behavior. The driver improvement program became operational in January of 1975 and has treated more than 200,000 drivers.

In 1977, it was decided that the program had been in operation for a sufficient length of time to allow for the evaluation of its impact on negligent driving. With this in mind, the Division of Motor Vehicles approached the Virginia Department of Transportation Safety with a request that the Highway and Transportation Research Council conduct an evaluation of the driver improvement system in the state. This report presents the short-term findings of the resultant study.

PURPOSE AND SCOPE

The purpose of the study is twofold. The primary goal is to determine the impact of the driver improvement program on Virginia's traffic and safety environment in terms of accidents and traffic convictions averted as a result of appropriate treatment. A secondary, but very important, function of the study is to establish an ongoing system of data collection to be used by the Division of Motor Vehicles to continually evaluate the effectiveness of the driver improvement program and to establish statewide norms for administrative evaluations.

The study will be limited to an evaluation of the driver improvement system as it currently operates; it will not —

1. determine whether point values are appropriately assigned to each possible violation;
2. determine if the order in which treatments are given is appropriate;
3. evaluate whether the criteria for receiving a given treatment are appropriate;
4. evaluate the quality of treatment offered throughout the state; nor
5. evaluate the efficiency or consistency of the administration of the program, except where the impact of the driver improvement program is affected.

VIRGINIA'S DRIVER IMPROVEMENT PROGRAM

As mentioned earlier, the purpose of the driver improvement program essentially is to diagnose and offer treatment to chronically unsafe drivers — those drivers who are frequently involved

in accidents or incur frequent violations, and who constitute a hazard to themselves and others. Most traffic offenses mentioned in the Code of Virginia have been assigned a point value consistent with the degree of hazard attaching to them. The values range from no points to a total of 6 points, and drivers who are convicted of each type of violation are awarded the appropriate number of points. Drivers become eligible for the various treatments offered in the program based upon the number of points they accumulate in a 1- or 2-year period. The program reflects both the number and severity of convictions incurred.

It is noted here that there are three types of convictions for which no points are assigned. First, no points are assessed as a result of a conviction for an offense requiring a mandatory suspension, such as "driving while intoxicated". Second, no points are assessed for nonmoving or very minor moving violations, such as operating a motor vehicle with defective or improper equipment. Additionally, convictions for which the courts order suspension of the driving privilege generate no points. Figure 1 outlines the operation of the driver improvement program. As seen at the top of the chart, persons enter the system as a result of being convicted of one or more violations. Nonviolators receive no attention from the system, with the exception of being awarded one "safe driving" point for each full calendar year in which they are conviction-free. A maximum of 5 of these points may be accumulated and applied as credit against convictions. Once the driver has accumulated a total of 6 demerit points in a 1-year period (or 9 points in a 2-year period) he is subject to receive the first stage of treatment, the advisory letter. This letter informs the driver that he has accumulated sufficient points to warrant the Division's concern, and warns him that if he accumulates additional points, he may become eligible for additional administrative action, possibly including suspension. No action on the part of the driver is required at this stage of treatment. In 1979, the Division sent 45,966 advisory letters to eligible drivers.

Should the driver heed this advisory letter, no further action will be taken against him. However, if he accumulates additional points for a total of 8 points in 1 year or 12 points in 2 years, he becomes eligible for a group interview. This treatment involves a 1-hour interview with a driver improvement analyst, with a small group of 8 to 12 other drivers. In the course of the hour, the analyst reviews each driver's record, explains what action will be taken should the driver earn more points, and stresses that suspension can be invoked if needed. He also presents some information on good driving behavior and on the ways drivers can avoid violating traffic laws. In 1979, almost 56,000 drivers attended group interviews.

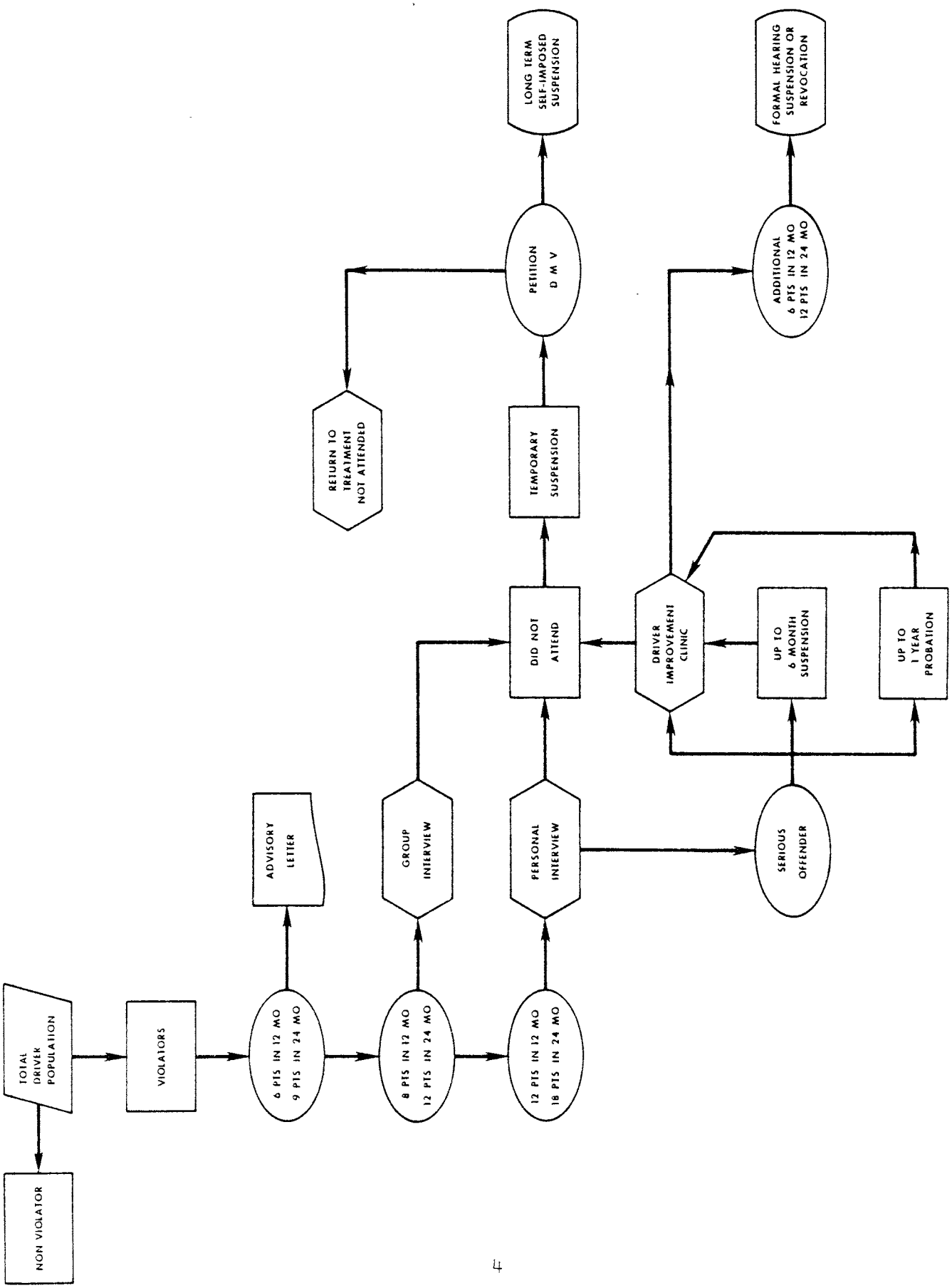

Figure 1. Operations of the Virginia Driver Improvement Program.

Should drivers continue to accumulate points to a level of 12 points in 1 year or 18 points in 2 years, they become eligible for a personal interview with the driver improvement analyst. This interview is basically diagnostic and is not considered a form of a treatment in itself. The possible outcomes of the personal interview include —

1. placing the driver on probation for a period of 3 to 12 months,

2. suspending his driver's license for up to 6 months,

3. sending him to a driver improvement clinic, or

4. prescribing any combination of the above treatments.

In the most prevalent treatment, the driver is sent to the driver improvement clinic and is put on probation for some period of time. In this evaluation, the personal interview is considered in conjunction with the driver improvement clinic and probation as one unit of treatment.

The driver improvement clinic is an 8-hour course of classroom instruction held over a 4-week period in the violator's community. A modified version of the National Safety Council's Defensive Driving Course is used as an instructional guide, although the program is occasionally tailored to individual needs. Once he has completed the driver improvement clinic, the driver receives 5 "safe driving points", which can be used to offset prior convictions. The charge for this treatment is $20. In 1979, over 9,000 drivers attended this course of treatment.

Should the driver continue to accumulate points up to 6 additional points in 1 year or 12 additional points in 2 years, he may become eligible for a formal hearing, at which time his license may be suspended or revoked. Only about 74 drivers attended these hearings in 1979, with 68 having their licenses suspended.

Not all drivers receive this sequence of remediation. The system is flexible enough to allow drivers to enter the system at levels consistent with their driving problems. For instance, should a driver become eligible for an upper level treatment, he may enter the program at the group interview or personal interview level and bypass the advisory letter. This would allow for immediate intervention in the person's driving problem and should make successful treatment somewhat more probable. Should a driver fail to attend the group interview to which he has been assigned or

fail to complete a treatment, he is reassigned and renotified. Should he fail to attend this reassigned treatment, or not attend the personal interview or clinic, his license is suspended until such time as he petitions the Division of Motor Vehicles or completes the treatment. A very small group of drivers fail to petition the Division for reentry and thus undergo an indefinite period of self-imposed license suspension. Treatment can be postponed on a short-term basis, provided the driver has a valid reason for requesting the postponement.

REVIEW OF THE LITERATURE

Virginia's driver improvement program is fairly typical of most programs of its type, both in relation to available remediation and in the offering of a sequence of treatments for drivers with serious problems. This is to be expected, since the design of Virginia's system was based upon the state of the art at the time of its creation in 1975.

This portion of the report presents a review of the research concerning the remediation of problem drivers, emphasizing those findings applicable to both Virginia's system of driver improvement and to this evaluation.

Considerable research has been directed toward improving negligent drivers through remediation. Beginning in the mid-50's, when the concepts of driver improvement were first employed on a large scale, three characteristics of these studies that diminish their usefulness should be noted here. First, many of the studies suffer from methodological problems and thus must be considered suggestive rather than definitive. (These methodological problems are well documented by Peck.[1]) Second, even the methodologically correct studies tend to compare the effectiveness of treatment to that of the absence of treatment. The likelihood of abandoning an ineffective driver improvement program in favor of doing nothing is very low; it is much more likely that a different type of treatment would be instituted, or at the very least, previously existing court sanctions such as suspension or revocation would be involved. Thus, a more realistic control group would receive these alternate treatments. This flaw does not negate the findings of a particular piece of research. Indeed, as is the case in this study, the use of a no-treatment control group may be a necessary first step in the evaluation or it may be unavoidable due to the existing system. Only the types of conclusions which may be drawn from the research are affected.

Third, it should be remembered that the impact of a driver improvement program may be very difficult to measure, depending on the criteria chosen to evaluate its effectiveness. Logically, the ultimate objective of such a program, and thus its main criterion of performance, is accident reduction. However, a reduction in accident rates or frequencies may be difficult to detect for several reasons. First, accidents are rare or infrequent events. A very large number of participants are required for a study in order to accumulate sufficient numbers of accidents to allow for detection of changes, and many of the studies reviewed here suffer from this "sample size" problem.(1) Also, accidents are the result of a large number of factors other than the behavior of a particular driver. The state of his vehicle, the environment, and the state of the other vehicles and drivers involved all come together to cause an accident, and even then chance plays a considerable role. Thus, improving unsafe driving behavior would not necessarily result in a reduction of accidents. Additionally, changes brought about by treatment may not survive in real life situations, since an unsafe driver is usually not "punished" for his negligent behavior by being involved in an accident. In effect, each unsafe act that does not result in an accident may reinforce the concept that persons may drive in whatever manner they wish without consequence. Also, since risk-taking and other unsafe driving behaviors may be stimulating, pleasant, and ego enhancing, safe driving practices which seem dull by comparison may not outlive the effects of treatment. Finally, accidents are not always reported to authorities, particularly because of confusion over reporting criteria but also because of the desire to avoid increases in insurance rates and the hope that one's driving record will not be worsened by the recording of such an event. While accident-free drivers might be willing to report all accidents, drivers involved in several accidents may be less likely to do so, thus making the detection of changes in their accident records even more difficult. All of these factors mask the impact of even the most successful driver treatment program.

Because of time limitations, when evaluating driver improvement programs researchers usually choose surrogate measures to augment accident data. Often, the measure is conviction rates or frequencies. Conviction rates are more stable than accidents and thus are a more reliable measure. Also, convictions are less rare than accidents, and thus reduce sampling and time requirements. Chance factors and the other influences which affect accident occurrence play less of a role with conviction data and there is very little self-reporting bias. Finally, conviction frequencies are the best available correlate and prediction of accident frequencies, outside of previous accidents, and as such are the most accurate surrogate measure.(2-8)

There are, however, several problems with using conviction data to measure driver improvement. First, it's possible that although accidents and convictions are correlated, a treatment will have different effects on the two; i.e., a treatment may affect behaviors related to convictions and have no impact on accident-related behaviors, or vice versa. This has been postulated to be the case in many studies that examined both accidents and convictions.[9,10,11,12] Also, there is a certain amount of chance involved in the detection of violations, and there may be enforcement biases in that police may be more diligent in one area of the state than another or they may be more likely to enforce particular traffic laws, such as speeding laws on interstate highways, the enforcement of which is federally mandated. In spite of these problems, however, conviction data remain the best available surrogate measure of accident potential.

In summary, the available literature, although flawed, can provide both an indication of the impact of a program and a direction for further research. There are a number of very thorough reviews of the literature on the effectiveness of driver improvement programs, including references 13 through 16. Because of the very complete coverage of the subject in these reports, only a brief review, by type of treatment, will be presented here.

Warning Letters

In many driver improvement systems, as in Virginia's, the entrance level treatment is an early warning letter to advise the driver as to the state of his driving records so that he may amend his negligent driving behavior. These warning letters vary among programs, based upon content, level of personalization, degree of threat, and format of presentation.

While the warning letter treatment has been extensively studied, its existence in many programs has not been questioned for several reasons. First, warning letters are very inexpensive to produce compared to the cost of other treatments; it has been generally believed that a warning letter could be included in a driver improvement program regardless of the amount of improvement it produces because it would almost automatically be cost-effective.[9] Second, it has been felt that because of the very low level of negligent driving that will cause a person to get a warning letter, a number of drivers receiving letters would improve their driving behavior without any intervention. Cases of spontaneous improvement would ensure the appearance of effectiveness of the treatment.[13] Some of the impact of warning letters may be due to this phenomenon, since a warning letter

presented as a "last chance" to more serious habitual offenders proved ineffective.[17] In any case, with increased budget tightening and fiscal accountability, the justifications for warning letter programs are being closely scrutinized.

The results of the several studies of the effectiveness of the warning letter are rather contradictory. In some cases, the receipt of a warning letter was shown to result in reduced traffic convictions.[9,18,19] In several other cases, a warning letter was found to be effective in reducing both accidents and convictions.[10,20] In only one case was a warning letter found to be ineffective in reducing accidents and convictions.[21] Except under special circumstances, all of these reported beneficial effects lasted no longer than 6 to 7 months. In only one study did the administration of a warning letter result in a long-term or delayed reaction. March found that drivers receiving a warning letter experienced an increase in numbers of collisions during the second year following treatment that was not evident during the first post-treatment year.[22]

Several studies addressed the question of which type of warning letter is most beneficial. In general, the use of increased threat as motivation for improved driving did not produce the desired effect, and for male offenders this authoritarian approach may be detrimental.[10,20] There seems to be some question of whether personalization of the letter improves its effectiveness. Kaestner, Warmouth, and Syring found that personalized letters reduced traffic involvements more than did a standard letter, and that the higher the degree of personalization, the longer lasting the effect, even beyond the 6-month limit.[20] In contrast, McBride and Peck later found that personalization seemed to have little effect.[10] Finally, Epperson and Harano found that a low threat, highly personal letter did not perform significantly better than a standard letter.[21] This last study also points up the distinct possibility that combinations of treatments, like warning letters, informational pamphlets, and follow-up letters, could interact to produce either more beneficial or more detrimental effects than single treatments alone, and that recipients of these treatments could react differently to remediation based upon personal characteristics such as their previous conviction records.

In summary, although the literature is divided on the exact impact of the various types of warning or advisory letters on negligent driving, it has been largely concluded that they have a beneficial effect overall. Most programs still include this phase of treatment because of the low cost of administration and its potential for early intervention.

One-Time Group Meetings

In most driver improvement systems, the short-term group meeting is reserved for highly negligent drivers, than the first contact with offenders, although it may occasionally include some of them. This type of meeting is analogous to Virginia's second stage of treatment, the group interview, in that it involves a short, one-time group session. As with the warning letters, group meetings often vary from state to state with regard to content, length, format, orientation, and target population.

Again, the results of research are somewhat contradictory. Several studies have found that attendance at a single group meeting results in reduced convictions,[11,22-26] while only one study claims a reduction in collisions.[9] It should be mentioned that this study also discovered strong differences in the effects of the treatment on each sex's driving behavior. Among females, a minority group in most driver improvement programs, highly authoritative meetings resulted in reduced collision experience, while for males, a less authoritative meeting produced this effect.

A few studies of group meetings have claimed that they are successful in reducing both collisions and convictions,[9,17,27] and two other studies claim that one-time group meetings have no effect on either.[28,29]

It must be noted that many of these studies suffered to some degree from methodological problems and that all dealt with separate and distinct applications of the group interview concept.

There is somewhat more agreement on the characteristics of effective group type meetings. For the most part, the length of the meeting and the attitudinal orientation seem to make little difference, except perhaps in the case of threatening or authoritative meetings, which have a detrimental effect on males.[23] It is also agreed, as with the warning letter, that there is considerable subject-treatment interaction in the group meeting treatment.*

As noted with other types of driver improvement treatments, there are small disagreements among research findings; there is, however, considerably more consensus on the effectiveness of individual hearings. Several studies have found them to be effective in reducing convictions,[9,19,22,31] while others have found them

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*The subject-treatment interaction indicates that a particular treatment may affect subjects with different traits (such as age, sex and prior driving record) in different ways. In these cases, some subjects may benefit from a treatment and others may be harmed by it.

to be effective in reducing collisions.[9,12,22,32,33] Only one study reviewed found such a hearing to be ineffective.[29] As with the group interview, some subject-treatment interaction was detected, in that an individual hearing was found to be a better first contact for females than for males.[22]

Traffic Schools

The traffic school is one of the more variable types of driver improvement remediation, and as such has been the subject of considerable research. In the Virginia driver improvement system, the traffic school function is fulfilled by the driver improvement clinic. Assignment to the program is usually the result of a personal interview. Traffic schools vary in length, in content, in the amount of interaction, and in format. While several studies dealing with traffic schools have suffered from methodological problems, they have been somewhat more realistic in their choice of control groups, in that treatment effects have been often compared to the effects of court sanctions. There are some disagreements in the findings. No studies claim that traffic schools are effective in reducing accidents alone, but several have found reductions either in convictions[17,11] or in both accidents and convictions.[33,34] Also, the length of time a driver has been found to remain conviction-free has been increased by attendance.[17] However, several studies claim to have found no impact of attendance at a traffic school.[25,28,33,35]

Various studies have examined the question of which type of school is most effective in reaching certain types of students. It would appear that the length of the course makes no difference in its effectiveness.[36] While one study found that one type of course that stressed attitudinal changes was no more effective than another in reducing traffic involvements, it has been shown that several types of courses do impact driver behavior. Interestingly, one of the newest curricula employs concepts of transactional analysis, and although it has not been fully evaluated, there is some indication that this approach may be beneficial.[37]

There appears to be very strong subject-treatment interaction regarding traffic school treatments, which could account for the contradictory results. However, the exact nature of these effects is a source of disagreement. Various studies have found that traffic schools are most effective for young drivers,[17] older drivers,[30] or both.[34] There is also some interaction between treatment type and race,[28] and between prior driving record and treatment success, although some studies claim[17] that traffic

schools are more successful for persons with previous convictions, while others claim success with persons involved in a few previous collisions.(21) Again, it is clear that more work is required to define the limit of this subject-treatment interaction in each driver improvement program.

Suspension and Other Incentives

As mentioned earlier, the most realistic alternative to a remedial program of driver improvement is the system of early suspension, revocation, and/or probation used by most states prior to their adoption of the treatment approach. While suspension is still a part of most remedial programs, it is invoked only if all else fails. In Virginia, for instance, as few as two speeding violations in a 1-year period could result in suspension under the old system. Currently, suspension and/or probation are outcomes of a personal interview and formal hearing process. Nevertheless, while suspension is not as serious as it would appear since, conservatively, one-third to one-half of all suspended negligent operators drive during their suspensions, it is the threat of suspension that acts to ensure compliance with the rest of the remedial program.(38)

Very few studies have dealt with the use of suspension or probation as a deterrent to violations of traffic laws. While considering the full range of sanctions, including warning, fines, a probationary license, and imprisonment, one study found little or no relationship between the severity of punishment for the first offense and the number or gravity of later offenses.(39) It was determined that the severity of punishment was related to the length of time between punishment and the occurrence of the next offense, with more severe penalties delaying a second offense longer than less severe ones. There was, however, some indication that the most severe punishments could increase recidivism.(39) Unfortunately, suspension was not among the sanctions considered in this study. In this regard, Kaestner and Speight compared suspension with a probationary licensing system and found that the probation resulted in greater reductions in both convictions and accidents than did suspension.(37) This finding confirms the finding of research on traffic schools, that was was discussed in the previous section, in that this treatment sometimes proved more effective than the ultimate sanction of suspension.(39)

There has been, however, a study that contradicted this finding.(40) On the assumption that treatment alternatives are considered less harsh than suspension, it was found that operators receiving driver improvement actions less harsh than their case

actually called for, including suspension, experienced more accidents, but no more violations, than did a group receiving the appropriate action or one more harsh than called for.(40)

Summary

Contradictory results from driver improvement research can probably be attributed to several factors. First, the treatments themselves vary considerably. While there is some indication that different applications of the same treatment concept (such as variations in program length from place to place) may make no difference, it is possible that these differences may account for discrepancies in the effectiveness of the various programs. Second, similar treatments are applied to vastly different populations in different programs, and considering the importance of subject-treatment interaction, this difference in clients alone would account for the disparity of findings. Sometimes the treatment used with entry-level negligent operators in one program is applied only to very serious problem drivers. Also, the demographic makeup of the subjects may differ from place to place, thus changing the probable outcome of the treatment.

Finally, it is clear that because of the wide variety of programs and their disparate use of varying treatments, each individual program requires its own on-site evaluation both to determine program effectiveness and to define the program's differential effects on its target population.

EVALUATION OF THE VIRGINIA PROGRAM

Methodology

As mentioned previously, the available literature not only pointed up effective types of treatment and the need for individual, on-site evaluation, but also examined various methodologies and problems to be avoided in designing experiments.(5) The general design of this study involved the comparison of experimental groups receiving treatment with control groups not receiving treatment to determine the effectiveness of the forms of remediation in the Virginia program. A random assignment of subjects was considered essential; however, assignment to the driver improvement program is not discretionary in Virginia (see Appendix A for the enabling legislation). Legislation had to be sought to enable the Commissioner of the Division of Motor Vehicles to waive treatment for randomly selected subjects, thus forming the control groups needed. This legislation, which appears in Appendix B, was passed by the 1978 Virginia General Assembly to be operational for one year.

Study Groups

The subjects were randomly assigned to study groups at three levels as shown in Figure 2. These levels correspond with each of the three levels of treatment — the advisory letter, the group interview, and the personal interview-driver improvement clinic. The series of treatments appears at the top of Figure 2, and the corresponding study groups are described under the following subheadings.

Level One: Advisory Letter

Once violators accumulated sufficient points to become eligible for the advisory letter, they were randomly assigned to the level one experimental and control goups. The level one experimental group (EXP-1) received the advisory letter only, while the control group (CONT-1) did not receive an advisory letter. After they were assigned to the groups, no additional administrative actions were taken against persons in either group. They were allowed to accumulate points without additional contact with the driver improvement system. Their accident and conviction experiences were monitored initially for a 6-month period following their assignment.

Level Two: Group Interview

The second level of treatment involved the group interview, which has two frequently used avenues of entry. In the first, the driver accumulates 6 points in a 1-year period (or 9 points in a 2-year period), receives an advisory letter, accumulates at least 2 more points in that year (or 4 more points in 2 years) and is assigned to group interview. This could be accomplished by receiving two minor speeding convictions (one to nine miles per hour over the posted limit) for a total of 6 points, followed by a third minor speeding conviction at a later time. The second avenue of entry involves receiving 8 (or 12) points and being assigned directly to group interview, thus bypassing the advisory letter. This could be accomplished by receiving two or more sereious convictions (10 to 19 miles per hour over the posted limit). These two methods of entry constitute two different treatment groups — one receiving an advisory letter plus the group interview, and one receiving the group interview only. Since rather large volumes of drivers enter group interview through these two methods, both were evaluated in this study.

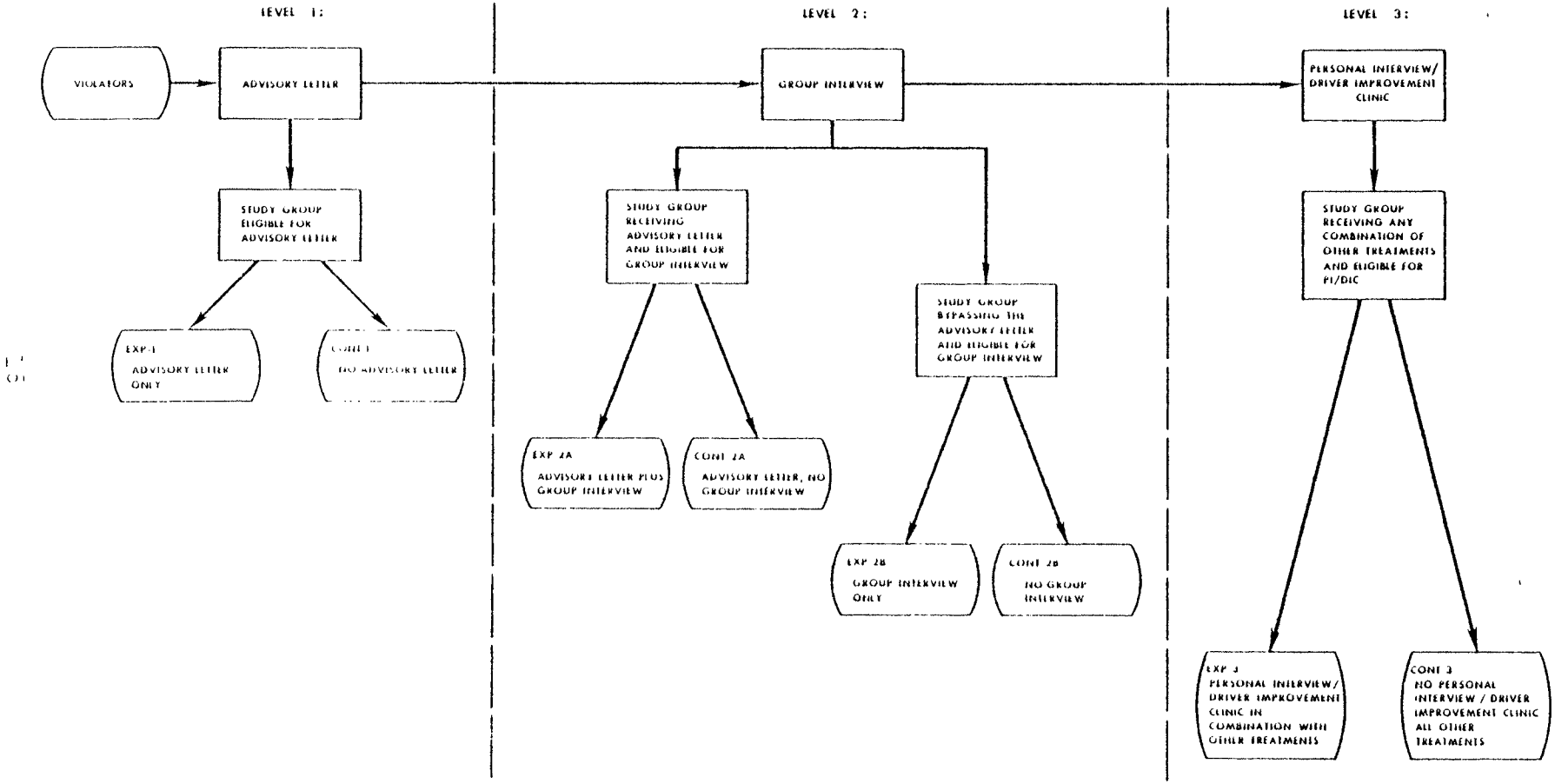

Figure 2. Three levels of study groups.

As those subjects having received the advisory letter became eligible for a group interview, they were randomly assigned to experimental and control groups. The experimental group in this case (EXP-2a) received both the advisory letter and the group interview. The control group (CONT-2a) received the advisory letter but not the group interview. As persons bypassing the advisory letter became eligible for group interview, they too were randomly assigned to experimental and control groups. The experimental group (EXP-2b) received group interview only, while the control group (CONT-2b) received no treatment. Again, the driving behavior of all four of these groups was monitored for a 6-month period- and at the end of the study period treatment groups were compared to no treatment groups to assess the impact of the remediation employed.

Level Three: Personal Interview-Driver Improvement Clinics

Those drivers not already assigned to a study group were eligible to continue accumulating points and could become eligible for assignment to the personal interview and the driver improvement clinic. As with the group interview, there are various avenues of entry into the personal interview phase. For instance, a driver could receive an advisory letter, attend a group interview, and attend a personal interview (followed by some additional treatment). The driver could enter the system at the group interview level as described above, and then attend a personal interview; or he could receive an advisory letter, bypass group interviews, and go directly to the personal interview level. Finally, the person could accumulate the necessary points, be assigned to a group interview, but become eligible for a personal interview before he can attend the group session. This would be equivalent to entering the system at the personal interview level. Since the number of individuals receiving each of these treatment combinations was too small to allow the separate evaluation of each by statistical methods, all combinations of treatments including personal interview were evaluated in the aggregate. As subjects became eligible for the personal interview, independent of their previous treatments, they were randomly assigned to experimental and control groups. In this case, the experimental group subjects (EXP-3) received any previous treatments to which they were assigned, and then received a personal interview along with the driver improvement clinic and/or were suspended or placed on probation for some period of time. The control group (CONT-3) received the previous treatments, but did not attend the personal interview and were not assigned to the driver improvement clinic, etc. As with the other levels, the experimental group that had the personal interview was compared to the control group that did not to determine the effect of the personal interview-driver

improvement clinic unit of treatment on driver behavior. It should be noted then, that all conclusions concerning the personal interview phase of treatment are based upon the assumption that the subjects received both the group interview and the advisory letter treatments.

In summary, eight study groups were considered — four experimental groups, each offering a different set of treatments, and four corresponding control groups. The treatments received by each group and the criteria for entry appear in Table 1.

Table 1

Summary of Study Groups

TREATMENT	Treatments			
	Advisory Letter	Group Interview	Personal Interview Dr. Improv. Clinic	Criteria For Entry, Points
Level 1: Advisory Letter				
EXP - 1	X	—	—	6 (9)
CONT - 1	0	—	—	6 (9)
Level 2: Group Interview				
EXP - 2A	X	X	—	8 (12)
CONT - 2A	X	0	—	8 (12)
EXP - 2B	0	X	—	8 (12)
CONT - 2B	0	0	—	8 (12)
Level 3: Personal Interview-Driver Improvement Clinic				
EXP - 3	(Any previous combination)		X	12 (18)
CONT - 3			0	12 (18)

Sampling Plan

Eligible subjects were randomly assigned to the study groups mentioned previously, based on the millisecond of entry of the transactions making them eligible for selection, i.e., the time at which the conviction was entered on the driver's record. Time of entry and social security number are pseudo random elements in the driving record. By using time as the criterion for selection, problems arising from the systematic absence of the social security number were avoided. The subjects' assignments were equally distributed across a 12-month period such that approximately 1/12 of those in any one of the eight groups were persons becoming eligible in any given month.

Sample Sizes

The necessary sample sizes for the study groups were computed using the formula

$$n = \frac{(Z_{1-\alpha} + Z_{1-\beta})\,pq}{d^2} \left[\frac{Nn}{N+n}\right],$$

where

$Z_{1-\alpha}$ = normal value corresponding to the alpha level (i.e. the probability of finding significant results when there are none);

$Z_{1-\beta}$ = normal value corresponding to the beta level (i.e. the probability of finding no significant results when there are some);

p = probability of occurrence of the event ultimately being measured (in this case, accidents or convictions);

q = $(1 - p)$;

d = the minimum detectable change in the event being measured;

N = population size;

n = sample size; and

$\left[\frac{Nn}{N+n}\right]$ = the correction for a finite population size.

As this formula indicates, sample sizes are related to the precision or exactness of a study in that the more precision required, the larger the sample sizes must be. For instance, if it is necessary to detect a very small change in the event being measured, say accidents, then it will be necessary to have a very large sample size. On the other hand, if less precision is required, then a smaller sample may be used. In determining the precision of this study, the following assumptions were made.

1. The alpha level was set at 0.05 (meaning that there is less than a 5%chance of finding significant results when in fact there are none).

2. The beta level was set at 0.20 (meaning that there is less than a 20% chance of finding no significant results when in fact there are some).

3. The minimum difference that could be detected in this evaluation was a 10% difference in rate. (For example, if the accident rate for the experimental group was 15%, a difference as small as 1.5% could be detected.)

To ensure that the sample sizes calculated were sufficiently large, a conservative approach was used. Sample sizes were determined for each of the criterion measures (accidents, major convictions and minor convictions) for each group, and then the largest of these was chosen. Additionally, the sample sizes were then inflated by 25% to account for unforeseeable sources of attrition later in the study. The final sample sizes for each group appear in Table 2.

Table 2

Sample Sizes for Groups Evaluated

	Treatment	Estimated Sample Size	Actual Sample Size	
			Experimental	Control
1.	Advisory Letter Only	4,729	4,899	4,884
2a.	Advisory Letter Plus Group Interviews	2,214	2.293	2,319
2b.	Group Interview Only	4,344	4,649	4,617
3.	Personal Interview Combinations	1,763	1,738	1,650

It can be noted from Table 2 that all groups exceeded their required sample size with the exception of experimental and control groups 3, the groups involving the personal interview. The numbers of persons becoming eligible for the personal interview were smaller than expected during the subject selection period and thus, even by selecting 100% of the eligible subjects for these groups, the estimated sample size of 1,763 was not reached. However, since this figure was inflated by 25% at the outset, there were still adequate numbers of subjects to allow for statistical analysis at the originally determined levels.

Analysis

As mentioned earlier, data collection began as soon as subjects were assigned to a study group. This introduced some bias into the study in that data collection for some subjects began before they received treatment. In those cases where delays before receiving treatment were great, it was possible that this factor could have influenced the study findings. There were two alternatives for handling this problem. First, data collection on experimental subjects could have begun after treatment; however, in this case it would have been unclear as to when data collection on control subjects would begin. In the second alternative, data collection for both experimental and control subjects would have begun at a specific time after they became eligible, with that time corresponding with the average length of delay in receiving that particular treatment. In this case, data collection on some subjects would have begun after they received treatment and on some before they received treatment. Both of these alternatives were considered either too cumbersome or impractical to be employed. For this study, it was decided that if data collection was begun on subjects as soon as they were assigned to a study group, the bias involved would be in the conservative direction, making a difference in groups more difficult to prove. Thus, under this method, any differences found would be known to be true differences and not artifacts produced by some bias in the study design.

Three statistical analyses were performed. The first was performed on a monthly basis as subjects were assigned to a study group to determine group comparability. At the outset, corresponding experimental and control groups at each level were compared for demographic and driving-related variables such as age, sex, and number of accidents and convictions experienced in the year previous to their entry into the study.

Once comparability was determined, data collection proceeded for a 6-month period. After 6 months, the subsequent driving behaviors of the experimental and control groups were compared using chi-square and covariance analysis. This comparison determined if the driving records of persons receiving a particular treatment differed significantly from the driving records of persons not receiving treatment, then a cost-benefit analysis could be undertaken.

LIMITATIONS

There are several limitations to this study which should be recognized. These include limitations on the scope of the study and limitations relating to the treatment of the control groups.

Limitations on the Scope of the Study

In most experimental studies, small groups of subjects are selected from a population to receive some sort of special treatment. In this case, small samples of drivers were selected from the larger population of drivers entering the driver improvement program to receive or not receive driver improvement treatments. The samples of drivers were randomly chosen from the population so that they would resemble the population as closely as possible, and so that any findings of the study involving the samples would apply to the larger population as well. However, if certain groups of drivers in the population were not included in the study samples, then findings of the study would not apply to them. The following groups of drivers were not included in the study groups.

1. Persons volunteering to attend any form of treatment or persons assigned to any treatment by the courts rather than by the Division of Motor Vehicles.

2. Persons convicted of violations for which no point value is assigned, such as "driving while intoxicated" — for which a suspension or revocation is mandatory — or nonmoving violations, such as equipment or financial responsibility violations.

It should be noted that findings of this study do not apply to these groups of subjects.

Limitations Relating to Handling of Control Groups

From a purely research point of view, the control groups in this study should have been allowed to accumulate additional points relating to accidents and convictions without the intervention of the driver improvement system, so that final comparisons of treatment and no treatment groups would show the true differences between these groups. However, it was realized that this was not wholly practical. Because of the commitment of the Division of Motor Vehicles to preserving the safety of the driving public, extremely high risk drivers had to be offered some sort of remediation, regardless of their group assignment. For the purpose of this project the term "high risk" driver was defined as any driver accumulating 13 points or more in a 1-year period after being assigned to a study group.

There were essentially two ways of dealing with high risk drivers in the two control groups in question:

1. To remove those drivers judged as high risk from both the experimental and control groups, so that comparisons between the two groups would not be distorted; or

2. to remediate the high risk drivers in the control group and leave them in their appropriate group for analysis.

Both of these alternatives contain an element of bias concerning removing high risk drivers from both the experimental and control groups. If drivers removed from the experimental group were essentially the same as those removed from the control group, then the drivers remaining in both groups would still be comparable. However, high risk drivers in the experimental group would be removed only when they accumulated points after remediation, while high risk drivers in the control group would be removed when they accumulated the necessary points without remediation. Thus, drivers removed from the two groups might, and probably would, differ from one another, and if they were removed the remaining groups would not be comparable. In this case, the strength, and even the direction of this group distortion, would be unknown.

On the other hand, if high risk drivers in the control group were remediated and left in their appropriate groups as suggested in alternative 2, some distortion in groups would still be present, since introducing remediation to this small group of control subjects would contaminate the control group in question. However, the direction of this group distortion would be known.

The effect of alternative 2 would be to make proving a significant difference between experimental and control groups somewhat more difficult. Thus, any effect of the program that is found under this alternative would be known to truly represent the impact of the program. According to the experience of researchers at the California Department of Motor Vehicles, the distortion produced by choosing the first alternative would actually be more than the impact of the treatment itself, while the known distortion in alternative 2 would be less than 5%. For these reasons, alternative 2 was chosen as the method for handling high risk drivers in control groups. The driving records of control subjects who fell into the high risk category, and who were not under suspension for conviction of an offense during the data collection period, were manually reviewed and the subjects given appropriate treatment, if deemed necessary, and left in the appropriate control group for analysis.

RESULTS

As mentioned previously, the analysis of driver improvement data to determine short-term effects was conducted in two phases. First, preexisting demographic and driving-related characteristics of the various experimental and control groups were compared. This was done to ensure that any differences in driving record subsequent to treatment would be attributable to the driver improvement program rather than to preexisting differences in the groups. Second, once comparability was ensured, 6-month subsequent driving records were examined to determine if the persons in groups receiving driver improvement treatments were subsequently "better drivers" than those in groups not receiving treatment.

Comparability of Study Groups

No matter how carefully study groups are chosen, it is statistically possible to create groups that are somewhat different on preexisting characteristics, in spite of the fact that persons are randomly assigned. To determine if this was the case, a comparability analysis was performed. The results of this analysis of preexisting traits appear in Tables 1 through 8 in Appendix C. All experimental and control groups are essentially equal regarding their members' sexes, ages, previous accidents, and previous convictions, with the exception of the personal interview groups. As shown in Tables C-4 and C-8, these experimental and control groups differ significantly on age and number of previous convictions.

In terms of age, the experimental group receiving treatments including the personal interview tend to be somewhat younger than the control group receiving treatments not including the personal interview. As seen in Table C-4, there are more experimental group drivers in the 16-20 age category and fewer in the 21-25 year category than in the control group. The two groups are essentially equal in the other age categories.

As seen in Table C-8, these experimental group drivers also had experienced significantly more convictions during the year preceding their entrance into the study. Thus, the experimental group drivers seemed to be poorer drivers at the outset of the study, even before receiving treatment. This finding is in agreement with the discovery of age differences, in that it has been shown that younger drivers tend to have more accidents and receive more convictions than do their older counterparts.(2,21,41)

Ordinarily, differences between groups with regard to preexisting traits are considered to be biasing factors. Such is the case in this study; however, and quite fortunately, these differences interject a conservative bias in that it is more difficult to demonstrate the positive impact of treatment on a more "hard core" experimental group. In this case, even before applying statistical controls, the study is biased against the treatment effect, thus ensuring the validity, and probably the underestimation, of those effects which are found. In the final analyses, experimental and control groups will be made essentially equal with regard to preexisting traits through the use of statistical techniques such as covariance analysis.

Program Impact

The first step in the analysis of short-term effects was a comparison of accidents and conviction frequencies for the experimental and control groups. In this portion of the analysis, the simple chi-square statistic was used to determine if over the first 6-months' subsequent driving experience there were significant differences in the distribution of accidents and convictions for those groups receiving treatment and those not receiving treatment. The data analyses are presented in Appendix D and the results are discussed in the text.

With regard to the first level of treatment, the advisory letter, there were essentially no differences in the accident and conviction experiences of the experimental and control groups. The control group received slightly more mandatory convictions than the experimental group, but this difference was not statistically significant. Otherwise, the subsequent major and minor

conviction rates* and the frequencies and severity of accidents for the group receiving an advisory letter were equivalent to those for the group not receiving this treatment, which indicates that the advisory letter was largely ineffective in changing driver behavior.

The same can be said for the combination of the advisory letter and group interview. Again, subsequent conviction and accident experiences for the group receiving an advisory letter plus a group interview were not statistically different from those for the group receiving only the advisory letter. This would indicate that the group interview had no impact on driving behavior when preceded by an advisory letter.

Results were different for the group interview presented by itself rather than in conjunction with an advisory letter (see Table 3). For both major and minor convictions, the experimental group attending the group interview only had significantly fewer subsequent convictions than the control group. With regard to mandatory convictions and accident involvement, no such effect was evident. This is an interesting finding, especially in light of the fact that when presented after an advisory letter the group interview did not reduce major and minor convictions. It would appear from this cursory analysis that some characteristic of the advisory letter or its place in the sequence of treatments reduces the impact of the group interview.

The final chi-square analysis was applied to the personal interview study groups (see Table 4). While no effect was noted for subsequent minor convictions, the personal interview resulted in fewer major convictions for the experimental group compared to the control group. No other effects on convictions or accidents were noted.

In summary, it appears that several of the upper level treatments are successful in reducing convictions. There are, however, several confounding factors in these data which make additional analysis necessary. First, as previously mentioned, significant

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*Major convictions invoke a 6-point penalty and are generally considered to be more serious than minor convictions, which involve 3 or 4 points.

Table 3

Results of the Chi-Square Analysis of the Group Interview Only

Measure of Performance	Type of Impact
Mandatory convictions	No significant effect
Major convictions	Significantly reduced
Minor convictions	Significantly reduced
Number of accidents	No significant effect
Accident severity	No significant effect

Table 4

Results of the Chi-Square Analysis of the Personal Interview

Measure of Performance	Type of Impact
Mandatory convictions	No significant effect
Major convictions	Significantly reduced
Minor convictions	No significant effect
Number of accidents	No significant effect
Accident severity	No significant effect

differences in age and previous conviction records were found between the personal interview experimental and control groups. While these differences bias the study in a conservative direction, making the impact of the treatment more difficult to detect, they can and should be screened out. Second, there may be some differences in exposure between several of the experimental and control groups. As demonstrated in Table 5, the experimental groups receiving the group interview only and the personal interview had their licenses suspended significantly more days than did their corresponding control groups. This difference can be explained by a procedural characteristic of the system: When negligent operators fail to attend an assigned treatment, and do not reschedule, their licenses are automatically suspended until they comply with their treatment assignment. This is the case with experimental group subjects, who are assigned to treatments, but not with the control group subjects, who are not.

Table 5

Differences in Exposure Rates for the Group Interview and Personal Interview Study Groups

Group Interview Only

Incident Type	Experimental Group	Control Group
Average major convictions	0.1510	0.2043
Average minor convictions	0.0719	0.0830
Average days of suspension	48	37

Personal Interview

Incident Type	Experimental Group	Control Group
Average major convictions	0.1491	0.2394
Average days of suspension	88	77

Thus, the experimental group subjects are likely to have their licenses suspended more often and for longer periods of time than are control group subjects. Theoretically, the experimental subjects have less exposure time to collect traffic convictions and accidents than do their control group counterparts. While it is known that license suspension does not always have the desired effect of removing selected drivers from the traffic environment, it must be assumed that "failure-to-appear" suspensions and their corresponding reduction in exposure for the experimental groups only would mask the effects of treatment. When all individuals who had their licenses suspended for failure to appear are removed from the analysis, treatment effects do become more pronounced, and some effects that were masked in the full analysis become evident. However, as discussed earlier under LIMITATIONS, this type of analysis is not methodologically correct. In theory, about the same number of control group subjects would have failed to appear for treatment and would have been suspended had they been assigned to treatment in the manner as were the subjects in the experimental groups. However, it is impossible to determine which control group subjects would have incurred this action. Including in the analysis those control group subjects who might have been thus affected while removing their experimental group counterparts creates a serious bias. In order to compare the experimental and control groups in the absence of all biasing elements, including preexisting differences in age and conviction

records between groups, a multivariate analysis will be conducted after 12 months of post-treatment exposure. It is noted that to detect both short-term (6-month) and long-term (12-month) treatment effects, such a multivariate analysis was planned for inclusion in this interim report; however, sufficient case-by-case data on control and experimental subjects were not available in a timely manner.

CONCLUSIONS AND RECOMMENDATIONS

From this evaluation, it was found that some aspects of the Virginia driver improvement program are effective in reducing traffic convictions among participants while some aspects are ineffective. No driver improvement treatment had any effect on accident involvement, which is ordinarily the ultimate aim of such programs. It may be possible that the currently used driver improvement program treatments have been devised to impact negligent driving behaviors which lead to convictions, which in turn are expected to lead to accidents. It may be necessary to change the focus of each of the treatments to deal less with conviction records and more with accident involvement.

While the group interview proved to be a successful first contact with violators in reducing convictions, the current first contact, the advisory letter, proved totally ineffective. Regardless of its low cost of production, without some measurable impact the advisory letter cannot be construed to be cost-effective. Additionally, it appears that receipt of an advisory letter prior to a group interview reduces the strong beneficial effect of the group interview alone. It is clear that something must be done to amend this situation.

There are a number of reasons why the advisory letter may be ineffective. First, there is some evidence from the literature that in some localities simply receiving a warning letter provides insufficient motivation to change driving habits that result in accidents and convictions. Second, there is some indication that the type of letter — its content, whether it is personalized, whether it projects intimacy or the threat of punishment, how it is printed and signed — may determine its success in changing behavior. Also, and this explanation is unsubstantiated in the literature, the timing of the advisory letter may reduce its effect and the effects of later treatment. Under the previously existing system of sanctions, a suspension resulted from as few as two convictions for traffic violations. It is now possible to receive either an advisory letter after two convictions, or,

depending on the type of conviction, a group interview. An offender receiving an advisory letter, which requires no action on his part, may come to the realization that the current system is much less stringent than the old system, and may even realize that suspension as a driving sanction is much more rare. Since the fear of suspension is the underlying power that drives the driver improvement apparatus, the removal of this threat may undermine the entire system. On the other hand, the individual receiving a group interview after two convictions may view the sacrifice of an evening of his time, and the subsequent emotional trauma of attending the meeting, as somewhat comparable to the older sanction of suspension — different but similar in severity. This might account for the effectiveness of one treatment and the ineffectiveness of the other. The timing of treatment is a very complex issue and has been largely bypassed in recent research.

There are a number of possible experimental solutions to the advisory letter problem. Different types of advisory letters could be distributed to determine which have the most impact on subsequent convictions. There is, however, considerable disagreement in the scientific community as to which letters produce what types of benefits, and there is a possibility that none of the letters would result in any change in conviction experience. On the other hand, the Division of Motor Vehicles could experimentally begin requiring attendance at a group interview as an entry level (6 points) treatment, since this interview has been shown to be effective as a first contact at 8 points. The Division might also consider instituting an 8-point entry level to the program. In any case, none of these changes should be implemented without making preparations in advance to evaluate their impact on the behavior of the participants.

In general, considerably more research needs to be directed to the driver improvement program. This present evaluation, while answering a number of questions, poses an even larger number. For instance, the personal interview in conjunction with all other combinations of treatment reduces the number of subsequent convictions. But since all of the treatments are combined, it is unclear which combinations are most effective. It is possible that since the advisory letter vitiates a subsequent group interview, it may also reduce the effectiveness of a personal interview. If this is the case, then the other combinations of treatment that include the personal interview must be even more effective than they seem in order to mask this deficiency. Also, since the driver improvement clinic classroom instruction is commonly paired with a personal interview, there is a question of how much the reduction in major convictions is due to the interview and how much is due to the clinic.

These questions, along with the need to evaluate changes in the driver improvement program, point up the need for an ongoing program of evaluation and monitoring. Several states maintain such monitoring systems, which allow them to continuously improve their programs and discard useless and ineffective aspects. These monitoring systems also provide data on the management and administration of the driver improvement program, such as success rates for different instructors or institutions providing treatment, statewide program norms with which to compare local program information, and general performance indications such as cost per driver treated. It is strongly recommended that the Division of Motor Vehicles make arrangements for such monitoring and evaluation as soon as is feasible.

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APPENDIX A

The Virginia Driver Improvement Act
(§46.1-514)

ARTICLE 1.

General Provisions.

§ 46.1-514.1. Short title. — The short title of this chapter is the "Virginia Driver Improvement Act." (1974, c. 453.)

§ 46.1-514.2. Purpose; educational and training programs; rules and regulations; appeals. — (a) The purpose of the Virginia Driver Improvement Act is to improve and promote greater safety upon the highways and streets of this State; to improve the attitude and driving habits of drivers who accumulate traffic accident and motor vehicle conviction records; to determine whether certain drivers possess mental, physical or skill deficiencies which may affect their ability to safely operate a motor vehicle; to establish a Uniform Demerit Point System which will identify those drivers who are considered by the accumulation of demerit points to be habitually reckless or negligent drivers and frequent violators of the laws regulating the movement or operation of motor vehicles; to provide uniform educational and training programs for the rehabilitation of persons identified as habitually reckless or negligent drivers and frequent violators; and to suspend or revoke the license of those persons who do not respond to the rehabilitation programs.

(b) The educational and training programs shall be developed to improve the knowledge and skill of drivers in the operation of motor vehicles and to help eliminate their aggressive driving attitudes and habits or other driving problems through the media of advisory letters, group interviews, personal interviews and driver improvement clinics.

(c) The Commissioner shall, subject to the provisions of § 46.1-26, adopt those administrative rules and regulations which he deems necessary to carry out the provisions of this chapter. The Commissioner shall publish all administrative rules and/or regulations which he adopts to carry out the provisions of this chapter and shall furnish them to any person requesting them.

(d) Any person receiving an order of the Commissioner to suspend or revoke his driver's license or licensing privilege or to require attendance at a driver improvement clinic may, within thirty days from the date of such order file a petition of appeal in accordance with the provisions of § 46.1-437. (1974, c. 453.)

§ 46.1-514.3. Designation of driver improvement analysts; analysts to conduct group interviews, personal interviews and driver improvement clinics. — The Commissioner shall designate, appoint and empower such persons as he shall see fit to act for the Division as driver improvement analysts to examine and evaluate the driving records of the problem drivers and to conduct group interviews, personal interviews and driver improvement clinics. (1974, c. 453.)

§ 46.1-514.4. Section 46.1-418 not applicable. — The provisions of § 46.1-418 shall not apply to any person whose license or other privilege to operate a motor vehicle is suspended or revoked in accordance with the provisions of this chapter. (1974, c. 453.)

§ 46.1-514.5. Persons included within scope of chapter. — (a) Every person who possesses a driver's license issued by the Division regardless of whether such person is a resident or nonresident is included within the provisions of this chapter.

(b) Every resident of this State regardless of whether such person possesses a driver's license issued by the Division is included within the provisions of this chapter. (1974, c. 453.)

ARTICLE 2.

Uniform Demerit Point System; Safe Driving Points.

§ 46.1-514.6. Uniform Demerit Point System. — (a) The Commissioner shall assign numerical point values to those convictions, or findings of not innocent in the case of a juvenile, which are required to be reported to the Division in accordance with § 46.1-413 for traffic offenses committed in violation of the laws of this State or any valid town, city or county ordinance paralleling and substantially conforming to such State law.

(b) The Commissioner shall assign numerical point values to those convictions received from any other state of the United States, the United States, the Dominion of Canada or its provinces or any territorial subdivision of such state or country, of an offense therein, which if committed in this State, would be required to be reported to the Division by § 46.1-413.

(c) Notwithstanding the provisions of (a) and (b) herein, no point assignment shall be made for those convictions that require the mandatory revocation or suspension of the license by the Commissioner.

(d) The Uniform Demerit Point System standard for rating convictions of traffic offenses shall be based on the severity of the offense and the potential hazardous exposure to other users of the highways and streets. The Commissioner shall designate the numerical point values assigned to convictions, or findings of not innocent in the case of a juvenile, on a graduated scale not to exceed six demerit points for any single conviction, except that no demerit points shall be assessed for any conviction when the court suspends the driver's license because of the conviction. The Commissioner shall develop point system assignments as follows:

(1) Serious traffic offenses such as reckless driving in violation of § 46.1-189, speeding twenty or more miles per hour above the posted speed limit, racing in violation of § 46.1-191 and other serious traffic offenses as the Commissioner may designate, shall be assigned six demerit points.

(2) Relatively serious traffic offenses such as failure to yield the right of way in violation of § 46.1-221, speeding between ten and nineteen miles per hour above the posted speed limit, following too close in violation of § 46.1-213, failure to stop when entering a highway in violation of § 46.1-190 (j) and other relatively serious traffic offenses as the Commissioner may designate, shall be assigned four demerit points.

(3) Traffic offenses of a less serious nature such as improper driving in violation of § 46.1-192.2, speeding between one and nine miles per hour above the posted speed limit, improper passing in violation of § 46.1-208, failure to obey a highway sign in violation of § 46.1-173 and other offenses of a less serious nature as the Commissioner may designate, shall be assigned three demerit points.

(e) In order to ensure that demerit points are assessed in a uniform manner, the following method will be used effective January one, nineteen hundred seventy-five to assess demerit points:

For any conviction where the offense was committed on or subsequent to January one, nineteen hundred seventy-five, demerit points will be assessed according to the point values contained in (d) (1), (d) (2) and (d) (3) herein and any other point value assignments which are designated by the Commissioner.

(f) When a person is convicted of two or more traffic offenses committed on a single occasion, such person shall be assessed points for one offense only and if the offenses involved have different point values, such person shall be assessed points for the offense having the greater point value. (1974, c. 453.)

§ 46.1-514.7. Demerit points valid for two years. — Demerit points, assigned to any conviction, or finding of not innocent in the case of a juvenile, shall be valid for a period of two years from the date the offense was committed. Demerit points used, prior to the termination of the two-year period, as the basis for suspension, revocation, probation or other action which extends beyond the two-year period, shall remain valid until such suspension, revocation, or probationary period or other action has terminated. (1974, c. 453.)

§ 46.1-514.8. Safe driving point credit. — Every person, resident or nonresident, holding a valid Virginia driver's license whose driving record does not contain any suspension, revocation, conviction, or finding of not innocent in the case of juvenile, of a traffic violation, during any calendar year shall be awarded one safe driving point. One safe driving point shall be awarded for each calendar year of safe driving, except that no person shall be permitted to accumulate more than five safe driving points. Such points may be used to offset an equivalent number of demerit points assigned to any conviction, or finding of not innocent in the case of a juvenile, for a traffic violation. If subsequent to awarding a safe driving point to any person, the Division receives a conviction, or finding of not innocent in the case of a juvenile, for an offense which occurred during the period that a safe driving point was awarded for and which requires the Division to assess demerit points, the safe driving point shall be invalidated. (1974, c. 453.)

ARTICLE 3.

Advisory Letters, Group Interviews, Personal Interviews, Driver Improvement Clinics, Driver's License Probation and Formal Hearings.

§ 46.1-514.9. Advisory letters. — (a) Whenever the driving record of any person shows an accumulation of at least six demerit points based on conviction(s), or finding(s) of not innocent in the case of a juvenile, for traffic offense(s) committed within a period of twelve consecutive months, or at least nine demerit points based on convictions, or findings of not innocent in the case of a juvenile, for traffic offenses committed within a period of twenty-four consecutive months, respectively, the Commissioner shall mail, by first-class mail, to the last known address of such person an advisory letter listing his conviction(s), or finding(s) of not innocent in the case of a juvenile, and the demerit points assigned thereto, including his safe driving points, if any, and furnish any other information deemed appropriate and applicable to the rehabilitation of such person, for the purpose of preventing subsequent traffic offenses.

(b) The Division's failure to mail, or the citizen's nonreceipt of the advisory letter shall not be grounds for waiving any other provision of this chapter. (1974, c. 453.)

§ 46.1-514.10. Group interviews. — (a) Whenever the driving record of any person shows an accumulation of at least eight demerit points based on conviction(s), or finding(s) of not innocent in the case of a juvenile, for traffic offense(s) committed within a period of twelve consecutive months, or at least twelve demerit points based on convictions, or findings of not innocent in the case of a juvenile, for traffic offenses committed within a period of twenty-four consecutive months, respectively, the Commissioner shall direct such person to attend a group interview. The driver improvement analyst shall examine the persons attending the group interview as a single unit for the purpose of identifying their basic reasons for failing to respond to the motor vehicle laws

§ 46.1-514.7. Demerit points valid for two years. — Demerit points, assigned to any conviction, or finding of not innocent in the case of a juvenile, shall be valid for a period of two years from the date the offense was committed. Demerit points used, prior to the termination of the two-year period, as the basis for suspension, revocation, probation or other action which extends beyond the two-year period, shall remain valid until such suspension, revocation, or probationary period or other action has terminated. (1974, c. 453.)

§ 46.1-514.8. Safe driving point credit. — Every person, resident or nonresident, holding a valid Virginia driver's license whose driving record does not contain any suspension, revocation, conviction, or finding of not innocent in the case of juvenile, of a traffic violation, during any calendar year shall be awarded one safe driving point. One safe driving point shall be awarded for each calendar year of safe driving, except that no person shall be permitted to accumulate more than five safe driving points. Such points may be used to offset an equivalent number of demerit points assigned to any conviction, or finding of not innocent in the case of a juvenile, for a traffic violation. If subsequent to awarding a safe driving point to any person, the Division receives a conviction, or finding of not innocent in the case of a juvenile, for an offense which occurred during the period that a safe driving point was awarded for and which requires the Division to assess demerit points, the safe driving point shall be invalidated. (1974, c. 453.)

ARTICLE 3.

Advisory Letters, Group Interviews, Personal Interviews, Driver Improvement Clinics, Driver's License Probation and Formal Hearings.

§ 46.1-514.9. Advisory letters. — (a) Whenever the driving record of any person shows an accumulation of at least six demerit points based on conviction(s), or finding(s) of not innocent in the case of a juvenile, for traffic offense(s) committed within a period of twelve consecutive months, or at least nine demerit points based on convictions, or findings of not innocent in the case of a juvenile, for traffic offenses committed within a period of twenty-four consecutive months, respectively, the Commissioner shall mail, by first-class mail, to the last known address of such person an advisory letter listing his conviction(s), or finding(s) of not innocent in the case of a juvenile, and the demerit points assigned thereto, including his safe driving points, if any, and furnish any other information deemed appropriate and applicable to the rehabilitation of such person, for the purpose of preventing subsequent traffic offenses.

(b) The Division's failure to mail, or the citizen's nonreceipt of the advisory letter shall not be grounds for waiving any other provision of this chapter. (1974, c. 453.)

§ 46.1-514.10. Group interviews. — (a) Whenever the driving record of any person shows an accumulation of at least eight demerit points based on conviction(s), or finding(s) of not innocent in the case of a juvenile, for traffic offense(s) committed within a period of twelve consecutive months, or at least twelve demerit points based on convictions, or findings of not innocent in the case of a juvenile, for traffic offenses committed within a period of twenty-four consecutive months, respectively, the Commissioner shall direct such person to attend a group interview. The driver improvement analyst shall examine the persons attending the group interview as a single unit for the purpose of identifying their basic reasons for failing to respond to the motor vehicle laws

governing the movement or operation of motor vehicles and to provide corrective information and persuasion to improve their driving performance.

(b) The Division's failure to schedule a person for a group interview shall not be grounds for waiving any other provision of this chapter. (1974, c. 453.)

§ 46.1-514.11. Personal interviews. — (a) Whenever the driving record of any person shows an accumulation of at least twelve demerit points based on convictions, or findings of not innocent in the case of a juvenile, for traffic offenses committed within a period of twelve consecutive months, or at least eighteen demerit points based on convictions, or findings of not innocent in the case of a juvenile, for traffic offenses committed within a period of twenty-four consecutive months, respectively, the Commissioner shall direct such person to appear for a personal interview. The driver improvement analyst shall examine such person for the purpose of identifying his basic reasons for failing to respond to the motor vehicle laws governing the movement or operation of motor vehicles, and evaluate the problems contributing to his continued reckless or negligent driving habits, and shall recommend to the Commissioner that he impose one of the following actions deemed appropriate to prevent future violations or accident involvement:

(1) Suspend the license or other privilege to operate a motor vehicle for a period not to exceed six months, and that upon termination of the suspension, such person be placed on probation for a period of not less than three nor more than twelve months.

(2) Place immediately on probation for a period of not less than three nor more than twelve months, and require such person to forthwith attend a driver improvement clinic.

(b) Whenever the analyst has cause to believe that any person appearing for a personal interview suffers from a physical or mental disability or disease as will serve to prevent his exercising reasonable and ordinary control over a motor vehicle while operating the same upon the highways and streets, he shall recommend to the Commissioner that the case be processed for one or more of the following actions, whichever in his judgment are applicable:

(1) That he be required to undergo an examination in accordance with the provisions of § 46.1-383.

(2) That he be cited to appear for a formal hearing as provided in §§ 46.1-430 through 46.1-436.

(3) That the case be referred to the Medical Advisory Board in accordance with the provisions of § 46.1-26.1.

(4) That he be required to attend a driver improvement clinic as provided in subsection (a) (2) of this section. (1974, c. 453.)

§ 46.1-514.12. Driver improvement clinics. — (a) The Commissioner shall develop and implement a system of driver improvement clinics, for the purpose of dealing with those persons identified as problem drivers in need of driver improvement education and training. The clinics shall be composed of uniform education and training programs designed for the rehabilitation of the problem drivers, and for the purpose of creating a lasting and corrective influence on their driving performances.

(b) The clinic classes shall be scheduled to begin at a reasonable hour during the evenings and shall be conducted for a two-hour period, one night each week for four consecutive weeks. The Commissioner may, when he deems it necessary because of unusual conditions or circumstances, schedule and conduct clinic classes between the hours of 8:30 a.m. and 5:00 p.m.

(c) Every person who attends a driver improvement clinic and who satisfactorily completes such clinic shall have five demerit points subtracted from their total accumulation of demerit points, except in those instances where

a person has not accumulated five demerit points, in which case a reduction in demerit points and/or the award of safe driving points will be made. No person shall be allowed to accumulate more than five safe driving points.

(d) No person shall be rescheduled to attend a driver improvement clinic for a period of two years from the date he satisfactorily completes such clinic; except the provisions of this subsection shall not apply to any person who is required to attend a driver improvement clinic in accordance with the provisions of § 46.1-514.18.

(e) For the purpose of generating greater interest in highway safety, the Commissioner may solicit local governmental authorities, associations, societies, clubs, schools, colleges and other organizations or persons, knowledgeable in highway safety driving standards, to participate in conjunction with the Division of Motor Vehicles in the development of the local driver improvement clinic program and in conducting the driver improvement clinic classes. Further, the Commissioner may employ the services of qualified professional instructors for the purpose of conducting driver improvement clinic classes in those areas of the State where it is not economically practicable to maintain the full time services of a driver improvement analyst.

(f) No person shall be permitted to attend a driver improvement clinic unless he first pays to the Commissioner the attendance fee of twenty dollars. All such fees collected shall be deposited with the Treasurer of Virginia in a special "Driver Improvement Account" and shall be used by the Division to defray the cost of maintaining the driver improvement clinics and the additional cost incurred when necessary to employ the services of qualified professional instructors, and to reimburse qualified local personnel, as defined in subsection (e) of this section, for all reasonable expenses incurred while participating in the driver improvement program.

(g) Any person, resident or nonresident, holding a valid license to operate a motor vehicle in Virginia, whether or not he has accumulated demerit points, may apply to the Division in writing for permission to attend a driver improvement clinic on a voluntary basis. The Commissioner may, when seating space is available, schedule such person to attend a driver improvement clinic. (1974, c. 453.)

§ 46.1-514.13. Driver's license probation. — The Commissioner may place any person on probation for a period of not more than one year when probation is used in conjunction with the provisions of §§ 46.1-514.11 and 46.1-514.12. Whenever a person who has been placed on probation is convicted, or found not innocent in the case of a juvenile, of any offense for which demerit points are assessed, and the offense was committed during the probation period, the Commissioner shall suspend the driver's license(s) of such person for a period of time not to exceed one half of the probation period. (1974, c. 453.)

§ 46.1-514.14. Notice to attend group interview, personal interview or driver improvement clinic. — (a) Any notice to attend a group interview or a personal interview shall contain:

(1) A specific statement of the offense(s) which the person has been convicted of, or found not innocent of in the case of a juvenile.

(2) The date, time and location of the group interview or the personal interview.

(3) The purpose of the group interview or personal interview.

(b) Any notice to attend a driver improvement clinic must contain:

(1) The date, time and location of the driver improvement clinic.

(2) The purpose of the driver improvement clinic including the consequences of not attending the clinic program.

(3) An explanation of the terms of the probationary licensing period, if any.

(c) The notice directing any person to attend a group interview, personal interview or driver improvement clinic shall provide the addressee with a minimum of ten days' notice, and shall be forwarded by certified mail to the last known address of the person, as shown on the records of the Division. (1974, c. 453.)

§ 46.1-514.15. Commissioner to designate place for conducting interviews and clinics. — The Commissioner shall designate the cities and/or counties in which the group interviews, personal interviews and driver improvement clinics are to be conducted. Such cities and/or counties shall be designated on the basis of their geographical location so as to be reasonably accessible to any person required to attend such interviews or clinics. (1974, c. 453.)

§ 46.1-514.16. Suspension of driver's license, etc., for failure to attend interviews or clinics. — (a) The Commissioner shall suspend the driver's license or other privilege to operate a motor vehicle of any person who fails to attend a scheduled group interview, personal interview or driver improvement clinic. Every such suspension shall remain in effect until such person applies to the Division in writing for permission to attend a scheduled group interview, personal interview or driver improvement clinic, whichever is applicable, and thereafter until he is rescheduled and satisfactorily completes the assignment, except as hereinafter provided.

(b) The Commissioner may, for good cause shown, cancel such suspension, provided such person applies to the Division in writing for permission to attend a scheduled group interview, personal interview or driver improvement clinic, whichever is applicable. In the event he does not satisfactorily complete the assignment, the Commissioner shall forthwith suspend the person's driver's license or other privilege to operate a motor vehicle as required by subsection (a). (1974, c. 453.)

§ 46.1-514.17. Form and contents of order of suspension or revocation. — Whenever the Commissioner issues a suspension or revocation order in accordance with any provision of this chapter, the order shall provide the addressee with a minimum of ten days' notice and shall be forwarded by certified mail to the last known address of the person as shown on the records of the Division. (1974, c. 453.)

§ 46.1-514.18. Court may direct defendant to attend driver improvement clinic. — (a) Any town, city or county court of this State, or any other court of this State, or any federal court, charged with the duty of hearing traffic cases for offenses committed in violation of any law of this State, or any valid town, city or county ordinance of this State, or any federal law regulating the movement or operation of a motor vehicle, may require any person found guilty of a violation of any such State law, or town, city or county ordinance, or federal law, to attend a driver improvement clinic. Such requirement for attendance may be in lieu of or in addition to the penalties prescribed by § 46.1-16, or any such ordinance or federal law.

(b) Whenever any court stipulates in its judgment of conviction, or finding of not innocent in the case of a juvenile, that a person attend a driver improvement clinic, the court shall so indicate in the space provided on the abstract of conviction filed with the Division in accordance with the provisions of § 46.1-413, or any federal law, rule or regulation. Upon receipt of such abstract of record, the Division shall forthwith schedule such person to attend a driver improvement clinic.

(c) Failure of such person to attend and satisfactorily complete a driver improvement clinic, in compliance with the court order, may be punished as contempt of such court. In every such case, the Commissioner shall notify the court of the defendant's failure to comply with the court order. (1974, c. 453.)

§ 46.1-514.19. Formal hearings. — Whenever the operating record of any person shows an accumulation of six demerit points based on conviction(s), or finding(s) of not innocent in the case of a juvenile, for traffic violation(s) committed within any twelve consecutive months, or twelve demerit points based on convictions, or findings of not innocent in the case of a juvenile, for traffic violations committed within any twenty-four consecutive months, respectively, and subsequent to his assignment to attend a driver improvement clinic, he may be charged as an habitually reckless or negligent driver of a motor vehicle, and cited for a formal hearing in accordance with the provisions of §§ 46.1-430 through 46.1-436. (1974, c. 453.)

§ 46.1-514.20. Suspension and revocation orders issued prior to January 1, 1975. — Any order of the Commissioner issued under the provisions of §§ 46.1-383.1, 46.1-419 and 46.1-420 prior to January one, nineteen hundred seventy-five, remain in full force and effect until the termination date shown on such order. (1974, c. 453.)

ARTICLE 3.

Advisory Letters, Group Interviews, Personal Interviews, Driver Improvement Clinics, Driver's License Probation and Formal Hearings.

§ 46.1-514.11. Personal interviews. — (a) Whenever the driving record of any person shows an accumulation of at least twelve demerit points based on convictions, or findings of not innocent in the case of a juvenile, for traffic offenses committed within a period of twelve consecutive months, or at least eighteen demerit points based on convictions, or findings of not innocent in the case of a juvenile, for traffic offenses committed within a period of twenty-four consecutive months, respectively, the Commissioner shall direct such person to appear for a personal interview. The driver improvement analyst shall examine such person for the purpose of identifying his basic reasons for failing to respond to the motor vehicle laws governing the movement or operation of motor vehicles, and evaluate the problems contributing to his continued reckless or negligent driving habits, and shall recommend to the Commissioner that he impose one of the following actions deemed appropriate to prevent future violations or accident involvement:

(1) Suspend the license or other privilege to operate a motor vehicle for a period not to exceed six months, and that upon termination of the suspension, such person be placed on probation for a period of not less than three nor more than twelve months.

(2) Place immediately on probation for a period of not less than three nor more than twelve months, and require such person to forthwith attend a driver improvement clinic.

(b) Whenever the analyst has cause to believe that any person appearing for a personal interview suffers from a physical or mental disability or disease as will serve to prevent his exercising reasonable and ordinary control over a motor vehicle while operating the same upon the highways and streets, he shall recommend to the Commissioner that the case be processed for one or more of the following actions, whichever in his judgment are applicable:

(1) That he be required to undergo an examination in accordance with the provisions of § 46.1-383.

(2) That he be cited to appear for a formal hearing as provided in §§ 46.1-430 through 46.1-436.

(3) That the case be referred to the Medical Advisory Board in accordance with the provisions of § 46.1-26.1.

(4) That he be required to attend a driver improvement clinic as provided in subsection (a) (2) of this section.

(c) Upon review of the recommendations of the driver improvement analyst, the Commissioner shall direct that the recommendations be carried out, with such modifications as the Commissioner shall direct, except that in no case may the action directed by the Commissioner be more severe than provided for in this section. (1974, c. 453; 1976, c. 86.)

The 1976 amendment added subsection (c).

§ 46.1-514.13. Driver's license probation. — The Commissioner may place any person on probation for a period of not more than one year when probation is used in conjunction with the provisions of §§ 46.1-514.11 and 46.1-514.12. Whenever a person who has been placed on probation is convicted, or found not innocent in the case of a juvenile, of any offense for which demerit points are assessed, and the offense was committed during the probation period, the Commissioner shall suspend the driver's license(s) of such person for a period of one half of the probation period when six demerit points are assigned, for a period of one third of the probation period when four demerit points are assigned, and for a period of one fourth of the probation period when three demerit points are assigned. (1974, c. 453; 1978, c. 221.)

The 1978 amendment, in the second sentence, deleted "time not to exceed" preceding "one half of the probation period" and added the remainder of the second sentence.

§ 46.1-514.21. Evaluation of driver improvement program. — Notwithstanding the provisions of §§ 46.1-514.9 through 46.1-514.12, the Commissioner may waive the action usually taken by the Division in order to conduct an evaluation of effectiveness of the driver improvement program. This evaluation, when conducted, shall be performed in accordance with generally accepted scientific principles such as the establishment of control groups and comparisons of driving records between groups receiving the treatment and the control groups. (1978, c. 288.)

Expiration of section. — Acts 1977, c. 288, cl. 2, provides: "That this act shall cease to be effective on and after July one, nineteen hundred seventy-nine."

APPENDIX B

Amendment to the Virginia Driver Improvement Act (§46.1-514.21)

CHAPTER 288

An Act to amend the Code of Virginia by adding in Chapter 6.1 of Title 46.1 a section numbered 46.1-514.21, relating to evaluation of the driver improvement program.

[H 608]

Approved 3/25/78

Be it enacted by the General Assembly of Virginia:

1. That Chapter 6.1 of Title 46.1 of the Code of Virginia is amended by adding a section numbered 46.1-514.21 as follows:

§ 46.1-514.21. Notwithstanding the provisions of §§ 46.1-514.9 through 46.1-514.12, the Commissioner may waive the action usually taken by the Division in order to conduct an evaluation of effectiveness of the driver improvement program. This evaluation, when conducted, shall be performed in accordance with generally accepted scientific principles such as the establishment of control groups and comparisons of driving records between groups receiving the treatment and the control groups.

2. That this act shall cease to be effective on and after July one, nineteen hundred seventy-nine.

President of the Senate

Speaker of the House of Delegates

Approved:

Governor

APPENDIX C

Comparability of Experimental and Control Groups

Table C-1

Age and Sex of the Advisory Letter Only Groups

Age	Control Group (C-1)	Experimental Group (E-1)
16-20	1052	998
21-25	1451	1546
26-30	864	864
31-35	518	552
36-40	346	292
41-45	215	219
46-50	164	145
51-55	107	106
56-60	87	69
61-65	48	45
66-70	27	21
71-75	7	9
75+	13	15
Sex		
Male	4052	4053
Female	848	831

Table C-2

Age and Sex of the Advisory Letter/Group Interview Groups

Age	Control Group (C-2A)	Experimental Group (E-2A)
16-20	515	539
21-25	795	801
26-30	408	408
31-35	242	215
36-40	127	136
41-45	85	77
46-50	44	54
51-55	28	37
56-60	21	31
61-65	16	19
66-70	2	4
71-75	5	1
75+	6	4
Sex		
Male	2046	2047
Female	248	279

Age - $X^2 = 7.80$ Not Significant

Sex - $X^2 = 1.49$ Not Significant

Table C-3

Age and Sex of the Group Interview Only Groups

Age	Control Group (C-2B)	Experimental Group (E-2B)
17-20	941	879
21-25	1499	1472
26-30	892	916
31-35	496	532
36-40	290	295
41-45	193	177
46-50	130	137
51-55	100	78
56-60	50	62
61-65	36	40
66-70	10	19
71-75	8	6
75+	10	6
Sex		
Male	3967	3893
Female	688	726

Age - X^2 = 13.01 Not Significant

Sex - X^2 = 13.0 Not Significant

Table C-4

Age and Sex of Personal Interview Groups

Age	Control Group (C-3)	Experimental Groups (E-3)
16-20	357	407
21-25	737	639
26-30	303	310
31-35	174	146
36-40	76	66
41-45	32	42
46-50	34	24
51-55	14	15
56-60	13	6
61-65	5	3
66-70	3	1
71-75	1	1
75+	0	0
Sex		
Male	1619	1526
Female	130	134

Age - X^2 = 18.01, p .05

Sex - X^2 = 0.40, Not Significant

Table C-5

Previous Driving Record of the Advisory Letter Only Groups

Accidents	Control Group (C-3)	Experimental Group (E-3)
None	3510	3495
One	1115	1159
Two	228	192
Three or More	47	38

$X^2 = 4.89$ Not Significant

Convictions		
None	110	104
One	1746	1733
Two	2637	2637
Three or More	407	410

$X^2 = 0.20$ Not Significant

Table C-6

Previous Driving Record of the Advisory Letter/Group Interview Groups

Accidents	Control Group (C-2A)	Experimental Group (E-2A)
None	1569	1583
One	559	592
Two	133	133
Three or More	33	18

$X^2 = 5.19$ Not Significant

Convictions		
None	33	38
One	466	438
Two	1127	1129
Three or More	633	721

$X^2 = 3.35$ Not Significant

Table C-7

Previous Driving Record of the Group Interview Only Groups

Accidents	Control Group (C-2B)	Experimental Group (E-2B)
None	3337	3306
One	1051	1056
Two	226	222
Three or More	41	35

$X^2 = 5.26$ Not Significant

Convictions		
None	83	93
One	918	899
Two	2917	2942
Three or More	737	685

$X^2 = 2.63$ Not Significant

Table C-8

Previous Driving Record of the Personal Interview Groups

Accidents	Control Group (C-3)	Experimental Group (E-3)
None	1162	1055
One	440	453
Two	117	126
Three or More	30	26

$X^2 = 3.65$ Not Significant

Convictions		
None	47	37
One	196	145
Two	513	531
Three or More	990	947

$X^2 = 7.91$ p .05

APPENDIX D

Subsequent Accident and Conviction Experience for Study Groups

Table D-1

Subsequent Conviction Experience of the Advisory Letter Groups

Major Convictions	Experimental	Control
Three or More	21	14
Two	69	68
One	540	599
None	4254	4218
	$X^2 = 4.59$ Not Significant	
Minor Convictions		
Three or More	4	5
Two	28	23
One	282	271
None	4570	4600
	$X^2 = 0.56$ Not Significant	
Mandatory Convictions		
Three or More	0	0
Two	1	4
One	32	45
None	4851	4850
	$X^2 = 2.73$ Not Significant	
Number of Accidents		
Three or More	6	1
Two	36	37
One	356	374
None	4486	4487
	$X^2 = 0.62$ Not Significant	

Table D-2

Subsequent Conviction Experience of the
Advisory Letter/Group Interview Groups

Major Convictions	Experimental	Control
Three or More	9	14
Two	41	62
One	327	310
None	1942	1907
	$X^2 = 5.99$ Not Significant	
Minor Convictions		
Three or More	2	2
Two	18	24
One	160	142
None	2139	2125
	$X^2 = 1.75$ Not Significant	
Mandatory Convictions		
Three or More	0	0
Two	3	2
One	19	27
None	2297	2264
	$X^2 = 0.78$ Not Significant	
Number of Accidents		
Three or More	0	3
Two	16	18
One	181	195
None	2122	2077
	$X^2 = 1.53$ Not Significant	

Table D-3

Subsequent Conviction Experience of
the Group Interview Only Group

Major Convictions	Experimental	Control
Three of More	8	24
Two	64	102
One	545	674
None	4000	3849
	X^2 = 33.1, p .001	
Minor Convictions		
Three or More	2	2
Two	31	27
One	264	326
None	4320	4294
	X^2 = 6.74, p .05	
Mandatory Convictions		
Three or More	1	1
Two	7	3
One	17	36
None	4592	4609
	X^2 = 2.94 Not Significant	
Number of Accidents		
Three or More	2	3
Two	28	31
One	358	355
None	4229	4260
	X^2 = 0.26 Not Significant	

Table D-4

Subsequent Conviction Experience of the Personal Interview Groups

Major Convictions	Experimental	Control
Three or More	4	9
Two	29	61
One	176	267
None	1441	1401
	X^2 = 30.28, p .001	
Minor Convictions		
Three or More	0	5
Two	12	12
One	115	145
None	1523	1576
	X^2 = 2.94 NotSignificant	
Mandatory Convictions		
Three or More	0	0
Two	1	1
One	14	24
None	1635	1713
	X^2 = 1.60 Not Significant	
Number of Accidents		
Three or More	0	3
Two	18	17
One	123	141
None	1509	1577
	X^2 = 0.54 Not Significant	