Renewal Licensing of Older Drivers

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Basically, the elderly are no different from the rest of us as far as the driver's license is concerned. How would any of us react to the loss of our right to drive? In our society, for the young beginning driver as well as the older driver and those in between, the driver's license represents a sense of freedom to come and go as we please. Its symbolic value is probably at least as great as its actual value. Just as the young person views the license as a rite of passage into the adult world of independence, so the elderly driver views its loss as a loss of independence and even identity. And indeed this view is based in large part on reality. The identity aspects can be dealt with through the issuance of an identification card that looks like a license and is used by many older persons in place of a license for the purpose of cashing checks. However, the independence aspect cannot be so easily addressed. The loss of the license is a very real loss that frequently places the older person in a position of dependence on those who previously depended on him or her. It is a difficult and often painful role reversal for all concerned.

At the same time, it is clear that the risk of crashes per mile driven increases for older drivers, and markedly so for those 75 and over. Furthermore, older persons are much less able to survive a crash of any given severity because of their vulnerability to injury and death. Consequently, they pose an increased safety risk to themselves and others, one that cannot be ignored. Their growing numbers simply underscore the increasing magnitude of the problem.

In the past, states have been almost lax in their recognition of and response to this problem. By and large, licensing programs have been designed to qualify young beginning drivers, and relatively little attention has been given

to the special needs and capabilities of the elderly. However, the growing size of the elderly driving population in combination with the increasing potential liability of states for failure to implement rational procedures for licensing high-risk drivers have led to increasing attention to what, if anything, can or should be done in renewal licensing of the elderly.

This paper will review what is known about this issue, and recommendations will be made regarding program modifications and research. The conclusions drawn should not be considered final in that the issue has not been sufficiently investigated to warrant definitive solutions. Nevertheless, an attempt is made to make interim recommendations based on the evidence available.

CURRENT STATUS OF RENEWAL LICENSING

U.S. Renewal Practices

The federal highway safety standard for driver licensing *(1)* includes the following requirements for the reexamination preceding renewal. The reexamination should

- Occur at least every 4 years before license renewal,
- Include testing for visual acuity at least and for knowledge of rules of the road,
- Be designed to identify driver deficiencies and limitations,
- Provide remedial measures for applicants with such deficiencies and limitations,
- Include provision for terminating the driving privilege of those who are unable to meet safe driving standards, and
- Provide remedial procedures for improving driver performance by refreshing the driver's knowledge and educating him in areas unknown to him.

Of course, if vision testing and overall evaluation by the license examiner are to occur, renewal licensing must require in-person application. The following review of current renewal practices is based on a report by the American Association of Motor Vehicle Administrators (AAMVA) on state and provincial licensing systems *(2)*, a recent evaluation of Pennsylvania's reexamination program *(3)*, and, to a lesser extent, an evaluation of the Nebraska driver licensing program *(4)*. According to the AAMVA, 41 jurisdictions in the United States require periodic reexamination of all drivers.

Frequency

States vary in the length of time for which a driver's license is issued. The most frequent term is 4 years, but at least one state issues a license for only 1 year and two for 5 years.

Vision Screening

Most jurisdictions (39) require vision testing of all renewal applicants. Maine institutes vision testing at age 40 and Oregon at age 50. Pennsylvania requires random vision and medical examination for applicants 45 and older. (Presumably the knowledge that one may be required to undergo such an examination would motivate applicants to be examined before renewal.)

Standards for visual acuity generally require 20/40 vision with both eyes open for licensure without restriction to corrective lenses. Some states have somewhat less stringent standards for licensure with glasses or for licensure in the case of blindness in one eye, or for both. Other states require better vision in the remaining eye if one eye is nonfunctional. Most states do not report testing for visual field, dynamic visual acuity, color perception, depth perception, or other visual proficiency for a regular operator's license.

Knowledge Testing

Eight jurisdictions report routine knowledge and sign testing of all renewal applicants. One state requires it beginning at age 89 and three more institute it at 75. Most states do not have routine requirements for knowledge and sign testing at any age.

Road Testing

No jurisdiction includes road testing for routine renewal of license. One state requires road testing beginning at 69, and three other jurisdictions institute it at 75. In addition, one state reports that the road test and medical report are discretionary at 65, and one state requires it at 78.

Medical and Physical Evaluation

No jurisdiction requires a medical examination for applicants for routine renewal, although Pennsylvania requires it for original licensure. According to the AAMVA report *(2)*, the District of Columbia requires a medical evaluation and reexamination at 70, and according to Freedman *(3)*, Louisiana does likewise.

Most states have in place some kind of medical advisory board (MAB), which provides expertise to the licensing authority on medical questions relating to an applicant's ability to drive safely.

Effectiveness of Reexamination

It is difficult to evaluate the effectiveness of any licensing procedures because, by definition, applicants must pass in order to be licensed. Hence, it is not

possible to obtain a sample of those who failed and evaluate their subsequent records. Nevertheless, a number of studies shed some light on the effectiveness of driver's license examinations.

Vision Testing Although it is obvious that vision is essential to safe driving, it has been difficult to demonstrate strong relationships between performance on standard vision tests and driving records *(5)*. More recent work shows promising findings, but there remains a need to develop the research in this area further *(6, 7)*. The importance of routine vision testing for all applicants is shown by failure rates on standard tests of visual acuity reported at all ages *(8)*.

Knowledge Testing The evidence for the effectiveness of knowledge testing is even more limited than that for vision testing. Much of the difficulty may arise from the fact that most knowledge tests in existence are not well constructed from a psychometric standpoint, so that if there are relationships between driving knowledge and subsequent driving performance, they would be difficult to detect through the use of these instruments.

In the early 1970s North Carolina enlisted the Educational Testing Service to construct psychometrically valid knowledge tests for driver's license examinations. A subsequent evaluation of these instruments showed that when reported mileage was taken into account, those applicants scoring at or below the median experienced a per-mile accident rate that was 62 percent higher than those applicants who scored above the median. Thus it appears that performance on a well-constructed knowledge test is related to driving performance, as indicated by official driving records *(9)*.

Nevertheless, when a test waiver law eliminated routine knowledge testing for most renewal applicants who had no violation convictions within the preceding 4 years, no evidence could be discerned that there was any detrimental effect for applicants 25 and older. Younger drivers who were excused from knowledge testing showed worse subsequent performance than their counterparts who renewed before the new law and hence were required to take the knowledge test *(10)*.

In summary, it appears that the elimination of routine knowledge testing for older license renewal applicants who have no convictions during the 4 years before renewal has no adverse effects on subsequent driving performance, as measured by crashes and convictions on the official driving records.

Road Testing Road testing is time-consuming and expensive and is generally avoided when possible by both licensing agencies and applicants. Performance on the road test for the original license has been shown to have some relationship to subsequent driving record. Campbell *(11)* compared the road test scores of 1,100 drivers involved in fatal crashes with 1,100 drivers selected at random. Three maneuvers (out of 88) revealed significant differences between the two driver groups, namely, parallel parking, second left-

turn signal, and third left-turn signal. Shortly after this study was conducted, the state legislature removed parallel parking from the state road test.

A subsequent study by McRae *(12)* also showed some relationship between road test performance and subsequent driving record. However, the relationships were not strong.

The test waiver law referred to earlier provided an opportunity to measure the impact of the removal of routine road testing from the renewal licensing process for drivers 65 and older. It was anticipated that this change would result in observable differences in the subsequent performance of the affected drivers. However, an exhaustive analysis of the driving records of this age group failed to reveal any effects of the removal of routine road testing for this or any driver age group.

Furthermore, the implementation of the test waiver law required for the first time that driver histories be reviewed before applicants were sent their renewal notices so that the notice could indicate whether the applicant was entitled to test exemption. At the same time it was decided that those applicants with exceptionally poor records should be flagged for more intensive evaluation, including a road test. In this way the manpower that had previously been used to test all older drivers could be redirected at those drivers most in need of evaluation, namely, those with the poorest records. Evaluation of subsequent records failed to find any beneficial effects of this procedure. On the contrary, the data showed a statistically significant deterioration in performance of the road-tested applicants compared with drivers with similar histories who had not been required to take the road test (those who renewed shortly before the law was implemented).

These findings were consistent with those from a California study *(13)* that evaluated out-of-state applicants transferring licensure to California. In a procedure with no apparent bias, some applicants were road tested and others were not. When data were analyzed by age and sex, it was found that middle-aged women (30 to 49 years) given the road test had significantly more crashes and significantly more fatal and injury crashes than those not given the road test. With the exception of the young drivers, the other driver groups showed results with the same trend, although they were not statistically significant.

Ratz *(14)* examined the effects of a traffic safety film along with a long written test emphasizing safe driving or a driving test used in combination with a counseling session for renewal applicants with poor records. He reported that applicants who took the road test had a significant increase in fatal or injury accidents. Thus, the evidence suggests that road testing as it is currently practiced is probably not useful in routine renewal testing, even for older drivers. This is not to say that, in the case of questions about a specific older driver's performance, road testing should not be used.

Finally, there is evidence that the measurement of skill per se is not a good predictor of on-road driving performance *(15)*, and the evaluation of older drivers must particularly reflect these limitations.

Medical and Physical Evaluation In-person renewal allows the license examiner to observe the applicants and, with proper training, to detect potential medical problems that may interfere with safe driving performance. The National Highway Traffic Safety Administration (NHTSA), in cooperation with the AAMVA and the American Medical Association (AMA), has developed a training program for license examiners that is available to state licensing agencies *(16)*. It should be noted that even though the NHTSA training program for examiners has been implemented, at least to a limited extent, in several states, it has not been evaluated for its effectiveness in detecting potential problems. Nevertheless, at this time it is the most rational tool available for overall evaluation of applicants by the examiner.

Although the license examiner should never attempt to diagnose medical problems, it is important that he or she be trained to recognize when an applicant should be referred for more extensive professional evaluation. *The examiner's personal contact with the applicant is the only routine opportunity to detect potential problems. This opportunity should not be lost because of inadequate training.*

Chronological age per se is usually not a criterion for referral for medical evaluation, but the probability of developing medical problems does increase with age. It should be noted, however, that in the absence of specific medical problems, age alone has not been shown to be associated with poorer driving performance *(17)*. Nevertheless, it has been recommended that older drivers be subjected to more frequent evaluation *(18)*. Presumably the increased risk of problems for older drivers would constitute a legally sound basis for more frequent reexamination, but there have been no legal cases to substantiate or refute this thesis.

Renewal Practices in Canada and Other Nations

According to the AAMVA *(2)*, Canadian provinces generally do not require vision testing, knowledge and sign testing, road testing, or medical evaluation for routine license renewal. However, a complete retest, including medical evaluation, is required in Alberta beginning at 70, and Ontario requires a complete retest annually beginning at 80. Manitoba requires a medical report at 65.

A recent report from Australia *(19)* addresses the effectiveness of license retesting of older drivers. The state of Victoria and the Northern Territory are alone in Australia in having no special provisions for licensing of older

drivers. Other states vary in the age at which special requirements are imposed, as well as in the requirements placed on older applicants. New South Wales requires a medical report and vision test for renewal of applicants 80 to 84, and from 85 on a road test is added. In the case of motorcycle licenses, annual road tests are required beginning at 80.

South Australia renews licenses by mail until 70, when a road test is required every 3 years until 80. Medical and eyesight certificates are required for those years after 70 when there is no testing. Beginning at 80, annual road tests as well as medical and eyesight certificates are required.

Queensland reduces the period of license renewal from 5 years to 4 beginning at 62 and reduces it further to annual renewal at 66. Annual vision and medical tests are required from 70 on.

Tasmania allows renewal by mail until 75, at which time there is an annual requirement for a road test, medical report, and vision test.

In Western Australia road and vision tests are required at 75, 78, and 80, after which they must be administered annually.

In Australian Capital Territory applicants are tested at 70, and a physician determines whether a license is issued for 1 or 2 years. After 75, annual medical tests are required.

Torpey *(19)* also reviews the literature on retesting of older drivers and compares the experience of older drivers in Victoria, which has no age-related requirements, with that of older drivers in other Australian states with special requirements. Examining the rate of involvement in both fatal and injury accidents, based on total population as well as licensed population, Torpey found no detrimental effects associated with a lack of special licensing procedures for older applicants. Indeed, for injury accidents, Victoria experienced a substantially lower rate than that observed in states with special programs. Thus, the study concludes that implementation of a retesting program for older drivers would not be likely to improve the current situation. Additional analyses of accident costs versus estimated benefits further confirmed the conclusion that institution of a retesting program for older drivers would not be warranted.

It should be noted that the retesting considered in this study involved physicians and optometrists. No study has directly addressed the effectiveness of a well-defined inexpensive screening (as opposed to testing) program designed especially for elderly drivers.

CHARACTERISTICS OF OLDER DRIVERS

Although in many, if not most, ways older drivers are similar to their younger counterparts, there are certain characteristics that set them apart. These include a reduction in mileage driven, characteristic patterns of violations, and an increased vulnerability to injury in the event of a crash.

Changing Driving Patterns

Data from the most recent Nationwide Personal Transportation Study (NPTS) *(20)* indicate that although older drivers still average fewer miles than younger ones, a larger proportion of both men and women 65 and over hold licenses, and the increase for women is even more dramatic than that for men. However, older women are the only ones to show a decrease in average mileage driven since the last NPTS *(20, 21)*. Although mileage per older female driver is lower, because the proportion of women licensed has almost doubled, total mileage driven by older women is much higher.

Whether this increase in the proportion of older persons licensed, as well as the overall increase in mileage driven by this group, is viewed as a problem depends on how their performance is viewed. Based on the number of licensed drivers, older drivers are no worse and possibly somewhat better than younger drivers. Traditionally, licensing agencies, as well as the insurance industry to some extent, have taken the position that drivers should be judged or assessed on the basis of the absolute number of crashes or violations incurred. Thus, the driver with one crash is a better risk than the driver with two crashes, even if the latter drives 10 times as far as the former. (An exception is the commercial driver, who in some states is allowed an increased number of violations in recognition of the greater exposure to risk.)

However, older drivers as a group drive fewer miles than younger drivers, and when their crashes are calculated on a mileage basis, their records may be the worst of any age group *(22)*. However, there is a relationship between low-mileage and high-mileage crash rates that holds true across age groups *(23)*, and mileage appears to be much more strongly related to crash rates than either age or sex. High-mileage drivers of any age have lower crash rates per mile driven, and older drivers who report high mileage have crash rates comparable with those of other age or sex groups with similar mileage. Of course, it is likely that there is an interaction here, in that drivers who, for whatever reason, are having difficulty with their driving are more likely to reduce their exposure and thus fall into the lower-mileage group. Older drivers who continue to accumulate high mileage are more likely to be physically and mentally fit.

Violation Patterns

When violations as well as crashes occur, those involving older drivers differ from those of younger drivers. Brainin *(22)* identified left turns at intersections, inattention, failure to yield right-of-way, and failure to obey stop signs and traffic lights as problems for older drivers, with the difficulty becoming significantly worse after 75. In an analysis taking into account exposure by age and sex, Waller et al. *(24)* found that older drivers (over 64) are overrepresented in failure to yield, failure to stop, and safe-movement violations, but

underrepresented in recklessness, following too closely, and alcohol violations. When sex is considered, the overall pattern indicates that older drivers and women are similar in their driving behavior, as are younger drivers and men.

Based on their exposure, older drivers of both sexes were overrepresented in at-fault crashes, and older female drivers were overrepresented in total crashes. The crashes of older drivers were more likely to be multivehicle, particularly in the case of women, with a higher proportion occurring during the daytime. They were likely to occur at somewhat lower speeds than crashes of other drivers, and they were somewhat more likely to occur in an older car. A higher proportion of crashes involving older drivers proved to be fatal, with this outcome much more marked in the case of single-vehicle crashes.

Likewise, in her analysis of fatal crashes Partyka *(25)* found that fully 25 percent of the drivers over 64 who survived a crash that was fatal to someone else were charged with failure to yield the right-of-way, compared with only 7 percent of similarly surviving drivers under 65. Failure to observe signs and inattention were also more characteristic of the older driver.

Interestingly, Brainin *(22)* identified alcohol as probably the single most important factor in fatal crashes for drivers 65 and older, with estimates that 25 percent of such drivers are legally intoxicated. However, he indicates that the alcohol involvement is greatly reduced after age 75. In contrast, Waller et al. *(24)*, examining crashes of all kinds, and Partyka *(25)*, examining two-car fatal crashes, found that older drivers were less likely to have been drinking.

Vulnerability to Motor Vehicle Injury

Although older drivers are not overinvolved in crashes on the basis of their presence in the licensed population, they are more vulnerable to injury. Analyses based on the Fatal Accident Reporting System (FARS) data show a much lower proportion of older drivers surviving with no injury and, conversely, a much higher proportion experiencing a fatal injury *(22)*.

More recently, Partyka *(25)*, using 1979–1981 FARS data, analyzed 15,336 fatal crashes, each involving two cars. She found that older drivers were much more likely to die, and that the probability of death increased with increasing age. Compared with drivers younger than 20, drivers over 64 were five times as likely to die. She also examined crash configuration. For all accident configurations combined, the older driver had a 77 percent higher risk of fatality. However, the older driver was more likely to be in the car that was struck as opposed to the striking car and thus was more vulnerable to injury. Nevertheless, when crash configuration was controlled, the older driver was still 43 percent more likely to be fatally injured than other drivers. Thus, she concludes that the higher risk of fatality for the older driver has more to do

with lower resistance to crashes than to the crash configuration per se. This conclusion is consistent with an earlier report by Baker and Spitz *(26)*. Thus crash avoidance and occupant protection take on added significance for this age group.

TRENDS IN LICENSING FOR OLDER PERSONS

There have been two conflicting trends in licensing older drivers. The first concerns efforts to reduce costs associated with license examination; the second stems from the increased liability of states for licensure of high-risk persons.

Reducing Costs of License Examination

The first trend focuses not on the elderly driver but rather on all licensed drivers, with the elderly consequently affected. The aim is to reduce the burden on both the public and the licensing agency by reducing or limiting the amount of testing required for license renewal. California has evaluated the impact of allowing drivers who have no entries on their driving record for the previous 2 or 4 years to renew their licenses by mail. In the case of the 4-year extension, eligibility was limited to drivers under 70. Extensive evaluations of these procedures concluded that the 4-year extension may result in a slightly higher accident rate overall, but not for the older drivers *(27, 28)*. The small increase in crash experience for those drivers receiving license extension by mail was not firmly established statistically, although the authors conclude that there is "at least a 76% chance that the extension program does not increase accidents" (*28*, p. 165). Because the estimated savings to the state are close to $3,000,000 annually, California has enacted a renewal-by-mail pilot program through which renewal applicants with clean records for 2 years or more immediately before the generation of the renewal notice are eligible for mail renewal that is valid for 4 years. The legislation allows two consecutive renewals by mail if the applicant meets the criteria.

Earlier attempts in California to reward drivers with clean records by extending their license by mail failed to show beneficial effects *(29)*. Nevertheless, the more recent studies strongly indicate that removal of routine in-person testing for older drivers with clean records does not result in detrimental effects that are apparent in the official driving record. This finding is consistent with the evaluation of the North Carolina test waiver law that showed no detrimental effects of eliminating knowledge and road testing for license renewal for drivers 65 and over *(24)*. Likewise, Stoke *(30)* found no short-term evidence that successful completion of a written knowledge test was associated with better subsequent driving performance.

In contrast, Creech and Grandy *(9)* found that when reported mileage is taken into consideration, drivers who score well on the knowledge test have significantly fewer crashes than drivers who do poorly. It should be noted that the test they were evaluating was carefully constructed to meet psychometric criteria, a situation that does not hold in the case of most state knowledge tests. McKnight and Edwards *(31)* examined the effectiveness of using written manuals and tests that deal with safe driving practices. They conclude that "well-designed manuals and tests are a cost-effective accident countermeasure" (*31*, p. 187). However, they found effects only for their new-driver and renewal groups, whereas the older driver group showed no consistent effects. McKnight has pointed out that the older drivers were not given as much information as the standard renewals but rather were given only that information specifically related to problems of age. Had they been given the other information as well, it is likely that they would have shown the same improvement as did the standard renewals. Furthermore, the older driver group was much smaller in size, and hence it would have been more difficult to detect an effect.

At least two studies suggest that removal of knowledge testing may have detrimental effects on younger drivers *(24, 32)* but not on older ones. Thus the evidence on the value of knowledge tests for renewal applicants, and particularly the elderly driver license applicant, is unclear. On the whole it appears that removal of knowledge testing for the older driver is not associated with adverse consequences, at least not in the short run.

The elimination of vision testing for renewal licensing appears somewhat more problematic. A recent report by Zaidel and Hocherman *(33)* examines Israel's system of requiring vision and medical evaluations for license renewal applicants 65 and older. They found that 25 percent of the elderly applicants were required to wear corrective lenses. However, they estimated that only 7 percent of all elderly drivers actually started wearing glasses as a result of the required vision test. Because of the cost of the vision and medical evaluations, and because they report considerable self-restriction of driving among the elderly, the authors conclude that the evidence does not warrant singling out elderly applicants for more intensive evaluation.

On the other hand, other studies clearly document the increase in frequency of vision problems that occurs with advancing age *(6–8, 34–36)*. Although there is evidence that many older drivers attempt to limit their driving as their faculties show evidence of failure, there is also evidence that older drivers as a group may fail to recognize certain important limitations. Planek et al. *(37)* compared older drivers' errors that led to crashes with the perceptions of older drivers of their problems with driving. Although failure to yield the right-of-way ranked first in causes of older driver crashes, older drivers themselves ranked it ninth out of ten maneuvers that posed problems. Likewise, running a

red light ranked third as an actual cause of crashes but was ranked tenth by the elderly drivers themselves. Certainly the evidence on crash rates based on mileage driven indicates that even though older drivers limit their driving to safer conditions, they are still greatly overrepresented in traffic crashes. Furthermore, although Zaidel and Hocherman *(33)* concluded that only 7 percent of the elderly applicants obtained corrective lenses as a result of the license requirement, that 7 percent would translate into many thousands of drivers in this country.

Increased State Liability

The second, and opposing, trend in driver licensing has been weaker but is gaining momentum. It is a response to the growing recognition that the driving population is aging and that with increasing age there is an increase in risk per mile driven. This growing interest in and concern about older drivers accompanies an increase in the liability of state administrators for the programs they oversee. States are increasingly losing their immunity to suit, and licensing administrators have found themselves the defendants in actions brought by victims of persons licensed by the state but whose qualifications were questionable. Thus far, most cases have involved alcohol problems, but there is recognition that states must be prepared to defend their practices of renewing licenses for persons about whom questions may legitimately be raised. For example, routine license renewal by mail for a 95-year-old driver could be questioned in court if that driver subsequently injures someone else and it is discovered that his vision is seriously impaired.

Administrators are finding themselves in a dilemma, because there are no clear guidelines on how to deal with elderly applicants. On one hand, it is clear that impairment associated with aging is not closely correlated with chronological age for individuals. Those charged with protecting the interests of the elderly rightly use this fact to oppose arbitrary cutoff points for driving. On the other hand, the clear evidence that the probability of problems that would affect driving increases with increasing age places a responsibility on the states that cannot simply be ignored. National television coverage of extreme cases has not eased the burden on states.

Thus licensing administrators are subjected to directly opposing forces; at the present time, whatever course of action they pursue may very possibly lead to criticism.

Limitations of Driver Licensing Programs

Driver licensing should not be viewed as a way of screening out all the bad drivers. The factors that contribute to good or poor driving performance are

many, and licensing cannot realistically test for all of them. For example, it is known that certain personality characteristics are associated with a higher probability of poor driving performance, but it is not politically feasible to include personality testing as part of the driver licensing process. Furthermore, even under the best of circumstances driver licensing programs can only modify rates of crashes for large groups. The driver licensing process cannot predict performance for individuals. For example, in North Carolina 16-year-old boys have an extraordinarily high crash rate in their first year of driving. Approximately 20 to 25 percent of them will experience a crash. Even so, the best prediction for any one such driver is that he will be crash-free in that first year, because three-fourths of this group have no reportable crashes. Nevertheless, the excessive crash rate of this group argues strongly for special licensing procedures, that is, a graduated licensing program, even though most of the drivers affected by such a program would be crash-free under the current system.

If licensing programs cannot test for all characteristics relevant to driving performance and cannot make accurate predictions for individual drivers, what can such programs accomplish? A sound program should be able to determine whether an applicant meets the established criteria for licensure. These criteria should be based on evidence of their relationship to safe driving, even though they are not adequate for individual predictions. Thus, the vision screening is based on some evidence that groups scoring more poorly are characterized by poorer driving performance when age, sex, and exposure are controlled for. Likewise, it has been shown that a well-developed knowledge test is associated with driving performance. There is some evidence that skill testing is associated with subsequent performance, at least in the case of motorcycle operation. There is also evidence that persons suffering from alcoholism or certain forms of mental illness have poorer driving records. In all these instances the associations are based on group performance, not individual; at best, driver licensing can only modify rates for groups.

Driver license testing is not really different from other criterion testing. Sucessful completion of the medical boards does not guarantee that one will be a good physician. However, most of us would be reluctant to seek medical care from someone who has failed the boards. Meeting the criteria for licensure is considered necessary but not sufficient for safe driving, just as passing the medical boards is considered necessary but not sufficient for effective medical practice. In neither case would it be wise to eliminate the criteria, even though the prediction is less than perfect. In both instances decisions have to be made on an individual basis, whereas prediction is probably valid only for groups.

PROPOSED CHANGES IN LICENSING PRACTICES

The literature clearly shows that older drivers (65 and older) as a group do not constitute an increased hazard to the public *(22, 38)*. Their crash rate per driver is no greater than that of younger drivers and possibly lower. However, it is equally clear that on a per-mile basis older drivers increasingly are overrepresented in crashes *(39, 40)* and that drivers 75 and over *as a group* are greatly overrepresented. It is also clear that older drivers are more vulnerable to injury once a crash has occurred.

How can driver license programs operate to enable the older person to drive as long as possible under conditions that are reasonably safe for both the driver and other highway users?

Outside of a very few urban areas that have adequate public transportation systems, the private automobile is the major form of transportation in the United States today. There is little indication that this situation will change in the foreseeable future. Housing patterns and the location of shopping and work sites combine to ensure that the personal vehicle will continue to be the choice of transportation.

In the United States the driver's license is prized as almost no other personal possession, and recent surveys to identify anti–drunk driving measures that the public would view as harsh have placed license removal near the top of the list *(41)*. Thus, the removal of licensure from an elderly person, particularly someone who has not been involved in a crash or incurred any violations, must be recognized as a measure that is likely to be viewed as harsh and punitive by the driver as well as by others.

Although states persist in referring to the driver's license as a privilege, rulings by the Supreme Court have made it clear that driver licensure may not be denied or removed without due process and just cause *(42)*. The fact that chronological age is a poor indicator of functional age makes it more difficult to design a license renewal system that is cost-effective and at the same time fair to the elderly applicant, not to mention legally defensible. Ultimately, all licensing decisions must be made on an individual basis, although it is apparently possible to introduce modifications in licensing procedures on the basis of age.

Several states already have such practices. Most frequently, the only modification for the older driver is that the regular 4- or 5-year renewal cycle is reduced to 2 or 3 years, although at least one state requires annual renewal at ages 75 and older. Some of these states also require increased frequency of renewal for very young drivers as well. This shorter renewal cycle allows the examiner to evaluate the applicant in person, thus enabling earlier detection of developing problems.

Graduated Driving Reduction Program for Older Drivers

Possibly the most important modification that should be considered for older drivers is a graduated driving reduction program. Just as there is growing recognition that young beginning drivers should not be introduced into the driving population all at once but rather eased in gradually, it should be recognized that many, if not most, older drivers do not have to be abruptly removed from the driving population. All states have the authority to place restrictions on the driving of any applicant, but traditionally license examiners have been reluctant to impose them. MABs often assume this role, but the major portion of their cases involve alcohol problems. Even so, there is currently some experience with gradually reducing the amount and kinds of driving that older drivers may do.

It is not suggested that restrictions be imposed indiscriminately or in accordance with specific chronological ages. However, it is recommended that clearer guidelines be established for how and when, as well as what kind of, restrictions should be placed on some older applicants. The development and use of more relevant vision tests could be useful in defining and applying appropriate restrictions.

Because of the rapid increase in crash risk after 75 it appears warranted to increase the frequency of routine reexamination beginning at this age. With in-person renewal the examiner could determine whether a license should be issued for 1 or 2 years, but it appears reasonable to require renewal for this age group at least every 2 years. It should be recognized that any arbitrary cutoff age is likely to trigger opposition, but the available data suggest that 75 would be defensible. As indicated earlier, if states do not implement some special procedures, they may find themselves under attack or even liable for failure to act on the basis of evidence that crash risk increases dramatically at these upper ages.

Counseling for Driving Alternatives

At whatever age special procedures are incorporated as a part of routine testing, there needs to be some special program to assist drivers in making the transition from full-fledged driving to more restricted and eventual elimination of driving. Whether or not the licensing agency addresses this need, the society as a whole is going to be faced with it as more drivers reach the point at which they can no longer meet their own transportation needs.

There are no simple solutions to this problem. Nevertheless, it would be useful to begin to address it, and the licensing agency is a logical place to start. It is the licensing process itself that officially defines the boundaries within which one may legally operate a motor vehicle on the public roads. Therefore,

it is reasonable for any program designed to assist in identifying alternatives to driving to be affiliated with the licensing program. Whether the program is sponsored by the state or by private interests and coordinated with the state is irrelevant to its overall purpose and function. Its aim would be to work with drivers of any age, but most likely predominantly older ones, who are faced with the prospect of limitations on their driving and who must therefore identify alternative means of meeting their transportation needs. Ideally, such a program would be community based, so that there would be not only broad knowledge of local resources but also a local commitment to develop resources where needed.

Obviously, program for identifying alternatives to driving is based on the assumption that such alternatives either exist or could be developed. Where there are no such alternatives, it will be less feasible to restrict or deny licenses to elderly applicants. In other words, the decision to restrict will to some extent be based on the available choices rather than on an arbitrary standard that is applied in every instance. This approach is not different from what is already employed in vision standards. Although most states require 20/40 acuity in each eye, an applicant with only one eye may be licensed even though the standard cannot possibly be met. Even so, an applicant with 20/40 in one eye and 20/70 in the other may be required to use corrective lenses if by so doing the poorer eye may be improved to 20/40. The decision is based on what can potentially be accomplished by imposing a requirement for corrective lenses. By the same token, if there are driving alternatives available, restrictions are more likely to be imposed than if there are no such alternatives. The ultimate goal is to fulfill the necessary transportation needs in as safe a manner as possible.

Initially, there will be a need for developing overall guidelines for how to establish and operate such a program. It may be that organizations such as the American Association of Retired Persons (AARP) or the American Automobile Association (AAA) could assist in this endeavor, beginning with exploration of existing efforts, however informal they may be.

It should be emphasized that the development of this kind of assistance will not be creating a need but rather organizing a response to an existing and growing need. It will enable a more fruitful approach to the problem because it will identify and capitalize on whatever ingenuity has already been brought to bear on the issue. Older drivers and their relatives and friends can share what they have already learned, often through trial and error and difficult experience.

BENEFITS OF CHANGE

Because the driver's license holds such symbolic, as well as real, value to the older applicant (as it does to all of us), it is important to assess carefully the

trade-offs involved in the imposition of special license renewal procedures. A graduated driving reduction program, if widely applied, may assist older drivers in becoming used to the idea of limited driving. Indeed, the early stages of such a system would probably not be imposing many restrictions that are not already self-imposed by most elderly drivers. Nevertheless, the official sanctioning would clearly communicate to the older driver that he or she must begin to limit the circumstances of driving. Just as young beginning drivers accept restrictions in those states that have provisional licensing or curfew laws, or both, older drivers may be expected to gradually recognize that it is accepted practice to progress through a series of stages of driving reduction before total restriction.

Although any such system would need to be carefully implemented and evaluated, it may be anticipated that benefits would accrue not just to the older driver but also to the older driver's family. The older driver would benefit because the system would remove him or her from the more hazardous driving situations, if self-restriction has not already done so. At the same time, it would help prepare the older driver for the possibility that the driver's license may eventually be completely denied. The family of the older driver would experience some alleviation of anxiety in knowing that driving has been restricted to those circumstances in which it may most safely occur. Presumably, the public would likewise benefit because the driving that does occur is under the safest conditions. It is in the best interests of all concerned—the elderly, the family of the elderly, and the greater society—for older drivers to continue to drive as long as it can be accomplished in relative safety. Such a program, based on the best available evidence, should also provide licensing administrators with some security in knowing that their procedures for licensing elderly drivers are defensible.

COST OF CHANGE

The cost of change would of course depend on the practices adopted. The available evidence indicates that special procedures beyond those already in use in most states would not be warranted until about age 75. Routine in-person renewal that includes vision screening, medical questions, and overall evaluation by a trained examiner should be sufficient to detect most of those applicants who should be referred for further evaluation. In addition, states should establish routine procedures for reviewing crash reports to identify instances in which medical problems may have contributed to the crash. It is also recommended that physicians be provided immunity for referring to licensing authorities persons considered a hazard on the road but who will not respond to medical advice to cease driving. (The North Carolina Medical Society requested such legislation, but the state legislature rejected it.)

The increase in crash risk before age 70 or 75 is probably not sufficient to warrant across-the-board requirements for all applicants. Nevertheless, the state should carefully review current policies and practices to ensure that when problems do arise at earlier ages, they are likely to be detected before they translate into serious injury.

The proposed components of a graduated driving reduction program are discussed in the following sections.

Medical Questions

Most states already include such questions on renewal aplication forms, and they should incur no additional cost.

Vision Screening

Most states already include vision screening for routine renewal; in those states there would be no additional cost unless additional skills were included. Current testing procedures can measure static visual acuity under reduced illumination, but no vision-testing equipment currently in routine use for licensing includes a measure of dynamic visual acuity. Tests of both these skills should be included, but it is recommended that they be used with applicants of all ages, not just the elderly. Problems with night vision begin long before age 60 or 70. If these skills are incorporated into the licensing procedures, there would be no additional costs as far as the elderly are concerned.

Medical Advisory Board

Most states already have in place a medical advisory board (MAB), but special licensing procedures for the elderly may be anticipated to increase the load on this program. Even without a special licensing program for the elderly, it may be anticipated that the demands on MABs will increase, simply because of the increase in the elderly driving population and the corresponding increase in medical problems of all kinds. Thus, whatever additional cost is incurred as a result of a special program for the elderly will probably simply reflect cases that should have been referred but were not being detected before the special procedures.

Advisory Board for Licensing Elderly Drivers

Because of the special and growing needs of elderly applicants for licenses, it is recommended that each state establish a special advisory board to deal with

problems of the elderly driver. Such a board should work in collaboration with the MAB but be separate from it in that its focus would be somewhat different. Its membership should include not only medical experts but also legal experts and groups representing the interests of the elderly. The ultimate purpose of such a board would be to establish and interpret guidelines to enable as many elderly drivers as possible to drive as long as possible under as broad circumstances as possible while protecting the health and safety of the older drivers as well as of the public.

The cost of such a board could be minimal. The out-of-pocket expenses of participants should be covered, but it is probable that service on the board could be secured without remuneration or at most with token remuneration. It is assumed, of course, that once guidelines were established, the board would not have to meet more frequently than once a month and perhaps as infrequently as quarterly. There would, however, need to be funds to staff such a board.

Counseling Program for Driving Alternatives

Related to the advisory board for licensing elderly drivers would be a network of counselors to assist elderly applicants, as well as others, in identifying alternatives to driving. The advisory board should provide guidance to this counseling program, but there may also be a need for a state-supported system of supervisors or administrators to work with the counselors. From a cost standpoint, it would be ideal if the counselors themselves were volunteers, but it may not be realistic to anticipate obtaining sufficient assistance in this manner. Obviously, the cost to the state will depend on how much of the program is supported by state funds. This component of the program cannot be clearly described until there is sufficient investigation of existing programs and resources. It may well be that whether and to what extent state funds are required will vary from one area of the country to another.

Increased Frequency of Testing

Special licensing provisions for the elderly would likely be accompanied by a need for more frequent license examination; that is, greater attention to the possibility of developing problems could result in shorter renewal periods before the age at which all applicants would be required to appear more frequently. Until there is better evidence substantiating the effectiveness of road testing, reexamination should not routinely include this component. (It should be pointed out, however, that from the standpoint of face validity, administration of the road test would probably provide the strongest defense

to the state in the event that problems arise later. Nevertheless, the high cost of routine road testing plus the lack of clear evidence for its effectiveness make it a low-priority component of reexamination.) There is no basis for including routine knowledge testing either. The elderly as a group perform worse on knowledge tests than do younger applicants, and there is no empirical evidence to support routinely subjecting older drivers to this experience. However, appropriate medical questions and vision screening should definitely be included. Furthermore, examiners should be trained to recognize the more obvious signs and symptoms of impairment.

Thus, the more frequent evaluation would not ordinarily result in more extensive testing than that which usually occurs. Because neither road testing nor knowledge testing would ordinarily be included, the amount of time required from both examiner and applicant would be minimal. Nevertheless, because the number of applicants appearing at the licensing station would increase, there would probably be a need for additional examiners, at least in some stations.

Records System

The imposition of a graduated driving reduction program will require accurate documentation on the driver's record of when and what restrictions were imposed. Without this information it will not be possible to evaluate the effectiveness of any program. There will be some cost associated with implementing such a system, but once in place it should not require any increased funding.

In summary, the costs of a graduated driving reduction program for older drivers will be those associated with enhancing the vision test, which should be applied to all applicants; increasing the work load of the MAB, which is likely to occur in any event; increasing the frequency of testing based on more careful evaluation of applicants and more frequent reexamination for applicants beyond a certain age; the establishment of an advisory board for licensing of elderly drivers; and development and implementation of a counseling program to identify driving alternatives.

POTENTIAL SOURCES OF REVENUE

The costs of special programs should be shouldered by the total driving population. Thus a graduated driving reduction program for the elderly would be financed in the same way as the graduated licensing system for young beginning drivers. Included in this approach would be the stipulation that the elderly driver not be required to pay for any additional examinations beyond the schedule routinely applied to all drivers.

A strong argument can be made for spreading the costs of such a program among all drivers. First, a larger proportion of the elderly fall below the poverty level than of the population in general. Furthermore, the medical costs paid by the elderly are on the whole higher. For some, but not all, money is a problem. If a graduated driving reduction program is aimed at enabling drivers to continue driving as long as is safely possible, it should not impose an additional financial burden on the applicant. Furthermore, it is in the best interests of other drivers that the elderly be allowed to continue driving as long as is safely possible because once they can no longer drive, their transportation needs must be met in other ways.

Finally, the distribution of the costs across the total driving population will result in only a very small increment in the cost of any one person. An increase of 25 cents per driver per year in North Carolina would create a $1,000,000 fund to finance the additional costs. As noted earlier, the type of program recommended should not require large sums.

IMPLEMENTATION ISSUES

Legal, Administrative, and Institutional Barriers

Perhaps the major potential barrier to the implementation of special licensing procedures for elderly drivers is opposition from groups representing the interests of the elderly. Any program that is viewed as arbitrary and discriminatory will be opposed, and rightly so. It is important that the procedures adopted be developed with input from groups such as the AARP. The program must be viewed as fair by those who are most affected by it. Although states do not want to risk liability for licensing persons who should not be on the road, neither do they want to find themselves the object of discrimination suits. Even short of legal action, the appearance of discrimination against the elderly would not be welcomed by most licensing administrators. Thus, any proposed renewal licensing program must include careful scrutiny by experts on the constitutional aspects of driver licensing, as well as by representatives of the elderly themselves.

Administrative barriers include inherent resistance to change of any sort. Those responsible for the administration of the program, including the license examiners themselves, must be involved from the beginning and be given sufficient opportunity to understand and digest the reasons for change. Thus it would be useful to give examiners the opportunity to make suggestions before all procedures have been firmly established.

Institutional barriers include the traditional compartmentalization of governmental functions. Licensing authorities have not always worked closely with medical experts and, even where MABs exist, there is sometimes a somewhat adversarial relationship between the MAB and the licensing authority. It is important to obtain broad-based opinion in the planning of any

program so that disagreements are resolved at an early stage. Licensing administrators and the advisory board for licensing of elderly drivers should be in accord before new practices are implemented for elderly applicants.

In spite of potential barriers, it is possible for the various interests to work together to develop a program for renewal licensing of older applicants. Although it is unlikely that every state will be comfortable with the same program, variations could prove beneficial in that evaluation of different programs might identify those approaches that appear most promising.

Time Frame for Implementation

Although some portions of the proposed program would require additional research, most could be readily implemented in any state that is receptive to new ideas. The steps required are as follows:

1. A decision on the age at which special procedures will be routinely imposed. This age need not be below 70 or 75, but, in any event, its specification should be based on the collective thinking of all relevant groups. The time frame for this decision should be no more than 1 year. Of course, whatever decision is made could conceivably be modified later in light of new information.
2. A decision on procedures to be used to identify problems emerging before age 75 (or whatever age is selected). These procedures should be in place for all applicants, and many of them already exist in at least some states. These include, but are not limited to, the following:
    a. Routine medical questions on license application;
    b. Vision screening, including acuity under reduced illumination and dynamic visual acuity;
    c. Overall evaluation by a trained examiner *(16)*;
    d. Routine review of crash reports to identify possible medical problems;
    e. System for reporting drivers identified as having special problems; and
    f. Greater use of restrictions on driving, for example, restrictions on speed, roadway system, hours or days of driving (or both), distance from home, light conditions, and weather conditions.

Determination of Special Procedures

For applicants the age selected and older, the examiner would still employ all procedures in use with other drivers. In addition, there may be more extensive medical questions and vision testing. If any medical evaluation is required routinely, for example, blood pressure, ideally it could be obtained through the

local health department. In other words, extensive and expensive medical evaluation should be avoided to the extent possible.

J. A. Waller *(43)* has recommended repeated examination of older applicants on successive days because of the large variation in performance that may be observed in this group. However, it is unlikely that such a requirement would be imposed at this time as part of routine procedures. Nevertheless, the major change beginning at the age selected would be the requirement for more frequent examination, and in certain cases it may be appropriate to require repeated evaluation on successive days. Ordinarily, the length of renewal for this age group could be as short as 6 months or as long as 2 years but probably no longer.

Initially, the procedures to be used in this system should be tested at a single major station so that problems can be detected and resolved before statewide implementation. Once the procedures have been clearly defined and the implementation practices determined, examiners will need training in their use. The time from when the system is designed until it is implemented statewide should be no more than 1 year. However, examiners should know well in advance that the new system is being developed.

PUBLIC POLICY AND OTHER ISSUES

It should be clearly stressed that although the data can only define the level of risk, they clearly show that with increasing age every mile driven by an older driver entails an increasing risk of crash. The data alone cannot determine what level of risk is acceptable. That decision must be made by those who make public policy.

The availability of acceptable alternative means of transportation would facilitate the selection of a lower level of risk; the absence of such alternatives may dictate the acceptance of higher-risk drivers on the public roads.

For a graduated driving reduction program to be successful, it must be acceptable to the public. This may require broad-based educational efforts to inform the public of the extent and characteristics of the problem. The current TRB effort should provide the basis for such an education program. If the public understands the nature of the problem as well as the overall goal of enabling mobility of the elderly within the constraints of safety for both themselves and the rest of the population, it is unlikely that serious opposition will be encountered. Nevertheless, those responsible for a program in any given state must be familiar with the data for that state and prepared to answer questions as well as respond to opposition.

RESEARCH NEEDS

The major research needs fall into five areas: review of the legal basis for special licensing procedures for the elderly, further development of vision and

other testing, special education programs for the elderly driver, state programs to counsel elderly drivers on alternatives to driving, and evaluation of any new programs implemented.

Legal Basis for Special Licensing of Elderly

There is a need at the outset for a careful review of the constitutional issues affecting special licensing programs for the elderly. Because some opposition is almost inevitable, there must be a clear-cut legal basis for whatever programs are implemented. Although legal authority is not sufficient for implementing a program, it is certainly necessary. Absent such authority, no program can be given serious consideration.

Development of Vision and Other Testing

A second research need is the further elaboration and investigation of special vision testing with particular emphasis on its practical application for elderly drivers. Much of the work in this area has already been accomplished, but there remains a need to define clearly those vision skills most relevant to license examination for the elderly and how they may be incorporated into routine licensing procedures at minimal cost. To the extent that visual skills may be improved through training—for example, learning how better to scan the roadway—methods for instruction of the elderly should be developed.

In addition, there remains a need in most states for knowledge and performance tests that are developed on the basis of psychometric principles. There is a science of test construction that has rarely been used in the development of driver's license tests. Unless the instruments used are scientifically constructed, they cannot be expected to reflect valid measures of the knowledge and skills of interest, nor can they be successfully defended in the face of criticism.

Education Programs for Older Drivers

A third research area concerns the extent to which older drivers can benefit from education concerning their driving habits, including how they choose when to drive or not to drive. This research should include the kinds of information elderly drivers can benefit from and how receptive they are to it.

It should be noted that the driver's license program offers an ideal point of contact for such educational interventions. If it can be demonstrated that older drivers can benefit from training or retraining, it may be possible to coordinate these programs with licensing to extend the period of driver licensure for those renewal applicants who successfully complete such instruction.

It may also be worthwhile to explore other opportunities for contacting elderly drivers about educational and service programs relevant to their needs. The driver's license program is the only state program that has the potential for reaching all drivers on a routine basis, and we have not begun to capitalize on the possibilities this contact offers. Educational and other information of all kinds could readily be made available through this contact, which is already being paid for by the taxpayer. Not all information provided would have to be aimed directly at older license applicants, but rather may be made available to those responsible for them. Thus the grown children of older drivers may be informed of alternatives available to reduce the necessity of driving for their elderly parents.

Counseling for Driving Alternatives

There needs to be research into the usefulness of assistance to elderly drivers in exploring alternatives to driving within their own particular circumstances. Most elderly persons, as well as their younger counterparts, do not have readily accessible public transportation. Nevertheless, there may be other alternatives, which would vary for different people. For example, it may be possible to arrange to go with a neighbor for groceries once a week with or without compensation. Or it may be possible to demonstrate to an older person how much less expensive it would be to use taxi service for transportation rather than maintain an automobile when it is used very little. What the possible alternatives may be and how the elderly could utilize them need to be further explored.

Most states have some type of driver improvement analyst who meets individually with drivers who have repeated convictions and attempts to assist them in solving their driving problems. This concept could be extended so that specially trained older-driver counselors could meet individually or in small groups to assist these drivers in identifying driving alternatives.

It may be that volunteers trained by the AARP, AAA, or state agencies could assume this function, at least in some states.

Evaluation of New Programs

Finally, as special programs for licensing older drivers are designed and implemented, it is essential that they include from the outset an evaluation component. It is highly unlikely that the ideal program will emerge immediately. Rather, it is more realistic to anticipate a bootstrap operation in which programs of varying sorts are implemented, and over time the better components of each are identified and incorporated by other states.

CONCLUSIONS AND RECOMMENDATIONS

The growing population of older drivers and the increasing use of motor vehicles by this segment of the population, along with their demonstrated increase in risk per mile traveled, combine to identify license renewal of elderly drivers as an area of growing interest and concern. There are conflicting values at stake. Our society is sensitive to any taint of discrimination against the elderly, and there is clear evidence that deficiencies attributable to aging do not neatly correspond to chronological age for any given individual. At the same time, the increased probability that deficiencies of some sort will occur with age places states under pressure to develop and implement some kind of special procedures for monitoring the performance of older drivers. Although it can be argued, and often is, that aging effects on performance can occur as early as the thirties, and that any special procedures to detect problems should therefore apply to all applicants, the fact remains that from a cost-benefit basis it would not be worthwhile to engage in elaborate interventions for all license renewals. Indeed, the data indicate that although increase in overall risk apparently begins in the late fifties, it is probably not great enough to warrant special interventions on a routine basis until the age of 70 or 75. Nevertheless, before that age there should be in place for all applicants procedures designed to detect the emergence of special problems, such as deterioration of vision or special medical problems that may affect driving.

Although there are no clear-cut indications for procedures that should be applied to all elderly applicants as opposed to younger ones, it appears that vision testing of all applicants should be expanded to include visual acuity under reduced illumination and dynamic visual acuity. In the case of applicants beyond a specified age (e.g., 70 or 75), the major modification should be to increase the frequency of renewal to at least every 2 years. In addition, greater use should be made of license restrictions so that the norm for older drivers would be a graduated driving reduction program. Just as young beginning drivers would ideally be introduced into the driving population gradually on the basis of demonstrated skill and experience, so the elderly should be gradually removed from the driving population as performance becomes less proficient. Such a procedure should be less traumatic for the elderly applicant, enabling driving to continue for as long as it can safely be done. Of course, there will still be some instances in which the license will need to be discontinued abruptly as a result of precipitous changes in ability.

It is also recommended that states create an advisory board for licensing of elderly drivers. This board would be charged with establishing and updating guidelines for the state licensing authority in the licensing of elderly applicants both before and after the age at which frequency of renewal increases. It

would also work with licensing and other relevant groups to develop innovative alternatives to driving that may be considered by individual applicants. Obviously, what some of these alternatives would be would depend not only on the circumstances of the individual applicant but also on the resources available in the community and the state.

Because so little is now known about the effectiveness of licensing modifications for the elderly, it is essential that programs be carefully evaluated and the results be made available to other states. In this way, states can benefit from each other's experiences and be better able to tailor a program that best meets the needs of their own citizens.

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