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Driving in Massachusetts: When to Stop and Who Should Decide?



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Selected findings from this study were presented at the 53rd Annual Scientific Meeting of the Gerontological Society of America, November, 2000, Washington, DC and at the 2001 Joint Conference of the American Society on Aging and the National Council on the Aging, March, 2001, New Orleans, LA.

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Executive Summary

The decision about when to stop driving is often emotionally charged and challenging, particularly when alternative forms of transportation are unavailable, inaccessible, or undesirable. Older drivers are likely to experience an increased accident rate per mile (though they drive fewer miles); and are at a greater risk of dying in that automobile accident. Moreover, data also suggest that older drivers are at fault a disproportionately high percentage of the time when they are involved in accidents (Kulash, 2000).

The challenge for this study was to find a way to address this very serious issue by focusing on objective criteria for assessment. The 1999 decision of the American Medical Association (AMA) provided a starting point for this study. The Council on Ethical and Judicial Affairs of the AMA published an opinion to allow doctors to notify their state department of motor vehicles of patients with medical conditions that could adversely affect their driving abilities. That opinion emphasizes public safety as a priority over the confidentiality of patients with conditions that could compromise road safety. Specifically, the opinion “articulates physicians’ responsibility to recognize impairments in a patient’s driving ability that pose a threat to public safety and that ultimately may need to be reported to the Department of Motor Vehicles” (AMA PolicyFinder, 2000). The purpose of this exploratory research was to assess stakeholders’ perceptions of the locus of responsibility for driving cessation and identify the criteria that should be included in that decision. The next step was to choose appropriate stakeholders to survey. The investigators decided to study law enforcement officers, physicians, and the general public age 50 years and older. Defining areas of agreement and disagreement across stakeholders will be valuable for informing policy makers who may be considering statewide or national initiatives.

The partners for this project included representatives from the Beth Israel Deaconess Medical Center DriveWise program and the TRIAD (a partnership among law enforcement, community, and elderly) program of the Waltham, Massachusetts, Police Department. In Spring 2000, 42 students (the majority age 60+) in the Frank J. Manning Certificate in Gerontology program contributed to the questionnaire design of a mail survey and committed weekend hours to data collection and processing in a supervised setting at the University of Massachusetts Boston.

This report is based on 300 completed questionnaires. This number represents an overall response rate of 30% (26% for physicians, 47% for law enforcement, and 17% for the general public age 50+). The majority of respondents were male with an average age of 47 years. Over two-thirds (69%) of the respondents were college graduates. Both the Law Enforcement (84%) and the Physician (86%) subgroups were highly likely to have on-the-job contact with older people.

This exploratory study has yielded some key findings that warrant further investigation and discussion. Most importantly, the three stakeholder groups surveyed—Law Enforcement, Physician, and General Public age 50+—felt that there should be periodic assessment of the driving skills of people as they age. Specifically, all three subgroups suggested that there should be driving reassessment in Massachusetts and moreover, that there should be an age set for that reassessment. There was less agreement, however, regarding how often reassessment should take place or at what age it should begin. Even though there was general consensus that standardized testing is needed, there was less agreement about the types of testing. Almost all respondents felt

that vision should be included, followed by a road test. The General Public consistently rated the need for cognitive and mental health assessments more often than did the Law Enforcement and the Physician subgroups. Other criteria that were noted as important to the driving decision were: alertness, flexibility, hearing, memory, history of moving violations, and types of medication taken.

Overall, the respondents reported that after the driver him- or herself, the responsibility for the driving decision should be shared by the Department of Motor Vehicles (DMV), family, physician, and law enforcement. The General Public and the Law Enforcement subgroups rated the physician as more responsible for the driving decision than did the Physician subgroup itself. Similarly, the Law Enforcement and the Physician subgroups rated the adult children significantly higher in responsibility for the driving decision than did the General Public subgroup. Several of the findings from this current study provide additional support for recommendations put forth by others (in Kulash, 2000):

- Promote public awareness and encourage participation in safe-driving program.

Aside from responding that a reduction in premiums was a positive incentive for undergoing a driving reassessment or taking a driving enrichment program, few of the respondents acknowledged the benefits of learning new skills to keep driving longer, reviewing the drivers' manual, and learning about vehicle modifications. Vehicle modifications that promote safe driving, their purpose, and where to find them should be included in a public awareness campaign.

- Develop better assessment tools and expand opportunities for driving reassessment and road testing.

Kulash (2000) suggests a multiple-tier system of testing where the initial round of assessment serves as a screening tool and relies on simple, low-cost, easily administered tests. More in-depth assessment would be conducted only if deficiencies were noted in the initial phase. This would avoid the cost and emotional burden of unnecessary testing. Efforts should be directed to assure that these assessments are reimbursed through insurance or offered at a reduced rate if referred by a physician or law enforcement officer.

Other findings have implications that were not previously addressed in the literature, specifically relating to law enforcement officers and physicians:

- Provide more education and training for police officers to sensitize them to older drivers and to the complications that can arise because of failure to cite or ticket, and thus, inadvertently condone unsafe driving. The implication here is that the driver will benefit from early detection of unsafe driving and referrals for appropriate intervention.
- Disseminate information about available resources to promote safe driving. Physicians and law enforcement officers should have information fact sheets with referral information on driving assessment and enrichment classes, as well as a listing of vehicle modifications, their purpose, and where to find them.

In conclusion, the findings of this study strongly suggest that there is a need for stakeholder groups to come together to establish policy guidelines to assure the maintenance of safe driving skills, to decide when reassessment should take place, and to indicate who should be responsible (or share responsibility) for the decision to stop driving, and who should assume the costs associated with that decision.

Acknowledgments

There were many individuals who contributed to the design and implementation of this research effort. The study was implemented within the framework of an applied research in aging class that conducts an annual action-research project, a required part of the Gerontology undergraduate and certificate programs at the University of Massachusetts Boston (UMB). The Spring 2000 action-research project was directed by Nina M. Silverstein, Ph.D., with research and teaching assistance from doctoral student Jenai Murtha and doctoral candidate Laney Bruner-Canhoto, MSW, MPH.

An advisory board was recruited to assist with the formulation and modification of research questions and later to provide some insight toward the interpretation and implication of findings. The individuals who served on the advisory board were: Margaret O'Connor, Ph.D., Beth Israel Deaconess Medical Center; Lissa Kapust, LICSW, Beth Israel Deaconess Medical Center; Officer Jon Bailey, TRIAD program, Waltham Police Department; Gerald Flaherty, Director, Special Projects & Deborah Thomson, Director of Public Policy, Alzheimer's Association, Massachusetts Chapter; Eliza Lake, Executive Office of Elder Affairs; Doris Axelrod, Ph.D.; Deborah Banda, AARP; Kay Maguire, UMB; Nita Goldstein, consumer; Sonia Michelson, MSW, Geriatric Social Worker; Steve Evans, Assistant Director of Medical Affairs, Massachusetts Registry of Motor Vehicles; Francis G. Caro, Ph.D., Director, Gerontology Institute, UMB; Jack Pizer, UMB; Regula Robnett, University of New England; Officer Roberta Craven, Senior Response, Boston Police District 18; and Talli McCormick, Massachusetts General Hospital. Advisory board members Dr. O'Connor and Officer Bailey were particularly helpful in providing substantive background for the project by serving as guest lecturers during February 2000, and Dr. Axelrod shared her expertise on mail survey design and implementation through a lecture in March 2000.

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Driving in Massachusetts: When to Stop and Who Should Decide?

INTRODUCTION

The decision about when to stop driving is often emotionally charged and challenging, particularly when alternative forms of transportation are unavailable, inaccessible, or undesirable. Researchers have documented that older drivers are likely to experience an increased accident rate per mile even though they drive fewer miles; and they are at a greater risk of dying in that automobile accident (Cobb & Coughlin, 1997; Gillespie & McMurdok, 1999; Miller & Morley, 1993; Johansson, Bronge, Lundberg, Persson, Seideman, & Viitanen, 1996; Sims, Owsley, Allman, Ball, & Smoot, 1998). Moreover, data also suggest that older drivers are at fault a disproportionately high percentage of the time when they are involved in accidents (Kulash, 2000, p.16).

The purpose of this exploratory research was to assess three stakeholders' perceptions of the locus of responsibility for driving cessation and identify the criteria that should be included in that decision. The stakeholder groups studied were law enforcement officers, physicians, and the general public age 50 years and older. Defining areas of agreement and disagreement across stakeholders will be valuable for informing policy makers who may be considering statewide or national initiatives. Findings will also be useful for public information and training.

A starting point for this study was a bold action taken by the American Medical Association. The Council on Ethical and Judicial Affairs of the AMA published an opinion to allow doctors to notify their state department of motor vehicles of patients with medical conditions that could adversely affect their driving abilities. That opinion emphasizes public safety as a priority over the confidentiality of patients with conditions that could compromise road safety. Specifically, the opinion "articulates physicians' responsibility to recognize impairments in a

patient's driving ability that pose a threat to public safety and that ultimately may need to be reported to the Department of Motor Vehicles" (AMA PolicyFinder, 2000; Associated Press, 1999). (See Appendix A for more information on the AMA opinion.) Additional guidelines were also adopted by the American Academy of Neurology. A report by the Quality Standards Subcommittee of the American Academy of Neurology indicated in a systematic review of the literature that "driving was found to be mildly impaired in those drivers with probable Alzheimer's disease (AD) at a severity of Clinical Dementia Rating (CDR) 0.5" and "those drivers with AD at a severity of CDR 1 were found to pose a significant traffic safety problem both from crashes and from driving performance measurements" (Dubinsky, Stein, & Lyons, 2000, p.2205). Understanding the unpredictable progression of Alzheimer's disease, the Academy of Neurology suggests that physicians assess their patients afflicted with Alzheimer's disease every six months as their dementia progress (Dubinsky, Stein, & Lyons, 2000, p. 2210).

BACKGROUND

The population of people age 65 and over in the United States will increase dramatically in the early part of this century, rising from the rate of 12% noted in 1997 to between 17 to 20% in 2020 (Cobb & Coughlin, 1997). An area that has begun to draw the attention of researchers, advocates, and policy makers is the dramatic increase in older drivers and concerns about potential safety issues. Presently, one in three drivers is over 55, compared with one in five in 1993 (Miller & Morley, 1993).

Not only are the numbers increasing; so is the nation's dependency on the automobile (Cobb & Coughlin, 1997). "Possession of a driver's license means choice, freedom, and identity" (Gillins, 1990). Driving has become synonymous with maintaining patterns of normal life. Older drivers can access part-time work, healthcare, recreation, shopping, and social activities (Cobb &

Coughlin, 1997). “Little rides” around the neighborhood may serve simply as a diversion from being housebound (Gillins, 1990).

Mobility can impact the well-being of elderly people. “Well-being is dependent on the fulfillment of needs” (Burns, 1999). It is mobility that contributes to fulfilling those needs. However, approximately 7,000 older drivers die in automobile accidents every year (Kulash, 2000. p.1). The number of drivers age 70 and older killed in crashes nationwide increased 39% over a 10-year period (Aging News Alert, 2000). Florida had the most fatalities in 1999, followed by Texas, California, Pennsylvania, and Michigan (ibid.).

The question has become a choice between personal well-being and the protection of others. “Once the question of competence to operate an automobile has been raised, ethical dilemmas must be addressed regarding the benefit of continued driving for the individual versus the risk to that person and society as a whole” (Reuben, Silliman, & Traines, 1988).

Currently, the responsibility for identifying impaired older drivers—if that responsibility is assumed by anyone—lies with the older drivers themselves, law enforcement professionals, family members, or physicians. Law enforcement and state departments of motor vehicles are currently the only formal authorities of preventative measures in place. However, even within this subgroup there is much variation. Every state has its own restrictions, and there is a considerable amount of variation in those statutory requirements. Currently, only eleven states have age-based license renewal requirements: Arizona (age 50), Hawaii (age 65), Illinois (age 81), Indiana (age 75), Iowa (age 65), Louisiana (age 70), Maine (age 65), Montana (age 75), Nevada (age 70), New Mexico (age 75), and Rhode Island (age 65) (Cobb & Coughlin, 1997). Adler (1997) observed that “age alone, in the absence of certain medical conditions, has not been shown to correlate with poor

driving performance, although there is evidence to suggest that the skills needed for safe driving begin to deteriorate in later years” (p.1).

Adler (1997) also reported that 40 states have adopted some form of restrictive or “graduated” license that, besides corrective lenses, might include limiting driving to daylight hours or to familiar areas. These policies vary widely among the states. Most states require a repeat vision test at the time of renewal regardless of the driver’s age. Nine states, however, do not have this requirement. Alabama, Arkansas, Connecticut, Kansas, Nevada, Pennsylvania, Tennessee, Vermont, and West Virginia not only do not have a vision test in place; they also allow for renewals by mail (Reuben, Silliman, & Traines, 1988). Appendix B provides data on all 50 states and the District of Columbia regarding the length of the license renewal cycle, whether there is an accelerated renewal process for older drivers, and any other provisions applicable to older drivers. (Insurance Institute for Highway Safety, 2001).

Researchers in the United States are not alone in addressing concerns around driving. In many countries, research has been focused on the responsibilities of local authorities, several of which concentrate on the contrasts of licensing laws in Sweden and Finland (Hakamies-Blomqvist, 1996; Johanasson & Lundberg, 1996).

Family members differ in their desires and abilities to address concerns related to the older driver. Revealing and reporting impaired drivers is often a difficult task for family members. This is especially problematic if the impaired driver is the only driver in the household (Kapust, 1992). “Family members have enough to cope with as the older person declines and should not have to serve as the judge in assessing the ability to drive and as the enforcer in setting driving limits” (Gillins, 1990). Even in situations where a family member wishes to confront his or her relative, it may be easier to do so if it is not a solo mission. The family member may have a better time

saying “the doctor” or “the state says you shouldn’t drive,” rather than, “I don’t think you should be driving” (Gillins, 1990).

Stutts (1998) questioned whether older drivers, themselves, restrict their own driving. She found clear patterns of reduced driving. Lower cognitive and visual functioning were closely associated with “lower annual miles and greater avoidance of high-risk driving situations” (Stutts, 1998).

Physicians are most often thought to be in charge of identifying potentially problematic drivers, even though there is no formal protocol established for them to rely on. Mandatory reporting as in protective service cases exists only in California, which “mandates physicians to report drivers with AD [Alzheimer’s disease] and related disorders to the department of motor vehicles (DMV)” (Adler, 1997, p.2).

Much research has been done to clarify the role that physicians should play according to the law. Eight states “have passed laws requiring physicians to report certain conditions that may affect driving ability” (Reuben et al., 1988). In a study by Miller and Morley (1993), several physicians were unaware of the American Medical Association’s guidelines for physician reporting. Many felt that it was their responsibility, but over 60% admitted that they had never referred a patient for driving evaluation. Less than one third of the physicians questioned in the Miller and Morley 1993 study actually kept records of their patients’ driving status. A more important question may be whether reporting unsafe drivers should actually be the physician’s responsibility at all. There is research to suggest that the impairments associated with unsafe driving are not visible through a routine physical examination. Purely clinical examinations possess little value in evaluating driving ability. Cognitive impairments are best revealed by using cognitive rating scales and performance tests (Johansson et al., 1996). Furthermore, it is difficult

for physicians to make judgments regarding on-road errors based on office examinations (Kapust, 1992).

METHODOLOGY

Research Model

An action-research model was used to conduct this project. This model brings the university faculty and students together with community leaders and agency representatives to address an issue of public concern (Bass & Silverstein, 1996). The partners for this project included representatives from the Beth Israel Deaconess Medical Center DriveWise program and the TRIAD (a partnership among law enforcement, the community, and the elderly) program of the Waltham, Massachusetts, Police Department.

Physicians, law enforcement officers, and the general public age 50 and older were chosen as subjects for this exploratory study, due to their role as stakeholders in the driving decision. A randomly selected sample of adult primary care physicians in the Beth Israel Deaconess Medical Center Care Group Network were surveyed (n=415). The physician subgroup was over-sampled due to the expectation of a lower response rate. (McFarlane & Garland, 1994; Baim, 1991; Berry, 1987). The law enforcement officers surveyed (n=300) were composed of a purposive sample of officers who were likely to have contact with older drivers, such as officers from patrol and accident investigation units. The general population 50+ (n=300) was randomly selected using a national sampling firm, Info USA. The investigators anticipated that people within this age group might have considered these issues either for themselves, a spouse, a friend, or family member. Clearly, a major limitation of this study is its limited generalizability. This study is presented as a solid exploratory study that will provide useful data for policy discussion and defining further

research needs. Caution should be exercised in interpreting the findings that are intended as descriptive only.

An advisory board was assembled, consisting of several stakeholder groups who have a vested interest in the driving decision. Members of local and national organizations such as Alzheimer's Association, AARP, Executive Office of Elder Affairs, University of Massachusetts Boston Gerontology faculty, and older drivers and their family members were included. The purpose of the advisory board was to assist in deciding the domains to include in the survey instrument at the onset of the study and then later on, to provide insight on the interpretation of research findings.

Data Collection

The data were collected through a mail survey in the spring of 2000. The survey was 12 pages in length and included the following domains: policy considerations, professional and personal experiences with the driving decision, and establishing competency criteria. Data on stakeholders' knowledge about available resources and adaptive equipment to promote safer driving were also collected but will not be discussed in this report. The survey was formatted according to the protocol for mail surveys defined by Dillman (1978). Two weeks after the initial mailing, a reminder postcard was sent to the non-respondents in the Physician and General Public subgroups in an effort to increase the survey's response rate. In addition, the Physician subgroup received a general e-mail reminder directly from the Beth Israel Deaconess Medical Center representatives to the advisory group. Reminders were not administered to the Law Enforcement subgroup because contact addresses were not available to the research team; the Law Enforcement surveys were administered directly by a representative of the TRIAD program.

Forty-two gerontology certificate and undergraduate students participated in the survey development, data collection, and processing. Two-thirds of the gerontology certificate students were age 60+ and thus, were interested stakeholders in the driving decision themselves.

Informed consent was passively obtained: it was assumed that individuals who returned completed surveys were consenting to participate and surveys not returned were considered refusals.

The General Public subgroup had the lowest response rate (see Table 1). However, this rate is consistent with surveys without follow-up and was expected. The response rates of the remaining subgroups, Physicians and Law Enforcement, were substantially higher than that of the General Public. The investigators believed that increased numbers would be returned because of the subgroups' affiliations with the research partners, Beth Israel Deaconess Medical Center and the TRIAD program of the Waltham, Massachusetts, Police Department, as well as their interest in the research topic.

Table 1. Data Collection

	Physicians	Law Enforcement	General Public	Total
Sample size	415	300	300	1015
Completed surveys	106	142	52	300
Response rate	26%	47%	17%	30%

Sample Description

Table 2 illustrates that the majority of respondents were male with an average age of 47 years. Given that the General Public subgroup was purposively chosen at age 50+, the average age of that subgroup was significantly higher at 63 years. Both professional subgroups were more highly educated than the General Public subgroup. To further describe this sample, items were

included on the respondents' personal and professional experiences with older drivers and with the driving decision.

Table 2. Sample Description

	Law Enforcement (n=142) %	General Public (n=52) %	Physicians (n=106) %	Total (n=300) %
Gender				
Male	85	57	67	74
Female	15	43	33	26
Age*	41 years (mean age) SD= 10.4	63 years (mean age) SD= 11.4	46 years (mean age) SD= 11	47 years (mean age) SD= 13.2
Education				
Elementary school or less	0	4	0	1
High school/ vocational	15	39	0	14
Associate degree	28	12	0	16
Bachelor degree	34	18	0	19
Graduate degree	23	27	100	50

* It is important to note that the General Public was purposively selected to be over age 50. This accounts for the higher ages of respondents in this subgroup.

RESULTS

Professional and Personal Experiences with the Driving Decision

Did the respondents encounter older people in the workplace? And did they take the opportunity to discuss driving issues? Both the Law Enforcement (84%) and the Physician (86%) subgroups reported having on-the-job contact with older people, although the frequency of

discussing driving issues with older people was not likely to be very often (Table 3). Just over a third (39%) of the General Public subgroup reported having on-the-job contact with older people. The small number (20) of the General Public subgroup who reported that they encounter older people in the workplace did not permit further analyses.

The following open-ended comments from physicians perhaps best summarize the frustration felt by many:

As a primary care physician I feel a tremendous amount of time pressure. It seems reasonable to discuss driving with elderly patients; I honestly don't know how I'd find the time to take care of one more issue.

Another physician offered the following comment:

Need to address more frequently. Unfortunately, often only addressed when family members raise concerns.

And from another physician:

Older people hold onto driving as an expression of independence...very hard to argue for change with them.

Table 3. Frequency of Discussing Driving*

	Law Enforcement (n=116) %	Physician (n=89) %	Total (n=205) %
Not Often	51.7	65.2	57.6
Somewhat Often	37.9	23.6	31.7
Very Often	10.4	11.2	10.7

* Includes only the respondents who reported having on-the-job contact with older people.

Respondents were then asked about whether they had personal experience with the decision to stop driving. Over a quarter of the total respondents, 29%, reported having had personal experience with the driving decision. Of the respondents with personal experience, the General

Public was more likely than the other subgroups to have had the experience related to themselves ($p < .05$). Although it was expected, there was no significant correlation between the older age of the General Public subgroup compared to the younger ages of the Law Enforcement and the Physician subgroups and the relationship to the frequency of discussion about driving.

In addition, the General Public subgroup reported having had personal experience with the driving decision related to a parent more often than was reported by the other two subgroups (58% for the General Public versus 33% for Law Enforcement and 30% for Physicians). A theme noted by several respondents is reflected in this statement from a General Public respondent:

It was necessary for my dad to stop driving because of the effects of Alzheimer's.

And from a physician:

My grandmother is 94 11/12 months and should not be driving. She still drives despite being careless. We have attempted to have her reassessed through the DMV (outside of Massachusetts) but we have not been successful.

Overall, about 13% of the respondents reported having been in an automobile accident involving an elder driver. The General Public reported having been in more accidents with elder drivers than did the other two subgroups ($p < .01$). From a General Public respondent:

A woman mid to late 60s stopped on a highway. I rear ended her and was held at fault.

Another comment from the General Public:

The driver neglected to look to her left and drove into oncoming traffic.

And another:

When I was 18, I was rear-ended by an elderly woman who just was not paying attention. I have suffered from this injury all my life.

More of the respondents (36%), however, reported having witnessed an automobile accident involving an older driver, with Law Enforcement reporting significantly more often than

the other two subgroups ($p < .001$). The following open-ended comments provide further insight into these responses:

From a police officer:

The person thought that the light was green, when in fact it was red. The driver hit two pedestrians in the crosswalk.

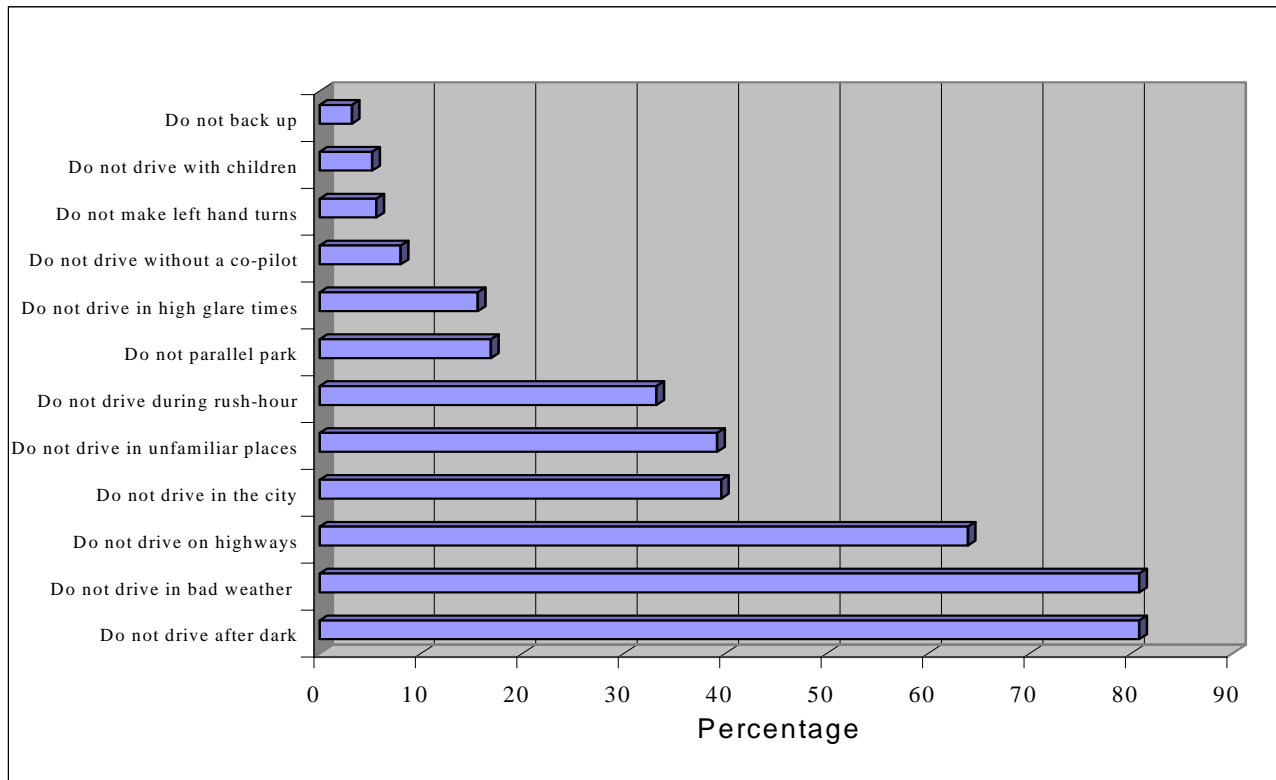
From a physician:

The driver had visual problems, (he) could not see a truck and drove into it.

Another physician:

I witnessed an elderly driver making a left-hand turn into oncoming traffic and striking a car.

Figure 1. Respondents with Personal Knowledge of Drivers who Place Restrictions on Their Own Driving*



* Includes only the respondents who had personal knowledge of drivers who self-restrict. Other restrictions mentioned less frequently: do not merge and do not travel far.

Personal Knowledge of Drivers who Place Restrictions on their Own Driving

Figure 1 illustrates that most of the respondents (85%) knew someone who placed at least one restriction on his or her own driving. The most frequently mentioned self-restrictions were: not driving after dark, not driving in bad weather, and not driving on highways. A respondent from the General Public subgroup offered the following comment on self-restrictions:

I do not drive now. I gave up driving due to vision problems. I do not have a driver's license now. At 84 years of age I do not belong on the road.

Another respondent from the General Public echoed this sentiment:

I just thought at eighty-two years young, it was time.

Knowledge of Facts about Older Drivers

A final area of sample description regarded the respondents' knowledge of three issues related to driving. In the first case, respondents were given the statement, *As an older driver ages, driving skills decline*. The majority of the respondents, 87%, agreed with this true statement. Respondents were next given the statement: *Compared to younger drivers, older drivers are involved in more accidents per mile driven*. This statement is also true; both statements have been well documented in the literature (Cobb & Coughlin, 1997; Gillespie & McMurdo, 1999; Miller & Morley, 1993; Johansson, Bronge, Lundberg, Persson, Seideman, & Viitanen, 1996; Sims, Owsley, Allman, Ball, & Smoot, 1998.). However, only 20% or less of each subgroup believed that the second statement was true. Physicians were significantly more likely than Law Enforcement or the General Public to agree with this statement ($p < .05$).

Respondents were then asked whether they considered the following statement true or false: *Police officers are reluctant to issue tickets or warnings to older drivers*. This belief was shared with the researchers by a police officer who served as a project advisory board member. He encountered this sentiment on the job and in training sessions. In fact, as shown in Table 4, the

General Public and Physicians were more likely to feel that police officers are not reluctant to ticket older drivers, while police officers, themselves, were more likely to agree that police officers are reluctant ($p < .001$). The following comment from a police officer illustrates this reluctance:

Just last week I had a 94-year old with an expired inspection sticker. He bragged at how old he was. I let him go.

Table 4. General Knowledge of Police Ticketing Practices

	Law Enforcement (n=142) %	General Public (n=52) %	Physicians (n=106) %	Total (n=300) %
False	31.4	46.1	14.2	27.9
True	55.7	13.5	22.9	36.7
Don't Know	12.9	40.4	62.9	35.4

Knowledge of AMA Guidelines

The respondents were first asked about their knowledge of the American Medical Association’s 1999 decision “to let doctors notify the Department of Motor Vehicles in their states of patients with medical conditions that could make them unsafe drivers.” The great majority of the respondents, 82%, were not aware of the change in these guidelines. Interestingly, although not statistically significant, fewer of the Physicians (15%) reported knowledge of the change than did the other two subgroups. Overall, there was consensus among the respondents that doctors may be *somewhat likely* to comply with the guidelines, although it was significant that none of the physicians indicated *very likely*. ($p < .001$). One physician offered the following comment:

As an oncologist I occasionally see newly impaired drivers due to sedative use, brain tumors, seizure disorders, etc. In such patients I always address driving responsibilities, but have never informed DMV.

Another physician, however, did indicate compliance:

[I] have written to the DMV regarding a small number of patients who were presenting a danger in driving to themselves or others.

Respondents were later asked whether or not there should be a legal requirement to report unsafe drivers to the Department of Motor Vehicles. As shown in Table 5, the majority of the respondents, 75%, felt that there should be mandatory reporting. Almost all agreed that police officers (92%) and physicians (71%) should be mandatory reporters. There was less agreement for inclusion of social workers (42%). Additional suggestions for whom to include as mandatory reporters were family members, friends, eyewitnesses, and nurse practitioners.

Table 5. Possible Individuals Responsible for Mandatory Reporting

	Law Enforcement (n=142) %	General Public (n=52) %	Physicians (n=106) %	Total (n=300) %
Police Officers**	95.4	79.5	94.1	92.1
Physicians	74.3	59.0	73.9	71.4
Social Workers	41.3	28.2	50.7	41.9

p<.01**

Need for Standardized Testing

The respondents were then asked whether or not there should be standardized testing for license renewal in Massachusetts. The Law Enforcement and Physician subgroups were in consensus that there should be standardized testing in Massachusetts (over 80% of each subgroup). However, although many people in the General Public subgroup were in agreement (68%), their feeling that standardized testing is necessary was not so strong as those of the other two subgroups. (p<.05).

Though there was general concurrence that standardized testing is needed, there was less agreement about the types of testing. Respondents were asked to check items in a list for inclusion

in a standardized test. Table 6 indicates that all three subgroups strongly believe that a vision test should be required. A road test was the next most frequently checked component for standardized testing. There were significant differences among the three subgroups regarding the need for a neurological examination. The General Public more strongly believed that such an examination should be included in standardized testing than did the Law Enforcement or Physician subgroups. (This response was consistent with responses to two later questions about the importance of cognitive and mental health issues with regard to driving. The General Public consistently rated these factors higher than did the other two subgroups ($r=.38$, $p<.05$.) Respondents suggested additional components for standardized testing, including physician statements, driving violation history, drug testing, health issues questionnaire, reaction time test, and a mental stability test.

Table 6. Possible Tests Included in a Standardized Exam

	Law Enforcement (n=142) %	General Public (n=52) %	Physicians (n=106) %	Total (n=300) %
Vision examination	92.0	97.1	97.7	94.9
Driving road test	71.4	55.9	68.2	68.0
Neurological examination/ Dementia testing*	40.2	64.7	48.9	47.0
Written examination	39.3	32.4	34.1	36.3
Routine physical examination	24.1	23.5	14.8	20.5

$p<.05^*$

There was no agreement on how often a standardized test should be administered. Twelve percent thought *yearly*; 30% thought *every other year*; 37% thought *every five years*; 6% suggested *every ten years*; and 15% offered other intervals. There was even less agreement about

at what age the first reassessment should occur. However, when asked directly if Massachusetts should implement age-based license renewal, 76% of the respondents overall agreed that renewal should be age-based. The age for first reassessment ranged from 18 to 90 years with an average of 65 years. There were significant differences, however, among the ages offered by the three subgroups ($p < .001$). The mean age offered by the Law Enforcement subgroup was 63.7 years ($SD=10.7$); the mean age offered by the Physician subgroup was 68.2 years ($SD=8.3$); and the mean age offered by the General Public subgroup was 59.6 years ($SD=22.1$). Two comments offered by police officers give very different opinions:

Many motor vehicle accidents are caused by elderly drivers who consistently think that the brake is the gas pedal. They get confused. I think a yearly test should be administered to drivers who are over the age of 70.

Older people have said they will know when to stop. They do not need government intervention.

Respondents were then asked who should bear the primary cost for standardized testing. Table 7 illustrates that respondents felt that individual drivers and the Department of Motor Vehicles should be most responsible for payment.

Table 7. Responsibility for Costs for Standardized Examination

	Law Enforcement (n=142) %	General Public (n=52) %	Physicians (n=106) %	Total (n=300) %
Department of Motor Vehicles	28.0	41.4	35.4	32.7
Individual Driver	26.0	24.1	40.2	31.3
Automobile Insurance Companies	27.0	17.2	12.2	19.9
Health Insurance Companies	13.0	10.3	8.5	10.9

p<.05*

p<.01**

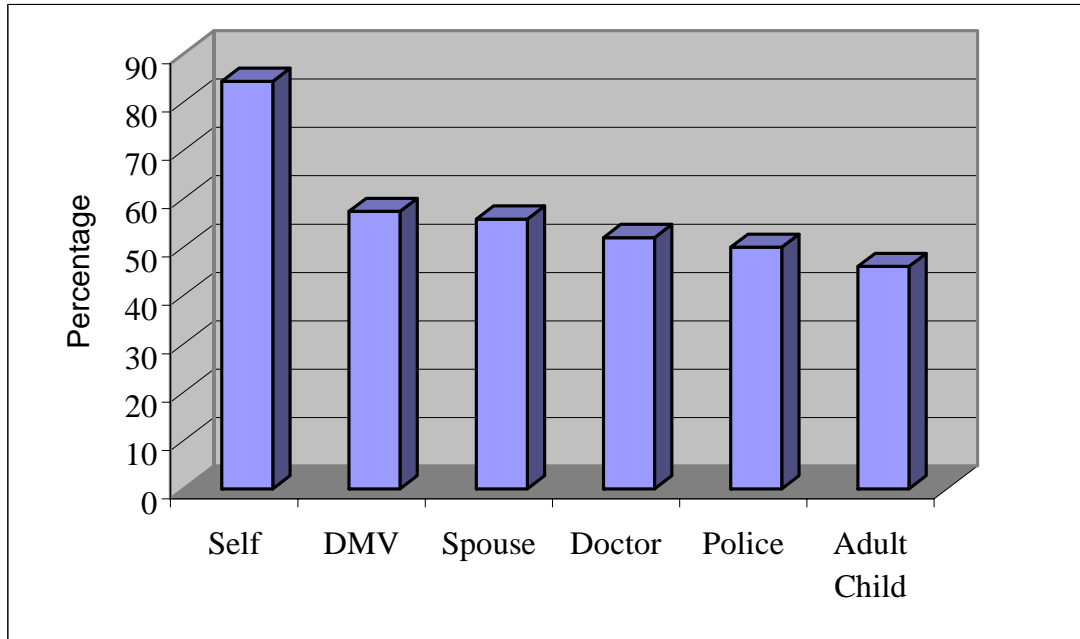
p<.001***

Responsibility for the Driving Decision

Responsibility for determining when and if an individual should stop driving is a difficult, yet extremely important, decision. Where responsibility lies is unclear, and making the decision may fall to several people or, unfortunately, to no one. Respondents were given a list of stakeholder groups and were asked to rate each group as *not at all responsible*, *somewhat responsible*, or *very responsible*. Figure 2 illustrates that, overall, the respondents ranked the following groups by their levels of responsibility in making the decision to stop driving:

1. Self
2. Department of Motor Vehicles
3. Spouse
4. Physician
5. Law Enforcement
6. Adult Child

Figure 2. Responsibility for the Driving Decision



There were differences, however, in how the three subgroups ranked each of the stakeholders in the decision-making process. The majority of the respondents, 84%, felt that the individual, him- or herself, should be *very responsible* for the decision to stop driving. However, it was significant that the Law Enforcement subgroup rated the individual significantly lower in responsibility than did the other two subgroups (74%, compared to 94% of the General Public subgroup and 92% of the Physician subgroup who rated the individual as *very responsible*, $p < .001$).

Physicians rated spouses significantly more often as *very responsible* than did the Law Enforcement or General Public subgroups (65%, compared to 48% of the Law Enforcement subgroup and 57% of the General Public subgroup who rated spouses as *very responsible*, $p < .001$).

The Law Enforcement and Physician subgroups rated adult children significantly higher in responsibility than did the General Public subgroup (50% of the Law Enforcement and 46% of the

Physician subgroups compared to 36% of the General Public subgroup who rated adult children as *very responsible*, $p < .05$).

The majority of both the Law Enforcement and General Public subgroups (61% and 59%, respectively) felt that the physician should be *very responsible*, compared to 37% of the Physician subgroup who rated themselves as *very responsible* ($p < .001$). Instead, over half (54%) of the Physician subgroup considered themselves only *somewhat responsible*.

Three physicians offered similar comments on how the decision arises:

Most feel a loss of independence. It is usually a relative asking to have the loved one curtailed.

I am a physician. Patients always think they can drive while family does not.

Often family members start dialog on relative's deteriorating driving skills...often related to [relative's] dementia.

Also from a physician relating to his experience with his father:

Father began to have dementia—he also had no insight. We referred him to his physician, but physician would not restrict his driving. Family had to take keys, sell vehicle, and place father in an assisted care facility.

How responsible were law enforcement officers considered in the driving decision? Over half, 55%, of the Law Enforcement subgroup considered police officers *very responsible* in the driving decision, compared to 46% of the General Public subgroup and 45% of the Physician subgroup who considered police officers *very responsible* ($p < .05$). It is interesting to note that the Law Enforcement subgroup considered the Department of Motor Vehicles *very responsible* at a significantly higher rate than did the other two subgroups (68%, compared to 40% of the General Public subgroup and 51% of the Physician subgroup, $p < .001$).

Who else was considered to share responsibility in the decision to stop driving? Only 20% of the respondents considered siblings *very responsible*; 18% considered counselors or therapists

very responsible; 11% considered other family members (besides spouse, siblings, and children) *very responsible*; 8% considered friends *very responsible*; and 3% considered religious leaders *very responsible*.

Establishing Competency Criteria

Establishing competency criteria for what makes a driver safe and able is an important stage in finding a solution to the ongoing struggle facing many Americans. Both personal and situational factors may have impacts on the driving decision. Respondents were asked to rate the importance of personal factors first and then situational factors as *not important*, *somewhat important*, or *very important* in determining whether or not an individual should be allowed to drive. Table 8 illustrates that there was strong agreement among the three subgroups regarding the personal factors that should be considered. The major criteria noted by over half of the respondents in all three subgroups were:

- Vision
- Alertness
- Reaction time
- Number of moving violations, and
- Hearing

The General Public perceived hearing as significantly more important than the other two subgroups (78%, compared to 56% of the Law Enforcement subgroup and 50% of the Physicians, $p < .01$). In preparation for this study, advisory board members who represented both the Law Enforcement and the Physician subgroups informed the research team that hearing, in fact, was not an important criterion for establishing driving competency. The General Public and Law Enforcement also rated types of medication, memory, and mental health significantly more

important than did the Physician subgroup. Age and gender were not considered important factors by the respondents overall.

Table 8. Personal Factors Rated as *Very Important* in Establishing Driving Competency

	Law Enforcement (n=146)	General Public (n=52)	Physician (n=106)	Total (n=300)
Vision	94.4	96.1	97.1	95.6
Alertness	80.7	83.3	86.7	83.1
Reaction time	82.0	83.3	76.2	80.1
# Moving violations	57.0	62.5	61.5	59.6
Hearing**	55.8	78.4	50.0	57.7
Type(s) of medication*	62.8	63.0	45.2	56.4
Memory*	58.1	64.6	47.1	55.2
Mental health***	63.2	67.4	35.6	53.4
Cognitive ability	50.4	64.3	40.9	48.9
Attention span	43.9	55.8	42.9	45.4
Medical conditions***	51.0	51.1	21.4	40.5
Physical flexibility	23.0	22.2	12.5	19.0
Ability to walk	20.0	6.8	12.6	15.1
Age	14.5	17.8	4.9	11.5
Upper body strength*	10.5	10.9	7.6	9.5
Gender	3.1	2.4	1.9	2.5

p<.05*

p<.01**

p<.001***

The investigators also hypothesized that situational factors may enter the driving decision, such as “my work depends on it” or “no one else in the house drives.” Table 9 indicates that these factors, however, were not rated as important as the personal factors, with less than 50% of each subgroup rating situational factors as *very important*. One exception was that 63% of the General Public subgroup responded that the condition of the vehicle should be an important factor in

establishing driving competence. While situational factors were not rated as *very important*, there was consensus across all three subgroups that these factors were *somewhat important*.

Table 9. Situational Factors Rated as *Very Important* in Establishing Driving Competency

	Law Enforcement (n=146)	General Public (n=52)	Physician (n=106)	Total (n=300)
Weather conditions	37.5	48.0	38.0	39.5
Condition of the vehicle**	37.4	63.3	28.2	38.5
Occupational needs***	27.9	44.7	13.9	25.7
Time of day*	12.8	10.6	22.2	15.8
Travel distance	12.5	17.0	13.9	13.7
Travel frequency	10.4	4.3	9.1	9.0
# Drivers in the home	6.9	8.7	9.0	7.9

p<.05*

p<.01**

p<.001***

Benefits of Driving Assessment and Enrichment Programs

The investigators recognized that this study highlighted areas of concern for older drivers that may lead the respondents to question, what can be done? The investigators underscored opportunities for interventions to address those concerns. Specifically, respondents were asked about their perceptions of the benefits of driving assessment and enrichment programs.

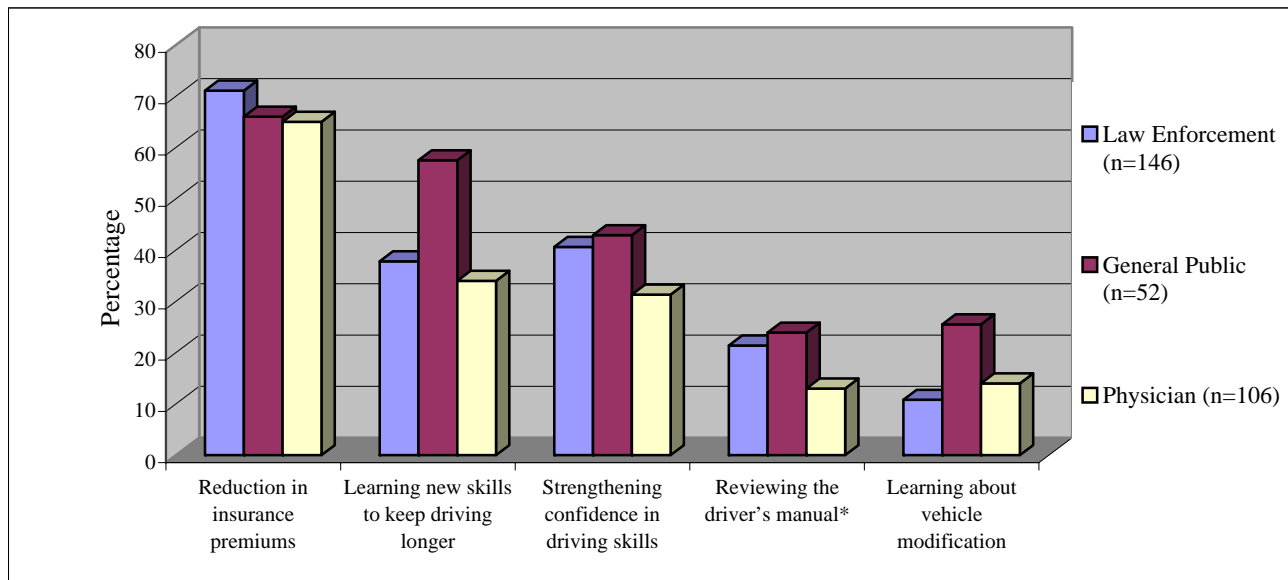
The respondents were provided a list of common benefits of driving assessment and enrichment programs. They were asked to rate how much of an incentive each benefit would be to enrolling in such programs. Figure 3 shows that a reduction in insurance premiums rated as the highest incentive, with 68% of the respondents overall indicating that it would be a *very important* incentive. Forty percent thought that learning new skills to keep an individual driving longer was a *very important* incentive. This was followed by 38% who thought that strengthening confidence in one's driving skills was a *very important* incentive. Only 19% thought that the opportunity to

review the driver’s manual was a *very important* incentive. Fewer, 14%, thought that learning about vehicle modification was a *very important* incentive.

From a physician:

I have referred patients to the DriveWise at BIDMC; there should be more programs like this.

Figure 3. Benefits of Driving Assessment and Enrichment Programs Rated as *Very Important*



p<.05*
p<.01**
p<.001***

KEY FINDINGS

This exploratory study has yielded some key findings that warrant further investigation and discussion. Most importantly, the three stakeholder subgroups surveyed—Law Enforcement, Physician, and General Public age 50+— felt that there should be periodic assessment of the driving skills of people as they age. Specifically, all three subgroups suggested that there should be driving reassessment in Massachusetts and moreover, that there should be an age set for that reassessment. There was less agreement, however, regarding how often reassessment should take place or at what age it should begin.

Although there was general consensus that standardized testing is needed, there was less agreement about the types of testing. Almost all respondents felt that a vision test should be included, followed by a road test. The General Public consistently rated the need for cognitive and mental health assessments more often than did the Law Enforcement and Physician subgroups. Other criteria noted as important to the driving decision were: alertness, flexibility, hearing, memory, history of moving violations, and types of medication taken.

Overall, the respondents reported that, after the driver him- or herself, the responsibility for the driving decision should be shared by the Department of Motor Vehicles (DMV), family, physician, and law enforcement. The General Public and the Law Enforcement subgroups rated the physician as more important to the driving decision than did the Physician subgroup itself. Similarly, the Law Enforcement and the Physician subgroups rated the adult children significantly higher in responsibility for the driving decision than did the General Public subgroup.

IMPLICATIONS FOR POLICY CONSIDERATION

This study raises several issues that have been reported by other researchers. For example, Kulash (2000) noted, “Greater cooperation and specific procedures between the medical community and licensing agents is required. A prototype referral system for medical, legal, and licensing practitioners should be developed and evaluated.” (p.32). A clear pathway for referral, assessment, and licensure does not presently exist in Massachusetts.

Several of the findings from the current study provide additional support for some of the recommendations already put forward by the U.S. Department of Transportation and the National Highway Traffic Safety Administration, specifically to *encourage creative partnerships among*

elder advocates, governments, care providers, insurers, and others, and develop better rehabilitation and regulation of drivers. (in Kulash, 2000, p.9.)

- **Promote public awareness and encourage participation in safe-driving programs.**

Aside from responding that a reduction in insurance premiums was a positive incentive for undergoing a driving reassessment or taking a driving enrichment program, few of the respondents acknowledged the benefits of learning new skills to keep driving longer, reviewing the drivers' manual, and learning about vehicle modification. Vehicle modifications that promote safe driving, their purpose, and where to find them should be included in a public awareness campaign. The New York State Office for the Aging recently published a handbook, *When You Are Concerned: A Guide for Families Concerned About the Safety of an Older Driver*. (LePore, 2000). Topics covered included: how to know when it is time to become concerned, how to broach the subject of unsafe driving, how to get around after driving cessation, and how to keep an older person driving safely. The handbook was funded by the New York State Governor's Traffic Safety Committee and by the Allstate Insurance Foundation and additionally supported by the New York State Department of Motor Vehicles, New York State Police, and the New York State Department of Health. All states should consider such a public awareness campaign. We would also encourage the development of companion handbooks, which could be entitled, *When You Are Concerned: A Guide for Physicians...* and *When You Are Concerned: A Guide for Law Enforcement...*

Another guide book, *How to Help an Older Driver*, and its video companion, *The Older and Wiser Driver*, were developed by the AAA Foundation for Traffic Safety. These are both useful tools for beginning the dialogue and moving toward action steps. (AAA Foundation for Traffic Safety, 1999, 2000).

Since 1979, 7.5 million people have completed AARP's *55 Alive Driver Safety Program*. The charge for the eight-hour course taught in two sessions is \$10. Major co-sponsors include senior centers, area agencies on aging, banks, libraries, places of worship, and local businesses. Many states offer multi-year discounts on auto insurance premiums to individuals who have completed the AARP course (AARP, 2001).

Since stakeholders already acknowledge insurance premiums as an incentive, states should encourage insurance companies to expand premium reduction benefit programs for drivers who participate in safe-driving programs. Kulash (2000) reported that "legislation has been enacted in 33 states and the District of Columbia that requires all automobile insurance companies conducting business in those states to provide multi-year premium discounts to graduates of state-approved classroom driver improvement courses. Insurance companies in all states are required to provide discounts to those who complete these training classes" (p.20). Moreover, to increase the likelihood that individuals take advantage of reassessment opportunities, states might also explore policy options for reimbursement through insurance or a reduced rate offering, if referred by physician to such reassessment programs.

- **Develop better assessment tools and expand opportunities for reassessment and road testing.**

Kulash (2000) suggests a multiple-tier system of testing where the initial round of assessment serves as a screening tool and relies on simple, low-cost, easily administered tests. More in-depth assessment would be conducted only if deficiencies were noted in the initial phase. This would avoid the cost and emotional burden of unnecessary testing. Kulash (2000) further notes that the AMA has recommended that "physicians should work with their state medical

societies to create statutes that uphold the best interests of patients and community, and that safeguard physicians from liability when reporting in good faith” (p.18).

Programs such as *DriveWise: A Driving Fitness Evaluation Program* offered through Beth Israel Deaconess Medical Center, Boston, MA, offer a comprehensive evaluation of driving performance that includes a road test for individuals who may have compromised driving safety due to impairments in motor, cognitive, perceptual, and sensory abilities (DriveWise, 2001). DriveWise provides a useful model for the assessment and remediation of driving problems. (See Appendix C for a program description.)

Some of the findings have implications that were not previously addressed in the literature, specifically relating to law enforcement officers and physicians:

- Provide more education and training for police officers to sensitize them to older drivers and to the complications that can arise because of failure to cite or ticket and thus, inadvertently condone unsafe driving. The implication here is that the driver will benefit from early detection of unsafe driving and referrals for appropriate intervention.
- Disseminate information about available resources to promote safe driving. Physicians and Law Enforcement officers should have information fact sheets with referral information on local driving assessment and enrichment classes as well as a listing of vehicle modifications, their purpose, and where to find them.

In conclusion , the findings of this study strongly suggest that there is a need for stakeholder groups to come together to set policy guidelines to assure the maintenance of safe driving skills, to decide when reassessment should take place, to indicate who should be responsible (or share responsibility) for the decision to stop driving, and who should assume the costs associated with that decision.

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Appendix A

Current Opinion of the Council on Ethical and Judicial Affairs of the American Medical Association

E-2.24 Impaired Drivers and Their Physicians

The purpose of this Opinion is to articulate physicians' responsibility to recognize impairments in patients' driving ability that pose a strong threat to public safety and which ultimately may need to be reported to the Department of Motor Vehicles. It does not address the reporting of medical information for the purpose of punishment or criminal prosecution.

(1) Physicians should assess patients' physical or mental impairments that might adversely affect driving abilities. Each case must be evaluated individually since not all impairments may give rise to an obligation on the part of the physician. Nor may all physicians be in a position to evaluate the extent or the effect of an impairment (e.g., physicians who treat patients on a short-term basis). In making evaluations, physicians should consider the following factors:

(a) the physician must be able to identify and document physical or mental impairments that clearly relate to the ability to drive; and (b) the driver must pose a clear risk to public safety.

(2) Before reporting, there are a number of initial steps physicians should take. A tactful but candid discussion with the patient and family about the risks of driving is of primary importance. Depending on the patient's medical condition, the physician may suggest to the patient that he or she seek further treatment, such as substance abuse treatment or occupational therapy. Physicians also may encourage the patient and the family to decide on a restricted driving schedule. Efforts made by physicians to inform patients and their families, advise them of their options, and negotiate a workable plan may render reporting unnecessary.

(3) Physicians should use their best judgement when determining when to report impairments that could limit a patient's ability to drive safely. In situations where clear evidence of substantial driving impairment implies a strong threat to patient and public safety, and where the physician's advice to discontinue driving privileges is ignored, it is desirable and ethical to notify the Department of Motor Vehicles.

(4) The physician's role is to report medical conditions that would impair safe driving as dictated by his or her state's mandatory reporting laws and standards of medical practice. The determination of the inability to drive safely should be made by the state's Department of Motor Vehicles.

(5) Physicians should disclose and explain to their patients this responsibility to report.

(6) Physicians should protect patient confidentiality by ensuring that only the minimal amount of information is reported and that reasonable security measures are used in handling that information.

(7) Physicians should work with their state medical societies to create statutes that uphold the best interests of patients and community, and that safeguard physicians from liability when reporting in good faith. (III, IV, VII) Issued June 2000 based on the report "Impaired Drivers and Their Physicians," adopted December 1999.

Appendix B

U.S. Driver Licensing Renewal Procedures for Older Drivers

U.S. DRIVER LICENSING RENEWAL PROCEDURES FOR OLDER DRIVERS as of March 2001

[Initial licensing procedures](#) vary substantially in the United States. Renewal procedures, however, are not as varied. Applicants' driving records are checked to ensure there are no suspensions or revocations and, if not, upon payment of renewal fees new licenses are issued. Most states require renewal applicants to appear in person and to pass a vision test. The significant differences are the length of time between renewals, ranging from 2 to 8 years, and the existence of provisions in 20 states and the District of Columbia designed to guarantee that older adults continue to meet license requirements. Renewal procedures for older drivers include accelerated renewal cycles that provide for shorter renewal intervals for drivers older than a specified age, typically 65 or 70; a requirement that they renew their licenses in person rather than electronically or by mail where remote renewal is permitted; and testing that is not routinely required of younger drivers (vision and road tests, for example). These special renewal procedures for older drivers apply in addition to the license renewal procedures that exist in all states for dealing with licensed drivers of any age who no longer meet the standards for licensure because of physical or mental infirmities.

If a person's continued fitness to drive is in doubt, because of the person's appearance or demeanor at renewal or because of a history of crashes or violations, reports by physicians, police, and others, state licensing agencies may require renewal applicants to undergo physical or mental examinations or retake the standard licensing tests (vision, written, and road). States typically have medical review boards composed of health care professionals who advise on licensing standards and on individual cases in which a person's ability to drive safely is in doubt.

After reviewing a person's fitness to drive, the licensing agency may allow the person to retain the license, refuse to renew the license, or suspend, revoke, or restrict the license. Typical restrictions prohibit nighttime driving, require the vehicle to have additional mirrors, or restrict driving to specified places or a limited radius from the driver's home. Where the renewal cycle is not shorter for older drivers, licensing agencies have the authority to shorten the renewal cycle for individual license holders if their condition warrants.

The following chart indicates for the 50 U.S. states and the District of Columbia the periods for which licenses can be renewed, any accelerated renewal periods for older drivers, and other miscellaneous provisions applicable to older drivers.

State	Length of Renewal Cycle	SPECIAL PROVISIONS FOR OLDER DRIVERS	
		Accelerated Renewal	Other Provisions
Alabama	4 yr.	None	None
Alaska	5 yr.	None	Mail renewal not available to people 69 and older and to people whose prior renewal was by mail.
Arizona	Until age 65 ¹	5 yr. for people 65 and older	People 70 and older may not renew by mail.
Arkansas	4 yr.	None	None
California	5 yr.	None	At age 70, mail renewal is prohibited. No more than two sequential mail renewals are permitted, regardless of age.
Colorado	10 yr. (eff. 7/1/01)	5 yr. for people 61 and older (eff. 7/1/01)	Mail renewal not available to people 66 and older and to people whose prior renewal was by mail.
Connecticut	4 yr.	None that are safety related ²	None that are safety related ²
Delaware	5 yr.	None	None
District of Columbia	5 yr.	None	None

State	Length of Renewal Cycle	SPECIAL PROVISIONS FOR OLDER DRIVERS	
		Accelerated Renewal	Other Provisions
Florida	6 yr. with clean record; 4 yr. otherwise	None	None ³
Georgia	4 yr.	None	None
Hawaii	6 yr.	2 yr. for people 72 and older	None
Idaho	4 yr.	Drivers ages 21-62 have the choice of a 4- or 8-yr. license; drivers 63 and older will receive a 4-yr. license	None
Illinois	4 yr.	2 yr. for drivers ages 81-86; 1 yr. for drivers 87 and older	Renewal applicants 75 and older must take a road test.
Indiana	4 yr.	3 yr. for drivers 75 and older	None ⁴
Iowa	2 or 4 yr. at driver's option	2 yr. for drivers 70 and older	None
Kansas	6 yr.	4 yr. for drivers 65 and older	None
Kentucky	4 yr.	None	None
Louisiana	4 yr.	None	Mail renewal not available to people 70 and older and to people whose prior renewal was by mail.
Maine	6 yr.	4 yr. for drivers 65 and older	Vision test required at first renewal after driver's 40th birthday and at every second renewal until age 62; thereafter, at every renewal.
Maryland	5 yr.	None	None that are safety related ⁵
Massachusetts	5 yr.	None	None that are safety related ⁵
Michigan	4 yr.	None	None
Minnesota	4 yr.	None	None that are safety related ⁵
Mississippi	4 yr.	None	None
Missouri	6 yr.	3 yr. for drivers 69 and older and 21 and younger	None
Montana	8 yr. or 4yr. if by mail	4 yr. for drivers 75 and older	None
Nebraska	5 yr.	None	None
Nevada	4 yr.	None	None that are safety related ⁵
New Hampshire	4 yr.	None	Renewal applicants age 75 and older must take a road test.
New Jersey	4 yr.	None	None
New Mexico	4 or 8 yr. at driver's option	4 yrs. for drivers who would turn 75 in the last half of an 8-yr. renewal cycle	None
New York	5 yr.	None	None
North Carolina	5 yr.	None	People 60 and older are not required to parallel park in the road test.
North Dakota	4 yr.	None	None
Ohio	4 yr.	None	None
Oklahoma	4 yr.	None	None that are safety related ⁶
Oregon	4 yr.	None	Vision screening is required every 8 yr. for drivers 50 and older.
Pennsylvania	4 yr.	None	None
Rhode Island	5 yr.	2 yr. for drivers 70 and older	None
South Carolina	6 yr.	None	None
South Dakota	5 yr.	None	None
Tennessee	5 yr.	None	Licenses issued to people 65 and older do not expire ⁶
Texas	6 yr.	None	None
Utah	5 yr.	None	Vision test required for people 65

State	Length of Renewal Cycle	SPECIAL PROVISIONS FOR OLDER DRIVERS	
		Accelerated Renewal	Other Provisions and older
Vermont	4 yr.	None	None
Virginia	5 yr.	None	None
Washington	5 yr.	None	None
West Virginia	5 yr.	None	None
Wisconsin	8 yr.	None	None
Wyoming	4 yr.	None	None

¹In Arizona, the license is valid until age 65.

²In Connecticut, people 65 and older may choose a 2-year renewal cycle. A personal appearance at renewal generally is required. Upon a showing of hardship, people 65 and older may renew by mail.

³In Florida, only two successive renewals may be made electronically or by mail, regardless of age.

⁴In Indiana, until December 3, 1998, renewal applicants 75 and older were required to take a road test.

⁵Some states' licensing laws specifically prohibit licensing administrators from treating people differently solely by virtue of advanced age. Maryland law specifies that age alone is not a grounds for reexamination of drivers; applicants for an initial license age 70 and older must provide proof of previous satisfactory operation of a vehicle or physician's certificate of fitness. Massachusetts law prohibits discrimination by reason of age with regard to licensing. Minnesota and Nevada law specify that age alone is not a justification for reexamination. In Nevada, applicants for mail renewal age 70 and older must include a medical report.

⁶License fee reduced for drivers 62-64 and are waived for drivers 65 and older in Oklahoma; fees are

reduced for drivers 60 and older in Tennessee.

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Appendix C

Summary of the Beth Israel Deaconess Medical Center DriveWise Program

DriveWise is a collaborative effort involving an interdisciplinary team of health care professionals who work closely with one another in the evaluation and remediation of medically ill patients with driving problems. The team includes professionals from rehabilitation services, social work and neuropsychology. Each professional provides expertise in his or her respective field that is critical in making a final set of recommendations to the patient, family and physician regarding continued driving. While DriveWise was initially conceptualized to evaluate the older driver with dementia, the program has expanded its patient population to include other diagnostic groups of patients (e.g., traumatic brain injury, brain tumors, multiple sclerosis, and psychiatric problems). The program has a community-based advisory board with representatives from the Alzheimer's Association, the Registry of Motor Vehicles, the Department of Elder Affairs, AARP, and the Department of Public Health. Team members from DriveWise are active in public speaking and education of other health care professionals to increase public awareness about this important issue (O'Connor & Kapust, 2001).

THE GERONTOLOGY INSTITUTE

University of Massachusetts Boston

The Gerontology Institute at the University of Massachusetts Boston addresses social and economic issues associated with population aging. The Institute conducts applied research, analyzes policy issues, and engages in public education. It also encourages the participation of older people in aging services and policy development. In its work with local, state, national, and international organizations, the Institute has three priorities: 1) productive aging, that is, opportunities for older people to play useful social roles; 2) long-term care for the elderly; and 3) economic security for older people. The Institute attempts to pay particular attention to the special needs of racial and ethnic minority elderly.

Established in 1984 by the Massachusetts Legislature, the Gerontology Institute is a part of the University of Massachusetts Boston. The Institute furthers the University's educational programs in Gerontology. One of these is a multidisciplinary Ph.D. program in Gerontology. Through the Institute, doctoral students have the opportunity to gain experience in research and policy analysis. Institute personnel also teach in the Ph.D. program.

The Institute also supports undergraduate programs in Gerontology. Foremost among these is the Frank J. Manning Certificate Program in Gerontology, which prepares students for roles in aging services. Most students are over 60 years of age. Each year the Institute assists this program in conducting an applied research project in which students administer a large telephone survey. An Advanced certificate program is also supported by the Institute; its in-depth courses focus on specific policy issues.

The Institute also publishes the *Journal of Aging & Social Policy*, a scholarly, peer-reviewed quarterly journal with an international perspective.

Information about recent Institute activities can be obtained by visiting the Gerontology Institute's web pages: www.geront.umb.edu or e-mail: gerontology@umb.edu.