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Family and Friends
Concerned About an Older Driver

final report

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16. Abstract

To provide families, friends, healthcare providers, law enforcement personnel, and community and social services with information to assist older adults whose capabilities make them potentially unsafe to drive, a series of research tasks were conducted, including a literature review of public information materials on family and friends' involvement with the driving decisions of older adults, identification of current state and provincial requirements and practices regarding identification of high risk older drivers, and identification of information resource needs among professionals. Researchers also conducted a series of focus groups to determine the feasibility of involving family and friends in identifying and helping at-risk older drivers limit or stop unsafe driving. The final result of these efforts was the development guidelines and materials on what concerned families need to do to help at-risk older drivers.

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EXECUTIVE SUMMARY

Background

Americans are concerned about highway traffic safety and what to do about older people who no longer drive safely. In response to this concern, the *Traffic Safety Plan For Older Persons* was established by the National Highway Traffic Safety Administration (NHTSA) in 1993 to identify the nature of safety problems experienced by older persons and develop actionable solutions to these problems.

Unless there is compelling evidence to the contrary, older adults should be encouraged to maintain their lifestyle and activities, including driving. However, we can expect that if a person lives long enough, at some point, age–related changes and declines in health and functional ability may alter the performance of critical skills needed for driving,

NHTSA has proposed that individuals who have an opportunity to routinely observe the driving behavior of functionally impaired drivers may provide referrals for selective review by driver licensing agencies. This may be preferable to periodic screening of all older drivers. Individuals in this position include family members and friends who are frequently concerned about the driving safety of older individuals.

Project Objectives

To provide families, friends, healthcare providers, law enforcement personnel, and community and social services with information to assist older adults whose capabilities make them potentially unsafe to drive, NHTSA contracted with Creative Action Inc., the Beverly Foundation, and the National Mobility Institute to conduct a series of research tasks.

(1) Review literature and public information materials on family and friends' involvement with the driving decisions of older adults.

(2) Identify current state and provincial requirements and practices regarding identification of high risk older drivers.

(3) Determine information resource needs among professionals.

(4) Conduct a series of focus groups to determine the feasibility of involving family and friends in identifying and helping at–risk older drivers limit or stop unsafe driving.

(5) Convene an expert panel to provide additional input, insight, and suggestions for interventions.

(6) Develop guidelines and materials on what concerned families need to do to help at–risk older drivers.

Method

All research tasks were conducted with input from a panel of experts in a wide range of professions related to older driver issues. The literature review took a broad–based approach and included related topics of intergenerational linkages, caregiving, and issues of changing problem behaviors. A mail survey with telephone follow–up was carried out with 7 participating states to identify current state regulations and practices. Professionals attending professional conferences were asked what resources they need to work with older drivers and their families. Six focus groups with 50 participants were conducted among concerned family members, friends and professionals in St. Louis, MO and Akron, OH. Many basic questions were answered by this research. Key issues related to intervention by family and friends have been identified. Additional quantitative research is needed to develop definitive guidelines and materials.

Significant Results

Older drivers most at–risk of engaging in unsafe driving behavior are males with certain medical conditions, especially dementia or declining vision, who are not aware of or do not recognize their disabilities, and who have little contact with family members or friends. The independence driving provides is more important to older men than older women who are more willing to modify or stop driving. Family members and friends most likely to intervene to help the problem older driver modify or stop driving are those with strongest concern and caring for the older driver -- generally the same people who are likely to become caregivers or decision–makers for caregiving. Those who intervene are most likely to be a spouse, or an adult child of an older driver. Families' ability to function effectively influences their ability to intervene.

Many family members are able to recognize unsafe driving among older relatives and think of impairment in functional, rather than diagnostic terms. They characterize unsafe driving practices as forgetfulness, confusion, bad judgment, failure to follow the rules of the road, inability of drivers to see where they are going, and aggressive driving. Family and friends indicate signs of unsafe driving situations: crashes, new dents and dings on the older driver's car, neighbors, friends, police, others calling family members about the driving problem, and the family members' observing unsafe driving firsthand.

Some family members try to intervene on their own, often through "persuasion," removing car keys, making the car impossible to start, or removing the car altogether. Only a few have the support of the police, the DMV, or a physician. Most would like the support of these authority figures. At the same time, professionals who responded to the survey say they want more information and materials to help them in this supportive role.

Barriers to intervention include social and cultural norms that favor individual independence over public safety; national policies, state regulations and practices including those related to reporting problem older drivers; lack of support from authority figures; lack of public education and information about public health risks; lack of customer–focused alternative transportation services; and an inability or unwillingness to recognize the problem and change to driving safely.

Potential Applications

Families, friends, and professionals in focus group discussions, and expert panelists recommend a common set of solutions to involve family members and friends: a social marketing campaign with materials that indicate signs of unsafe driving, its consequences, and specific examples of intervention; federal and state policies and regulations mandating reporting and retesting; development of functionally appropriate tests with cut–off scores to identify at–risk drivers of any age; regional driving assessment clinics; classes to improve driving skills; establishing insurance providers as gatekeepers; creating linkages with DMV's and insurance providers; developing customer–focused alternative transportation; establishing a more prominent role for authority figures; and providing transportation planning and counseling at the local level. This set of solutions should be broadly targeted to the general public, professionals, and responsible authorities.

Research results indicate use of a 4–part model for application in additional research and development of coordinated intervention programming. Features include: identification of high risk functional disabilities of the problem older driver; characterization of families who are likely to intervene; formal community supports; and informal social networks, within the social and cultural environment.

RECOMMENDATIONS

Based on the findings and conclusions presented, the authors recommend that the following activities to remove the barriers to intervention and motivate family members and friends to intervene in driving decisions of at–risk older drivers be considered.

- Develop a comprehensive, cohesive, and consistent social marketing campaign that achieves similar changes in national behavior as have the MADD and Seat Belt campaigns:
  - To identify unsafe driving as a public health risk and make intervention socially acceptable and responsible (e.g., "Friends don't let friends drive unsafely");
  - Targeted to the general public and authority figures: healthcare; law enforcement; DMV; policymakers; lawmakers and the courts.
  - With cohesive and consistent multimedia communications, themes, and messages that identify specific indicators of unsafe driving, consequences of unsafe driving, specific examples of intervention, and portray families and friends who:
    - Believe their older driver is in imminent danger to themselves and others on the road
    - Believe they have a "responsibility" for and to their older person
    - Will be the primary or secondary caregiver
    - Are able to make decisions for their elder's good, over their elder's objections
    - Are able to overcome any feelings of disrespect or guilt
    - Have the support or at least the tacit approval of other family members
    - Are willing to provide or secure transportation when their older driver stops driving
    - Perceive that alternative transportation exists
    - Attend support groups dealing with functional disabilities and/or caregiving
    - Have the support of the physician, law enforcement personnel, and the DMV for reporting and retesting.
- Establish and implement federal and state policies and regulations mandating reporting and procedures for retesting

- Enforce enacted laws; require retesting and license revocation for people with too many traffic tickets or who cannot pass retest; have "no loopholes".

- Develop functionally–appropriate assessments, tests, and measures with cut–off scores to identify at–risk drivers of any age.

- Account for differences in driving performance styles between young and old without an age bias

- Establish at least one driving assessment clinic in regional metropolitan and suburban areas

- Publicize classes to improve driving skills

- Enlist the help of insurance companies as gatekeepers

  - Establish an interactive relationship between DMV's and insurance companies

  - Renew insurance only if relicensed; write requirements for insurance into state code

  - Discount insurance premium for taking driving classes

- Improve current alternative transportation to meet the needs of those who have stopped driving

  - Plan and implement new services that not only meet riders' travel needs but also "pools money now going for insurance and car upkeep into fund to get a ride somewhere"

- Develop and implement mobility training programs to help the elderly learn to use alternative transportation services

- Develop national policies and provide sufficient funding to support local, customer–focused, alternative transportation services

- Give authority figures (healthcare community; law enforcement personnel; DMV) the information and tools to make them responsive to families who need assistance through: pamphlets and other reference materials that list signs of driving impairment; reference materials to help older drivers plan for a change in mobility; and a pamphlet listing costs and benefits of driving versus alternatives to driving

  - Develop proactive and cooperative measures for the police and DMV's to help get at–risk drivers to stop driving/help families and friends intervene

  - Develop ways to involve professionals in working with older adults and family members to plan early for changes in mobility

- Establish transportation planning and counseling along with retirement planning programs

- Encourage social service agencies to establish support groups for older drivers, families, and friends

- Conduct additional research related to family and friends intervening to increase knowledge about interventions and test social marketing campaign strategies and materials

BACKGROUND

Statement of the Problem

Americans are concerned about highway traffic safety and what to do about older people who no longer drive safely. In response to this concern, the *Traffic Safety Plan For Older Persons* was established by the National Highway Traffic Safety Administration (NHTSA) to identify the nature of safety problems experienced by older persons and articulate actionable solutions to these problems.

This investigation was initiated to determine if individuals who have the opportunity to routinely observe the driving behavior of functionally impaired drivers are able to identify the unsafe older driver and intervene on that driver's behalf to help limit or stop unsafe driving. The study was also initiated to determine if family and friends may be a better trigger for more extensive testing than periodic screening of all older drivers. People in this position include family members and friends who are frequently concerned about the driving safety of older relatives and peers. NHTSA–sponsored research (McKnight and Urquijo, 1992) and the Illinois Retired Teachers Association, Inc. (1990) survey have shown that family members and friends rarely report driving difficulties to regulatory authorities. The ability of families to deal with changes in older adults' functioning has a lot to do with how the family deals with problem situations (Aizenberg and Treas, 1985; Sterns, Weis, and Perkins, 1984).

To ensure that high risk older drivers are identified before they are involved in an injury or crash, the public has begun to pressure state licensing agencies to test older drivers more extensively and more frequently. The use of testing for older adults may be reasonable, if it can be shown that potential impairment is related to higher risk of crashes, and tests can detect the capabilities known to be associated with driving risks (Hunt, 1994; U.S. Department of Transportation National Highway Traffic Safety Administration, 1992). Currently, increased testing is problematic because it is imprecise, expensive, time consuming, and is perceived by many people to be unfair and discriminatory. A blanket driving licensing requirement based on age alone would be difficult to defend as chronological age, per se, does not lead to an increased risk of crashes (Marotolli, Cooney, Wagner, Doucette, and Tenneti, 1994; Marotilli, Ostfield, Merril, Perlman, Foley, and Cooney, 1993).

Unless there is compelling evidence to the contrary, older adults should be encouraged to maintain their lifestyle and activities, including driving. However, we can expect that if a person lives long enough, at some point, age–related changes and declines in functional ability due to disease may alter the performance level of critical skills needed to drive.

Given their responsibilities for the diagnosis and treatment of health problems, health professionals are also in a critical position to detect functional and medical conditions that may compromise driving. They also have the responsibility of advising clients about the level of appropriate activities, including driving, in relation to their physical condition and medications involved in treatment. The degree to which medical professionals are aware of their responsibility to assist individuals in enhancing their driving, limit when or whether they should

drive, or report older adults who should not be driving has not been systematically researched. (Indeed, the nature of reporting responsibility is debated among medical professionals themselves). Health professionals need explicit guidelines and assessment tools to identify and report patients with medical impairments that jeopardize safe driving (Marotolli, 1993; Rueben, 1993).

Project Objectives

Families, friends, physicians, law enforcement, and social and community services should be provided with information to assist older adults whose capabilities make them potentially at–risk for unsafe driving. To determine the surest course of action, NHTSA contracted with CREATIVE ACTION INC. the Beverly Foundation, and the National Mobility Institute to conduct a series of research studies:

- Review the literature and public information materials on family and friends' involvement with driving decisions of older adults;
- Identify current state and provincial requirements and practices regarding identification of high risk older drivers;
- Determine information resource needs among professionals interested in issues concerning older drivers;
- Conduct a series of focus groups to determine the feasibility of involving family and friends in identifying and helping at–risk older drivers;
- Convene an expert panel to provide additional input, insight, and suggestions for interventions, and
- Develop guidelines and materials on what concerned families need to do to help at–risk older drivers.

This report summarizes the results of these research activities.

FOCUS GROUP RESULTS

Overview

A series of focus groups was carried out to explore the feasibility of involving family and friends in assisting problem older drivers limit or stop unsafe driving. Results have been used to formulate solutions and interventions, and can be used in the future to develop themes and messages for a comprehensive, cohesive, and consistent social marketing campaign for driving safety.

The focus group technique represents a small group dynamics approach to social and other types of marketing research. Typically, eight to twelve specifically recruited participants (screened according to defined client specifications) are engaged in a roundtable discussion directed by an experienced moderator. This type of interactive environment encourages involvement among participants. Ideas and motivations are often uncovered which do not typically surface through conventional survey methods.

The focus group interview seeks to develop insight and direction rather than definitive or precise measures. Because of the size of the panels and screened recruitment employed, it should be clearly understood that the work is exploratory in nature. The findings must be regarded in relationship to the literature review and be considered directive for future quantitative study. Findings cannot be projected to make predictions about a larger population. Focus groups are conducted for the purpose of qualitative insight, such as gaining an understanding of the categories of thought, attitudes, and behaviors about specific issues; understanding reasons why people hold certain opinions or behave the way they do; and obtaining language target groups use to talk about issues for later use in communications to those targets, including information materials and quantitative survey questions.

Method

Sample

Six focus groups with a total of 50 participants were conducted in St. Louis, Missouri, and Akron, Ohio, during May and July 1996. In St. Louis, two groups were conducted among female family and one among male family members concerned about an older driver. An additional group was conducted among professionals who work with at–risk older drivers and family and were serving as faculty at the International Symposium on Alzheimer's Disease and Driving sponsored by the Washington University School of Medicine.

In St. Louis, groups among female family members were divided into those whose family member had stopped driving and those whose family member was currently driving. Group participants were selected for their concern about an older driver with whom they have a close relationship; the older driver either still drove or stopped driving within the past 2 years; and the older driver had functional limitations caused by Alzheimer's disease or other dementia; vision disorder due to macular degeneration, cataracts, glaucoma or other vision impairment; or other

condition, such as arthritis, diabetes, heart disease, stroke, etc., that may impair his/her ability to drive safely. Participants displayed a range in age from under 25 to over 80, martial status, relationship to the older driver (although most were spouses or adult children) living arrangements with the older driver, ethnicity, education, and number and ages of children.

In Akron, one group consisted of females who were concerned about an older driver and the other among a similar group of males. All participants were over age 55 with most over the age of 70. Most said they were concerned about a friend, but many were concerned about a sister, brother–in–law, or other peer group relative.

Design

Discussions concentrated on issues related to the feasibility of family and friends intervening on behalf of an older driver to assist that at–risk individual in modifying or stopping driving. Panelists were encouraged to share their stories and experiences related to unsafe older drivers, to relate interventions they had tried or would consider trying in this endeavor, and to evaluate these interventions for broader use among others who are concerned.

After introductions, family and friend panelists first discussed their concerns about a specific older driver with accounts and anecdotes about problem driving situations and outcomes and awareness of related medical conditions. Next these panelists discussed their involvement, if any; the involvement of professionals; barriers panelists faced in assisting the unsafe older driver to modify or stop driving; the resources the panelists used, if any, to assist them in getting the unsafe older driver to make safe driving decisions; and perceived transportation alternatives to driving for older adults.

In Missouri, family panelists were then shown a summary of the (then) pending Missouri state legislation for reporting impaired drivers, asked to rate their approval, and discussed their reasons for approval or disapproval of this legislation. In Akron groups, the discussions among friends focused on issues of reporting. Finally, panelists discussed their perceptions of the role family and friends may play in helping unsafe older drivers, what resources families and friends of unsafe older drivers need to help in the situation, and where to expect to find those resources.

The focus group among professionals in St. Louis followed a similar pattern. Group objectives centered on obtaining an understanding of the perceptions professionals have regarding the role of family and friends in assisting at–risk older drivers make safe driving decisions including:

- How families become aware of the problem
- Barriers to family involvement
- Ascertaining the role of professionals in assisting older drivers, family and friends who may need interventions for driving modification and cessation.

Professionals were asked to consider and discuss how they perceive the problem of family/friend intervention; how professionals come in contact with family members; how professionals overcome barriers to family involvement; what resources they use; and unmet needs among families, friends, and professionals for helping at–risk older drivers and involving family members.

Focus Group Objectives

Specific focus group objectives were as follows:

- Obtain an understanding of the characteristics of family and friends who might help a problem older driver modify or cease his/her driving.
- Evaluate levels of awareness and observation of functional limitations that lead to problem driving.
- Explore perceptions of current and potential ways family/friends may identify older adults who have problems driving safely.
- Assess the ability of family/friends to help older people modify their driving on their own without legal procedures.
- Investigate barriers to and motivations for family and friends regulating/reporting in their relationships with older drivers, such as levels of family functioning, and ability to make decisions regarding older family members; ability of friends or peers to keep older drivers from driving unsafely.
- Explore issues and concerns including fear among family and friends about meddling in older drivers' private lives; loss of mobility through driving cessation of spouse and perceived presence of transportation alternatives to support mobility.
- Assess the use of support groups such as health care professionals, driving assessment clinics, social service agencies, police, courts, and volunteer programs to assist older drivers.
- Determine levels of knowledge regarding state reporting procedures and requirements and willingness to report to a variety of authorities: DMV, physician, and others who may assist in driving intervention.
- Determine how state reporting procedures encourage or hinder family/friends reporting, including concerns that the state will inform who reported the older driver.
- Identify the conditions under which family and friends would be likely to intervene to improve the driving decisions an older driver makes.

Summary of Focus Group Findings

Characteristics of Those Who Intervene

Those most likely to intervene to help the problem older driver modify or stop driving are those with strongest concern and caring for the older driver—generally the same individuals who are likely to become caregivers or decision–makers for care giving. Interventionists are most likely to be a spouse, or an adult child of an older driver. This suggests that a marketing campaign targeted to these family members, without alienating other relatives or friends, would be most successful.

Awareness and Observation of Functional Limitations

Virtually all family members and friends are able to recognize unsafe driving behavior among the elderly of their concern. While many family and friends associate unsafe driving with specific medical conditions, many others do not do so. The common denominator for discussing impairments is functional, rather than related to a specific medical condition or diagnosis. Further, relatives seem to recognize signs of impairments well before a triggering incident or medical diagnosis occurs. Some individuals are faced with family members who refuse to go to a physician. This suggests that marketing materials should address areas of functional impairment, including early signs of medical conditions that would impair driving performance, and how to recognize the signs.

Identification of At–Risk Driving

Family and friends characterize unsafe driving among older adults as forgetfulness, confusion, bad judgment, and/or not following the rules of the road; inability to see where they are going; and aggressive driving. Indicators of unsafe driving situations are an accident; new dents and dings on the older driver's car; neighbors, friends or others calling family members about the driving problem; police calling family members about the driving problem; and the family member or friend observing the unsafe driving while a passenger. Although most family and friends report a change from relatively safer driving to unsafe driving, a few noted unsafe driving over much of the family member's lifetime.

Specific patterns of unsafe driving family and friends mention include: "driving too slow on the expressway," "drives too fast and he'll drive right up on a car;" "weaves in and out of lanes;" "car parked in the yard;" "straddled the line frequently;" "slowed down for green lights;" "stopping for green lights;" failed to stop for red lights;" "ignoring red lights; "won't use turn signals;" "didn't look when backed out, didn't use the mirrors;" "couldn't find the gas pedal;" "couldn't find the brake". Interestingly, family members, friends, and professionals agree that unsafe older drivers also have noticeable impairments in the performance of other daily activities.

These findings suggest that family and friends could be encouraged through social marketing to look for signs of unsafe driving, along with other indicators of functional impairments, to recommend that the elder undergo a driving assessment by qualified personnel. Findings also

suggest that geriatric assessment clinics and social service agencies that often deal with caregivers should consider establishing driving assessment clinics to assist older adults and families in making safe driving decisions.

Ability of Family Members and Friends to Intervene

A number of family members and friends had tried to intervene to get the problem older driver to modify their unsafe driving behavior or stop driving. Most who had success in intervening did so on their own, generally by removing the car keys and/or the car. Only a few had the support of a physician. None had the support of the police or DMV, although a some had tried and still others would have liked these authorities to have helped.

Although interventionists wanted and expected the support of physicians, the police, DMV, and lawmakers in their intervention attempts, this support was often lacking. Physicians did not always agree with family members about the seriousness of the problem. Given the lack of social norms about driving cessation and the strength of cultural norms for independence and mobility, the police and DMV officials often missed opportunities to intervene in the interest of public safety. This suggests that physicians, police, and others in a position to protect public safety, need to be informed about:

- How to recognize impaired drivers
- Assist family members in their interventions
- Support legal efforts to get unsafe drivers off the roads
- Advocate for public safety when independence and mobility become a threat to others.

Levels of Family Functioning and Caregiving: Motivations and Barriers to Intervention

Although intervention is difficult, at best, for those who intervened or potentially will, it appears that those who intervene are generally able to cope with most family interactions and relationships. This ability to cope, along with a strong concern for safety and feelings of responsibility, appears to provide interventionists with the motivations they need to intervene. Only a few would not be able to intervene. In these instances, the family member or friend does not define unsafe driving as serious enough for intervention at this time or is not able to cope with the perceived consequences of intervention and driving cessation. Conflicts over the perceived role reversal with the child guiding the parent and guilt in intervention; dependence by the older driver for rides; and being too busy to provide rides served as barriers to intervention.

These findings suggest that a social marketing campaign to remove unsafe drivers from the roads may help some of those less able to cope with an elder's impairments. Findings also suggest that social service agencies may increase their client base through outreach efforts to assist families and older adults early in the impairment process when the elder is still driving. Additional

opportunities exist for transportation providers to target older adults who may be transitioning to driving cessation.

Fear of Meddling

Fear of meddling appears to be a minor concern among family and friends. Most family members said they want to be told by friends, neighbors, co–workers, or others about an older relative's unsafe driving; most age–peers said they want to tell family members. Few family and friends said they would not tell the at–risk older driver, his/her family, or authorities about the elder's unsafe driving because they did not "stick their nose in someone else's business." Only one relative—a daughter–in–law—expressed the belief that she is not a "close enough relative" to intervene and consequently left that task to her husband and his sister. A number of friends discussed their intervention on behalf of others, not all of which resulted in success. A few family members spoke negatively about non–relatives who could have intervened but chose not to.

Alternative Transportation

Many panelists were aware of alternative transportation, including public fixed route and demand responsive bus services, the Metro Link train service in St. Louis, church and organization services, and taxi cabs. Most panelists said they would encourage their older relative to use these alternatives, especially if the services met their travel needs. Some perceived current services to be inadequate to meet those needs. A few panelists said they or the older family member use these alternatives. A few others said they would not let their older relatives use public transportation. Most agreed that public policy initiatives should improve transportation alternatives so that older adults now and in the future will be able to give up driving more readily with the knowledge that they will remain independent and mobile.

These findings suggest that family and friends of at–risk older drivers should be targeted as well as older adults for support of alternative transportation services. Further, availability of transportation alternatives should be included in local social marketing campaigns.

Use of Community Supports

Many panelists mentioned going to their physician for help. Because a number of panelists were recruited with the assistance of the Alzheimer's Association using their client base, it is not surprising that the most frequently cited community organization resource in St. Louis is the Alzheimer's Association. While this agency provides support for driving cessation for older adults as well as family members, it appears that unsafe driving may not be the primary reason family members first go to this agency for help. However, family members find a great deal of support at this agency through attending support groups and getting information related to the disease, and ideas for intervention. Generally, those affiliated with the Alzheimer's Association mentioned contacting the police or DMV for help. No one mentioned using another social service agency for help in driving cessation. Only one family member mentioned going to a driving assessment clinic. She and her husband went to a driving clinic 5 years earlier, when her

husband, the at–risk older driver, perceived he was experiencing memory loss. He continued to go periodically for testing. No one mentioned being aware of or going to a volunteer organization for assistance in intervention. Further, professionals believed that there were few resources for older drivers and families related to safe driving decisions. Professionals also documented their unmet needs for information and education tools for themselves and for distribution to family members and at–risk older drivers.

These findings suggest that the physician is the most frequent contact for issues related to safe driving. Given the reluctance of many physicians to get involved with families and issues of driving cessation, the social marketing campaign must include and target healthcare personnel. Other community resources, such as social service agencies, police, and courts, should be included as well. Findings also indicate that volunteer groups that support safe driving decisions may be particularly valuable, provided these are guided and facilitated by qualified personnel. Ideally, community resources should have the ability to refer family and friends to a regional driving assessment clinic.

Knowledge of State Reporting Procedures

Most panelists in Missouri and Ohio do not appear to have a good knowledge of reporting possibilities. Those who had tried to report for a retest or license revocation knew they could not report. Except for those affiliated with the Alzheimer's Association, most St. Louis panelists were unaware of then-pending legislation that would permit reporting in Missouri.

Willingness to Report

About two–thirds of panelists said they would be willing to report a problem older driver. Several had tried to report to the DMV for retesting and/or inquire about procedures for getting a license revoked. With no reporting regulations in Missouri and Ohio at that time, attempts to notify state authorities did not result in positive action. A number had also tried to enlist the help of the physician. While a few had success, others did not.

The remaining third of family and friends who hesitated to report focus their concerns on:

- Reporting as a "last resort," to be used when all else has failed
- Anonymity and confidentiality for the reporter
- Older driver not yet "bad enough" and knowing when unsafe driving is "really bad"
- "Revenge" and "retribution"
- Reporting leading directly to license revocation without a hearing or retest.

Focus group findings indicated a willingness to report among family members, especially when their own interventions have not succeeded. Results also suggest that issues of anonymity and

confidentiality, while a barrier to a few, may be overcome through regulations that negate perceptions of possible "revenge" by the problem older driver. Development and institution of reporting regulations may coincide with that of the social marketing campaign to enhance awareness and knowledge among state residents.

Conditions Conducive to Intervention

Family and friends are likely to intervene under the following conditions:

- They believe the older driver is in imminent danger to themselves and others on the road
- They believe they have a "responsibility" for and to the older person
- They will be the primary or secondary caregiver
- They are able to make decisions for the elder's good, over the elder's objections
- They are able to overcome any feelings of disrespect or guilt
- They have the support or at least the tacit approval of other family members
- They are willing to provide or secure transportation when the older driver stops driving
- They perceive alternative transportation exists
- They attend support groups dealing with functional disabilities and/or caregiving
- They have the support of the physician, law enforcement personnel, and the DMV for reporting and retesting.

These findings suggest that family and friends most likely to intervene feel both a social responsibility (for public safety) as well as a responsibility in caring for the problem older driver. Those who intervene are themselves able to make decisions and belong to families who are also capable of decision–making. They also are willing to engage in increased caregiving through providing some or all of the unsafe older drivers' travel needs. The presence of alternative transportation is a factor for some in their intervention, as is participation in a support group.

LITERATURE REVIEW

Overview

A comprehensive review of literature and information resources was carried out to form the basis of an approach to discussing key issues and identifying potential solutions for safe driving. Because little information exists in these specific areas, a broad–based literature search was carried out for the following related topics:

- Family functioning and decision–making regarding relationships and care of older adults including support networks of the elderly; intergenerational relationships; and caregiving,
- Family members' and friends' awareness of medical conditions and functional impairments that impact driving safety,
- Substitute judgment; family and friends making decisions about medical procedures,
- Role of the health care community in assisting family and friends,
- Other public health concerns and issues of professional ethics,
- Social marketing campaigns, and
- Information resources targeted to older drivers and pedestrians and distributed by national, state and provincial government agencies, and not for profit organizations.

Objectives

Objectives of the literature and information resources review were to determine:

- Current knowledge about the feasibility of involving family and friends in assisting at–risk older drivers;
- Which groups of functionally impaired drivers need interventions; and
- What types of intentions family members can and should provide.

Methods

Key researchers and project consultants involved in areas related to the topics identified above were contacted to obtain relevant published and unpublished literature, information materials and data. With COTR assistance, the NHTSA librarian conducted a database search of relevant articles. A call for information resources was published in quarterly editions of the Transportation Research Board's Older Driver Committee Newsletter.

Draft reports were prepared including a review of the literature, an annotated bibliography, and content analysis of information resources, and were reviewed by the COTR, project consultants and other expert panelists. Reviewers provided or suggested additional literature and informational materials, which have been included in the final literature and information resources review report.

Summary of Findings

Identification of At–Risk Older Drivers

Most older adults continue to drive into very old age. While many older adults continue to drive safely, others develop declining functional abilities that negatively impact safe driving. Most older drivers compensate for functional changes on a voluntary basis by limiting their driving behavior to safer driving conditions. However, older drivers who are not aware of or refuse to admit to declining driving abilities are at–risk of involvement in crashes.

Family and friends may be in a good position to detect problems and intervene to assist the unsafe older driver to limit or stop driving. Family and friends often look to professionals for help and advice in these matters.

Older males are more at–risk than older females of unsafe driving. Older male drivers currently outnumber older female drivers even though older females outnumber older males about 2 to 1. Older males are also more likely than older women to be involved in fatal crashes.

Risk of crash involvement for older drivers is associated with number of miles driven, changing functional abilities, and the presence of certain medical conditions which impact vision, cognition, and physical functioning (Marottoli, 1993). It is estimated that about 10% of individuals have medical conditions that may lead to unsafe driving behaviors. Older drivers with cognitive and visual impairments may be most at–risk because many are not aware of or do not recognize their impairment.

These findings suggest that a subpopulation can be targeted for more focused and immediate intervention: males with particular medical conditions or functional impairments. Several information resources are available to family and friends to help them self–assess their older relative's risk of unsafe driving.

Currently, the best assessment for families to identify risk is available at driving assessment clinics that have established profiles on risk factor indices for at–risk drivers. There are no assessments to measure families' ability or willingness to intervene for safe driving. The Readiness for Change Model (Prochaska, Norcross, and DiClemente, 1994) may be adaptable for use to create a "Willingness to Intervene" measure.

Feasibility of Involving Family Members

Results of the 1990 AARP Intergenerational Linkages Survey (Bengston and Harootyan, 1994) demonstrate that ties exist across generations; adult children are generally able (have the opportunity) and are willing (through emotional ties and affection) to help older family members (parents, grandparents) maintain their well–being. Results also suggest that some adult children would also be generally able and willing to help older family members modify or stop unsafe driving. However, an unknown percent of problem drivers also have problematic relationships with family members or no family at all who would be willing and able to help (Noelker, 1996).

It is clear that contact with and attachment to parents is weaker for fathers than for mothers, even when parents remain married. Getting a child to intervene with the mother and her driving problems will be easier because of the nature of the mother/child relationship. Women are generally more compliant, more likely to respond to normative expectations, and less caught up with the norms associated with the automobile and independence. Older males are far more likely than older women to be married. Consequently, the wife must deal with the problem. We may ask how receptive elderly husbands are to their wives' advice to make major lifestyle changes, such as stopping drinking, smoking, or driving. Men who are problem drivers may need to be coerced more often than women into compliance. However, coercion must used with care; older males have the highest and fastest growing suicide rate (Noelker, 1996).

Consideration must be given to cohort effects and intergenerational linkages between future generations. While older male drivers currently outnumber older females, driving patterns among baby boomer women indicate increasing numbers of women will continue to drive at older ages. Boomer women are more inclined to engage in unhealthy behaviors shunned by older women (smoking, substance abuse, etc.). Women's death rates from lung cancer, heart disease, and other lifestyle conditions are increasing and approaching those of men. Perhaps the boomer generation will be more inclined to engage in unsafe driving. This suggests that interventions targeted to the elderly of today may not be appropriate for future cohorts (Noelker, 1996).

Caregiving

As older adults begin to drive more and more infrequently, family members, friends, and neighbors often provide transportation. Giving rides to older adults may serve as a marker of one's entry into the caregiver/care recipient roles. Whitlatch and Noelker (1996) found the characteristics influencing the likelihood that a family member will assume the caregiving role are classified as "predisposing" (race, age, gender), "enabling" (access to resources, education), and "need factors" (onset of illness, loss of functioning).

Primary caregivers (usually a spouse or adult daughter) are the direct providers of care, performing and overseeing activities and tasks (including driving) for the care recipient. Seventy–five percent of primary caregivers are close family members. Women are more likely than men to assume this role. Men, however, are more likely than females to provide assistance

in decision–making and financial management. Secondary caregivers are unpaid individuals who provide supplemental assistance (Whitlatch & Noelker, 1996).

The ability of families to take action in the area of caregiving is related to their degree of control over their environment and ability to adjust to change. This range in ability follows 5 levels of functioning which from highest to lowest are: mastery, coping, striving, inertia, and panic (Sterns, Weis, and Perkins, 1984). Families who function at the mastery level would be best able to cope with the older drivers changing abilities and intervene to help, while those at the panic level would be least able to help.

Only 25% of caregivers are friends, extended kin, or neighbors. In the absence of family ties, women are more likely than men to have friends as caregivers. Friends and neighbors are an important source of help. Seventy percent of adults provide assistance to friends and neighbors in their communities (Bengston and Harootyan, 1994).

Interestingly, at least one research study reported that individuals who provide rides for functionally impaired elderly are the same people who also provide informal support activities for those elderly (Kington, Reuben, Rogowski, and Lilliard, 1994). The literature on intergenerational linkages and caregiving indicates family members generally help the older generation when help is needed. However, the types of family relationships and levels of family conflict indicate some families provide more help than others; some families can cope better with family responsibilities than others. For example, 48% of adult children report having a helping relationship with their elderly mothers while only 38% report having a helping relationship with their fathers (Bengston and Harootyan, 1994).

However, there is no clear indication of the percent of families who fall into different levels of conflict. Presumably, helping families have less conflict and better coping skills than non–helping families. One can surmise that more supportive families have disproportionately fewer problem drivers, while alienated, independent, and conflict–ridden families have more.

Readiness for Change

Prochaska, Norcross and DiClemente (1994) in *Changing for Good* discuss the process of changing problem behaviors for individuals who behave in undesirable ways. Research results reveal stages in the change process that those with problem behavior must undergo in order for change to occur. Before change can occur, the problem behavior must be recognized. Precontemplation is the stage prior to problem recognition. Thinking of problem driving, in this stage there is problem denial, resistance to modifying unsafe driving behaviors, or driving cessation. During the contemplation stage, the at–risk driver reevaluates the driving situation. During the action stage, "healthy responses are substituted for problem behaviors." Problem driving is substituted by modifications for safer driving patterns or driving cessation. At–risk older drivers who have no family and friends to serve as caregivers may be less likely to change or modify their problem driving behavior. Such support would be important for older drivers who have reached the action stage, and need help to change or stop unsafe driving.

Unlike other problem behaviors, such as smoking or alcoholism, the maintenance stage does not generally pose a threat to older drivers for reversion to unwanted behaviors. The stages and processes in the model including problem denial, problem recognition, preparation for change, taking action to change, maintaining change, and ending the problem permanently are the same for stopping smoking, substance abuse, weight gain, or unsafe driving.

Recognition of Medical Conditions by Family and Friends

Many family members and friends are aware of older drivers' medical conditions through direct observation or hearing about the elders' problem driving situations. Many are also aware of unsafe driving practices. However, family members of older drivers with Alzheimer's disease may have difficulty recognizing poor driving ability. Other family members may be unaware of or not recognize either medical conditions or unsafe driving practices.

In the AARP study on intergenerational linkages (Silverstein, Lawton, & Bengston, 1994), about as many parents and adult children reported strong helping as reported independent relationships. And although most frail elderly have a family member or friend they can count on for help, one may not assume that all older drivers in independent families will in fact receive some level of help should they become unable to drive.

It is important to encourage family and friends to assist the problem older drivers. Perhaps more importantly, those less likely to involve themselves with a problem older driver must be motivated to help as well.

Interventions

The vast literature on caregiver interventions focuses primarily on treatment effectiveness outcomes. Treatments include group interventions, or psychotherapeutic approaches, such as support groups; educational approaches which emphasize learning new care–related or problem–solving skills; and family systems approaches that involve both the caregiver and care recipient in the development of a care plan (Zarit and Teri, 1990). Studies that review levels of success reveal no clear direction. Treatments are effective mainly among caregivers who are receptive to them (Brugois, Schulz, & Burgio, 1996).

The meager literature on family and friends in assisting unsafe older drivers focuses on one of 3 major steps in the sequence of intervening. The first step in intervening uses the family member's direct observation as a passenger to identify how well the older adult drives (Malfetti and Winter, 1991). This set of interventions relies on the family member's observation skills. The family member will decide whether intervention is even necessary and if so, begin plans to take action. The family members observations should include noting the extent to which the older driver:

- Copes with traveling along familiar routes
- Sees out of the car

- Operates the controls
- Observes the rules of the road

The second step in intervening may consist of specific suggestions to the older driver to take remedial action to measure or improve driving skills. Interventions consist of the following (Malfetti and Winter, 1991):

- A self–assessment test for driving performance. The test should be user friendly; fun or entertaining; safe, valid and reliable; endorsed by national agencies, for example, NHTSA, AAA, AARP, etc. (Nielsen, 1996)
- A driver improvement course
- An eye exam
- A medical exam and physical fitness test
- Review of OTC and prescription drugs the older driver may be taking
- A test for a graded license using valid and reliable assessment tools

The final step in intervening specifies actions family and friends can take to stop the older driver from driving (Hunt, 1994). These include:

- Exchanging the car keys with a set of useable keys
- Disabling the car by disconnecting the distributor cap or car battery
- Removing the car by selling it, or parking it around the corner
- Providing rides, or chauffeuring, the impaired older driver
- Meeting mobility needs by arranging for alternative transportation instead of the unsafe older driver driving himself or herself
- And, as a last resort, reporting the problem older driver to state authorities in states that permit such reporting

Healthcare professionals influence the older driver in driving decision–making, and should play an important role in assessing driving abilities. However, mandatory physician reporting exists in few states. Family members may expect more help from healthcare professionals than many are able or willing to provide (Reuben & St. George, 1996).

A number of cultural, social, and psychological barriers may prevent family members from intervening. Ethical considerations for intervention or keeping a potentially unsafe older adult from driving are articulated by professionals who attempt to balance public safety and personal freedom.

There is no quantitative data to indicate the proportion of family members who tried the specific interventions indicated above or the outcomes. A longitudinal study following older drivers and potential caregivers is indicated to learn more about interventions used and their success rate.

Content Analysis

Information materials about driver safety were reviewed. A content analysis was carried out to determine the types of organizations that tend to publish such materials; the degree to which the materials target family and friends versus other concerned groups; types of formats used; and topics of information commonly discussed. A total of 79 public information items generally available to the public at–large were collected and reviewed.

The most common distribution source for older driver safety materials is state and provincial transportation or related departments, accounting for 40% of all reviewed publications. Close to half (46%) of all materials collected are brochures. Especially common are 6 panel and 4 panel brochures. AARP offers the largest selection of publications (11) followed by the American Automobile Association (7) and the AAA Foundation for Traffic Safety (5). Over 65% of publications are targeted to older drivers. Only 15% are designed specifically for caregivers, including family members. Two publications target professionals.

The publications cover a wide array of topics in 14 content areas: older driver safety; vehicle design and adaptation measures; vehicle maintenance; environmental/road design and adaptations to roadway conditions, weather, and signs and signals; driver improvement and rehabilitation; behavior change; occupant protection; aging and health; professional referral sources; licensing issues and procedures; transportation options; driving cessation; assessment tips; and counseling tips. However, almost half of the publications address only 5 or fewer topics. Only one addresses all 14 topics. Less than half mention the possibility of driving cessation and less than one–third specifically advise or make reference to using alternative transportation.

Most materials deal with the issue of driver safety on a very general level and suggest direct and simple remedial or compensatory actions to help prolong safe driving. The scope and quality of advice and tips in the materials vary. Few materials target different problem subgroups or deal with specific medical or functional impairments. Information is limited on specific interventions to use with high–risk drivers unwilling or unable to self–regulate. The topic of reporting unsafe drivers to state authorities is also rarely addressed. Future outreach efforts should address these voids so that older drivers, and the general public can be better informed. Family and friends need to be prepared to anticipate and respond to necessary driving limitations and cessation.

Social Marketing

In their statement of work, NHTSA emphasized the need to identify personal and social barriers standing the way of involvement in an older relative's or friend's driving decisions. NHTSA has also called for formative research, including focus group interviews, to provide the basis for framing interventions, messages, and incentives that can overcome these barriers. Such research is a cornerstone of social marketing programs, which focus on designing health– and safety–oriented appeals to change behavior. At least one recent publication links social marketing and traffic safety (OECD, 1993).

Figure 1 illustrates a social marketing framework for road safety. The framework recommends conducting a market analysis based on results of consumer and cost/benefit research; developing a market strategy or approach; implementing marketing strategies and tactics to solve social problems addressed by the marketing campaign; evaluating the results of the initial campaign; making improvements in campaign features; and finally, disseminating the study results.

Social marketing techniques may be applied to the development of guidelines and public information materials for improving driver safety. Themes and messages would address the behaviors of at–risk older drivers, their families and friends, professionals and other authorities, as well as the broader social and policy contexts that are shaping influences on these behaviors.

FIGURE 1:
A SOCIAL MARKETING FRAMEWORK FOR ROAD SAFETY

Market analysis

- Review and, if necessary, carry out consumer studies ensuring adequate market segmentation into homogeneous key target groups to improve understanding of consumers' perception of "problems" and potential solutions.
- Assess costs and benefits associated with alternative remedial strategies.

Formulate marketing strategy

- Select problems and groups to be targeted.
- Select remedial measures including communication strategy(ies) to be applied.
- Identify potential barriers and possible solutions.
- Set objectives which are realistic, achievable, and measurable. The following topics should be considered: collisions, behavior, attitudes, knowledge. All objectives should be consumer oriented.
- Decide marketing instruments and marketing mix to maximize cost benefits to consumer through "voluntary mutual exchange":
  - product
  - price
  - place
  - promotion
- Produce communication brief to maximize impact on target audience specifying:
  - budget
  - media strategy
  - messages
  - target audiences
  - styles/themes of communications
- Pretest proposals on target consumers for acceptability, comprehension, credibility, capability and motivation to implement.
- Adapt and re–test proposals as necessary.
- Decide process and summative evaluation measures.

Implement remedial measures, marketing instruments and evaluation program.

Obtain feedback from findings and adapt remedial program, when possible

Publish and disseminate study results

Source: Organization for Economic Cooperation and Development (OECD), 1993.

OLDER DRIVER RESOURCE NEEDS

Overview

Information was collected by 3 professional organizations to understand unmet needs for information resources among professionals who work with older drivers and their families. Feedback was solicited by conference organizers from participants at: *Rx for Safe Driving* held on November 9, 1995 in Harrisburg, Pennsylvania, and organized by The Pennsylvania State University, Geriatric Education Center; *International Symposium on Alzheimer's Disease and Driving* held on May 17–18, 1996 in St. Louis, Missouri, and organized by Washington University School of Medicine, Office of Continuing Medical Education; and *Annual Meetings of the American Occupational Therapy Association (AOTA)* held April 19–23, 1996 in Chicago, Illinois, and organized by AOTA.

Method

Conference organizers placed a 2–page, self–administered needs assessment questionnaire in participants' conference packages. Participants were urged by session leaders to complete and return their responses. A total of 119 participants responded to the questionnaire. Over half of the respondents were recruited at the *Rx for Safe Driving Conference* in Harrisburg, PA. Two–fifths (40%) are rehabilitation specialists (primarily occupational therapists) and approximately one–third (30%) include other health and service providers (largely physicians but also nurses, psychologists, social workers, eye specialists and social service professionals). Other respondents include researchers, highway traffic safety specialists, students, and law enforcement officials.

Participants from the Harrisburg conference included a more heterogeneous mix of professionals than the other two conferences. Not surprising, respondents from the Chicago AOTA meeting are heavily comprised of occupational therapists, while physicians, nurses, social workers and psychologists predominate among respondents from the St. Louis conference on *Alzheimer's Disease and Driving.*

Those who completed the questionnaire probably represent a distinct group. Given their attendance at a conference that addresses older driver safety, the respondents are probably more concerned, aware and/or knowledgeable about this subject than their professional peers, which may limit the generalizability of their responses.

Summary of Findings: Older Driver Resource Needs

Information Resources

Respondents were asked to identify sources that informed them of their professional role and responsibilities in promoting older driver safety. Over 90% of respondents identified at least one information source. The average respondent had access to two different types of sources.

Overall, the two most frequently cited sources of information are state motor vehicle departments and professional/trade journals (selected by 42.9% and 40.3% of respondents, respectively). The value that specific information sources have for respondents differs depending upon their professional background. Professional societies and associations are more important than state motor vehicle departments for rehabilitation specialists and predominant over journals for respondents in the "other professional" category.

Although older driver safety is an important public health issue, state health departments are the least identified source of information. Opportunities should be created for enlisting their participation in the future.

Professional Needs

Respondents were asked their opinions on the topics about which their colleagues would most benefit from having additional information. The data suggest that serious voids exist among professionals in the information they have on even their basic roles and responsibilities vis–a–vis the older driver. The greatest need is expressed for information on regulations and procedures for reporting potentially unsafe drivers. This need is particularly strong among respondents in the medical/health care and service provider fields: 83% of rehabilitation specialists and 74% of health and other service providers identified this as one of the three most important areas in which colleagues need additional information.

Respondents also expressed a strong need for information on aids and strategies to correct or mitigate health conditions that adversely impact driving. Regardless of professional background, this issue was selected by at least half of the respondents. Rehabilitation specialists and others in the health and social service sectors also include liability considerations in reporting as one of the three most important topics about which colleagues need additional information. Among "other professionals," a more urgent need is expressed for information on older adult involvement in collisions.

Format for Professional Information

For each area of professional information that is needed, respondents were requested to indicate the format in which they preferred receiving the information. A clear preference exists for fact sheets. Next most desirable are conferences and continuing education programs for "health and other service providers" and reference materials and manuals for rehabilitation specialists and "other professionals."

Although journal articles are identified as a relatively popular method for communicating with "health and other service providers," they are a less attractive delivery method for rehabilitation specialists and "other professionals." And while audio tapes, computer on–line services and PSA's are commonly used communication channels, they are relatively rarely mentioned by respondents.

For any given topic on which they would like to receive additional information, respondents usually identified several suggested format styles. However, overall their responses suggest that top priority be given to developing the following professional resources:

- Rehabilitation specialists: fact sheets on reporting regulations and procedures, and conferences and continuing education programs on aids and strategies.
- Health and other service providers: reference manual on reporting regulations and procedures and fact sheets on liability considerations.
- Other professionals: fact sheets on older driver collisions and aids and strategies for safely driving.

Family and Friend Needs

Respondents were asked to identify concerns or problems expressed to them by older adults or their families or friends for which they would like to have resource materials to share. Overall, the strongest demand is reported for information on aging and traffic safety. This includes tips on identifying warning signs of impaired driving, how to maintain driving skills, and precautions for older drivers. This information would be especially helpful for "health and other service providers" and "other professionals" to share with older adults or their families and friends. Also of importance are materials on laws and regulations, especially as related to reporting procedures, driver licensing evaluation and licensing options. Information and guidelines for family and friends' involvement with older problem drivers are also needed, particularly by "health and other service providers" and "other professionals". These materials should address the concerns that family and friends have about older drivers, and strategies they can use to get their older relation to alter or stop driving.

Format for Family and Friend Resources

Opinions were solicited from respondents on the formats that would be most successful in communicating with older adults and their families and friends. Regardless of professional background, a preference exists for pamphlets and brochures, followed by fact sheets and videos. Only occasional references were made to other delivery mechanisms, including audio tapes, presentations and computer–based communications.

Reporting

Respondents were queried as to the frequency in which they ever reported a person over 65 years of age to a state authority for review of driving qualifications and whether their report was ever initiated by a concerned relative or friend.

Overall, close to 30% of respondents indicated they had reported an older person to state authorities, although the actual frequency of reporting is low and usually ranges from 1–5 older persons. As expected, "health and other service providers" are most likely to have reported an

older individual (40% as compared to 32% of rehabilitation specialists and only 4% of other professionals).

Of significance, family and friends are highly influential in initiating reports. Overall, close to two–in–three respondents with reporting experience indicate that their report was initiated by concerned family or friends on at least one occasion. "Health and other service providers" are especially likely to be influenced by family or friends: over 75% of "health and other service providers" with reporting experience indicate that their report was initiated by concerned family or friends on at least one occasion.

Professional Alliances and Referral Resources

Respondents were questioned about professional alliances or referral resources they use or need in working with impaired older drivers. Responses fall within five general categories. In descending order these include: driver evaluation, professional agencies/organizations, health providers, professional societies/associations, and "other."

Of the professional agencies and organizations that are identified, state motor vehicle and transportation departments are cited most frequently. And of health providers, physicians are mentioned most. Professional societies and associations that are identified with greatest frequency are AARP (including the 55 Alive program), the Association for Driver Educators for the Disabled, and the American Occupational Therapy Association.

Professional alliances and referral resources differed for respondents depending upon their professional status, although driver evaluators were considered a priority ally/resource by rehabilitation specialists as well as other health care and service providers. Other professionals most often used or needed the support of professional agencies/organizations in their work with impaired older drivers.

STATE REPORTING PRACTICES

Overview

To understand the legal and practical context in which family and friends intervene with older problem drivers, a study was undertaken of state laws and regulations for reporting high–risk drivers to state authorities and how these requirements are actually implemented. Research on reporting of problem drivers has been limited. Most states lack age–based policies for handling unsafe drivers and according to Anapolle (1992) apply their "impaired populations policies" to screen and process older drivers. In some states (including California) provisions specifically prohibit special tests from being administered based on the driver's age alone.

A 1992 study of driver licensing programs in 7 states (Petrucelli & Malinowski, 1992) found that reports by physicians are considered confidential in 34 states; and in 27 states, laws provide immunity to physicians for reporting. Hawley and Tannenhill's 1989 summary of driver licensing programs, identified other sources that assist in the detection of problem drivers, including law enforcement, courts, insurance companies, and family members, but suggest that their reports are largely spontaneous and typically do not result from a systematic and structured reporting process.

A state driver safety advisory committee was appointed by the Governor of Illinois in 1992. The committee studied state reporting regulations to help assess the merits of implementing a state law allowing family reporting of unsafe drivers.

Twenty–eight states automatically keep the reporter's identity confidential; an additional 2 states (Wisconsin and Alaska) do so only if requested by the reporter; and one state (Ohio) maintains confidentiality only for reports submitted by law enforcement. However, in most states, the reporter's identity is released if required by court order.

Three states provided statistics on reporting frequencies by source. Family members account for 5% (Iowa) to 10% (Michigan) of requests submitted for reexamination in these states. Law enforcement officials are by far the most common reporting source, reporting 70% (Wisconsin) to 91% (Iowa). Over 80% of referrals in Florida are submitted by driver licensing personnel; less than 10% originate from medical providers. In Oregon, 4% of referrals come from the licensing administration and medical specialists account for 37% of referrals and are the primary reporting source.

Physicians represent a significant reporting source in Pennsylvania, which requires that physicians report to the transportation department all patients over age 15 diagnosed as having any condition that could impair driving ability. Before 1990, the department received about 10,000 medical reports annually. About half of the reports submitted are for patients over age 45. Seizure disorders and other neurological disorders account for 67% of the license recalls. About 9% of physician reports result in driving restrictions, generally for vehicle modifications.

McKnight and Urquijo (1993) analyzed reporting by law enforcement officials in five states (California, Maryland, Massachusetts, Michigan and Oregon). Triggers differed by age of driver with sensory deficiencies increasing and medical conditions decreasing as a basis for referral among drivers in the advanced ages.

Method

A 33–item questionnaire was developed to evaluate reporting regulations and procedures, provisions for confidentiality and immunity, reporting frequencies by source, medical and functional conditions triggering reports, background characteristics of reported drivers, and follow–up activities including licensing outcomes and relicensing procedures.

The questionnaire was mailed to nine state driver license agencies and one provincial driver license agency: California, Connecticut, Florida, Massachusetts, Michigan, Ohio, Oregon, Texas, Wisconsin and Ontario, Canada. States selected for participation were considered to have licensing departments that would cooperate with the study, model driver safety programs and/or data relevant to this project.

Summary of State Reporting Requirements and Practices

Health Care Provider Reporting Laws and Regulations

Seven states and one Canadian province returned questionnaires on their reporting regulations and practices: California, Connecticut, Florida, Michigan, Oregon, Texas, Wisconsin, and Ontario, Canada.

Of the states and province that responded, three—California, Oregon and Ontario—have laws mandating physicians to report potentially unsafe drivers. The remaining 5 states have laws permitting reporting by health professions, including physicians, psychologists, occupational and physical therapists, chiropractors and nurses.

Since 1939, California law has required physicians and surgeons to report patients aged 14 and above with disorders characterized by loss or lapse of consciousness that may recur. In 1988, the law was amended to specifically include Alzheimer's Disease and related dementia among conditions that physicians are required to report (California is the only state in the U.S. that requires referrals for Alzheimer's and related disorders).

In states with laws that permit reporting, referrals are accepted for all conditions that may adversely impact driving. Seven of the responding states require health providers to submit reports directly to the licensing department. In Ontario, reports are submitted to the ministry of transportation, medical review section/registrar of motor vehicles.

In Ontario, health providers who report potentially unsafe drivers are immune from both civil and criminal lawsuits. In Oregon, health care providers who report have no immunity from civil and criminal lawsuits. Of 5 states with reporting laws, 2 (Florida and Texas) provide health

providers who report with immunity from civil and criminal lawsuits; one state (Wisconsin) provides immunity from a civil lawsuit; and one (Connecticut) provides no immunity.

Two jurisdictions require reports from sources other than health providers. In Ontario, reports are required from law enforcement; in Texas, law enforcement, court officials and DMV staff are required to report. Opportunities arise for law enforcement to identify problem drivers during normal traffic surveillance and during collision investigations. Results of license screenings can also alert DMV staff to possible medical or functional problems. Other potential reporting sources include family and friends, insurance companies, and drivers themselves.

Most states have special forms for reporting problem drivers. Oregon, Wisconsin, and Ontario presented the most comprehensive profiles. Data for Oregon for the year 1993 suggest that close to 5,300 reports are submitted annually. About 60% of the reports refer to drivers aged 56 and above; about 55% are drivers aged 65 and above; an estimated 35% are over 75 years; and about 5% are 87 years plus.

Approximately 36% of reports submitted in Oregon are self–referrals (largely from accident reports); among older drivers, self–reports drop to 29%. Health providers also represent an important source of referrals, accounting for 37% of all reports and 31% of reports of drivers aged 56 and over.

While the proportion of self–reports and reports by health providers drops among older drivers, law enforcement staff are a more significant reporting source, accounting for 17% of all reports as compared to 24% of reports for older drivers. DMV staff also are important, representing 3% of all reports and 4% of reports of older drivers. Family and friends account for 6% of all reports and 10% of reports for older drivers. Close to 90% of reports submitted by law enforcement, DMV staff, and even family and friends are for older drivers.

In 1995, Wisconsin received about 2,400 referrals. About two–thirds (68%) of these reports were submitted by law enforcement. While Wisconsin does not mandate physician reporting, about 22% of its reports originate from this source. About 3% are submitted by DMV staff. Michigan receives about 5,000 referrals annually. Physicians and law enforcement are the two primary reporting sources, followed by family members.

What are the medical conditions that prompt reports to state authorities? In Oregon, reported drivers investigated by the licensing department are most likely to be referred for either a seizure disorder (19%) or stroke (15%) (Data are not separately available for medical conditions of older reported drivers). Data on medical conditions of reported drivers are also available for Ontario. In 1995, there were 25,990 reported drivers with medical conditions and impairments. The three top ranking conditions were epilepsy (24%); neurological disorders, including stroke, Alzheimer's disease and other dementia (19%); and cardiovascular conditions (15%). Age breakdowns of reported drivers are also available for Ontario, and show that close to 7% of the reported drivers are aged 65 or older.

A typical scenario is that when the report is received, the DMV checks the license status and driving record of the referred driver. The reexamination differs depending upon the person's medical or functional condition. A drive test may also be required. Three of the seven states participating in the survey (California, Connecticut, and Wisconsin) have special road tests they may administer. These tests are longer in length (45–60 minutes versus 15 minutes for the standard test) to help evaluate the driver's endurance, and use routes designed especially for the driver's condition. If the driver has dementia, the examiner tests the driver's ability to follow multiple instructions, concentrate, recall information, and perform divided attention tasks. Some states also rely on other testing procedures. In Oregon, California, and Connecticut, a personal interview may also be conducted with the driver. In more serious cases, a license revocation or suspension may occur which prohibits driving. License suspensions are temporary and are typically issued if the medical condition is expected to improve.

Licensing Actions

Limited data are available on licensing actions that result for reported drivers following their reexamination. In Florida and Oregon it is equally likely for drivers to require a license suspension as to receive no license action at all. In Florida, 11.7% of reported drivers had licenses suspended, and 11.9% had no change in licensure status. License restrictions rarely occur in Oregon (4 in 1994 and 5 in 1995). Data for Ontario, by contrast, indicate that most reported drivers (92%) experience no change in license status; about 7% of reported drivers have their license suspended.

Data on licensing actions are not available by driver age. However, California reports that when license restrictions occur for older drivers, they commonly involve the use of corrective lenses, followed by daylight driving only; geographic restrictions rarely occur.

Age–Based License Procedures

In California, license renewals are prohibited by mail after age 69. Beyond that age, drivers must pass vision and knowledge tests every four years. A road test may be required if the driver demonstrates confusion, tremors, or other symptoms that may seriously jeopardize driving.

In Oregon, drivers aged 50 and above must pass a vision screening every eight years. Respondents were sometimes uncertain about their state laws and regulations. Although limited, the data from the questionnaire corroborate other research findings (e.g., Illinois study, 1991) which suggest family and friends rarely report potentially unsafe drivers to state authorities. In Oregon, about 300 reports were submitted by family and friends (in 1993), accounting for about 6% of all referrals and 10% of referrals of older drivers. In Oregon, where physicians are mandated to report, health providers accounted for 37% of all referrals (and 31% of referrals of older drivers). The large share of these referrals are actually submitted by nurse practitioners and physician assistants; physicians account for up to 10% of referrals. In Oregon, about 8.5 of every 10,000 licensed drivers are reported by health providers to state authorities; in Wisconsin the rate of reporting by health providers is 1.6 per 10,000 licensed drivers. Considering health provider

reporting of older drivers, the rate climbs to 16 of every 10,000 licensed drivers aged 56 and above in Oregon. (Corresponding data are unavailable for other states.)

In Oregon, about 23.1 of every 10,000 licensed drivers (and as many as 51 of 10,000 licensed drivers aged 56 plus) were reported (in 1993). The corresponding rate for all drivers in Wisconsin is 6.6 (in 1995). Currently, states mandating reporting by health care providers only include physicians under this requirement. Other health care professionals are also well–positioned to detect and intervene with problem drivers.

SOLUTIONS

Focus group discussants and expert panelists suggested a number of guidelines and solutions to consider in removing barriers to intervention and motivating family members and friends to intervene for safe driving decisions. Common themes emerged from both laypersons and professionals. Their recommendations for solutions and interventions are described below.

However, on a cautionary note, one expert panelist, a geriatric physician who has also conducted research on family involvement with older drivers, believed the current state of research knowledge does not yet permit the development of guidelines, materials and legislation. This expert recommends conducting a series of demonstration project to enhance future success in interventions and social marketing campaigns.

Solutions and Interventions Offered by Family Members and Friends

Issues and ideas for solution centered on types of interventions at the societal, community, group, and individual levels. It was not always clear who would put the interventions into practice or how one would access them.

Social Marketing Campaign

Develop a social marketing campaign on a state by state basis to achieve an impact on safe driving similar to MADD.

Identify unsafe driving at any age as a public health risk and position driving as a healthcare and safety issue through a media campaign. Use safety and liability as the motivators to change societal norms to make intervention socially acceptable (e.g., "Friends don't let friends drive unsafely").

Target the campaign to the general public (including the older driver, family and friends) and authority figures in healthcare, law enforcement, DMV's, policy–makers and legislators, and the courts.

Develop multimedia presentations that specify indicators and consequences of unsafe driving, and specific examples of interventions. Initiate widespread education of healthcare providers, police, care providers, and caregivers focused on understanding older driver behavior and the importance of professionals participating in assisting older drivers transition through the stages of driving cessation. Educate family members that age alone is not a predictor of driving ability. Provide information about the signs of unsafe driving and related functional declines. Be aware of some family members' questionable motivations for intervention.

Develop appeals to and intervention strategies for family and friends to help the small proportion of older drivers who cannot or will not recognize their own functional disabilities. Develop methods for family and friends to intervene more successfully on behalf of the highest risk subpopulations such as older male drivers. Adapt interventions now in use for older couples and

family members who are experiencing conflict and relationship difficulties for use in driving cessation issues.

Encourage families and friends to seek official assistance from healthcare professionals and DMV's in re–evaluating a driver. Tell family members and friends in each state how to get a reassessment of an older driver. Persuade families, friends, and older drivers who modify unsafe driving on their own volition to look for unsafe driving situations and take refresher courses such as 55 Alive. Encourage the use of alternative transportation prior to the older driver stopping driving completely.

Develop strategies to give the American Association of Motor Vehicle Administrators and the DMV's an active role in distributing social marketing campaign materials. Involve physicians, eye care specialists, podiatrists, and pharmacists. In partnership with NHTSA, disseminate information such as a family-directed quiz or a set of assessment tools through ophthalmologic, optometric, podiatric, pharmaceutical, and other similar societies, as well as national eyeglass and pharmacy chains. In concert with groups such as AARP, NSC, and NHTSA, produce an array of informational materials that organizations can use to illustrate older driver issues and solutions. Involve churches, synagogues, and senior centers as another source to reach and educate family, friends, and older drivers.

Authority Figures

Develop strategies to involve the healthcare community, law enforcement personnel, and the DMV to help them be more responsive to families who need their assistance. Provide them with pamphlets and other reference materials for distribution to family and friends with information about signs of driving impairment, helping older drivers plan for mobility changes, and inform the public about the costs and benefits of driving compared to alternatives to driving.

Position DMV's as the best authority by placing qualified and motivated examiners at licensing sites to conduct appropriate assessments of functional abilities. The examiners should be given sufficient time and budget to effectively test older drivers.

Policies and Laws

Enforce the laws now on the books. Require testing on a regular basis. Revoke the licenses of people who cannot pass the retest or have too many traffic tickets. Get rid of legal loopholes.

Determine how each jurisdiction now handles problems, including graduated licenses, more frequent testing based on age, handling of inquiries about older drivers, and publicizing of alternatives available to older drivers.

Develop federal and state policies and regulations mandating reporting, retesting, and classes in safe driving. Encourage uniform interest in and responses to older driver issues and solutions among all jurisdictions. Develop standardized older driver program strategies, including nationwide, standardized guidelines and tests for medical reporting with physician–

recommended restrictions, retesting intervals, and denials for various impairments (i.e., vision, diabetes, episodic disorders, dementia, memory loss, motor coordination, psychiatric disorders, cardiovascular disorders, pulmonary disorders, etc.).

Tests and Assessments

Develop nationwide, standardized skills–testing tailored to age groupings, with skills–appropriate tests for first–time (younger) and experienced (older) drivers that account for differences in driving performance styles. Develop fast, reliable, and scientifically valid tools for DMV examiners to identify, screen, and further test drivers (e.g., paper and pencil, visual cues, and interview tests). Develop scientifically valid and reliable protocols for office–based screening for physicians to predict who may be at–risk of unsafe driving. Develop a quiz with a validated profile form or risk factor index that family members can use to assess their relatives.

Develop Older Driver Evaluation Programs with standardized protocols for national distribution in multiple locations. Involve the physician in the Older Driver Evaluation program. Provide more functional ability testing centers as a first contact or follow-up to DMV skills-testing, a second opinion or appeals center, or as a non–regulatory third party to provide family members with an unbiased evaluation of the older driver's skill level.

Insurance Companies

Establish state codes which designate insurance companies as gatekeepers. Establish interactive computer linkages to DMV's, permitting insurance renewals if licenses are renewed and licensing if insurance is in place. Discount insurance premiums for older drivers who take driving skills improvement classes.

Alternative Transportation

Develop alternative transportation that meets customers' needs. Develop local partnerships to coordinate local transportation to meet community transportation needs. Develop web-site "Care pools" made up of lists of people who can offer rides to neighbors on a voluntary basis. Encourage older drivers to pool money into a fund that will support a personal transportation service. Encourage the use of alternatives through information materials distributed locally by physicians, community organizations, and other groups.

Transportation Planning and Counseling

Establish and provide an ongoing source of advice, information, and assurance to assist with continuing independence after an elder stops driving. Counsel older adults and caregivers on issues of independence, mobility, and feelings of incompetence surrounding driving cessation. Involve professionals working with older adults and families to plan early for changes in mobility. Encourage social service agencies to establish support groups for older drivers, families, and friends to deal with mobility changes.

Demonstration Projects

Identify signs and indicators of frailty that would alert family members to potential risk of an elder's unsafe driving. Develop materials that might help caregivers to look for those signs of frailty. Train physicians to counsel patients and families about unsafe driving and alternatives to driving. Pilot test these educational materials and trained physicians in physicians' offices.

Key Factors Associated with Family and Friends' Involvement for Driving Safety

Family and friends may be in a good position to detect problems and intervene to assist the unsafe older driver to limit or stop driving. Family and friends often look to professionals for help and advice in these matters.

The ability and willingness of concerned family and friends to help older drivers drive more safely or stop driving center on a number of key factors (see Table 1). These include characteristics of older drivers such as their perception of their own driving skills and their readiness to accept intervention; family and friends who are most likely to intervene on behalf of the problem older driver; professionals who may serve as intermediaries and/or advisors; and social norms and policies that must be in place to support these driving modification and cessation efforts.

Table 1: Summary of Findings

Problem Older Drivers Most Likely to Modify Unsafe Driving	**Problem Older Drivers Least Likely to Modify Unsafe Driving**
Will self–regulate	Will not self–regulate
Recognizes problem driving	Denies problem driving
Female	Male
Not cognitively impaired	Cognitively impaired
Has caregiver/confidant	Has no caregiver/confidant
Has access to alternative transportation	Has no access to alternative transportation
Is ready to change	Is not ready to change
Family Members Most Likely to Help Problem Older Drivers	**Family Members Least Likely to Help Problem Older Drivers**
Sociodemographic/Structural Variables	
Close family member	Not close family member
Primary/secondary caregiver	Not primary/secondary caregiver
Spouse or daughter	Son/son–in–law
Mother is care recipient	Father is care recipient
Father is still married to mother	Parents are divorced/separated
Lives within one hour's drive drive from older driver	Lives more than one hour's drive from older driver
Frequent contact with older driver	Infrequent contact with older driver
Not employed	Employed
Euro–American	African–American
Higher income	Lower income
Social/Psychological Variables	
Aware of declines	Denies declines
Not stressed	Highly stressed
Helping relationships	Independent relationships
Emotionally close	Emotionally distant
In family unit able to make decisions about elder	In family unit unable to make decisions about elder
Able to provide help and support for elder's change	Unable to provide help and support for elder's change
Professionals Most Likely to Help Concerned Family Members and Problem Older Drivers	**Professionals Least Likely to Help Concerned Family Members and Problem Older Drivers**
Understands issues	Does not understand issues
Sympathetic ethical stance	Unsympathetic ethical stance
Not fearful of lawsuit	Fearful of lawsuit
Risk of problem driving outweighs confidentiality	Risk of problem driving does not outweigh confidentiality
Will report to DMV	Will not report to DMV
Able to give patients and family information	Unable to give patients and family information
Social Norms Organized Around Safe Driving by Older Drivers	**Social Norms Not Organized Around Safe Driving by Older Drivers**
Social norms support driving cessation without stigma	Social norms support continued driving as a marker of independence
State regs support input of family/friends and professionals	State regs do not support input of family/friends and professionals
Public policy supports public or other alternative transportation	Public policy does not support public or other alternative transportation

Development of a Model for Research and Social Marketing

These factors may be categorized and analyzed in a four–part model:

1) The model begins with identification of problem older drivers, the medical conditions and functional disabilities that place the driver in high–risk categories, the meaning driving has for these older individuals, including their emotional attachment to the automobile, driving and consequent independence and autonomy that driving imparts.

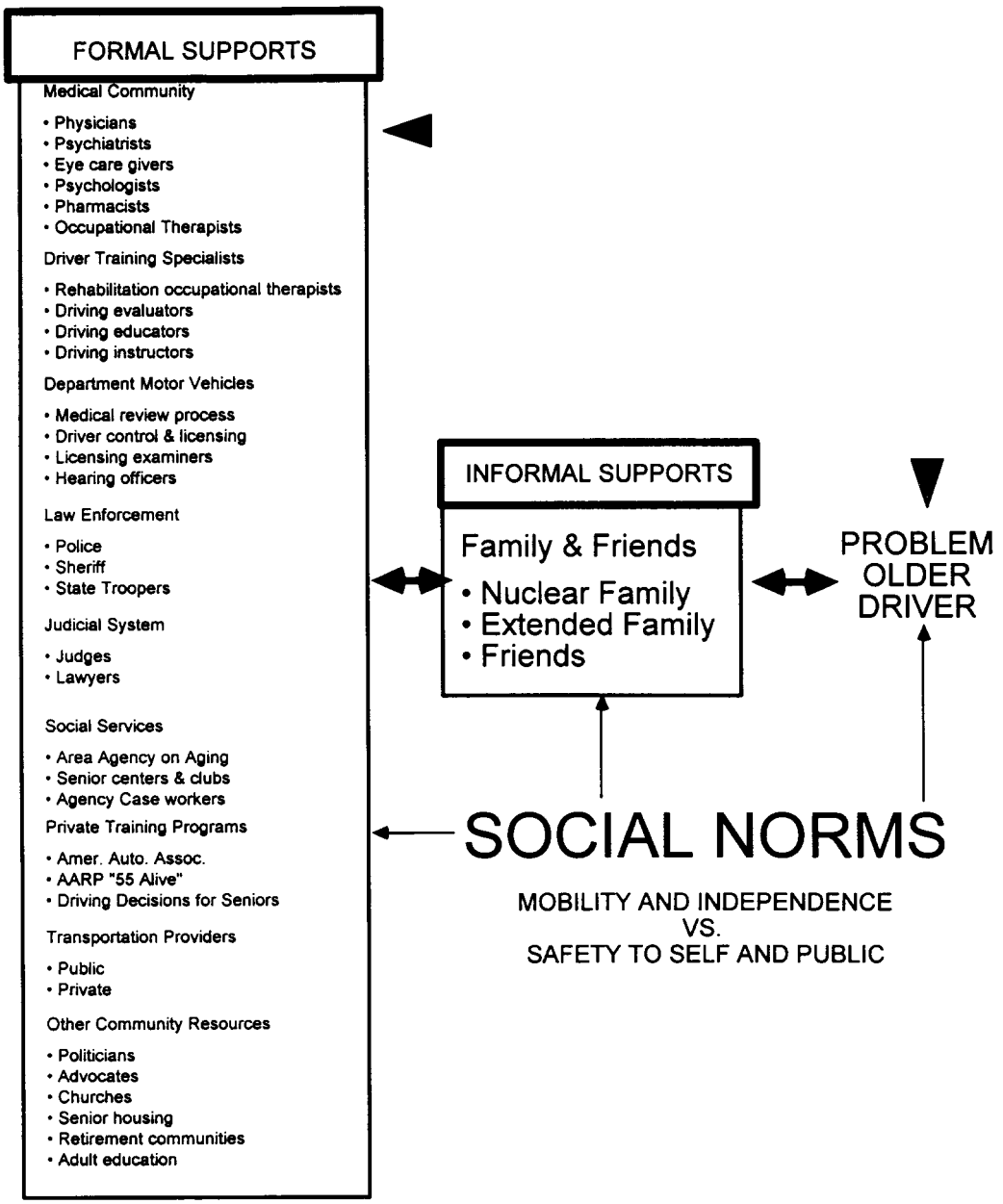
2) The model then proceeds to characterize families that are more likely to regulate or report at–risk older drivers. Particular emphasis should be placed on levels of family functioning and ability to make decisions concerning caregiving, medical intervention, and other issues related to driving.

3) The model incorporates environmental factors that support or hinder family and friends regulating and reporting unsafe older drivers. Supports include social services, medical and allied health communities, courts and licensing agencies, community agencies, and public transportation services.

4) Finally, the model recognizes social norms in which these factors and variables operate. Such norms include the values of "freedom" to choose to drive unsafely versus the risk of unsafe driving to public safety. These issues are similar to the change in value of drinking and driving or seat belt usage. The social values of choice and freedom, formerly weighted in favor of the drunk driver and non–user of safety devices, have shifted through social marketing campaigns, to the relative strength of values supporting decreases in risks to public health and safety (See Figure 2).

The model incorporates issues and variables related to unsafe older drivers, their informal networks, family and friends, the formal network of professionals, relevant national, state, and local organizations, as well as the social and cultural milieu. Development of the themes and messages of a social marketing campaign should serve to coordinate components and interventions of each group into an integrated whole.

FIGURE 2: MODEL OF SYSTEM TO ASSIST PROBLEM OLDER DRIVERS



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