impairments discovered in the simulation or screening process. This would help to prevent unnecessary limitation of precious driving privileges.

- Recognize and address issues concerning visual screening procedures and examiner awareness of the potential limitations and pitfalls of the visual screening process. These include variable performance with lighting/illumination conditions, memorization of test objects by examinees, use of concealed visual aids to overcome refractive disabilities (i.e., contact lenses), dependence of standardized signal positions and shapes to mask a visual limitation, and the use of telescopic low vision aids to pass tests of central acuity while severely compromising field or breadth of lateral awareness.
- Establish the relationship between types and levels of visual deficits and crash causation. This would provide the basis for visual restrictions based on crash probability.

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REHABILITATION OF ELDERLY DRIVERS

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When an individual tries to identify the common characteristics of an elderly person, several images come to mind. The elderly may react slower than other younger people in all areas - learning new tasks, accomplishing routine tasks, speaking and understanding what was said, responding to questions or comments. Sometimes the image is correct; sometimes it is not.

Problem

The elderly population suffer from more medical problems than other younger people. As an individual gets older, vision becomes more impaired. The variety of social and work related activities become more limited in the elderly population especially if physical impairments are present. The images and characteristics just described may not apply to all elderly persons, but are more prevalent among this population than other age groups. This paper will attempt to describe how health professionals can assist this population in improving their driving performance to overcome the above limitations imposed on them by the aging process. Considering an individual's lifestyle as well as measurable physical abilities, a plan for retraining and keeping the elderly driving safely can be formed.

Usually, people learn how to drive in their adolescent/young adult years. State law requires that they get relicensed at regular intervals without having to demonstrate continued satisfactory driving performance. An individual continues to drive until something drastic occurs which limits the person's ability to drive. Often, this drastic event is a physically disabling condition (i.e. a stroke, hip fracture, sickness, etc.). Individuals are less likely to limit their driving because of a mental disability as they often do not realize the impact mental/ cognitive functions have on driving performance. When people are forced to restrict their driving because of a physical impairment, health professionals usually see these people at the time they are questioning their ability to drive. What has developed is a comprehensive driving rehabilitation system offered through hospitals to evaluate and retrain persons to drive.

Needs

Health professionals, including occupational therapists, physical therapists, vocational counselors, speech therapists, optometrists, and psychologists can assist elderly persons to improve their driving performance or retain some type of community mobility to accomplish their daily needs. Occupational therapists (OT) work to enable a person to be as independent as possible. Usually, the driving evaluation and on-road training is administered by an OT because driving is an important activity of daily living for most people and allows them to be independent in community mobility. For those persons who have slow reaction times, occupational

therapists can work with them to improve their reaction times by participating in timed activities and/or utilizing compensatory strategies that may allow them to perform faster or remember important items.

Both the occupational therapist and the physical therapist can work to improve the strength in elderly persons arms and legs to enable them to operate the accelerator and brake better as well as get in and out of the vehicle better. Occupational therapists can assess the need for adaptive equipment for driving and then train individuals in the use of that equipment. For example, many elderly persons have arthritis. Simple adaptations to the steering wheel, gear selector, and pedals could make these people independent and safe drivers. Occupational therapists and physical therapists can evaluate an individual's sitting position in the vehicle and recommend/fabricate any equipment that may be needed to enable the person to maintain good sitting balance, visibility, and optimal comfort during the entire driving task. Occupational therapists can work with an individual on energy conservation techniques which may enable an elderly person to find the best times in the day, when they have more energy and are more alert, to do most of their driving. Occupational therapists and physical therapists can assist the elderly in exploring other transportation options by having them actually use the alternate system to give the elderly person the confidence they may need and the knowledge that despite their physical limitations, they can access public transportation.

While many elderly persons do not work, vocational counselors could assist the elderly person in finding volunteer activities within a certain distance from home or arrange hours so that no night driving is needed. A vocational counselor could also assist in finding alternative modes of transportation so that the elderly person does not need to depend on driving. Speech therapists can help to improve a persons ability to communicate with others if there are speech problems. Speech therapists, occupational therapists, and psychologists can work on cognitive strategies to improve decision making skills and increase their insight into how their driving might be affected by the deterioration of cognitive skills (ability to pay attention to important items, make quick decisions, etc..) Optometrists can assist individuals to overcome visual problems with various forms of vision training. Optometrists utilize specialized lenses and exercises to improve a person's ability to see. For example, a person with very limited visual acuity may be able to use bi-optic glasses to drive. These lenses greatly magnify areas of the visual field which can allow an individual to see specific objects in the traffic environment.

Most people who are able to access this evaluation and training system are already in the hospital for a medical problem which has impaired their physical and/or cognitive ability. There is a whole population of well elderly people who are missed because they have not had anything drastic happen or any life threatening on the road incidents.

There are several additional needs that must be met in providing access the services of qualified health professionals. First, the majority of well elderly people who could benefit from an evaluation, and possibly retraining to identify problems that may be hindering their driving performance, do not realize these services exist. They have no obvious problems that would bring them to a hospital or they may be concealing small problems from others for fear of restrictions on their driving. Second, the evaluation is usually very involved, taking at least an hour to complete, if not longer, for the in-clinic portion. The on-road portion can last from 1 to 4 or more hours. The individual has had to pay for an office visit to have the doctor request the evaluation. Third, the evaluation can be very expensive. The evaluations can run into the hundreds of dollars and medical insurance does not always cover these services. Many medical insurers feel that driving is not medically necessary and therefore will not cover the evaluation or training. A forth problem is that since hospital-based training programs are too expensive, many elderly persons may turn to commercial driving schools which are significantly cheaper and do not require a doctor's referral. Many commercial driving schools are not knowledgeable enough of all the conditions which affect older drivers. They may not be aware of the compensatory strategies available or be willing to take the time to retrain the elderly to drive more safely.

Action

Solutions to the above problems may be hard to find within the current health care system. As stated before, health professionals can help elderly persons overcome driving limitations by offering very specific and helpful services. Most have the knowledge of medical problems and how they might relate to driving as well as a repertoire of strategies to improve function. A specific section on driving rehabilitation needs to be added to the curriculum of allied health professionals to ensure that all health professionals in a particular field have the same knowledge base. Most therapists apply basic treatment techniques to driving rehab after entering the field and realizing how important driving is to many of their clients. The therapists then find a need for

additional coursework or continuing education on the issue of driving rehab especially for OT's when they provide the on-road training.

An effective action plan to satisfy the above needs would involve inclusion of driving rehab in the curriculum and collaboration and cooperation between the licensing agency and health care providers. First, the motor vehicle administrations could have some type of screening procedure to identify those persons at risk for problems with driving. These people would then be required to proceed to some type of qualified evaluation and training program staffed by driving rehab specialists or other professionals experienced in retraining techniques. The hospital-based programs would need to streamline services for the elderly population. They could do this by utilizing questionnaires and reports from physicians for tests already performed (i.e. eye exams). Once the in-clinic evaluation was completed, the health care professional could then work to devise a plan by referring individuals to an educational program (i.e. 55 Alive), to a health professional who could help overcome specific limitations (as aforementioned), or to a commercial driving school for on road training. The commercial driving schools should have a mandatory training course on the elderly driver so that they understand the various factors that affect driving performance in the elderly and ways to overcome them. Insurance companies should cover services related to driving and realize its importance in an individual's ability to accomplish daily tasks and that in the long run, it reduces accidents and claims that might be filed. If driving evaluation and training were more readily covered by medical insurance, elderly persons could get the individualized help they need to return to driving provided by health professionals. Another route to take might be to lower costs in general so that the driving rehab services are more affordable for those who need to pay out of pocket.

In an ideal world, the above may be attainable. With all the changes that are about to occur with health care reform, it is very difficult to say if any of this is possible. Health care professionals can greatly assist elderly persons overcome limitations in driving performance by taking a holistic view of the individual, realizing that many factors affect a person's ability and desire to drive. Health professionals consider all of these factors and in collaborations with the client and/or family develop a plan which helps retain the level of community mobility that is required to accomplish activities of daily living. Unfortunately those services are expensive and time consuming. I believe that by working together (MVA's, commercial driving schools, and health professionals) we can create a reasonable alternative which will satisfy the society's need of having safe drivers on the road and the individuals need of having a cost effective, efficient, and informative program for overcoming their limitations in driving and mobility.

EDUCATION, COUNSELING, AND FORMS OF SUPPORT

Donn W. Maryott

As North America's highway user population continues to mature, the need to help the group improve its driving, passenger, and pedestrian skills increases. Lives can be saved as traffic safety concepts are communicated to the many thousands of licensed senior drivers who are on the road today. Education, counseling, and transportation alternatives will make a difference and will lead to a reduction in fatalities, injuries, and property damage. Extremes in traffic, weather, and population density compound the problems and contribute to the likelihood of traffic collisions.

Education (Classroom/In-Car)

Problem

Senior highway users lack the knowledge, skills, and background to allow them to safely and efficiently travel in the transportation system.

Needs

Senior highway users require (1) skills to assist them drive, ride, and walk in the modern transportation systems, (2) a refresher/review of traffic and natural law, vehicle control, and (3) knowledge of age-related disabilities.

Actions

Federal, state, and local governments, and private sector components must provide seniors with traffic safety education classes. The program should include material focused on older drivers, riders, and walkers. These classes must educate seniors about the value of safety belts and other restraint systems, age-related disabilities and compensating behaviors, the effect of medications on coordination, vision, and the decision making process, alternative transportation, and support agencies to provide mobility. Additionally, right-of-way, traffic signs-signals-markings should be detailed to familiarize older