Managing Older Adult Driving Safety in the Primary Care Setting

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The number of drivers over the age of 75 will dramatically increase over the next few decades. Adults age 85 and older have the highest rate of driver fatalities.[1] Individuals age 70 and older have the greatest motor vehicle fatality rates per mile driven compared to all but the riskiest age group, those 25 years and younger. Advanced age is also a risk factor for motor vehicle crashes.[2] Since driving safety declines as older adults age, clinicians caring for this population may be increasingly called upon to evaluate the driving safety of their elderly patients.

Dementia and Driving Safety

Considering the high prevalence of dementia with increasing age, physicians are increasingly confronted with the challenge of assessing driving risk in those with cognitive compromise. In 2010, the **American Academy of Neurology (AAN)** published its practice parameters for evaluating driving safety among patients with dementia.[3] Previous studies have found that motor vehicle crashes and failure rates on road tests and simulated assessments all increase with increasing dementia severity, and generally, those with moderate stage dementia are considered unsafe to drive.[4] The AAN recommends considering dementia severity to guide clinicians' decision-making.

A high percentage of individuals with very mild or mild dementia, however, are able to pass a standardized road test.[2] Consequently, in those individuals with milder cognitive compromise, the AAN practice parameters recommend the consideration of additional information regarding risk factors for unsafe driving. Risk factors to assess include caregiver report of the patient's marginal or unsafe driving skills, as well as recent history of crashes or citations, reduction in miles driven per week, avoidance of complex driving situations, aggressive/impulsive driving habits, and a Mini Mental State Examination score of ≤ 24. Based on dementia severity and number of risk factors reported, the AAN recommends following state requirements for reporting unsafe drivers. Risk management options articulated by the AAN include counseling the patient for options for alternate transportation, discussing the need to relinquish driving privileges, and possibly referral for outside assessment of driving safety (e.g., DMV or professional driving instructor). In patients where risk is considered very low, follow-up every six months has been recommended.[4]

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Office-based assessment of older driver safety

In 2010, the **American Medical Association (AMA)** also updated their *Physicians Guide to Assessing and Counseling the Older Driver*, *a* free on-line publication.[5] The AMA's guide provides a description of how to evaluate a range of age-related medical risk factors for unsafe driving. A thorough review of all medical conditions that may affect driving safety including, but not limited to, seizures, syncope, respiratory disease, diabetes and cardiac events, as well as a consideration of medications that may have sedating side effects is recommended by the AMA's guide.

With regard to office-based testing to determine driving risk, the AMA's guide recommends the **Assessment of Driving-Related Skills Battery (ADReS)**. This battery includes assessment of visual functioning (acuity and visual fields), cognitive screening (clock drawing and the Trail Making test), and motor functioning (20 foot walk, tests of range of motion and motor strength). It should be recognized that brief office-based assessments to determine driving safety, such as those that comprise the ADReS, have been criticized for limited evidence to support their clinical utility for distinguishing safe from unsafe drivers. Importantly, the AMA's guide emphasizes that medical, sensory, and motor deficits should, if possible, be addressed and then followed up to determine if there is still persisting concern about driving safety. If issues still persist, then referral to a driving specialist is recommended. Care providers should know their state's requirements for reporting unsafe drivers, and the development of policy for reporting unsafe drivers should be reviewed by appropriate legal counsel.[4] According to the AMA's guide, Rhode Island does not mandate reporting of unsafe drivers. Physicians can, however, report patients thought to be unsafe drivers due to a medical conditions through the medical advisory board of the Department of Motor Vehicles. Physicians appear to be generally protected from legal reprisal, so long as the reporting is done in good faith and with due care. Please check with the Rhode Island DMV and the AMA's Guide (Chapter 8, page 58) for details on reporting.[5]

Older Driver Remediation

As described above, age-related declines in sensory and motor functioning, and to some degree cognitive functioning, does not mean that driving cessation is required. Considering the reality that within many communities there are limited alternate forms of transportation, it is important to try and maximize driving safety, when feasible. In addition to addressing any modifiable medical conditions, driving safety may be increased by referral to an occupational therapist or driving specialist. Adaptive equipment for

the vehicle is available for those individuals with some sensory and physical limitations. For example, hand controls for individuals with decreased lower extremity sensation and parabolic mirrors for those with reduced neck range of motion may allow some older adults to continue to safely operate a motor vehicle.

Beyond physical modifications of the vehicle, the most common form of intervention to improve driving safety has been older-driver education. Classroom-based and on-line education programs are offered by AARP, AAA, and other state run agencies. Few studies have examined the efficacy of education-based interventions. The results of these limited clinical trials have been mixed; one study reports that education is associated with fewer citations, one reports that education was linked to increased crashes, and three studies detected no influence of education upon crash risk.[6,7]

Use of a **cholinesterase inhibitor (ChEI)** may help drivers with early stage dementia prolong their ability to safely operate a motor vehicle. In a preliminary study with a small sample of participants with mild Alzheimer's disease (n=24), it was found that simulated driving performance improved following treatment with ChEI.[8] Furthermore, Daiello and colleagues observed that performance on the simulated driving assessment was better among those individuals who had been treated with a ChEI compared to individuals who had not yet started this treatment. These findings are preliminary but may have important implications for helping drivers with dementia maintain safe performance of this critical activity of daily living; however, the effect of ChEI upon actual driving habits has yet to be examined.

Cessation of Driving

In many cases, healthcare providers will need to recommend cessation of driving to their older patients. Cessation of driving has a number of serious and negative consequences linked to decreased community participation and increased risk of long-term care placement. Therefore, providers should be aware of alternate transportation options in the community such as the RIDE and para-transit for elders who cannot use public transportation. Other alternate forms of transportation may include friends, family members, religious groups, social clubs, or other volunteer programs. For those patients who cease driving, at follow-up providers should assess for regular attendance of appointments, renewal of prescriptions, as well as signs of depression, isolation, and other forms of self-neglect due to cessation of driving.

Conclusions

As the older population increases, clinicians in the primary care setting will increasingly be called upon to evaluate driving safety. Although research supporting an evidenced based approach to identifying and remediating unsafe older drivers is lacking, there are increasing recommendations to inform the primary care practitioner and help make this determination.

References

1. Insurance Institute for Highway Safety (IIHS). Fatality facts 2009, Older people. http://www.iihs.org/research/fatality_facts_2009/older-people.html.
2. Ott BR, Heindel WC, Papandonatos GD, Festa EK, Davis JD, Daiello LA, Morris JC. A longitudinal study of drivers with Alzheimer disease. *Neurology*. 2008 Apr 1;70(14):1171–8.
3. Iverson DJ, Gronseth GS, Reger MA, Classen S, Dubinsky RM, Rizzo M; Quality Standards Subcomittee of the American Academy of Neurology. Practice parameter update: evaluation and management of driving risk in dementia: report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology*. 2010 Apr 20;74(16):1316–24.
4. Carr DB, Ott BR. The older adult driver with cognitive impairment: "It's a very frustrating life". *JAMA*. 2010 Apr 28;303(16):1632–41. Erratum in: *JAMA*. 2010 Jun 16;303(23):2357.
5. American Medical Association. Physician's Guide to Assessing and Counseling Older Drivers. http://www.ama-assn.org/ama/pub/physician-resources/public-health/promoting-healthy-lifestyles/geriatric-health/older-driver-safety/assessing-counseling-older-drivers.page.
6. Korner-Bitensky N, Kua A, von Zweck C, Van Benthem K. Older driver retraining: an updated systematic review of evidence of effectiveness. *Journal of Safety Res*. 2009;40(2):105–11. Epub 2009 Mar 14. Review.
7. Kua A, Korner-Bitensky N, Desrosiers J, Man-Son-Hing M, Marshall S. Older driver retraining: a systematic review of evidence of effectiveness. *Journal of Safety Res*. 2007;38(1):81–90.
8. Daiello LA, Ott BR, Festa EK, Friedman M, Miller LA, Heindel WC. Effects of cholinesterase inhibitors on visual attention in drivers with Alzheimer disease. *J Clin Psychopharmacol*. 2010 Jun;30(3):245–51.

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