Driving and Dementia

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Presentation Objectives

- Identify most prevalent risk factors threatening driving skills.
- Identify screening/assessment for cognitive function with combined ecological validity and suitability for primary and specialty care settings.
- Identify resources and referral processes for further evaluation and additional community mobility services.

Background

- Driving as a complex, overlearned, multidimensional task
  - Cognitive domains
    - Attention
    - Processing speed
    - Visuospatial skills
    - Executive functioning
    - Memory
  - Psychological/emotional domains
  - Identity and independence
  - Needs vs. wants
  - Privileges vs. rights
  - Public health concern
  - Ethical and legal dilemmas

Background (cont.)

- Studies evaluating driving skills in dementia are fraught with methodologic difficulty
  - In-vehicle/naturalistic monitoring (i.e., Davis et al, 2020; Roe et al, 2019)
- Driving skills inversely correlated with dementia severity
  - Higher risk = mild dementia
  - Majority will pass an on-road driving test
- How to balance risk and safety with preserved independence and autonomy?
- Traditional screening measures are marginally effective
  - Correlate grossly with driver test failure
  - No clear cutoffs
  - Improved with a careful history
  - Referral trigger for detailed evaluation

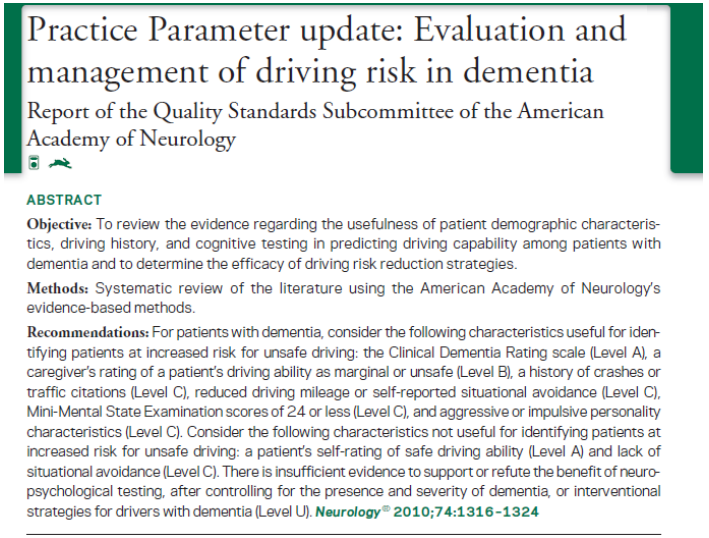
Primary Care Concerns

- Mixed feelings at best around fitness to drive evals
  - Assessment of cognitive impairment
  - Lack of familiarity with legal requirements
  - Uncertainty about local resources
  - Negative impacts
    - Relationship
    - Patient QOL
- Significant value to specialized assessment
  - OT
  - Geriatrics
  - Memory Disorders

Sinnott et al., 2018

AAN Practice Parameter

- Level A
  - CDR of .5-**1**
    - 41-85% will pass OTRE
  - Do not rely on patient
- Level B
  - Caregiver rating as marginal or unsafe
- Level C
  - MMSE<25
  - Traffic citations (prior 2-3 yrs) & crashes (prior 1-5 yrs)
  - Reduced mileage & situational avoidance
  - Aggressiveness or impulsivity
- Level U
  - Neuropsychological evaluation
  - Rehabilitation/interventional strategies



Practice Parameter update: Evaluation and management of driving risk in dementia

Report of the Quality Standards Subcommittee of the American Academy of Neurology

ABSTRACT

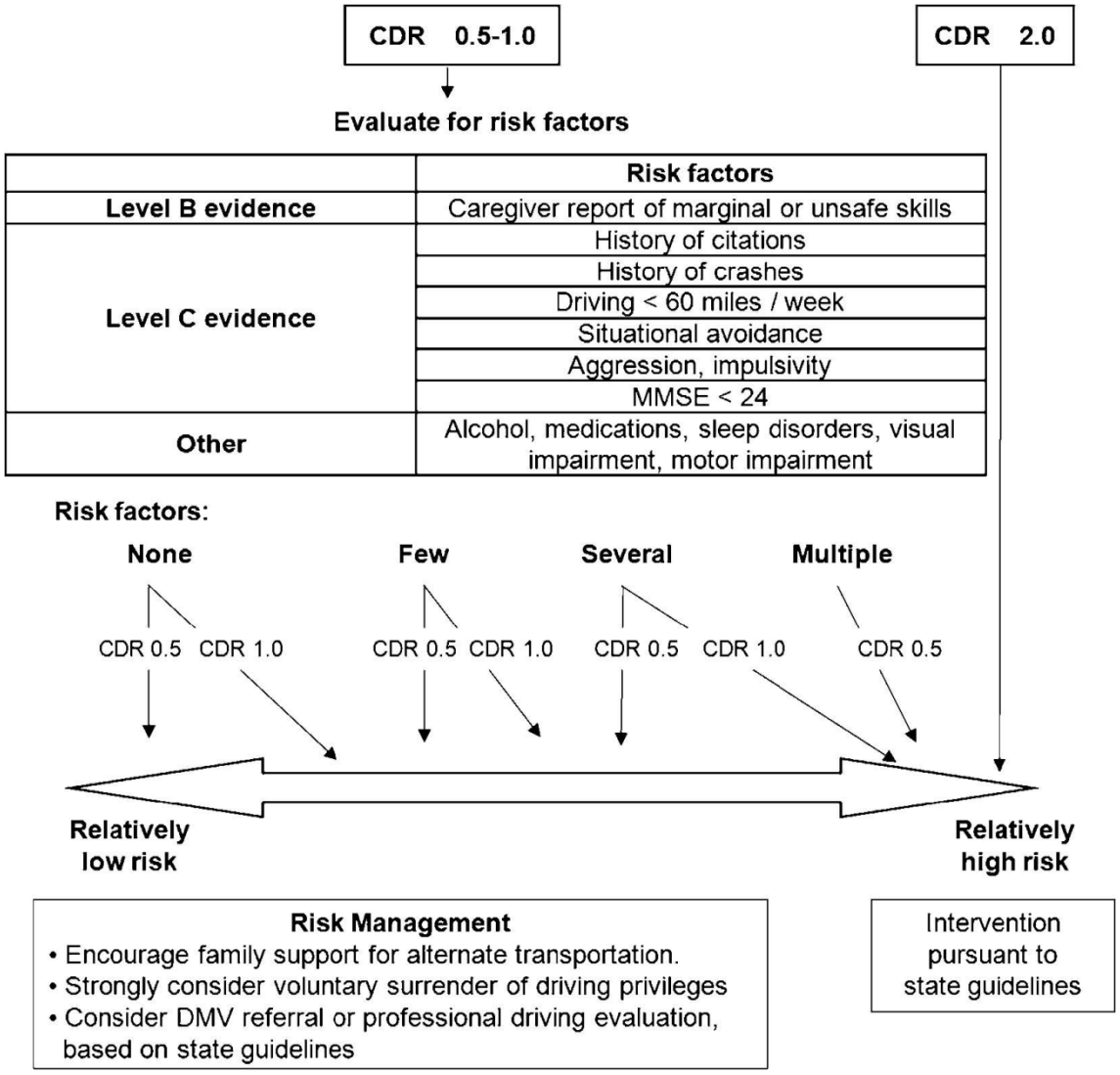
Objective: To review the evidence regarding the usefulness of patient demographic characteristics, driving history, and cognitive testing in predicting driving capability among patients with dementia and to determine the efficacy of driving risk reduction strategies.

Methods: Systematic review of the literature using the American Academy of Neurology's evidence-based methods.

Recommendations: For patients with dementia, consider the following characteristics useful for identifying patients at increased risk for unsafe driving: the Clinical Dementia Rating scale (Level A), a caregiver's rating of a patient's driving ability as marginal or unsafe (Level B), a history of crashes or traffic citations (Level C), reduced driving mileage or self-reported situational avoidance (Level C), Mini-Mental State Examination scores of 24 or less (Level C), and aggressive or impulsive personality characteristics (Level C). Consider the following characteristics not useful for identifying patients at increased risk for unsafe driving: a patient's self-rating of safe driving ability (Level A) and lack of situational avoidance (Level C). There is insufficient evidence to support or refute the benefit of neuropsychological testing, after controlling for the presence and severity of dementia, or interventional strategies for drivers with dementia (Level U). *Neurology*® 2010;74:1316-1324

Iverson et al., 2010

Evaluating Risk (AAN, 2010)



	Risk factors
Level B evidence	Caregiver report of marginal or unsafe skills
Level C evidence	History of citations
	History of crashes
	Driving < 60 miles / week
	Situational avoidance
	Aggression, impulsivity
	MMSE < 24
Other	Alcohol, medications, sleep disorders, visual impairment, motor impairment

CFP Practice Parameter

Figure 1. Checklist of considerations in driving safety

- ☐ History of driving accidents or near accidents*
- ☐ Family member concerns*
- ☐ Trail Making A and B tests—for processing speed, "task switching," and visuospatial and executive function
- ☐ Clock-drawing test—for visuospatial and executive function
- ☐ Copying intersecting pentagons or cube—for visuospatial function
- ☐ Cognitive test scores—possibly helpful
- ☐ Dementia severity according to the Canadian Medical Association guidelines[26]—inability to independently perform 2 instrumental activities of daily living or 1 basic activity of daily living

*Ask the patient and a family member separately.

Lee & Molnar, 2017

Office Assessment

- Past and Current Driving History
  - Miles per week, where, why
  - Traffic stops/violations/tickets
  - Accidents
    - Been in, caused, at fault
  - Navigation issues
    - Familiar, infrequent, new places, GPS use
    - Three point turns, parking spaces, garages
  - Concerns about safety
    - Self and others
    - Family members who will no longer ride as a passenger
  - Changes in habits
    - Situational avoidance (night, rain, freeway, traffic)
  - Speeding
    - How fast if sure not going to get caught, freeway vs. surface streets
  - Red lights
  - Distance estimation
  - Alcohol/medications
  - Horn/gestures/road rage
    - Aggressor vs. recipient
  - Damage to vehicle/wheels

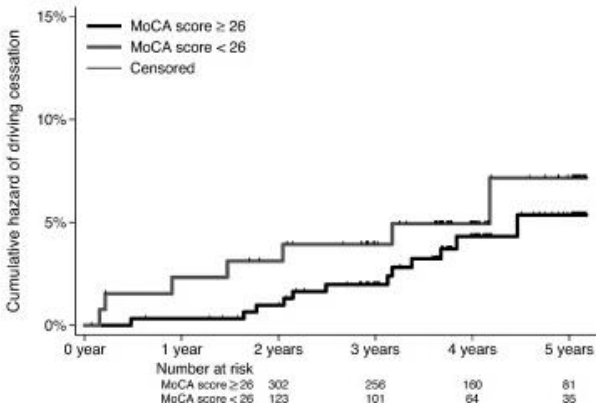
Office Assessment

- Collateral informant
  - All of the above, but:
    - Interviewed separately, ideally
    - Last time they rode with the patient?
    - Under what circumstances
  - AAN Caregiver Driving Safety Questionnaire

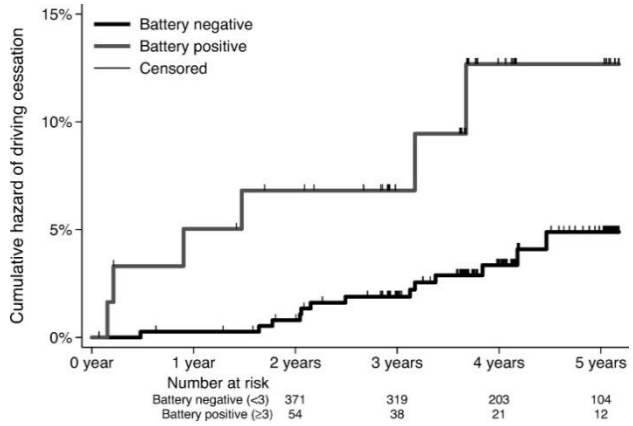
- Assessing insight and plans
  - Beginning the conversation about transitions
  - “Retirement” from driving
  - Education about liability

Screening: MoCA

- MMSE vs. MoCA Driving Test Prediction
  - Piersma, et al., Acta Neuro, 2018
    - N=81
    - Outcome: Standardized road test
    - MMSE<20, all failed
    - MMSE>24, one third failed
  - Hollis et al., JAGS 2015
    - N=92
    - Outcome: Standardized road test
    - Only useful for those with existing cognitive impairment
    - 1-pt decrease = 1.36 times as likely to fail road test
    - MoCA < 18
  - Esser et al., JNNP 2015
    - N = 243
    - Outcome: Road test
    - MoCA > 27 likely to pass
    - MoCA <12 likely to fail
    - 50/50 otherwise
  - Kokkinakis et al., PLoS One 2021
    - Utility may be improved in combination with other measures



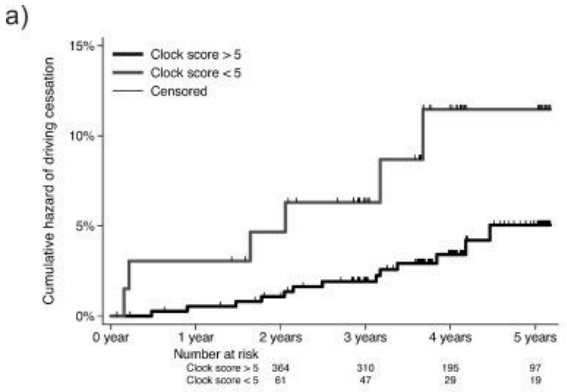
HR 1.24, 95% CI: 0.48–3.18, p = 0.660



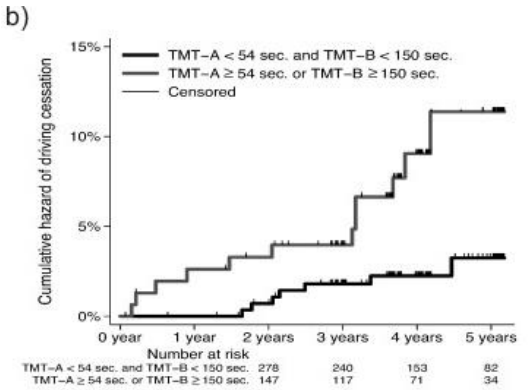
HR 3.46, 95% CI: 1.31–9.13, p = 0.012

Neuropsychological evaluation

- Visuospatial skills
  - Clock drawing
  - Block Design
  - Rey Complex Figure
  - Line Orientation
  - Facial Recognition
- Speed of information processing
  - Symbol Digit
  - Stroop Word & Color
- Visual attention (divided and selective)
  - Trail making test (B-A)
  - Stroop interference
- Mood / depression (in MCI)



hazard ratio 2.89, 95% CI: 1.01–7.71, p = 0.033



hazard ratio 3, 95% CI: 1.16–7.78, p = 0.023

Mathias JL & Lucas LK, 2009; Beratis et al, 2016; Kokkinakis et al., 2021

Driving Skills Evaluations

- Private, non-clinical assessment
  - Vehicle operation
  - Driver-vehicle fit
  - Risk perception
- Outcome recommendations:
  - Supplemental in-car training
  - A clinical driving assessment by an OT-DRS
  - No supplemental training
- Cost = ~$100 to $200
  - Training sessions ~$75 to $150 per hour

Clinical Assessment

- Driving Rehabilitation Specialists
  - Medical history
  - Physical assessment
  - UFOV
  - Cognitive assessment
  - Functional/on-road assessment
    - Adherence to traffic rules and regulations,
    - consistent use of compensatory strategies
- More nuanced outcome recommendations
- Cost = ~$300 to $600
  - $100-$200 an hour for rehabilitation.

- Searchable database from American Occupational Therapy Association: https://www.aota.org/Practice/Productive-Aging/Driving/driving-specialists-directory-search.aspx

Driving with Dementia

- American Academy Neurology 2010 Practice Parameter:… *"clinicians should reassess dementia severity and appropriateness of continued driving every 6 months."*

- Monthly care partner "ride along"

- Small prospective studies correlating office cognitive assessment with road tests:
  - 4 of 7 with Alzheimer's failed their 2nd test @ 6 mos
  - Worsening survival curve in drivers w/ AD, even at 6 mos post initial assessment with mild dementia

Counseling

- Validate the difficulty
- Recommendations are not all or nothing
  - Identify as needing tracking and re-evaluation
  - Restrictions/limitations
  - Consultation/evaluation from other providers
  - Scalable behavioral interventions
    - Avoid triggers (keys, car, mentioning driving)
    - Avoid confrontation
    - Avoid arguing about ability/capacity
    - Proactively offering to drive
      - "Oh, let me drive- I really need the practice"
    - Finding other roles/purpose as a passenger
      - "Oh, let me drive- I really need the practice and I really need your help with directions"
    - Changing/losing the keys
    - Relocating/disabling the car

Counseling

- Educate
  - Literature/evidence
  - Legal and financial risks
  - Progressive nature of ADRD
- Elicit patient's sense of responsibility
- Focus on preserving patient's driving legacy
- Maintain awareness of own reactions
  - Especially resistant or agitated patients
- Stay up to date on resources

Potentially Useful Phrases

- “How have your driving habits changed?”
- “What would have to happen for you to decide it’s time to retire from driving? What would the road signs be?”
- “We all retire from driving at some point- what’s your plan when that happens for you?”
- “What changes you could make now to minimize risks for accidents/getting lost/etc? Who can help you with those?”
- “It sounds like you’ve been an excellent driver for X decades and it’s important for you to be able to preserve your driving legacy.”

Community Resources

- DOL
  - Safe Driving for Seniors Collision Prevention Courses
    - Age 55+
    - 8 hours, wide array of content
    - Insurance discount
    - Offered online or in person
  - Request for Re-evaluation
  - Reporting

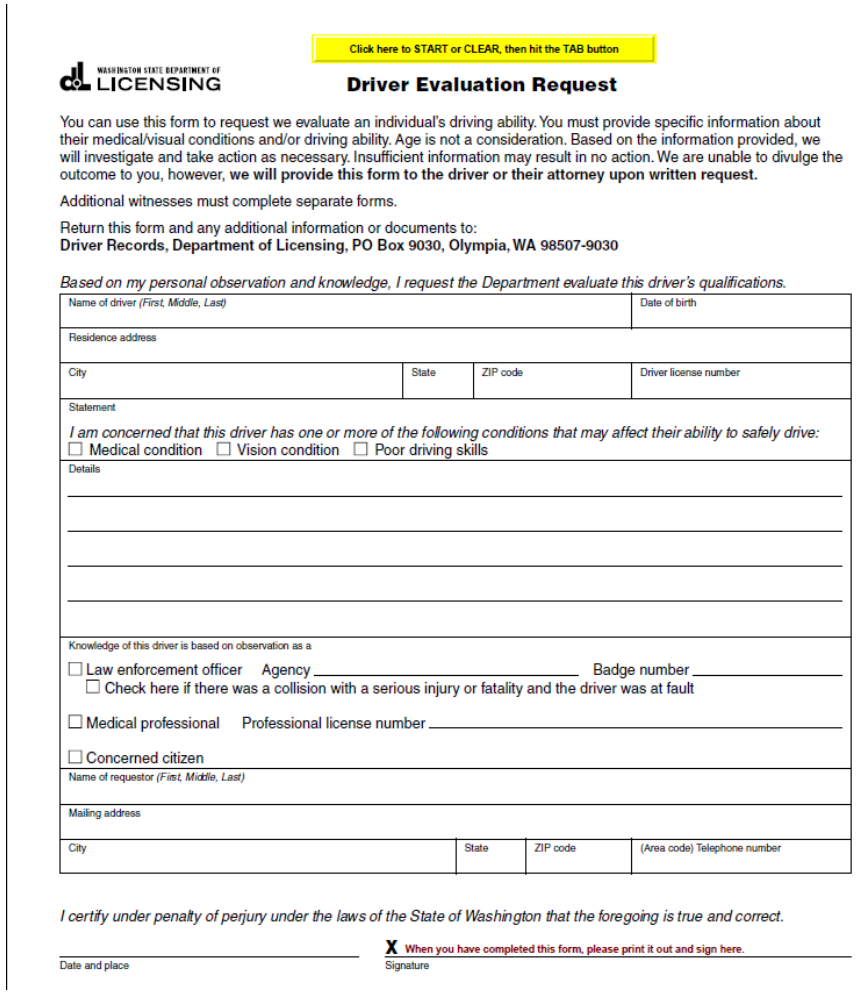
Reporting- Washington

- Physician/medical reporting permitted but not required
- No immunity
- No legal protection
- Neither anonymous nor confidential

- The DMV sends a letter to the driver
  - Due process
  - Action following failure to respond

- Will accept information from courts, other DMVs, police, family members, and other competent sources.
  - May be required to establish firsthand knowledge/standing

Reporting



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WASHINGTON STATE DEPARTMENT OF LICENSING

Driver Evaluation Request

You can use this form to request we evaluate an individual's driving ability. You must provide specific information about their medical/visual conditions and/or driving ability. Age is not a consideration. Based on the information provided, we will investigate and take action as necessary. Insufficient information may result in no action. We are unable to divulge the outcome to you, however, **we will provide this form to the driver or their attorney upon written request.**

Additional witnesses must complete separate forms.

Return this form and any additional information or documents to:
Driver Records, Department of Licensing, PO Box 9030, Olympia, WA 98507-9030

Based on my personal observation and knowledge, I request the Department evaluate this driver's qualifications.

Name of driver *(First, Middle, Last)*			Date of birth
Residence address			
City	State	ZIP code	Driver license number

Statement

I am concerned that this driver has one or more of the following conditions that may affect their ability to safely drive:
☐ Medical condition ☐ Vision condition ☐ Poor driving skills

Details

Knowledge of this driver is based on observation as a

☐ Law enforcement officer Agency _____ Badge number _____
☐ Check here if there was a collision with a serious injury or fatality and the driver was at fault

☐ Medical professional Professional license number _____

☐ Concerned citizen

Name of requestor *(First, Middle, Last)*			
Mailing address			
City	State	ZIP code	(Area code) Telephone number

I certify under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

Date and place

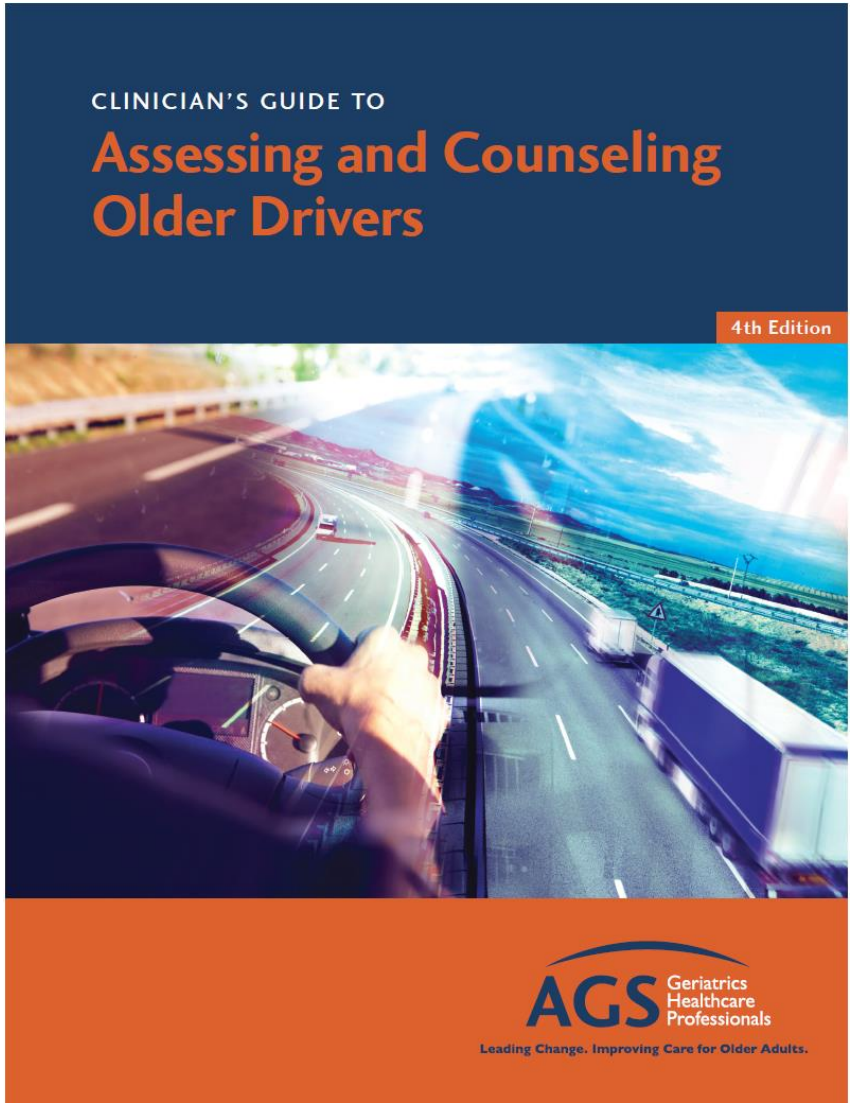
X When you have completed this form, please print it out and sign here.
Signature

https://www.dol.wa.gov/forms/500008.pdf

Reporting- WWAMI

- Alaska (https://doa.alaska.gov/dmv/akol/medical_impair.htm)
  - If requested, information will be kept confidential. However, if an administrative hearing is requested, it may be necessary to release information
- Idaho (https://www.accessidaho.org/itd/driver/profile/index)
  - No specific form, but age 62+ must renew in person every 4 years with vision test
  - Online & renewal changes with COVID, now up to age 75
- Montana (https://media.dojmt.gov/wp-content/uploads/Recommendation-for-Re-examiniation.pdf)
  - All licenses expire at age 75, the renewal every 4 years
  - There is a statute granting physicians immunity from liability for reporting in good faith any patient whom the physician diagnoses as having a condition that will significantly impair the patient's ability to safely operate a motor vehicle.
- Wyoming (http://www.dot.state.wy.us/driverservices)
  - Physicians providing information concerning a patient's ability to drive safely are immune from liability for their opinions and recommendations.

Clinician Resource



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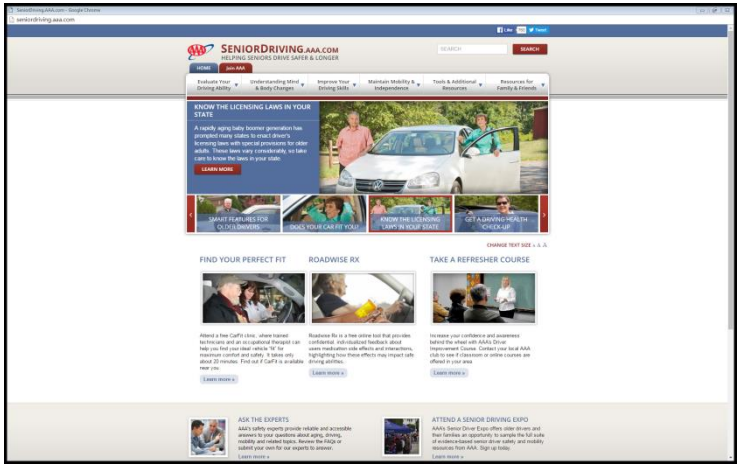
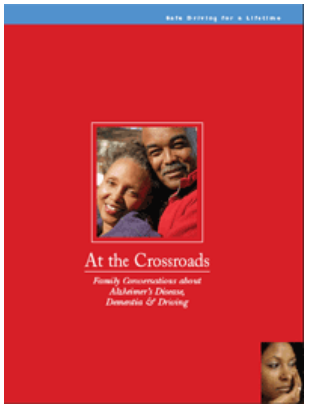
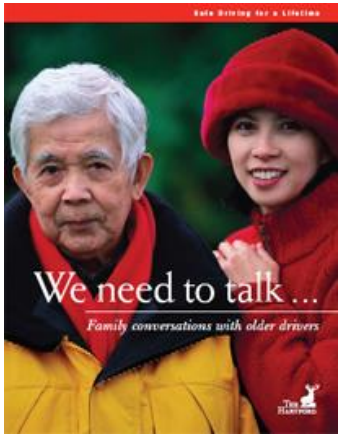
https://geriatricscareonline.org/toc/clinicians-guide-to-assessing-and-counseling-older-drivers-4th-edition/B047

Community Resources

- AAA Senior Driving Site
- ACCESS
- Area Agencies on Aging
  - Community Living Connections
- DSHS
- The Hartford Group
- VA Benefits
- Local organizations and societies
  - APDA taxi voucher program







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