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Driver Screening

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Background

- **Driving is complex task requiring visual, cognitive, and motor abilities**
- **Most people experience some loss in these abilities due to medical conditions/medications**
- **There is considerable variation in this process**
- **Making informed decisions about driving fitness requires meaningful information about drivers' functional abilities**



Background

- **Evaluating driver fitness is often controversial**
 - Much is at stake for older drivers and their families
 - The science often lags behind the need for tools and procedures
 - There is not always agreement on the best way to validate measures and what level of rigor is required
 - Other issues such as cost and time constraints must also be addressed
 - There is often a lack of clarity about the differences between screening and assessment

Consensus-Based Definition of Screening and Assessment

“Screening and assessment represent different and distinct domains of driver evaluation. Screening is the first step in a multi-tiered process and should not be used to make licensing decisions. Assessment provides the basis for identifying reasons for functional deficits, determining the extent of driving impairment, recommending licensing actions, and identifying options for driving compensation or remediation.”

North American Driver
License Policies Workshop
(Eby & Molnar, 2008)

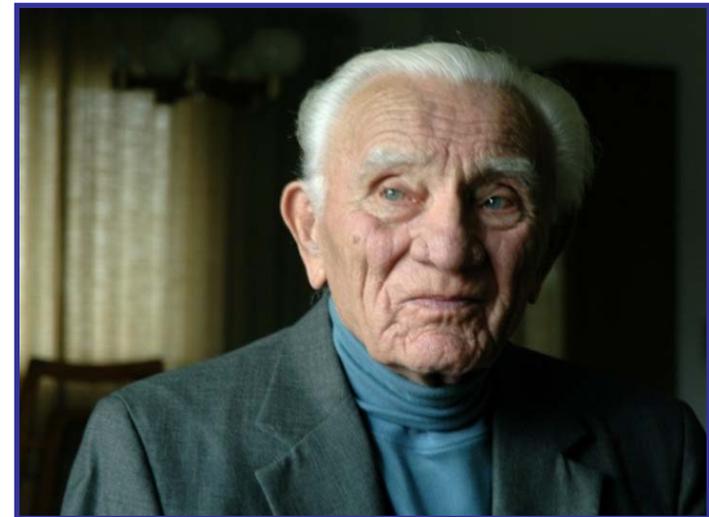
Descriptions

■ Driver screening

- First step in multi-tiered process
- Used to identify gross impairments
- May prompt more in-depth evaluation
- Should not be used to make fitness-to-drive decisions

■ Driver assessment

- Provides the basis for identifying reasons for functional deficits
- Determining the extent of driving impairment
- Identifying options for driving compensation or remediation
- Recommending licensing actions



Screening as Part of a Multifaceted, Multidisciplinary Approach

- Screening can occur in a variety of settings and at various levels of complexity
- Screening is part of a comprehensive, multifaceted, multidisciplinary approach to identifying older drivers who may be at risk
- Issues of safety and mobility go hand in hand



State of the Research

- Although much research has been done to develop screening tools that are valid and reliable, low cost, and easily administered, to date, no tool satisfies all of these components.
- Important research continues on ways to improve the sensitivity (maximizing correct decisions that an individual is a high crash risk) and the specificity (minimizing the incorrect decisions that an individual is a high crash risk) of screening.
- In the meantime, there is widespread consensus that screening tools should focus on detecting functional losses in visual, cognitive, and or motor abilities that directly affect driving.

Screening in Licensing Agencies: MaryPODS Study: Battery

- **Visual Acuity**
 - Wall charts, Stand alone testing machines, computer based programs
- **Visual Contrast Sensitivity**
 - Wall charts, Stand alone testing machines, Computer-based programs
- **Field of View**
 - Ophthalmological perimetry evaluation, UFOV subtest 2, Scan Chart test
- **Working Memory**
 - Delayed Recall test from the Mini-Mental Status Evaluation (MMSE)
- **Directed Visual Search**
 - Trail-making test, Part B
- **Visual (Divided) Attention Processing Speed**
 - Trail-making test, Part B and a PC-based version of the Trail-making test, Part B (“Dynamic Trails”), UFOV subtest 2
- **Visualization of Missing Information**
 - Motor-Free Visual Perception Test (Visual Closure subtest)
- **Lower Limb Strength and Mobility**
 - Rapid Pace Walk, Foot Tap tests
- **Upper Body Flexibility**
 - Arm Reach test and Head-Neck Rotation test
- **Head-neck Range of Motion**
 - Head-neck Rotation test
- Adapted from Staplin, L. & Lococo, K.H. (2003) and Staplin, L., Lococo, K.H., Gish, K.W., & Decina, L.E. (2003).

Screening in Licensing Agencies: MaryPODS Study: Observations

- Lower body strength, range of motion, mobility and coordination
 - Person is able to walk without assistance, no partial or full loss of a leg or foot, and no excessive shaking, tremors, weakness, rigidity, or paralysis.
- Upper body strength, head and neck range of motion, hand mobility, and coordination
 - Person can turn both head and upper body and has full use of arms and hands, no partial or full loss of arm, no excessive shaking, tremors, weakness, rigidity, or paralysis.
- Adequate hearing
 - With or without a hearing aid, person is able to hear the normal spoken voice during licensing process
- Adequate vision
 - Person must pass a vision screening by the DMV or a vision specialist.
- Cognitive skills
 - Person responds to instructions and questions without disorientation.
- Maintain normal consciousness and bodily control
 - Person does not experience excessive shaking, tremors, weakness, rigidity, paralysis, or obvious disorientation.
- Maintain normal social, mental, or emotional state
 - Person does not display an excessively hostile and/or disruptive, aggressive behavior, or acts out of control. No obvious disorientation.

Adapted from Staplin, L. & Lococo, K.H. (2003) and Staplin, L., Lococo, K.H., Gish, K.W., & Decina, L.E. (2003).

State of the Research

- Both screening and assessment tools need to be validated.
- Although much research has been done to develop screening tools that are valid and reliable, low cost, and easily administered, to date, no tool satisfies all of these components.
- Important research continues on ways to improve the sensitivity (maximizing correct decisions that an individual is a high crash risk) and the specificity (minimizing the incorrect decisions that an individual is a high crash risk) of screening.