Screening Drivers for Cognitive Impairment
Nationally, by 2030, 1 in 5 drivers will be age 65 or older
Older drivers made up 18 percent of all licensed drivers in 2015
Older drivers in Iowa made up 19 percent of all licensed drivers in 2015

NHTSA Traffic Safety Facts, DOT HS 812 372 February, 2017
Percentage of Iowa Drivers 65 and Older by County on 12/31/2015
Percentage of Iowa Drivers 65 and Older by County on 12/31/2016
Older Drivers in the News

- A couple in their 90’s died when the 94-year-old driver pulled onto a state highway in front of another vehicle; the passenger in the other car was severely injured.
- 84-year-old man killed after pulling out of his rural driveway into the path of a tractor-trailer.
- 84-year-old woman enters a four-lane highway in the wrong direction and is killed after striking a van; a young child and his mother were injured.
- 85-year-old struck and killed a pedestrian in a parking lot.
- 77-year-old woman crashes into a house, injuring herself and her 80-year-old husband; her third collision in one year.
- 8-year-old is struck by a 78-year-old driver and thrown from his wheelchair.
Health and Aging Concerns

Problems related to age can include

- Reduced vision
- Cognitive impairment
- Decreased strength and mobility
- Chronic disease, medication use, and other health conditions can impair driving ability
Many conditions resulting in cognitive impairment are age-related and are under-diagnosed.

Prevalence rates rise significantly with age:

- 65 - 74 years: 2.4%
- 75 - 84 years: 11%
- Greater than 85 years: 34.5 - 50%

Dementia is a general term for loss of cognitive function

- Multiple causes
  - Progressive degeneration such as Alzheimer’s (the most common cause)
  - Brain tumor
  - Stroke (large or ‘mini’ strokes)
  - Lack of oxygen to the brain such as near drowning or overdose
Dementia Signs & Symptoms

- Confusion, diminished memory, concentration and orientation
- Personality changes and loss of verbal abilities
- Difficulty planning ahead
- Recent memories are often lost and distant memories are retained (e.g., those suffering from dementia may give you an address that they lived at many years ago)
Mild Dementia

- Forgetfulness, especially details of recent events
- Subtle disorientation
- Seems normal to those other than family
- May get lost in unfamiliar surroundings
- Ability to safely operate a motor vehicle may or may not be impaired
Moderate/Severe Dementia

- Significant forgetfulness
  - Difficulty stating address and phone number
  - Unable to retain new information
- Communication: word finding is difficult and they may appear confused when questioned
- Acute disorientation
- Incapable of operating a motor vehicle safely
Many behaviors associated with dementia increase the chance of interacting with law enforcement:

- Drive too slowly
- Drive in the wrong direction
- Run stop signs or red lights
- Drive erratically
- Forget where car is parked and report it stolen
- Get lost while driving
- Have a car crash and leave the scene
- Abandon their vehicle and wander away
Developed DOSCI form

Driver Orientation Screen for Cognitive Impairment
Nine questions to determine orientation to person, place and time
DOSCI

Requested by law enforcement
Research determined best questions
Validated in the Alzheimer's Research Center at UCSD
DOSCI Validation

Control Average Age: 77 years
Dementia Average Age: 74 years

Average Number of Questions Missed
N=68

Control n=27
Dementia n=41

Average Number of Questions Missed:
- Control: 0.21
- Dementia: 2.43
Frequently Missed Questions

- Year
- Day
- Month
- Day of the Week
- Time
- City
- State
- Home Address
- DOB

Number Incorrect
DOSCI

IOWA DOT Form 433100 (10-14)
For use with customers who . . .

- Were referred for reexamination
- Required to provide a medical or vision report
- Appear to be confused
- Are not able to follow simple instructions
- Cannot answer questions without assistance
- Have difficulty finding or identifying their documents
Outcome

5 or more incorrect:
Require Medical Report and Drive Test

3-4 incorrect:
Possible Medical Report or Drive Test depending on situation

0-2 incorrect:
Medical Report or Drive Test only if other justification is apparent
Results

Based on 4444 individuals screened on 4694 occasions between November 2014 and October 2015

213 individuals were screened 2 to 5 times
Gender Distribution

n = 4444

46.5% female
53.5% male
Reasons for Assessment

- Re-Exam: 30.9%
- Recall: 8.8%
- Line Exam: 29.6%
- Local DT: 1.1%
- Hearing: 2.5%
- Other: 21.1%

Reasons for Assessment = 4393
Screenings ranged from 1 minute to 17 minutes

Average length of screening = 1.6 minutes
Traffic Stop
Utilizing DOSCI

Mr. Jones Video
Mr. Jones’ Results

DOSCI score is acceptable basis for reexamination referral

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| 5 or more incorrect | • **Request re-exam**  
Unsafe to drive; refer to department procedures for alternative transportation and vehicle removal |
| 3-4 incorrect       | • **Request re-exam**  
Potentially unsafe to drive; consider totality of circumstances |
| 0-2 incorrect       | • **No Referral** or re-exam based on totality of circumstances |
Applications

- DOSCI card
- Cell phone or tablet app
  - IPhone
  - Android
Training

- **TAILORED SESSIONS**
  - 30 min to 2 hours
  - Multiple sessions

- **DOSCI**
  - When to use DOSCI
  - Health and aging concerns

- **REEXAMINATION**
  - When to refer
  - How to refer/request
  - Driver actions and errors
  - Reluctance to cite older drivers
Reasons to use DOSCI

- Backed by research
- Validated screening tool
- Simple and efficient
- Free
- Removes the guesswork
- Shifts the decision to DOT
QUESTIONS

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THANK YOU!