Ontario’s Enhanced 80 and Above Senior Driver Licence Renewal Program

Wednesday, July 30th, 2014

Brent Swain & Erik Thomsen
Ministry of Transportation Ontario
• Provide an overview of enhancements to Ontario’s 80 and Above Senior Driver Licence Renewal Program.

• Detail day-to-day program operations and challenges.
• Ontario population aged 80+ will rise significantly: from about 550 thousand or 4.1% of the population in 2012 to 1.35 million or 7.6% in 2036.

• Rate of fatal collisions involving senior drivers continues to be higher than that of the general population.
  – In 2006-2010, the average at-fault fatal collision involvement rate for drivers aged 80+ was double the rate for drivers of all ages.

• **February 2012**: former Minister of Transportation made a commitment to enhance the ministry’s Senior Driver’s Licence Renewal Program.
Program Enhancements

- Based on an evaluation of Ministry programs, jurisdictional best practices, and research, MTO introduced enhancements to its 80+ Renewal Program on April 21st, 2014.

- **Key Objective:** balance need for senior mobility and independence with road safety for all.

<table>
<thead>
<tr>
<th>Program Prior to April 21, 2014</th>
<th>Program as of April 21, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewal cycle: every two years beginning at age 80</td>
<td>Renewal cycle: every two years beginning at age 80</td>
</tr>
<tr>
<td>Vision test</td>
<td>Streamlined vision test</td>
</tr>
<tr>
<td>Driver record review</td>
<td>Driver record review</td>
</tr>
<tr>
<td>Group Education Session presentation (90-minutes)</td>
<td>Streamlined Group Education Session presentation (45-minutes)</td>
</tr>
<tr>
<td>Written “rules of the road” knowledge test</td>
<td>Two brief cognitive screening tools (“Clock Drawing Test” and “Letter Cancellation Test”)</td>
</tr>
<tr>
<td>If necessary, road test</td>
<td>If necessary, either a road test or medical review</td>
</tr>
</tbody>
</table>
TIRF assessed 446 recent, peer-reviewed articles, and close to 100 cognitive tools for reliability, validity, and relevance in determining fitness to drive.

- Based on predictive ability, simplicity of scoring/administration and zero cost impact MTO selected the Clock Drawing and Single Letter Cancellation tests.

**Clock Drawing Test**

**Letter Cancellation Test**

Clock Drawing test measures visuo-spatial ability – ability to recognize, organize and interpret information.

Letter Cancellation test measures psycho-motor speed – ability to quickly process a signal, prepare a response, and execute that response.
The Senior Driver Renewal Program (Aged 80+) - Delivery

Overview

- Provincial – 4 Regions
- 4 Field Services Manager
- Approximately 15 Scheduling Clerks
- Approximately 30 Driver Improvement Counsellors
- Approximately 20 MTO locations and 110 Travel Points
- Serving over 120,000 clients per year (As of 2011)
  - Referring less than 5% to road test
Old Vs. New

- Old program
  - Vision test, Group Education Session (GES) and Written test
  - Session time approximately 3.5 hours
  - Referrals for road test were based on the driving record, failure to participate in the GES or language barrier

80% of seniors referred to a road test, passed
New program

- Vision test (streamlined), Group Education Session (GES) and two In Class Screening Components (ICSC)
- Session time approximately 90 to 120 minutes
- Referrals for road test or Medical follow up based on the combined factors of the driving record and the scores on the two ICSCs

» Less discretionary
• Renewal notice and information letter received by mail
• Call Provincial Scheduling Office where the Scheduling clerk will;
  ➢ Review the record for eligibility
  ➢ Determine the needs of the client
  ➢ Determine if the client requires a licence extension
• Scheduling takes approximately 3-4 minutes
• It’s not always easy
The clients are tested individually for vision standards
The Counsellor gives the presentation
The Counsellor administers the ICSC’s
Clients are advised of the results

- Successful - Proceed with Renewal
- Moderate failure – Road test referral
- Severe failure – Medical referral
Our Goals

- Educating Senior drivers
- Allowing them to drive longer and safer
- The safety of all drivers on our roads

Ultimately making Ontario’s roads the safest in the world
• Questions?
Update on aging drivers and drivers with dementia

Mark Rapoport, MD, FRCPC
Associate Professor
Dep’t of Psychiatry

AAMVA, July 2014
Outline

• What we know and what we don’t know:
  – Candrive Project
  – Dementia and Driving in Ontario Project
  – Other Mental Illness and Driving

• Suggestions for the future.
Candrive / Ozcandrive:
Major Objectives

• To develop a scientifically valid, easy to use clinical decision rule that will identify safe older drivers or those who need to go on for further testing

• To extend the safe driving period for older persons
# Candrive Contributors

## Candrive

<table>
<thead>
<tr>
<th>Co-Principal Investigators</th>
<th>Research Associates</th>
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<tbody>
<tr>
<td>Malcolm Man-Son-Hing</td>
<td>Jennifer Biggs</td>
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<tr>
<td>Shawn Marshall</td>
<td>Minh-Thy Dinh Truong</td>
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<td>Jeanette Montufar</td>
<td>Sheila Garrett</td>
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<td>Anita Myers</td>
<td>Karen Gibson</td>
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<td>Gary Naglie</td>
<td>Anita Jessup</td>
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<td>Janice Polgar</td>
<td>Linda Johnson</td>
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<td>Michelle Porter</td>
<td>Rivi Levkovich</td>
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<td>Mark Rapoport</td>
<td>Phyllis McGee</td>
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<td>Ian Stiell</td>
<td>Laura Morrison</td>
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<td>Holly Tuokko</td>
<td>Joane Parsons</td>
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<tr>
<td>Brenda Vrkljan</td>
<td>Suzie Schwartz</td>
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<td>George Wells</td>
<td>Felice Wise</td>
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## Ozcandrive

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<th>Principal Investigator</th>
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<tr>
<td>Judith Charlton</td>
<td>Lorraine Atkinson</td>
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<td>Peter Darzins</td>
<td>Louise Beasley</td>
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<td>Marilyn Di Stefano</td>
<td>Elizabeth Jacobs</td>
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<td>Sjaan Koppel</td>
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<tr>
<td>Jim Langford</td>
<td>Kate Mora</td>
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<td>Shawn Marshall</td>
<td>Grace Rive</td>
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<tr>
<th>Program Manager</th>
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<tr>
<td>Lynn MacLeay</td>
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Common Cohort Recruitment

- 7 Canadian sites; 4 provinces
  - 928 older drivers age 70 and older
- Melbourne, Australia and Wellington, New Zealand
  - 257 (Melbourne) and 45 (Wellington) age 75 and older
Persentech GPS Device in a Vehicle
Key Fob
To date over 20 million km of data!
Provincial Licensing Bodies

- Crash data from all provincial licensing bodies
- Traffic violations, “at fault status” determined independently.
## Common Cohort Demographics

<table>
<thead>
<tr>
<th></th>
<th>Year 1 (n=928)</th>
<th>Year 2 (n=884)</th>
<th>Year 3 (n=831)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n (%)</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Age</td>
<td>76.20</td>
<td>4.85</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>578 (62.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>350 (37.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current Living Arrangement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>House</td>
<td>604 (65.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartment</td>
<td>93 (10.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retirement Residence</td>
<td>13 (1.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condominium</td>
<td>188 (20.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>30 (3.2)</td>
<td></td>
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# Health / Physical Functioning

<table>
<thead>
<tr>
<th>Measure</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
<th>Comment</th>
</tr>
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<tbody>
<tr>
<td>Number of Current Medical Conditions</td>
<td></td>
<td></td>
<td></td>
<td>Year 1</td>
<td>7.55</td>
<td>3.46</td>
<td>0-22</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>9.65</td>
<td></td>
<td></td>
<td>4.35</td>
<td>0-27</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Year 3</td>
<td>10.25</td>
<td></td>
<td></td>
<td>4.51</td>
<td>0-28</td>
<td></td>
</tr>
<tr>
<td>Number of Current Medications</td>
<td></td>
<td></td>
<td></td>
<td>Year 1</td>
<td>4.48</td>
<td>3.03</td>
<td>0-14</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>4.76</td>
<td></td>
<td></td>
<td>3.09</td>
<td>0-16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Year 3</td>
<td>5.15</td>
<td></td>
<td></td>
<td>3.36</td>
<td>0-19</td>
<td></td>
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<tr>
<td>Timed Up and Go Test (Seconds)</td>
<td></td>
<td></td>
<td></td>
<td>Year 1</td>
<td>9.99</td>
<td>2.52</td>
<td>1-40</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>10.30</td>
<td></td>
<td></td>
<td>2.68</td>
<td>5-38</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Year 3</td>
<td>10.26</td>
<td></td>
<td></td>
<td>2.46</td>
<td>10-26</td>
<td></td>
</tr>
<tr>
<td>Rapid Pace Walk (Sec)</td>
<td></td>
<td></td>
<td></td>
<td>Year 1</td>
<td>6.42</td>
<td>1.73</td>
<td>3-19</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>6.66</td>
<td></td>
<td></td>
<td>2.08</td>
<td>3-34</td>
<td>Cannot do (n=2)</td>
</tr>
<tr>
<td></td>
<td>Year 3</td>
<td>6.66</td>
<td></td>
<td></td>
<td>1.72</td>
<td>1-19</td>
<td>Cannot do (n=3)</td>
</tr>
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## Cognitive Functioning

<table>
<thead>
<tr>
<th>Test</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trail Making Test B (Time, sec)</td>
<td>97.15</td>
<td>97.92</td>
<td>97.32</td>
<td>40.37</td>
<td>45.84</td>
<td>30-556</td>
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<tr>
<td>Trail Making Test B (No. of Errors)</td>
<td>0.76</td>
<td>0.73</td>
<td>0.69</td>
<td>1.11</td>
<td>1.08</td>
<td>0-9</td>
</tr>
<tr>
<td>MoCA Total Score</td>
<td>25.92</td>
<td>26.10</td>
<td>25.82</td>
<td>2.49</td>
<td>2.57</td>
<td>13-30</td>
</tr>
<tr>
<td>MMSE Total Score</td>
<td>28.12</td>
<td>28.68</td>
<td>28.32</td>
<td>1.67</td>
<td>1.38</td>
<td>20-30</td>
</tr>
</tbody>
</table>
Clock Drawing Test
Scoring: For a total of 7 points, award 3 points for time, 2 points for numbers, 2 points for spacing.
Thresholds:
3–7 points = pass
1–2 points = moderate fail (M-fail)
0 points = extreme fail (X-fail)

Letter Cancellation Test
Scoring: Calculating the number of omissions (i.e., “H”s that were not crossed out).
Thresholds:
0–5 omissions = pass
6–10 omissions = moderate fail (M-fail)
11+ omissions = extreme fail (X-fail)
– As of 1992, 252,600 Canadians over 65 had Alzheimer’s disease
  • By 2021, will rise to 592,000
– Crash rates are higher
– Many continue to drive
Patient, Family, Doctor

<table>
<thead>
<tr>
<th>Correctly classified</th>
<th>Self-rating</th>
<th>Informant Rating</th>
<th>Physician Rating</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>53.2</td>
<td>64.4</td>
<td>74.0</td>
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</table>

Brown et al, JAGS 2005
### Real World Monitoring

<table>
<thead>
<tr>
<th>Healthy (n=20)</th>
<th>Same</th>
<th>Mild Alzheimer’s (n=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>Trips/week Miles/week Pass/Fail Highway Driving</td>
<td>Light Traffic Residential Traffic Daylight Sunny</td>
</tr>
<tr>
<td></td>
<td>Worse scores on video ratings</td>
<td>Festa et al, 2013, Ger Psych Neurol</td>
</tr>
</tbody>
</table>
The working differential diagnosis is mild Alzheimer's disease vs. mild cognitive impairment.
Crashes
Caregiver concern
Cognitively slow
Irritable
Abnormal Clock
<table>
<thead>
<tr>
<th>Plan</th>
<th>MTO Report</th>
<th>Road Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>B</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>C</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>D</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Predictive Model
The combination of Abnormal Clock and Caregiver Concern accounted for:

- 62% of the variance in “report with or without a road test” (C or D)
Other Mental Illnesses and Driving

- Depression
- Anxiety
- Alcohol and other illicit drugs
- Bipolar Disorder
- Schizophrenia
- .....as well as psychotropic drugs
License renewal for 80+ will identify and remove only drivers with significant dementia or cognitive impairment. This will preserve autonomy for seniors.
• License renewal for 80+ will identify and remove only drivers with significant dementia or cognitive impairment. This will preserve autonomy for seniors.

• To further enhance autonomy but screen out at-risk:
  – Decision tools
  – Technology – simulators, in-vehicle
  – Conditional licensing
  – Driving refresher
• Physicians are the primary point of contact for older patients with physical, mental, cognitive decline.
Issues to solve: medically-impaired drivers

Advocacy and mobility

Restrictions and reporting
Medical illnesses as Red Flags
- Statistical Associations Modest
- Drug vs Illness
- Individual variation
Medical illnesses as Red Flags
  – Statistical Associations Modest
  – Drug vs Illness
  – Individual variation
  – Guideline weaknesses

Issues to solve: medically-impaired drivers

AGREEII Rigour
Rapoport et al, In Progress
Issues to solve: medically-impaired drivers

- Doctors’ Opinion?
- Standard – how to assess?
  - The Road Test
    - comparative sensitivity
    - Hawthorne effect
• Research
  – Current policy changes.
  – Envisioning and testing future changes.
• **Older Drivers**
  
  – Process and outcome analysis of new policy for license renewal (Yoassry Elzohairy).
• Older Drivers
  – Process and outcome analysis of new policy for license renewal

• Drivers with Medical Impairment
  – Process and outcome analysis for new reporting forms.
  – Assessment options for road testing—direct comparison of alternative methods and their outcomes.
  – Conditional licensing opportunities (other than dementia).
• Older Drivers
  – Process and outcome analysis of new policy for license renewal

• Drivers with Medical Impairment
  – Process and outcome analysis for new reporting forms.
  – Assessment options for road testing—direct comparison of alternative methods and their outcomes.
  – Conditional licensing opportunities (other than dementia).

• Brainstorming Consortium
Cognitive Screening by Police for At Risk Senior Drivers

July 30th 2014

Dr. Lindy Kilik, Ph.D., C.Psych.
Neuropsychologist,
Seniors MH-Providence Care & Queens University
THE CASE OF MRS. BROWN

You are an officer on traffic patrol when an elderly lady cuts in front of you causing you to slam on your brakes. She similarly cuts off another driver. You turn on your lights and siren and try to flag her down. Unaware of your presence, she drives into the grocery parking lot...
You drive up next to her and approach her. When asked if she noticed you flagging her, she denies seeing you. When you ask for her driver’s license she produced her health card. After much searching, she produces an expired license and tells asks: “Why didn’t you just ask for this in the first place?”

As you move back to your vehicle and ask her to wait while you check her license, she begins to drive away and you double back and stop her.
Senior Drivers...

- The need for a multi-pronged approach to address a complex issue
List of Projects

- Driving and Dementia Companion Pamphlets: patient/families and clinicians
- Determining who needs a road test: in–office cognitive screening
- Driving Simulator
- In-the-field Police screening of “at risk” senior (drivers)
Driving and Dementia in Ontario: A Quantitative Assessment of the Problem

Robert W Hopkins, PhD¹, Lindy Kilik, PhD¹, Duncan JA Day, PhD¹, Catherine Rows, RPN², Heidi Tseng, BSc³

Background: The population is becoming increasingly aged, and concomitantly, the prevalence of dementia is steadily rising. Persons aged 65 years and over are likely to continue driving for many years and often well into the dementia process.

Methods: Ontario Ministry of Transportation driving data, census data, and dementia prevalence data were combined to determine the number of persons with potential dementia who are driving, both now and in about 25 years’ time.

Results: Actual and projected Ontario figures show that the number of senior drivers will increase markedly from just under 500,000 in 1986 to nearly 2,500,000 in 2028. Similarly, the number of drivers with dementia is also increasing. Although not all drivers with dementia are necessarily dangerous, most are estimated to continue driving well into the disease process. By combining the above-mentioned data sets, a best estimate of the number of drivers with dementia in Ontario was derived. It is estimated that this group has grown from just under 15,000 in 1986 to about 34,000 in 2000 and will number nearly 100,000 in 2028.

Interpretation: Increasingly, the responsibility for identifying drivers with dementia has fallen on the health care system, a role for which it was never designed nor equipped to handle. The risks associated with the dramatically increasing number of drivers with dementia demand a psychologically sensitive and efficient screening procedure.

(Can J Psychiatry 2004;49:434–438)

Information on author affiliations appears at the end of the article.
Driving and Dementia Companion Pamphlets: patient/families and clinicians
MTO has generously supported project since its initiation in 2004
Developed by expert stakeholder group
Companion set of pamphlets
Now in 2nd iteration
Family/patient pamphlet in FAQ format
Physician/clinician pamphlet outlines MTO process for those reporting
Available in hard copy and online
Driving And Dementia: A Guide For Patients And Families

Receiving the diagnosis of a dementia can be overwhelming and confusing. One issue you and your family will need to consider is driving. This pamphlet provides basic information about why driving is an issue and the role you, your family, your physician and the Ministry of Transportation (MTO) have in making decisions related to driving.

Why is driving such an important issue in dementia?
Driving is a mode of transportation but also represents freedom and independence. This is why decisions about driving are always difficult. Dementia affects several mental functions that are essential for driving. While the basic mechanical skills needed to operate a vehicle may remain intact for quite some time, abilities such as rapidly judging distances, making quick decisions and attending to several events at once are affected sooner. Research into dementia and driving tells us that people who continue to drive with dementia are involved in more crashes than other drivers (up to five times more).

Does the diagnosis of dementia mean that I have to stop driving immediately?
Some people are able to drive for a period
Reporting Drivers with Dementia: A Guide for Physicians

This pamphlet reviews the process of reporting potentially unsafe drivers with dementia to the Ontario Ministry of Transportation (MTO).
Determining who needs a road test:
in–office cognitive screening
Deciding who needs a road test…
Can We Do Better?
A large number of seniors with cognitive impairment will be referred for medical driving assessment

- No clear guidelines to decide who to refer
Narrowing the field

- With empirical data...
  - We should be able to more narrowly define those people who actually need intensive driving assessment.
KSCAr and road test data

- Partnership with Dr. J. Fogarty, Neuropsychologist in Geriatric Program at London Health Sciences

- London DRIVEABLE medical driving assessment centre

- CONCURRENT cognitive screening (KSCAr** + SKT) and driving assessment outcome

**KSCAr = Kingston Standardized Cognitive Assessment-Revised**
• Data have just arrived!

• Preliminary analyses show
  – a better pass/fail ratio (2:1)
  – Separation of pass/fail groups on basis of KSCAr data
  – Opportunity to look at supplementary measures to enhance prediction of pass/fail
  – Promising reduction of “grey zone”
Driving Simulator
Driving Simulator Research (since 2008)
• A Partnership with

– Queens University Sleep Lab: Driving and Shift workers driving simulator research (Dr. Alistair MacLean)

– Providence Care Mental Health Services
Benefits of a Simulator:

- Another way to narrow the range of patients who need to have intensive driving assessment

- An inexpensive means to assess

- A way to manage the approaching wave of seniors who need assessment (could be replicated throughout the province)

- Rehab potential for those in the early stages of dementia who would benefit from remediation
Studies to complete

1. Finalize driving simulator program
2. Compare performance of non-seniors, seniors w/ and w/o dementia
3. Compare simulator performance with road-test outcome
4. Design and evaluate rehabilitative value
• In-the-field Police screening of “at risk” senior (drivers)
Typical Police Scenarios involving Seniors

1. Driving
2. Victimization
3. Theft
4. Wandering
5. Sexually inappropriate behaviour / exposing self
Pilot study 2006, to address growing police concern about increasing their ability to recognize dementia. First such study in Canada / North America.

- A cognitive screen called “the Short Orientation Memory Concentration Test” (SOMCT) was piloted with the Kingston police
  - Project Lead: Sgt. Charles Boyles
  - Ongoing support: Det. Diane McCarthy: Vulnerable Sector Unit
  - New key support: Det. Ken Jamieson, Vulnerable Sector Unit
Phase One: Pilot Study

• Criteria for Selected Tool
  – Can be administered in the field
  – Can adequately identify “at risk” individuals
  – Can be administered and scored with comparable accuracy level to that of seasoned clinician
  – One that DOESN’T
    • Require special equipment and is portable
    • Require specialized training in psychometric assessment
    • Have complex scoring systems
    • Take a lot of time to administer
• A screen – not a diagnosis
• 7 quick questions to determine whether a senior may have a dementia
• Literally takes a few minutes
• On wallet-sized card kept in notepad
• Consists of:
  – Orientation questions (e.g., year, time)
  – Attention/concentration questions (count backwards)
  – Memory (repeat and later recall an address)
The Short Orientation-Memory-Concentration Test

Administered by: __________________________
Incident #: __________________________
Date: __________________________
Time: __________________________ a.m. / p.m.

<table>
<thead>
<tr>
<th>Question</th>
<th>Circle obtained Score</th>
<th>Obtained score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the year now?</td>
<td></td>
<td>4 or 0</td>
</tr>
<tr>
<td>Response: __________________________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. What is the Month now?</td>
<td></td>
<td>3 or 0</td>
</tr>
<tr>
<td>Response: __________________________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Repeat this address:</td>
<td>Did the person repeat?</td>
<td>Do not score</td>
</tr>
<tr>
<td>“John Brown, 43 Market St., Chicago”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. About what time is it now?</td>
<td></td>
<td>3 or 0</td>
</tr>
<tr>
<td>(correct if within 1 hour of actual time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response: __________________________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Count backwards from 20 to 1.</td>
<td>Perfect response:</td>
<td>4</td>
</tr>
<tr>
<td>20, 19, 18, 17, 16, 15, 14, 13, 12, 11,</td>
<td>One error:</td>
<td>2</td>
</tr>
<tr>
<td>10, 9, 8, 7, 6, 5, 4, 3, 2, 1</td>
<td>more than 1 error:</td>
<td>0</td>
</tr>
<tr>
<td>Response: __________________________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Say the months in reverse order.</td>
<td>Perfect response:</td>
<td>4</td>
</tr>
<tr>
<td>December, November, October, September, August, July, June, May, April,</td>
<td>One error:</td>
<td>2</td>
</tr>
<tr>
<td>March, February, January</td>
<td>more than 1 error:</td>
<td>0</td>
</tr>
<tr>
<td>Response: __________________________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Repeat the address given:</td>
<td>Perfect response:</td>
<td>10</td>
</tr>
<tr>
<td>John Brown, 43 Market Street.</td>
<td>1 error:</td>
<td>8</td>
</tr>
<tr>
<td>43 Market Street.</td>
<td>2 errors:</td>
<td>6</td>
</tr>
<tr>
<td>Chicago.</td>
<td>3 errors:</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>4 errors:</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>5 errors:</td>
<td>0</td>
</tr>
</tbody>
</table>

Positive Screen = LESS THAN 18

TOTAL SCORE / 28
Results

• Can trained police officers administer/score the clinical screening tool with the same accuracy as experienced clinicians? **YES!**

  – Correlations between time₁ & time₂
    • \( r_{12} \) (CLINICIAN) = 0.89
    • \( r_{12} \) (POLICE OFFICER) = 0.85

  – ANOVA Main effect of First tester:
    • \( F(2,2)=10.64 \ p.=.09 \) (NSD)
• Is there a clinical dementia screening tool that could be used in the field, to adequately detect cognitive impairment in seniors? **YES!**

• Percent of participants **correctly classified** as either with/without cognitive impairment: **90.6%**

  (3 cases of cognitive impairment missed)
Distribution of Dementia Levels

- Mild: 20%
- Mild-moderate: 27%
- Moderate: 33%
- Severe: 20%
Phase Two: Building Community Partnerships
Community Partners-Kingston

- Kingston Police
- Frontenac Community Mental Health Service
- Emergency Departments
- Providence Care Geriatric Psychiatry Specialty Outreach Team
- Alzheimer’s Society Kingston
- Community Care Access Centre
- Ministry of Transportation
• Duration of training session:
  – 45-60 minutes.

• Protocol:
  – Introduction to Screening Tool
  – Distribution of Manual (developed for project)
  – Training in Administration of Tool
    • Observation of Clinician’s Administration of Screen
  – Review of Scoring procedures
  – Officer Practice:
    • 2 practice cases
      – Mock Assessments, Scoring & Review
Challenges/opportunities

• Ongoing data collection is slow
  – Currently getting regular administration of the screen: Whose job is it?
  – Small community of Kingston

• An opportunity to communicate a concern to MTO on the police report in a standardized fashion

• Ongoing training of other police communities
  – E.g., Perth (Local), Windsor (Provincial)
Meeting the demands of identifying at-risk senior drivers requires a multi-pronged approach.

Police Screening for dementia is one piece of the puzzle:
- Quick
- Inexpensive
- Only works if it’s used!
- Requires partnerships with the community
kilikl@queensu.ca

Thank you!
Questions...
Pennsylvania State Police

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Bureau of Patrol
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joberdorf@pa.gov
Challenges Faced By Law Enforcement When Dealing With Senior Drivers

July 30, 2014
http://www.youtube.com/watch?feature=player_detailpage&v=kZzuh1ntD8o
Law enforcement officers (LEO’s) encounter elderly drivers on a daily basis. Some of these drivers present a danger to the motoring public due to medical, mental and/or physical conditions that affect their ability to safely and responsibly operate a motor vehicle.
OBJECTIVE

Law enforcement must work together with their state’s Department of Transportation (PennDOT) to protect the motoring public by removing drivers from our highways that are a danger to themselves and other motorists due to certain medical, mental and/or physical conditions.
HOW DOES AGE AFFECT DRIVING?

Changes to our Bodies.
Over time your joints may get stiff and your muscles weaken, making it harder to move your head to look back, quickly turn the steering wheel, or safely hit the brakes.
Decreased Eyesight.

As we get older our eyes become more sensitive to glaring sun, bright headlights and street lights. Our peripheral vision narrows and we develop eye diseases such as cataracts, macular degeneration, or glaucoma.
Decreased Hearing.

Hearing loss can prevent a driver from hearing the noise of approaching traffic, children playing and horns beeping and may prevent the driver from detecting dangerous situations.
**Slower Reflexes.** As we age, our reflexes slow down and our attention spans may shorten. 60 MPH = 88 FPS

**Multi-tasking.** With slower reflexes and shorter attention spans, we gradually lose our ability to multi-task. These are all normal changes, but they can affect your driving skills.
Other Health Issues Occurring With Age.

- Arthritis
- Parkinson's Disease
- Diabetes
- Depression
- Dementia
- Stroke
- Pacemaker
- Loss of Fine Motor Skills
Alzheimer's Disease. Some older people have conditions like Alzheimer's disease or dementia that change their thinking and behavior. People with AD may forget familiar routes or even how to drive safely. They become more likely to make driving mistakes, and they have more "close calls" than other drivers.

**seniorcarehomes.com

81 @ Walnut Btm. Rd Incident.
Side Effects of Prescription Medicine.

• Sleepiness
• Blurred Vision
• Dizziness
• Slowed Movement
• Fainting
• Inattentiveness
• Nausea
HOW DO PENNSYLVANIA LEOs DEAL WITH UNSAFE ELDERLY DRIVERS?

1. Sections 1517 & 1518 of the PA Vehicle Code establishes MAB and mandates reporting by health care personnel.

2. Family Referrals.

3. PennDOT Re-examination Program 45.

4. LEO Submits a Request for Special Driver Exam after complaint, traffic stop or crash.
CHALLENGES FACED BY LEO’s WHEN DEALING WITH SENIOR DRIVERS

• Limited interaction with the driver.
• They don’t want their DL taken.
• Sometimes the worst has already happened.
WHAT CAN LEO’S DO TO REACH OUR OBJECTIVE?

Investigate:

• Screen for alcohol and medicinal intoxication.
• Screen for cognitive impairment through simple questions.
• Screen for physical impairment and mental alertness.
Assessment Strategies:

• Observations – driving and physical abilities.
• Questioning of driver.
• Interviews with witnesses, on scene medical personnel, family members and doctors.
• Physical Evidence.
• History with police.
Reporting:

• If the officer concludes the driver is a danger to himself and others, he must articulate the details of his investigation on a Request for Special Driver’s Examination report.

• Submit the report to PennDOT.
WHAT HAPPENS NEXT?

- PennDOT receives the officer’s report and an evaluation process is triggered.
- The person may be asked to provide more specific medical information and/or undergo a doctor’s examination.
- Restrictions and/or suspensions may be placed on the person’s driving privilege or there may be no action taken.
http://www.youtube.com/watch?feature=player_detailpage&v=eqGaIiwsTbA

THE END