Maryland Department of Transportation
The Secretary's Office

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

Darrell B. Mobley
Acting Secretary

Leif A. Dormsjo
Acting Deputy Secretary

December 13, 2012

The Honorable Edward J. Kasemeyer
Chairman, Senate Budget and Taxation Committee
3W Miller Senate Building
Annapolis MD 21401-1991

The Honorable Norman Conway
Chairman, House Appropriations Committee
121 Lowe House Office Building
Annapolis MD 21401-1991

Dear Chairmen:

Please see the attached *Older Driver Safety Interim report.* This report was prepared by the Motor Vehicle Administration in response to language set forth on page 42 of the 2012 Joint Chairmen's Report, which directs:

> *"The Motor Vehicle Administration should submit a report to the committees that analyzes the issues arising from older drivers. An interim report should be submitted by January 1, 2013, and a final report by January 1, 2014. Specifically, the report should analyze:*
>
> - *Past statistics and projected trends of older drivers for the United States and Maryland, including crash involvement with injuries or fatalities and demographics of older drivers;*
> - *A review of completed and ongoing research studies on older driver crash involvement and cognitive, physical, and other age-related changes affecting driving;*
> - *A review of programs to keep older drivers safe, including existing driver rehabilitation, education methods, and their reported effectiveness. The review should identify the availability of such programs and methods in Maryland;*
> - *Identification of the expected benefits to road safety of additional screening and testing for older drivers, including benefits to pedestrians and bicyclists;*
> - *The feasibility of requiring the use of MVA's existing functional capacity test to more drivers by demographic group as part of the periodic license renewal process; and*
> - *The cost and operational impact to the administration of implementing screening mechanisms and driver testing for older drivers."*

My telephone number is 410-865-1000
Toll Free Number 1-888-713-1414 TTY Users Call Via MD Relay
7201 Corporate Center Drive, Hanover, Maryland 21076

If you have additional questions or concerns, please do not hesitate to contact Mr. John Kuo, Administrator, Motor Vehicle Administration, at 410-768-7295. Of course, you should always feel free to contact me directly.

Sincerely,

Darrell B. Mobley
Acting Secretary

cc: Members of the Budget Committees
Mr. John Kuo, Administrator, Motor Vehicle Administration

A Report to the Maryland General Assembly
Senate Budget and Taxation Committee
and
House Appropriations Committee

concerning

Older Driver Safety Study - Interim Report
(2012 Joint Chairmen's Report, page 42)

The Motor Vehicle Administration
The Maryland Department of Transportation

January 2013

Older Driver Safety Study - Interim Report
(2012 Joint Chairmen's Report, page 42)

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Older Driver Safety Study - Interim Report
(2012 Joint Chairmen's Report, page 42)

Introduction

This interim report was prepared in response to language contained in the Joint Chairmen's Report, page 100, as part of SB 150, Chapter 148, Acts of 2012. Specifically, the language directs:

> *"The Motor Vehicle Administration (MVA) should submit a report to the committees that analyzes the issues arising from older drivers. An interim report should be submitted by January 1, 2013, and a final report by January 1, 2014. Specifically, the report should analyze:*
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> - *past statistics and projected trends of older drivers for the United States and Maryland, including crash involvement with injuries or fatalities and demographics of older drivers;*
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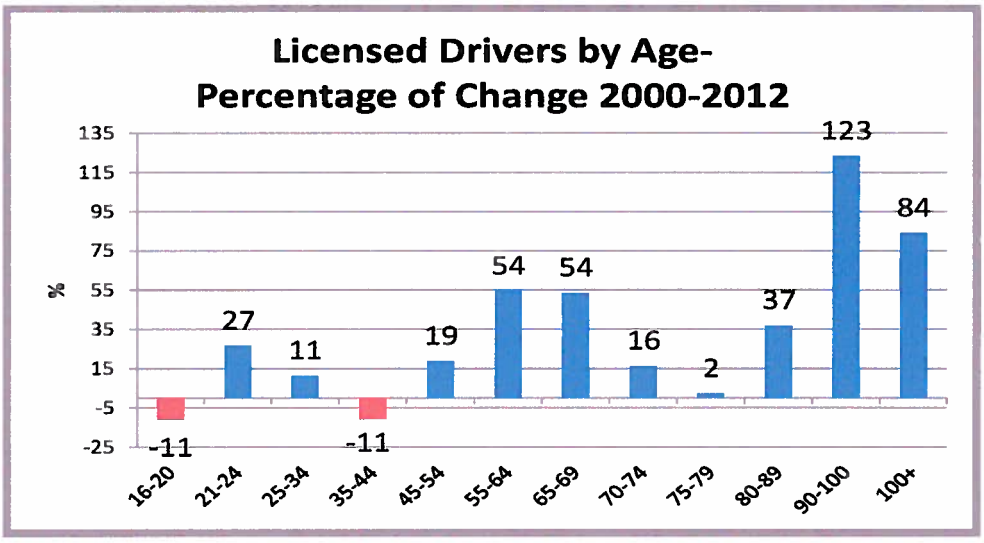
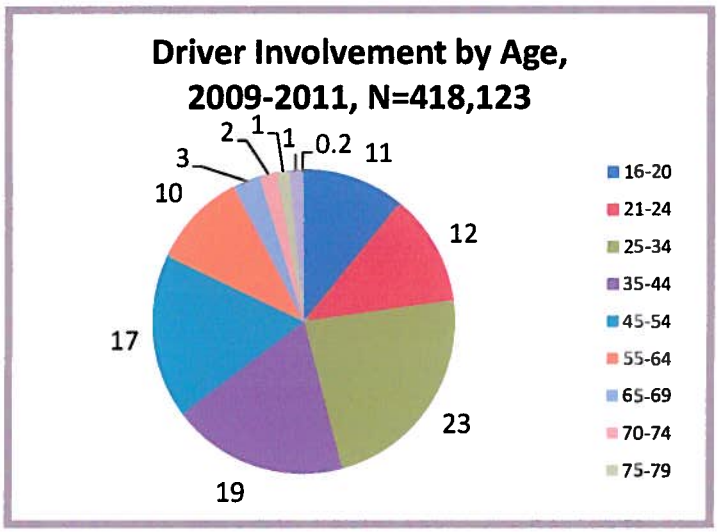
Older Driver Safety Study - Interim Report
(2012 Joint Chairmen's Report, page 42)

Statistical Overview

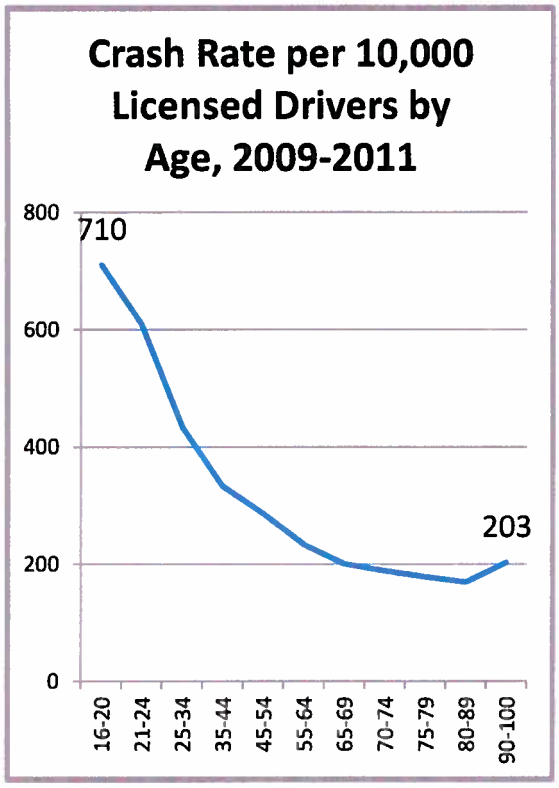
The MVA engaged the National Study Center at the University of Maryland for a comprehensive and in-depth review of statistical trends for Maryland's aging driver population.
As the graph below indicates, there has been a significant increase in the driving population over the age of 80. Additionally, there has been another large increase in the driver population between 55 – 69 years old since the year 2000.



Between 2009-2011, drivers aged 65 years or older made up about 7% of all drivers involved in crashes. For comparison purposes, a similar number of drivers aged 16-24 made up 23% of all drivers involved in crashes.



The total crash rate per licensed driver decreases as age increases, peaking among 16-20 year old drivers and reaching a low among the 75-89 year old drivers. This information, however, does not include the crash rate per vehicle miles traveled.

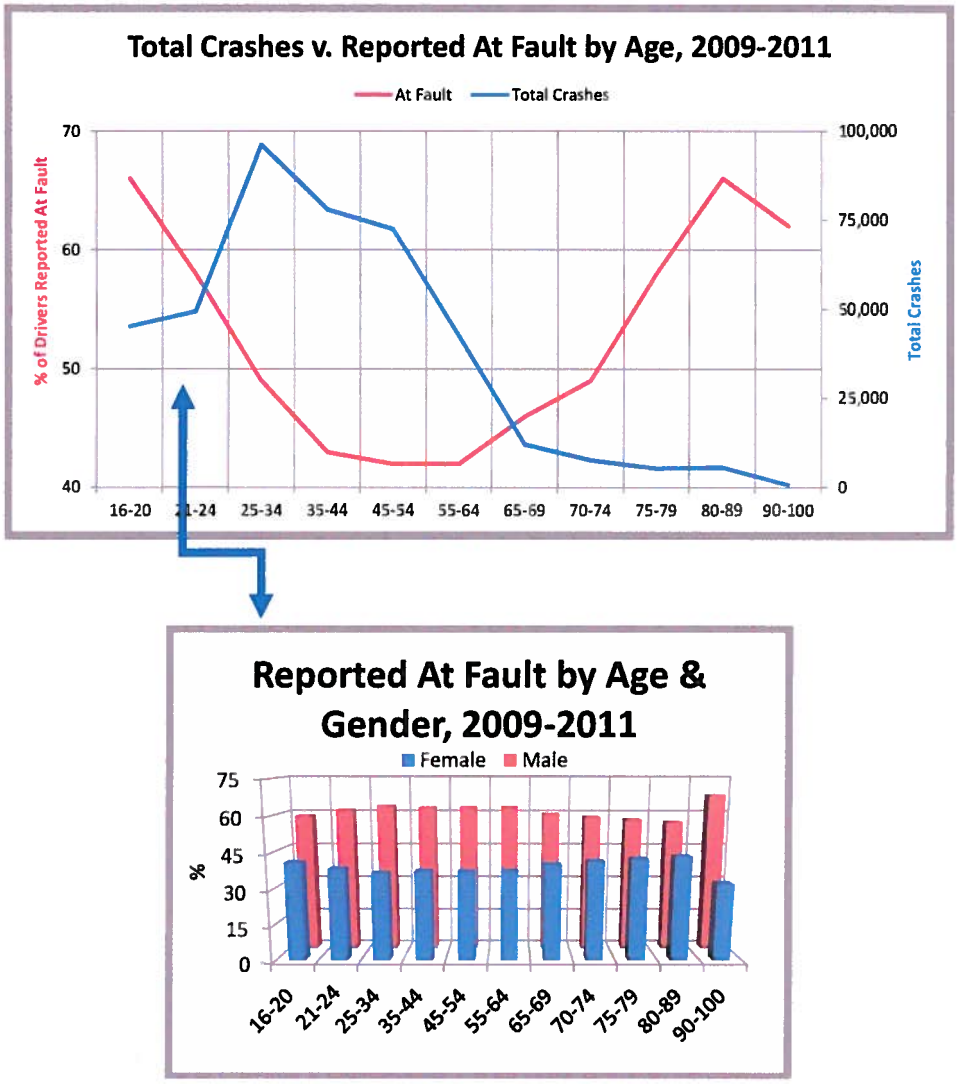


As to the causes of the accidents, there are no obvious factors that contribute disproportionately to accidents with older drivers as reported on the police reports. Older drivers were reported as impaired less frequently than younger drivers; older drivers had similar percentages of aggressive behaviors as the middle age groups (while younger drivers had the highest proportion of aggressive driving crashes); and speed involved crashes appear to be a concern among younger drivers, with a reduction in the proportion of speeding drivers correlated with increasing age.

"Failure to give full time and attention" or "cell phone use" is a factor that is more frequently reported for both older drivers and younger drivers. Reporting of these categories as a crash factor does begin to rise again after the age of 65, however, it is not clear exactly what behaviors constitute "failure to give full time and attention" for older drivers.

While more research needs to be conducted on the factors causing older drivers to crash, it is clear that drivers over 65, along with young drivers, are disproportionately reported to have been at fault on police reports.

Older Driver Safety Study - Interim Report
(2012 Joint Chairmen's Report, page 42)



There appears to be a consistent decline with age in behaviors that are associated with at fault crashes. Speeding, impaired driving, and aggressive driving are each cited in less than 15% of at fault accidents for drivers 65 years or older. Additionally, when analyzing the locations of the crashes, older drivers determined to be at fault were more likely to be involved in crashes in intersections. The proportion of intersection crashes appears to increase with age. The data also indicates that while rear end collisions tend to fall with age, older driver crashes tend to happen more frequently as a sideswipe or angled crash.

Finally, the data indicates that for enforcement of traffic laws, the citation rate per 1,000 licensed drivers falls dramatically in every category with age beginning at 25 years old.

In summary, the data reviewed does not suggest that older drivers as a unique segment pose a significant public safety risk. While the number of older drivers continues to grow, the total number of accidents caused and the crash rate per licensed driver is lower than any other age demographic. Older drivers are much less likely to be cited for risky driving behaviors. However, the percentage of crashes where the driver is deemed at fault increases with age, which is perhaps an indication of diminished driving skills. The lack of age specific data regarding vehicle miles traveled leaves out an important point of analysis in terms of the number of miles traveled by seniors in comparison to their involvement in crashes and fatalities. Without this information it is difficult to fully evaluate the safety risk of older drivers based on the number of miles they drive on a regular basis.

Current Process

"Driving requires that you take the **responsibility** to operate the vehicle in a safe manner...[to] reduce **risks** for yourself, your passengers and other roadway users" (Maryland Driver's Manual)

The MVA issues drivers' licenses and has the responsibility to evaluate the ability of drivers to safely operate a vehicle. This evaluation is conducted at the time of:

- New licensure – MVA tests your knowledge, skills and vision;
- License renewal – MVA asks you to self-report on potential safety concerns;
- Reported accidents/citations – MVA reviews your record for problems; and
- Reported concerns – when someone questions if you are medically qualified, MVA conducts further investigation and/or evaluation.

Maryland is fortunate, in comparison to other jurisdictions, to have a Medical Advisory Board (MAB) as well as nurse case reviewers to analyze cases involving drivers with medical conditions impacting their driving. In 1949, MVA established the MAB to oversee the medical review process of individual drivers brought to the MVA's attention. The MAB is comprised of physicians from various medical specialties. The objective of the MAB medical review process is to assess potential health/medical issues that might impact the driver's ability to safely operate a motor vehicle. This analysis focuses on specific areas of an individual's functional ability rather than age or disease.

The MAB functions by reviewing the medical information of drivers and then providing advice and recommendations to the Driver Wellness and Safety Division (DW&S) of the MVA. The MAB does not make the final decision as to whether or not to license a driver or to suspend a driver's license. Each case is reviewed on an individual basis, and a diagnosis is simply a "warning flag" that should lead to proper inquiry.

Referral

The first point of entry into the medical review process for most drivers occurs when DW&S receives a referral. Individual referrals can originate from:

- Clinical professionals (medical doctors, nurse practitioners, etc);
- Concerned citizens (neighbors, friends and family);
- Law enforcement agencies;
- State/Federal Courts; or
- Self-reports of medical conditions.

Referrals to the MAB are typically initiated on an individual's self disclosure of a medical condition or by referral from law enforcement. Self-reports may be made at the time of initial licensure and renewal, when a driver is diagnosed with any of the medical conditions listed in COMAR 11.17.03, or when there are concerns regarding their ability to safely drive. Law enforcement agencies typically initiate the referral of a driver through a Request for Re-examination (RRE). In addition, clinical professionals will refer a driver if they have concerns about the individual's medical fitness to safely operate a motor vehicle. Citizens, concerned about a friend or family member's ability to drive, may contact the Administration anonymously to communicate their specific concerns. When a citizen referral is made, DW&S will perform an initial investigation to assess the legitimacy of the claim and to determine if additional action or follow-through is warranted. While there are certain medical conditions, such as declines in visual acuity and cognitive functioning, that are more prominent in older populations, the age of the driver is not a primary factor in the review of MAB referrals.

Referrals for Medical Review of Driver

Referral Source	2009	2010	2011	2012*
Administrative Law Judge	118	93	47	30
Customer Self-report	1474	1228	1069	818
Court	28	84	52	31
Request for Re-exam/Police	853	851	778	697
Administration Referral	688	670	536	298
Family/Citizen Report to MVA	179	174	168	182
MAB Follow-up	2267	2069	2108	1504
Other (clinician, DW&S counter, etc.)	1127	1022	951	814
Total	6734	6191	5709	4374

* Data as of October 11, 2012

Nurse Case Reviewer

Once a referral is submitted to DW&S, a nurse case manager is assigned to the case. The nurse case manager then proceeds to contact the referred driver and begins gathering the necessary information, including the driver's information release consent form, personal health questionnaire, and physician's medical report. After obtaining and reviewing all of the relevant medical information, the nurse case manager determines if additional action and consultation with the MAB is necessary. Should further MAB review be warranted, additional information and/or assessment may be requested in order for the MAB to fully evaluate the case and finalize its recommendation. Once the MAB renders its recommendation to the Administration, the case is turned back over to DW&S for administrative action.

The MAB does not perform any direct medical examinations on drivers. Rather, it relies on the medical information gathered by the nurse case manager, additional contacts with the referred driver and consultation with the driver's health care providers to develop their recommendations. Discussion with the driver's personal physician provides valuable information regarding the individual's medical condition and their fitness to drive as they are the most familiar with the individual's specific condition. In addition to the medical record review, the MAB may also request a personal interview with the driver, and request that they complete a Functional Capacity Test. Finally, the MAB may also recommend that the driver be evaluated by a certified Occupational Therapist, or recommend that the driver take a skills and/or knowledge re-test.

Functional Capacity Test Screening (FCT)

If a driver is requested to take a Functional Capacity Test Screening (FCT) an appointment is scheduled through the MAB office and the FCT is conducted at one of 10 MVA locations. The FCT is administered through the use of a computer guided touch-screen interface and consists of five different segments. While most of the segments require use of the computer touchscreen, computer skills are not required in order to successfully navigate through the assessment.
The FCT is a screening mechanism scientifically validated to be a predictor of potential future crash involvement. The FCT consists of a short battery of tests that allows for assessment of basic visual, cognitive and physical abilities that are required to safely operate a motor vehicle. A collaborative study involving the University of Alabama and the Driver Safety Research Program of the Maryland Motor Vehicle Administration (MVA) found that poor performance predicts drivers who will be involved in future at-fault crashes.[1]
It is important to note that evidence of decreased function does not mean that a crash is certain. Also, excellent health does not guarantee a crash-free experience — caution and good judgment are always important. However, a poor screening result can be a warning flag that a person is placing himself/herself - and others - at a significantly higher risk by driving. They may need to

[1] Ball KK, Roenker DL, Wadley VG, Edwards JD, Roth DL, McGwin Jr G, Raleigh R, Joyce JJ, Cissell GM, Dube T: Can high-risk older drivers be identified through performance-based measures in a department of motor vehicles setting? *J Am Geriatr Soc 2006*; 54:77-84.

be evaluated by a certified driving occupational therapy rehabilitation specialist to assess medical fitness to drive safely.

Functional capacity screening is generally performed on drivers who come to the MAB's attention where there is a concern about cognitive function. Except for the walking task, the other elements are administered using a touch screen monitor. The five components include Rapid Pace Walk, Cued Recall (Working memory), and Motor Free Visual Perception Test (MVPT), - Trails B Test. This test assesses working memory, visual processing, visuospatial skills attention (executive function), and - Useful Field of View (UFOV)®. This test evaluates divided attention and cognitive processing speed.

Occupational Therapist (OT)

If an OT evaluation is recommended, a list of certified OTs is provided to the driver to schedule an appointment on their own. An OT performs a thorough evaluation of the driver and may recommend that the driver:

- Be permitted to drive unrestricted;
- Take additional training;
- Use adaptive equipment (larger side view mirrors, pedal extenders, etc.);
- Be subjected to a geographic driving restriction for essential driving needs (shopping, doctors) on familiar roads close to home; or
- Stop driving, if determined to be a high risk driver.

Driving Rehabilitation Specialists (DRSs)

Many DRSs are certified OTs and clinicians who specialize in assessing driving skills. Their evaluations consist of both clinical and behind-the-wheel components. The clinical component evaluates visual perception (including visual fields, visual closure, and divided attention), range of motion, motor strength (including fatigue), coordination, sensation, reaction time and cognitive function (including memory, executive function and sequential thinking). The clinical component also includes a detailed medical history and consideration of medications that may impact driving. The functional on-the-road assessments include vehicle preparation, ingress/egress, vehicle control, adherence to the rules of the road, and awareness of one's driving environment.

DRSs are the ideal clinicians to evaluate medical fitness to drive in many older drivers where there are concerns about visual problems and physical and cognitive decline. Based on their evaluations, DRSs can recommend strategies for driving safely with particular medical problems. These strategies may include remedial driving sessions and the use of adaptive equipment such as: spinner knobs, left foot accelerators, hand controls, wide view mirrors, etc. Other recommendations may include restricting the individual's driving to particular times, such as

only daylight driving and/or particular driving environments. In some cases, the DRS may recommend that the individual cease driving all together.

Maryland MVA Medical Advisory Board (MAB) – Driver Rehabilitation Network

In 2001, the MVA entered into an ongoing dialogue with Driving Rehabilitation Specialists (DRSs) in Maryland. The purpose was to educate DRSs about current referral and review practices of the MVA relative to medical fitness to drive. In addition, the DRSs have kept the MAB abreast of developments in their clinical practices.

In 2005, the MVA's Driving Rehabilitation Specialist dialogue broadened in scope and participation and meetings are now held quarterly. In addition to the Medical Advisory Board leadership and DRSs, the dialogue now includes the leadership and administrative nurse case reviewers from the MVA's Driver Wellness and Safety Division. In addition, vendors of driving adaptive equipment now attend meetings. The meetings, now referred to as the MAB/MVA Driving Rehabilitation Network, serves as a forum for all participating groups. This type of forum allows all participating groups to stay abreast of state-of-the-art information relative to driving rehabilitation. With this information in hand, current uniform methods of referral, medical evaluation, and rehabilitation are developed and enhanced.

Potential Outcomes

As a result of the medical review process DW&S might approve the driver to continue driving and close the case. Alternatively, DW&S may permit the driver to continue to drive with periodic reports to monitor the driver's medical condition. Depending on the severity and progress of certain medical conditions such as epilepsy seizures, DW&S may allow the individual to continue driving with certain restrictions, may require the driver to submit to further examinations or re-examination, such as FCT, vision test, law test, and/or a driving skills test in the car, or may suspend the driver's license.

Even if a driver's license is suspended, if the driver's medical condition improves, DW&S could lift the suspension and approve the driver to resume driving.

Recommended Standard Clinical Practice

It is highly recommended that clinicians consider driving health as an essential component of clinical assessments. Clinicians should advise their patients about fitness to drive taking into consideration medical conditions (transient vs chronic vs chronic progressive), medications, and therapeutic modalities and procedures.

The American Medical Association (AMA), in cooperation with the National Highway Traffic Safety Administration (NHTSA), has published a valuable clinical tool, the *Physician's Guide to Assessing and Counseling Older Drivers*. The *Guide* provides information about how to conduct office assessments of vision, cognition, and motor skills that are needed to drive safely. In addition, the Guide presents information about driving rehabilitation specialists – clinicians with

specific expertise in conducting comprehensive clinical and behind the wheel assessments. The 2nd edition (2010 edition) of the *Guide*, is available on-line from the AMA's website by searching for *AMA physician's guide.*

Physician and Other Treatment Providers and MVA Outreach Education Regarding Medical Fitness to Drive for Senior Citizens

Physicians and other treatment providers (nurse practitioners, physician assistants, and occupational therapists) can play a critical role in identifying, counseling and treating senior drivers with medical problems that affect their fitness to drive. However, many Maryland physicians and other clinicians are not aware of the MVA's medical referral and review process. In addition, most clinicians and their patients are unaware of their obligations (if any), options, and available resources relative to medical fitness to drive. It should be noted that the participation of the leadership of the MAB and the MVA's Driver Wellness and Safety Division over the past decade in regional and national taskforces and forums has identified a lack of clinician knowledge regarding medical fitness to drive as a national problem.

Beginning in 2006, the MAB has pro-actively advised clinical departments at the University of Maryland School of Medicine and the Johns Hopkins University School of Medicine of their availability to lecture on medical fitness to drive, particularly as it relates to the elderly. In addition, Continuing Medical Education (CME) offices at community hospitals throughout the State of Maryland have been contacted to convey the same information. As result of these efforts numerous lectures have been presented both in university and community hospital settings. Lectures have been presented at the Schools of Nursing at the University of Maryland and Johns Hopkins University. In addition the MAB has responded to many requests from clinicians in retirement communities to lecture both to their clinicians and their residents on medical fitness to drive. Finally, the MAB has provided and continues to provide, lectures to Driving Occupational Therapy groups. (Please see APPENDIX: MAB/MVA Driver Rehabilitation Network.)

This September the MAB initiated a partnership with the CME office of the MedChi Faculty of Maryland to explore multiple opportunities to provide outreach education to physicians in Maryland. These opportunities include:

- Development of educational materials and announcements of CME activities for the MedChi News, the electronic newsletter of MedChi;
- Development of web-based enduring educational materials on medical fitness to drive

for the MedChi website, including links to pertinent sites and resources;
- Launch of an enduring web-based educational seminar; and
- Preparation of a paper for *Maryland Medicine*, MedChi's peer reviewed journal, on the MVA's MAB referral and review process.

Our ultimate outreach education goal is to have as many clinicians as possible to consider medical fitness to drive for all of their patients, the young, the old and those in the middle. Ideally, as part of their routine clinical practice they would consider symptoms, diagnoses, medications, and medical procedures and how they relate to driving safety. To help in this regard, the MVA will also be creating a one page handout that will be located on the MVA website, providing physicians with key information regarding medical conditions and their impact on driving. This documentation can also be provided to the physician's patient.

Outreach to Law Enforcement

The MVA has met with law enforcement to determine how we can best provide additional information and resources related to older drivers. Based on these discussions, the MVA has reached an agreement with the Maryland State Police to take the current Request for Re-exam (RRE) paper form and create an electronic version as part of the eCitation platform. This functionality would be available to all law enforcement jurisdictions participating in eCitation, which handles approximately 70% of the citations written on an annual basis. The implementation of this new technology during calendar year 2013, will provide an opportunity for additional training for law enforcement on when a RRE should be submitted and what information it should contain to allow the MVA to take appropriate action.

In addition, the MVA will be adding information to our website to provide law enforcement with information on the subject of how to handle referrals they may receive regarding driver behavior. Law enforcement may receive calls from individuals who are concerned about a family member or neighbor's driving and need to know how to refer these individuals to the MVA and the information they will need to provide.

Both of these initiatives are intended to ensure that law enforcement has adequate information and capability to refer individuals to the MVA. Law enforcement officials are important partners in the effort to address older driver safety, and we believe these initiatives will encourage reporting of these issues so appropriate action can be taken.

Maryland Older Driver Safety Symposium

In May 2012, the MVA hosted a highly successful one-day education symposium on older driver safety. The symposium featured a prestigious keynote speaker, three information panels on key topics, and 18 exhibit tables and program demonstrations. The list of attendees, which totaled

nearly 140 people, included representatives from 4 of our surrounding states (VA, PA, DE & DC), 15 police agencies, 6 hospitals, and 20 county or state government agencies. The intent was to engage Maryland's policy makers and program providers, as well as highway safety professionals, including law enforcement, healthcare, and community services to focus on older driver safety issues.

The forum was an excellent venue to address older driver safety in Maryland, and provided useful information to professionals working in this area. A summary that provides key points to help bring the information to a practical, working level, along with all the presentations and information from the symposium are documented at http://www.mva.maryland.gov/modss. This website provides useful reference material, not just for those who attended the symposium, but for interested parties throughout the State.

The symposium sparked interest in continuing statewide discussions on older driver safety, including what needs to be said to the public and how to get that information out to them. Currently, the MVA is planning another symposium in the Spring of 2013.

Conclusion

A review of the statistics indicates that older drivers as a unique segment, do not pose a significant safety risk on the roadways as demonstrated by relatively few crashes and reduced risks of engaging in dangerous behaviors. There are various medical conditions afflicting older drivers disproportionately and which affect an individual driver's ability to safely operate a motor vehicle.

The MVA has a rigorous program in place through the Driver Wellness and Safety Division, in conjunction with the Medical Advisory Board, to evaluate reported problem drivers that individualizes a course of action for each customer. The MVA has renewed efforts to reach out to the medical community and seniors themselves to raise awareness on the process for older driver evaluation. Additionally, the MVA is actively working with law enforcement to make reporting problem drivers more convenient by incorporating a request for re-examination into the eCitation platform.

For the final report due January 1, 2014, the MVA plans to complete further research on Maryland crash data with regard to older drivers. The MVA will include a review of national research on older driver crash involvement. The final report will include a more in-depth examination of referral sources and the ability to identify and reach out to under-reporting sources. Finally, the final report will evaluate potential changes to the current process and any other information relevant to the topic.