

**American Academy of Ophthalmology
Council Advisory Recommendation
21-01**

Title: Improving Ophthalmic Trauma Care and Education

Problem Statement:

Ophthalmic trauma is a significant cause of visual impairment and monocular vision loss worldwide with a significant impact on medical care, vocational rehabilitation, and socioeconomic cost. Repair must be timely and expert. Ophthalmologists and healthcare providers face a deficit of an institutional nationwide system of care, and educational and training resources on how to effectively manage these injuries. Compounding the challenge is increased subspecialization with loss of comfort caring for traumatic ophthalmic conditions and ophthalmology's nationwide withdrawal from hospital-based practice to office- or ASC-based practice, resulting in loss of predictable and reliable on-call coverage.

Summary of facts and background information:

- Ophthalmic trauma is a leading cause of monocular vision loss worldwide (1).
- One-third of serious eye injuries result in eventual blindness (2).
- A total of 6.2 million ED visits for ophthalmic trauma occurred in the United States between 2006-2014, of which 124,989 were open globe injuries(3).
- In a study published in Ophthalmology in 2020 from the Wills Emergency Department (4), Deaner and colleagues found that more than one third of urgent and emergent ophthalmic problems, including ophthalmic trauma, were misdiagnosed. The diagnostic accuracy was significantly worse when non-eye specialists made the referrals. This study underscores the limitations of ophthalmic diagnostic accuracy in the healthcare community.
- A similar study assessing accuracy of referral diagnoses from non-ophthalmologists and optometrists also found that they may benefit from having improved emergency and urgency training in the diagnosis and management of ophthalmic emergencies(5).
- The ability to effectively medically and surgically manage ocular and adnexal/orbital trauma is critical, as these injuries can result in permanent visual loss and dysfunction, the development of sympathetic ophthalmia, lost workdays, disability, reduced quality of life, and psychological impairment. At this time, the Accreditation Council for Graduate Medical Education (ACGME) only requires resident surgeons complete four open globe injury repairs to graduate.
- There does not exist a unified body of recommendations and resources for healthcare providers to assist in their management of ophthalmic traumas.
- Lack of an established ophthalmic trauma system akin to the general Trauma Center system leads to inequitable and variable availability, treatment, and outcomes, particularly in non-urban and rural areas with little academic center or tertiary-level capability. It also poses a direct threat to the reputation of the specialty, as emergency care providers and systems seek support from other communities.

Possible Solutions:

Ophthalmic trauma is unique in that it unifies all subspecialties across ophthalmology and

often requires multidisciplinary surgical collaboration. The American Society of Ophthalmic Trauma proposes the following solutions and seeks to collaborate with AAO, Association of University Professors of Ophthalmology (AUPO), American Board of Ophthalmology (ABO), American College of Surgeons (ACS) and many of the state and sub-specialty societies to complete these actions:

- For poster and papers presentations for the annual AAO meeting, add trauma as a selection for subject classification, with eventual consideration of a subspecialty day for ophthalmic trauma.
- Create an Ophthalmic Trauma Preferred Practice Patterns for the evaluation and management of ophthalmic trauma, starting with the open globe injuries.
- Consider adding sections of ophthalmic trauma into the Basic and Clinical Science Course (BCSC) or creating an Ophthalmic Trauma book to add to the BCSC series to improve resident education and the continuing education for practicing ophthalmologists.
- Create a trauma section in the “Basic Techniques of Ophthalmic Surgery” textbook.
- Work with AAO to integrate ophthalmic trauma management questions into the Ophthalmic Knowledge Assessment Program (OKAP) Exam, and work with the ABO to add similar questions in the board certification exam and maintenance of certification.
- Work with the AUPO and ACGME to re-evaluate the four open globe surgery requirements for residents, assessing whether this is enough for ophthalmologists to feel comfortable managing ophthalmic traumas.
- Support the creation of resident core curriculum lectures on ophthalmic trauma to assist with standardization of resident education in ophthalmic trauma.
- Work with AUPO and AAO to support the development of ophthalmic trauma/hospitalist fellowships in the U.S.
- Create a task force to conduct a nationwide evaluation and analysis of ocular trauma care, including the military system, with a goal to establish a national criterion to be a designated eye trauma center. This taskforce would also evaluate the integration of eye trauma centers into the larger ACS national trauma systems and disaster response efforts to develop a tiered ophthalmic trauma system of care.
- Work with the AAO to reach out to non-ophthalmic societies like the American College of Emergency Physicians or National Association of Emergency Medical Technicians to develop an educational campaign to increase non-ophthalmologist awareness and comfort in managing ophthalmic trauma. As well as to raise awareness of ophthalmic trauma in occupational and recreational activities.

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Submitted by: Fasika A Woreta MD

Approval Date: 1/18/2021

On Behalf of: American Society of Ophthalmic Trauma

Other Society:

Alaska Society of Eye Physicians and Surgeons: 1/30/2021
Arizona Ophthalmological Society: 1/26/2021
California Academy of Eye Physicians & Surgeons: 1/26/2021
Colorado Society of Eye Physicians and Surgeons: 1/20/2021
Delaware Academy of Ophthalmology: 1/22/2021
Georgia Society of Ophthalmology: 1/27/2021
Maine Society of Eye Physicians and Surgeons: 1/24/2021
Maryland Society of Eye Physicians and Surgeons: 1/30/2021
Michigan Society of Eye Physicians and Surgeons: 1/21/2021
Minnesota Academy of Ophthalmology: 1/26/2021
Montana Academy of Ophthalmology: 1/7/2021
New York State Ophthalmology Society: 1/29/2021
South Dakota Academy of Ophthalmology: 1/21/2021
Texas Ophthalmological Society: 2/12/2021
Virginia Society of Eye Physicians and Surgeons: 1/28/2021
Washington Academy of Eye Physicians and Surgeons: 1/20/2021
Washington DC Metropolitan Ophthalmological Society: 1/29/2021
The Wisconsin Academy of Ophthalmology: 1/30/2021
American Board of Ophthalmology: 1/30/2021
American Osteopathic College of Ophthalmology: 1/24/2021
Association of University Professors of Ophthalmology: 1/29/2021
Association of Veterans Affairs Ophthalmologists: 1/20/2021
Cornea Society: 1/22/2021
Eye and Contact Lens Association: 1/26/2021
Intl Joint Commission on Allied Health Personnel in Ophthalmology: 1/22/2021
Macula Society: 1/24/2021
National Medical Association, Ophthalmology Section: 1/22/2021
North American Neuro-Ophthalmology Society: 1/27/2021
Ocular Microbiology and Immunology Group: 1/25/2021
Society of Military Ophthalmologists: 1/25/2021
Women in Ophthalmology: 1/21/2021

American Academy of Ophthalmology
Council Advisory Recommendation

21-02

Title: Limiting Outpatient Access to Topical Ophthalmic Anesthetics

Problem Statement:

Extended use of topical ophthalmic anesthetics (TOA's) can lead to serious patient harm and vision loss if used inappropriately. We therefore propose that these medications be limited to diagnostic use and that additional measures be taken to limit inappropriate use.

Summary of facts and background information:

Topical ophthalmic anesthetics (TOA's) can cause serious harm and have a high potential for abuse. Numerous studies describe the vicious cycle of using TOA's to reduce initial ocular pain, which results in damage to the eye, masking of underlying pathology, and subsequent dependence on TOA's (Pharmakakis et al., 2002). This process gradually causes opacification and edema of the corneal stroma which can ultimately cause irreversible vision loss. Current literature emphasizes the importance of rapid diagnosis/treatment of TOA-induced vision loss and the need for further education for patients and healthcare workers alike.

The primary abusers of TOA's are welders, healthcare workers, and those with underlying psychiatric diagnoses (Rocha et al, 1995). For these patient populations, education is often not enough to keep them from inappropriate use. In one study of 19 men, more than half of the patients continued TOA use despite education on the harmful effects of the anesthetic drops (Yagci et al., 2011). If access to TOA's was limited, patients and healthcare workers will be less likely to inappropriately use them.

There are several suggestions for limiting accessibility to TOA's. One study (Rocha et al., 1995) recommends that these types of drugs should only be used for diagnostic and surgical purposes because self-medication can turn benign inciting events into a sight-threatening disease. Other studies suggest that TOA's should be monitored in hospitals and clinics as patients have been reported to steal TOA's (Kintner et al., 1990; Rocha et al., 1995).

Lack of Education about Topical Ophthalmic Anesthetics

Most non-eye care providers do not know the devastating effects topical ophthalmic anesthetics (TOA's) can have on the eye. In a survey Dean McGee Eye Institute sent to corneal specialists around the country, 92% responded that there is a problem with non-eye care providers prescribing eye TOA's. These specialists further indicated that at least 85% of all TOA- related blindness was caused by obtaining TOA's by non-eye care providers (Collister et al, 2020).

A major part of the problem is the lack of ophthalmic education amongst non-eye care

providers. In the United States medical schools have gradually decreased the required exposure to ophthalmology. As such, 88% of medical schools do not require an ophthalmology rotation. Primary care residency programs report that the majority of their residents do not know how to do a basic eye exam (Moxon et al, 2020). This gap is even wider amongst mid-level providers who rarely have basic ophthalmology training.

The lack of education is particularly noted in the Emergency Room (ER). The vast majority of TOA-related blindness is due to inappropriate dispensing of TOA's at an ER or theft of TOA from the ER (Collister et al, 2020). As more ER's transition to mid-level providers, the problem is expanding (Brown et al, 2012). Per our recent survey, 99% of corneal specialists believe only an eye care provider should prescribe these medications (Collister et al, 2020). We do understand that TOA's are necessary for diagnostic purposes in ER settings. However, these medications should never be sent home with patients. Measures must be taken to provide safeguards against inappropriate prescribing practices.

Blindness has major financial and social implications. Those with blindness require additional assistance in day to day life in addition to the cost of increased eye care. According to a study from University of Chicago, each patient with low vision costs the system nearly \$27,000 per year. (University of Chicago, 2013).

To our knowledge, no limitations on TOA's exist. No other states have passed legislation limiting prescriptions. Additionally, no states have any limitation on the volume of a TOA used for diagnostic purposes. Even the FDA lacks a black box warning regarding the dangers of TOA's.

Possible Solutions:

A. Limit TOA's to Diagnostic Only Status

We ask the AAO work with the FDA to limit availability of TOAs to diagnostic only status. Topical ophthalmic anesthetics should never be sent home with a patient. Currently, however, there is no safeguard to prevent non-eye care providers from prescribing these medications. One proposal would limit prescriptions of TOA's to eye care providers. This would still permit hospitals and free-standing urgent care clinics to purchase topical anesthetics for diagnostic purposes only. This solution would preserve the ability of eye care providers to prescribe TOA's in extremely rare situations where this might be indicated. A potential disadvantage, however, is this legislation may cause tension with other medical providers who feel their prescribing rights are being limited.

Similarly, TOA prescriptions could be universally prohibited. These medications would remain available for diagnostic purposes, but they could no longer be prescribed at outpatient pharmacies. This solution is simple and avoids the appearance of discrimination against non-ophthalmology MDs/DOs as well as midlevel providers.

In addition to interventions at the FDA, this could also be initiated with state legislation. Local legislation would require more time and financial resources. We ask that if this is considered

as an option, that AAO assist with common language for bills that all states could use.

B. Increasing Education on TOA's

We recommend that AAO work with appropriate subspecialty societies and stakeholders (possibly AAOptom) to develop an educational module for use in Emergency Medicine residencies as well as mid-level provider training programs.

As previously discussed, there is minimal ophthalmic education for medical providers. As previously discussed, 85% of TOA abuse can be traced to non-eye care providers. Education regarding the danger of TOA's is vital to preventing inappropriate use.

C. Require Topical Ophthalmic Anesthetics to be Concealed within the Clinical Setting

We recommend considering the concealment of TOA's in emergency room settings.

Many patients obtain TOA's by stealing the bottle from the clinical setting. One solution would be to require TOA's to be removed from patient's line of sight. While this would likely reduce the number of stolen TOA's, it could limit workflow within the clinic setting.

Therefore, we propose this limitation only apply to emergency & urgent care settings.

D. Limit TOA Bottle Size in Primary Care, Emergency Room, & Urgent Care Settings

We recommend that the AAO work with companies that produce TOAs to limit the bottle sizes for non-eye care professionals.

Another solution to address theft of TOA's would be to limit the volume of TOA bottles in emergency room and urgent care settings.

Currently most TOA's come in three bottle sizes: 15mL, 4mL, and 0.6mL. If a patient obtained a 15mL bottle, he or she would have 300 drops of TOA. In contrast, if a patient obtained the 0.6mL bottle, they would only have 12 drops at their disposal — a decrease of 25 fold.

A potential intervention is that non-eye care providers at emergency rooms, urgent cares, and primary care centers may only purchase the 0.6mL bottle size. This reform would inhibit those who inappropriately obtain the TOA bottle from using the medication long-term — and hopefully drive those with an on-going problem back to an eye care provider.

Submitted by: Jonathan E Drummond MD

Approval Date: 1/15/2021

On Behalf of: Oklahoma Academy of Ophthalmology

Other Society:

American Osteopathic College of Ophthalmology: 1/24/2021

Arizona Ophthalmological Society: 1/26/2021

Arkansas Ophthalmological Society: 1/22/2021

Association for Research in Vision and Ophthalmology: 1/21/2021

Colorado Society of Eye Physicians and Surgeons: 1/20/2021

Cornea Society: 1/26/2021

Delaware Academy of Ophthalmology: 1/17/2021

Georgia Society of Ophthalmology: 1/26/2021

Indiana Academy of Ophthalmology: 1/28/2021

International Joint Commission on Allied Health Personnel in Ophthalmology: 1/21/2021

Michigan Society of Eye Physicians & Surgeons: 1/20/2021

Ocular Microbiology and Immunology Group: 1/15/2021

Women in Ophthalmology: 1/25/2021

American Academy of Ophthalmology
Council Advisory Recommendation

21-03

Title: Reconsidering Visual and Cognitive Driving Fitness

Problem Statement:

Denial or loss of a driver's license often results in loss of independence, depression, decreased access to health care, increased risk for long term care, increased mortality, and increased health care costs (18-22).

Summary of facts and background information:

A driver's license is highly valued and affords mobility and independence to many adults. Where safe, maintaining motor vehicle enabled mobility is a major quality of life advantage for our patients and society as well.

Ophthalmologists, who often are aware of the harm and suffering caused to our patients by outdated legislative inequities in the licensure system, ought to play a role in righting this inequity. Excellent studies in our literature are readily at hand (6, 9,11,13).

The role of visual acuity in driving has been studied extensively for nearly a century (23-31, 39). The relative importance of cognitive versus visual factors in motor vehicle crashes is increasingly recognized (32-48). Distracted driving is a cognitive or cortical process failure (81-83).

Good data exists to recommend reconsideration of visual acuity standards in many states (6, 9, 11, 13). It has been well known that some persons with reduced acuity continue to drive safely (49-52).

Persons with bioptic telescope systems drive, for the most part, looking through the carrier portion of the lens with acuity below most state standards (53-61). Tests for vision currently in place in most states are unrelated to future crash statistics (62-74).

Persons with significant visual field defects that violate state licensure requirements can be taught to drive safely (75-80). Tests for cognitive well-being are generally not used in motor vehicle licensure testing protocols in most US States.

Possible Solutions:

a. Acting in the best interests of our patients, our state ophthalmological societies could work to see motor vehicle licensing regulations more closely match available motor vehicle crash data.

b. State ophthalmological societies could be made aware of, and promulgate, data relating to both visual and cognitive factors as they relate to motor vehicle accidents.

c. State ophthalmological societies could be urged to approach their legislators to consider reviewing, perhaps relaxing, the visual acuity requirements for licensure while simultaneously advocating for simple appropriate tests where cognitive decline is suspected.

d. State ophthalmologists could work with appropriate legislative and regulatory agencies and other stakeholders to create consistent vision and cognitive function standards and cut-offs across state lines.

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a. Essential Quote: "Conclusions: Glare sensitivity, visual field loss, and UFOV (useful field of vision) were significant predictors of crash involvement. Acuity, contrast sensitivity, and stereoacuity were not associated with crashes. These results suggest that current vision screening for driver's licensure, based primarily on visual acuity, may miss important aspects of visual impairment."

7. National Highway Traffic Safety Administration (NHTSA); and the American Association of Motor Vehicle Administrators (AAMVA). (2009) Driver fitness medical guidelines. 149 pages.

a. Essential Quotes: "...There is consensus that corrected visual acuity should be 20/100 (6/30) or better and that drivers who do not meet the jurisdiction's standard should be afforded the opportunity to demonstrate safe driving despite their legal unfitness." Page 33.

b. "It is also important to point out that there is growing consensus among those serving on medical advisory boards and researchers alike that visual acuity down to a level of approximately 20/70-20/100 is probably not a threat to safe driving. This growing consensus stems from two factors...First, as mentioned above there is no evidence that people with acuity down to 20/100 are unsafe drivers. And second an increasing number of jurisdictions are allowing people with visual acuity as low as 20/100 to be licensed if these people can demonstrate driving fitness in an on-road performance evaluation by a driving specialist" Page 34.

c. "Tests of attention, executive functioning, visuospatial skills, and memory are useful to assist in assessments of drivers with Alzheimer disease. There is sufficient evidence to recommend the use of Trails B., UFOV, Line Orientation, Block Design, BVRT, Copy and BVRT-Recall, CFT Copy, Facial Recognition and Logical Memory, in assessment of drivers with Alzheimer's disease." Page 70.

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a. Essential Quote: "Based upon the research to date it is clear that if there is an association between visual acuity and driver safety, it is at best weak, ...how does one rectify this conclusion in light of the significant findings from performance-based studies? One important consideration in this regard is that visual acuity related performance decrements do not transpire into reduced safety. That is, visual acuity related driving skills (e.g., sign recognition) may not be crucial to the safe operation of a vehicle. Reading signage may be important for route planning or maintaining regulatory compliance with the "rules of the road" but it may not be critical for collision avoidance."

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Approval Date:

1/11/2021

On Behalf of:

Michigan Society of Eye Physicians and Surgeons

Other Society Sponsors:

Alaska Society of Eye Physicians and Surgeons: 1/25/2021

Arizona Ophthalmological Society: 1/26/2021

California Academy of Eye Physicians & Surgeons: 1/26/2021

Colorado Society of Eye Physicians and Surgeons: 1/22/2021

Georgia Society of Ophthalmology: 1/18/2021

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Cornea Society: 1/15/2021

Ocular Microbiology and Immunology Group: 1/15/2021

Society of Military Ophthalmologists: 1/19/2021

Women in Ophthalmology: 1/25/2021

American Academy of Ophthalmology
Council Advisory Recommendation

21-04

Title: Maintaining Retirement-Age Ophthalmologists as Participants in Ongoing Care

Problem Statement:

Meeting the anticipated demand for a burgeoning population of patients in need of quality ophthalmic care requires innovative approaches to ensure the skills of those who have devoted their lifetimes to the profession of ophthalmology are relied upon for as long as possible.

Summary of facts and background information:

There is a substantial aging population that requires ophthalmic care. The anticipated increase in the rate of cataract surgery (1, 2, 3) in the US in 2020 along with demands of intravitreal injections for macular degeneration and diabetic indications (4) will put unique strains on our collective ability to deliver care.

Among this aging population are many of our own beloved senior ophthalmologists who may be considering retirement for various reasons ranging from COVID-19 concerns to mounting administrative barriers to practice. In addition, some may be losing confidence in their surgical abilities. Others may not fully recognize the decline in their skills or cognitive status and may benefit from “direction.”

Key to these considerations are two pillars of the American Academy of Ophthalmology Code of Ethics:

- **Competence.** An ophthalmologist is a physician who is educated and trained to provide medical and surgical care of the eyes and related structures. An ophthalmologist should perform only those procedures in which the ophthalmologist is competent by virtue of specific training or experience or is assisted by one who is. An ophthalmologist must not misrepresent credentials, training, experience, ability or results.

- **The Impaired Ophthalmologist.** A physically, mentally or emotionally impaired ophthalmologist should withdraw from those aspects of practice affected by the impairment. If an impaired ophthalmologist does not cease inappropriate behavior, it is the duty of other ophthalmologists who know of the impairment to take action to attempt to assure correction of the situation. This may involve a wide range of remedial actions.

With these concepts in mind, it should be possible to promote the ability of our senior colleagues to be “part of the solution” for as long as possible to help manage the anticipated

“surge” of patients that will require care.

For example, guidance on making simple modifications to surgical settings – e.g., adaptations to microscopes, patient positioning, chair height, and equipment variables – can yield profound improvement outcome results.

Furthermore, having objective mechanisms to recognize the need to limit surgery to less stereotactically challenging cases may focus a colleague on things that they still can perform, or to recognize the need to limit practice to non-surgical ophthalmology could foster continued meaningful practice such that they continue to identify disease while colleagues provide the treatment, avoiding potentially humiliating at best and harmful at worst experiences such that they can continue practice for as long as they would hopefully wish.

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Possible Solutions:

The Academy, relying heavily on its Senior Ophthalmologist Committee, could develop confidential and comprehensive tools and programs for self-evaluation of cognitive and physical practice ability, and potentially establish teams of colleagues to provide unbiased guidance to ophthalmologists whose abilities may be questionable, recognizing competitive and legal challenges of such arrangements.

The Academy could also establish and promote mentorship pairings (e.g., young and senior ophthalmologists, not necessarily in the same geographic location) to allow appropriate sharing of knowledge and frank critiques.

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Approval Date: 1/26/2021

On Behalf of: California Academy of Eye Physicians & Surgeons

Other Society Sponsors:

Pennsylvania Academy of Ophthalmology: 1/31/2021