Testimony Supporting Senate Bill 129
Senate Health Committee
Aaron B. Zimmerman, OD, MS
Columbus, OH
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Chairman Huffman, Vice Chairman Johnson, Ranking Member Antonio, Members of the Senate Health Committee, my name is Dr. Aaron Zimmerman. I am a Clinical Professor at The Ohio State University College of Optometry where I regularly provide patient care, didactic education, perform research, and serve on a variety of local, state, and national committees. Most pertinent to this testimony, I have been the instructor of record for Optometry 7160 – Lasers, injections, and minor surgical procedures since January 2012 and I am a cover author of *The Ophthalmic Laser Handbook* which is clinical textbook on ophthalmic laser procedures which was produced in a collaboration with ophthalmologists and optometrists.

I am here today as a practicing optometrist in support of Senate Bill 129, specifically intending to share my first-hand knowledge and experience regarding a few of the procedures contained in Senator Cirino's legislation.

I would like to first start by discussing the ophthalmic laser and benign lesion removal procedures as they pertain to the optometry modernization Senate Bill 129. The procedures being proposed in this bill are being performed by optometrists in 12 states such as Oklahoma (since 1988), Louisiana, Arkansas, Mississippi, Alaska, Wyoming, Colorado, Virginia, Wisconsin, and our immediate neighbors – Kentucky and Indiana. Several other states allow for benign lesion removal, including another neighboring state, West Virginia. Optometrists have been safely performing these procedures on patients for nearly forty years in Oklahoma and for over a decade in Kentucky and Louisiana. From a student, and eventual practitioner perspective, our students want to provide the highest level of care that scope allows and several of these graduates are electing to move to states that allow optometrists to perform these types of procedures. In addition, these procedures have been taught, albeit on models, at The Ohio State University College of Optometry since 2012. From a patient perspective these procedures have various indications and purposes – which will be discussed below – but in each case, optometry is suited to safely and effectively perform the procedures which will provide good outcomes in a more cost and time efficient manner for many Ohioans.

I will now discuss Nd:YAG capsulotomy, laser peripheral iridotomy, selective laser trabeculoplasty and benign lesion removal procedures. I will discuss the common indications, describe the procedure, complications, outcomes, what is being taught at Ohio State and at other optometry schools, and how optometry is suited to provide this care often in a more efficient manner than what is currently allowed.

Nd:YAG Capsulotomy

Capsulotomy is a non-invasive procedure performed using topical anesthetic eye drops on patients who have had previous cataract surgery and have an intraocular lens implant in place. In 2014 in Medicare beneficiaries, there were just under 2.3 million cataract surgeries.[1] Over time a secondary cataract, diagnosed as posterior capsule opacification (PCO), (~29% of patients at 5 years) can develop which, depending on severity, can impair vision.[2] So, using the 2014 estimate, over 650,000 of those patients will develop PCO within 5 years. The disruption in vision quality can range from relatively mild to significant reduction in visual acuity and increase in glare resulting in individuals temporarily discontinuing to drive or participate in other visual demanding activities. Fortunately, diagnosing PCO is straightforward and can be treated non-invasively.

The procedure requires a slit lamp biomicroscope, which is a device that brightly illuminates and magnifies objects and is used by all eye care providers dozens of times per day to evaluate the ocular surface and internal structures of the eye. In an optometry program, students on the first day of their second year begin using this device and then continue using it through their third and fourth years of the curriculum and then their entire careers. For the capsulotomy, the slit lamp is equipped with a laser that is designed to safely and effectively treat the secondary cataract. The laser uses a focusing system that provides the practitioner with feedback as to where the laser is focused, and the slit lamp can then be positioned to focus the laser directly on the posterior capsule of the patient's lens. Due to the specific way in which the laser focuses, any structure posterior or behind the lens (specifically the retina), is not at risk of any damage. Since practitioners and students regularly use slit lamps, focusing the device is very straight forward. Once the practitioner determines that the laser is in focus, the laser is toggled from stand-by to active and laser pulses can be delivered to the lens capsule. This laser energy is such that it fragments the capsule and ultimately clears the visual axis. Often, this procedure will take less than a minute. No instruments enter into the eye.

With any surgical procedure there is always the risk of complications which can include pitting of the implant, increased eye pressure, inflammation, implant movement, swelling in the back of the eye which is rare (0.55% to 2.5% - and new incidence of this is very low with capsulotomy alone)[3], retinal detachment, corneal injury, or bleeding. The most common complications are pitting of the lens, an increase in eye pressure, and inflammation. Pitting results from the laser being focused too close to the implant and can create a localized mark on the lens. If this occurs, the practitioner will focus the laser more posteriorly, away from the lens, before applying another shot. In addition, the laser device is equipped with an adjustable focusing offset to further reduce the risk of pitting. According to the American Academy of Ophthalmology, pitting occurs in 15-33% of procedures though very few cases are visually significant.[3] With all the laser procedures being discussed today, an increase in eye pressure can occur as a result of having the procedure itself and not due to any operator error. To minimize this risk, pre-operative pressure lowering drops are administered in addition to a dilating drop. Following the procedure an additional pressure lowering drop is instilled and pressure is assessed prior to the patient leaving the office. The patient is then provided with a prescription for an anti-inflammatory eye drop to be used four times a day for a period of one week to suppress any inflammation that may have developed due to the procedure. The patient is

followed up within one week. A recent peer-reviewed publication in *Optometry and Vision Science* evaluated optometry performed capsulotomy outcomes from six practices in Oklahoma and Louisiana.[4] The study included 92 eyes of 79 patients with subjective improvement reported in 99% of patients and no complications of increased pressure, lens pitting, inflammation, macular edema, or retinal detachment.

Optometrists in Ohio have been approved to use each of the drops discussed above since 1992 and use a slit lamp every day. Optometrists are also trained and approved to treat any of the post-operative complications, and in some offices regularly manage these. From a patient access perspective, some of our patients need to wait 4 to 6 weeks to see an ophthalmologist for this procedure when it can be recognized and managed by optometrists who likely would perform the procedure the same day as their problem focused visit. This would lower costs from unnecessary office visits with another provider and would restore a patient's vision faster so that they do not sacrifice visual demanding activities, such as driving, potentially for several weeks.

Students are currently educated with didactic lectures on posterior capsule opacification and laser capsulotomy. They are exposed to a hands-on lab experience using a YAG laser on artificial eyes. These model eyes were designed by an ophthalmologist to simulate the procedure and are used by colleges of optometry and ophthalmology residencies throughout the country for training purposes.[5] The students are later assessed during a proficiency in which they are required to demonstrate proper programming of the laser energy and settings and then perform the procedure on model eyes. Because current laws in Ohio do not allow our students to do these procedures on live patients under supervision, our students go to other states where these procedures are approved and either seek certification in those states by obtaining the additional training set forth by those state's licensing agencies. If scope is expanded in Ohio to allow optometrists to perform these procedures, then faculty would precept students and have accreditation requirements similar to ophthalmology students in their accredited residency programs.

Laser Peripheral Iridotomy (LPI)

Laser peripheral iridotomy is a non-invasive procedure in which an opening is created by a laser through the iris or colored part of the eye. The indications for this procedure range from a spontaneous emergency of increased eye pressure to a pre-operative application for specific corneal and lens procedures. The condition associated with the emergency is primary acute angle closure, which is a situation in which fluid behind the lens no longer has access to the front of the eye due to an anatomical blockage of an internal drain. Since the fluid is not properly draining, the pressure in the eye increases significantly which causes pain, nausea, vomiting, blurry vision, and most importantly can permanently damage the optic nerve. Optometrists are trained to recognize this situation and are approved to pharmacologically lower the pressure within the eye. Unfortunately, this is a temporary solution and does not resolve the problem. The most assured ways of resolving or preventing a future angle closure event is through a LPI. Once pharmacologically managed, optometrists now need to refer the

patient to an ophthalmologist for the LPI. This once again results in increased costs, travel, and personal time off from work due to extra office visits which delays management of the condition.

The LPI procedure uses the same ophthalmic laser as described for the capsulotomy. The difference is the amount of energy required for the procedure and does not require the focusing shift used in capsulotomy. Once the laser settings are programmed, the laser uses the same focusing system as described above and is focused on the edge of the iris away from the line of sight. The laser energy is applied to the iris to photomechanically produce an opening. This opening creates an alternative path for fluid to exit the back of the eye, alleviating the pressure. and reduce the risk of future angle closure episodes.

As with capsulotomy, there is the potential for post-procedure complications with the most common being a temporary elevation of pressure (~10%) and mild inflammation. In order to minimize these risks, a pressure lower medication is used prior to the procedure, followed by a drop that will temporarily constrict the iris, and then a drop of topical anesthetic. Once the procedure is complete, another pressure lowering medication is instilled and the patient is sent home with a prescription for a corticosteroid eye drop to be used four times per day for one week. The patient will then be assessed at either 1 day or 1 week follow-up depending on the condition being treated. Other post operative considerations are incomplete opening, visual glare, mild bleeding from the procedure (~15%)[6], and peripheral cataract if the laser is focused too far posteriorly. Once again, optometrists are trained to detect and manage these patients postoperatively.

In an urban setting, referring a patient to an ophthalmologist for a LPI is rather efficient but does result in two office visits to diagnose the same condition. In a more rural setting, scheduling a patient with an ophthalmologist may result in a several day delay in care and could require a significant drive to a more urban location. This results in reduced access to care and often an unnecessary excessive burden for the patient. Properly trained optometrists are better distributed throughout the state, as compared to ophthalmologists, and are capably suited to perform this procedure.

At Ohio State, students have anterior segment, glaucoma, and a laser course all of which include narrow angles and acute angle closure. In addition, they develop gonioscopy skills – which are required and used to diagnose the condition, and they develop hands-on LPI skills using specific eye models and are once again assessed with a proficiency.

Selective Laser Trabeculoplasty

The SLT procedure is performed with a laser equipped slit lamp with a different aiming system than described above, but the aiming system allows the practitioner to ensure he/she is focused on the correct anatomical plane prior to delivering the laser energy. The laser energy is applied to the internal drainage canal of the eye which increases fluid outflow and lowers the intraocular pressure.

As with capsulotomy and LPI, rare complications can occur, with the most common once again being a temporary increase in pressure and inflammation, Again, the same pre and post operative pressure lowering eye drops are used before and after the procedure, and similarly the patient is sent home with a prescription for an ophthalmic corticosteroid to be used four times per day for five to seven days. The patient returns to the office at one week and then six weeks post-operatively to assess the efficacy of the procedure.

Selective laser trabeculoplasty (SLT) is an ophthalmic laser procedure that is increasingly being recognized as the first line treatment for many types of glaucoma. The supporting evidence of SLT as first line treatment for glaucomatous conditions comes from the Laser in Glaucoma and Ocular Hypertension (LiGHT) study. The LiGHT study has both three- and six-year post procedure outcome data available and concluded that SLT provides better long-term disease control than initial drop therapy and reduces the risk of glaucoma surgery.[7,8] Patient adherence to drop therapy is a significant problem with glaucoma management and with SLT drop therapy is often eliminated or reduced.

From a patient perspective, with SLT increasingly becoming the preferred initial intervention for the various types of open angle glaucoma listed above there will be an increased demand on glaucoma specialists. There is a two-fold issue in the coming decades with the first issue being an estimated increase in the number of glaucoma cases rising from a current level of 3 million to over 6 million by 2050 according to the National Eye Institute[9] and a projected decrease in full time equivalent in ophthalmologists by 2035 resulting a 30% workforce inadequacy.[10] Due to more robust distribution, Ohioans have better access to optometrists than ophthalmologists within the state. In addition to better access to care, certified optometrists have been safely performing these procedures in the states listed above and in the United Kingdom.[11]

Students have been educated and tested on glaucoma and have passed two proficiencies involving gonioscopy skills, one of which assesses SLT skill.

Benign Eyelid Lesion Removal

Optometrists are performing benign eyelid lesion removal in more states than those listed earlier with laser privileges. Benign eyelid lesions are regularly encountered in the clinical setting and the vast majority of the time these are differentiated and recorded with no indication for further intervention. On occasion a patient will enter with a new lesion that is causing irritation or a disruption in the function of the eyelids. These can include skin tags, warts, cysts and styes.

Before considering the removal of an eyelid lesion, the practitioner must differentiate and discern that the lesion in regard has very low suspicion of being malignant. There are several features of a lesion to consider when making this determination. Our students are well-educated on benign and malignant periocular lesions throughout their studies. Once benign

determination is made, benign lesion removal requires an indication of irritation or a disruption in function. Once these determinations are made then lesion removal can be considered.

For safe, comfortable, and effective benign lesion removal, local anesthetics are used to numb the area. The tissue is then aseptically prepared with betadine. Lesion removal can then be performed with sterile scissors, a sterile blade, or with radiofrequency devices. The lesion is then sent to pathology as standard protocol.

For lesion removal several skills are required which include aseptic techniques, injections, and knowledge of a variety of instruments and lesion removal techniques. At Ohio State we have been educating our students on injections for nearly 20 years – albeit on artificial models. The students learn sharps safety, how to draw medication, and how to deliver intravenous and intramuscular injections. We have been instructing them on local anesthesia, aseptic techniques, and lesion removal devices since 2016. It must be clearly stated that it is repeatedly emphasized to never remove any lesion remotely suspicious of malignancy. If a lesion is suspicious of malignancy, then that individual will be referred to oculoplastics or dermatology.

Conclusions

I recognize that some of you likely have concerns regarding ophthalmic lasers. There are several types of lasers used within ophthalmology and optometry. Within ophthalmology there are other lasers used for LASIK or retinal surgery. These two classes of surgery are more invasive, and optometry does not have privileging nor is pursuing legislation for any of these procedures.

It should also be made clear that optometrists seeking these privileges will be required to take additional certification course work, in addition to demonstrating competency with each skill. Despite not currently being privileged to perform these procedures in Ohio, students that have graduated from Ohio State within the last 12 years have all gone through laser and minor surgical procedure didactic education, and within the last six years have didactic education in addition to hands-on laser wet-lab experience.

Optometry's intent to modernize scope is focused on patients and their access to care. There are several articles listed above that demonstrate that optometry is capable of safely and effectively providing these procedures and our colleagues are performing these procedures in neighboring states. We are well dispersed throughout the state to provide better access to these procedures.

In summary, I, and optometry believe that SB 129 is sound public policy that will best serve the people of Ohio. Your support of the bill before you needed and appreciated. I thank each of you for your time and welcome your questions.

-Aaron Zimmerman, OD, MS
Clinical Professor

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