

**THERAPEUTIC PHARMACEUTICAL AGENT LEGISLATION  
FOR PRACTICING OPTOMETRISTS:**

**A COMPARISON OF THE FIFTY UNITED STATES**

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## **ABSTRACT**

The goal of this project is to compare and contrast the pharmaceutical agent legislation of each of the fifty states. With several of the states struggling to obtain privileges, it would be helpful to obtain a summary of the written legislation for each state and evaluate which states allow their optometrists the most freedom in treating eye disease. Comparisons in several areas will be made, including topicals, orals, glaucoma agents, and injectables. Another objective of the project is to put the legislative jargon in a readable format to allow my colleagues to evaluate their privileges, if practicing in a different state is of interest to them. It will also benefit optometrists currently practicing in Michigan, helping them to realize that our legislation is far from superior, and that in order for us to practice with full potential, several changes need to be made in our legislation.

When I was first introduced with the requirement of a senior project, I wanted to pick a topic that had a great impact on the practicing optometrist. I chose an area that is ever changing, day by day, week by week, making it impossible to keep up-to-date on its status. What I am referring to is the right that we as optometrists have to prescribe therapeutic pharmaceutical agents. Currently, there are no set standards in TPA legislation between the 50 states. Optometrists are among one of the only medical professionals that do not share the common drug laws amongst every individual in its profession. A Doctor of Osteopathic Medicine is another professional that does not have a standard drug law. Because of this, optometrists have not been considered medical doctors by many standards; for example, those set by insurance companies regarding reimbursement for services.

Information and Data for this project was obtained from the Optometric Societies/Associations of each state. The American Optometric Association also had an integral part in obtaining data for this paper. The first part of the paper consists of a brief overview of the history of therapeutic pharmaceutical legislation that has been passed. The next section discusses the current legislation in Michigan, including how the practice of optometry is defined, what pharmaceutical agents can be legally used, and what requirements need to be done to obtain TPA certification as an optometrist. The majority of the paper is dedicated to comparing the TPA legislation of the other 50 states.

With the passage of the first optometry practice acts from 1901-1924, optometrists were prohibited from using any drugs and from performing surgery. Optometry persisted as a drugless profession until the late 1960's. A small group of persistent optometrists realized that with the changes in health care caused by enactment of federal Medicare and Medicaid programs, the public could be better served if there were optometry laws amended to take advantage of improvements in ophthalmic technology and pharmacology. In 1971, the legislative effort of Rhode Island optometrists deemed successful, as the first bill proposing optometrists to use ophthalmic drugs for diagnosis, was enacted into law. Soon after, other states began their legislative push, and it wasn't until 1989 that all states and the District of Columbia had passed laws regarding Diagnostic Pharmaceutical Agent use.<sup>8</sup>

Soon after the passage of the Rhode Island bill, optometrists challenged legislators with the view that optometrists should be able to do more than diagnose eye disease. They argued for the use of drugs for the treatment of eye disease. West Virginia was the first to enact this landmark legislation that permitted the use of therapeutic drugs in 1976. North Carolina soon followed with the passage of its law in 1977. After a seven-year stretch, Oklahoma then passed its law in 1984.

Today, nearly 21 years after the passage of the first TPA bill, the District of Columbia is the only area in the United States that remains without this legislation. Every state's legislation is different in how it permits its optometrists to legally treat or perform certain procedures on their patients. Many states include several restrictions and privileges in their legislation, while others are very broad in their statements and definitions, leaving the reader unsure of his legal privileges.

As my colleagues and I are prospective optometrists in the State of Michigan, it is important to know how our state has legally defined our profession. Michigan defines the practice of optometry by one or more of the following statements:

- It is the examination of the human eye to ascertain the presence of defects or abnormal conditions that may be corrected, remedied, or relieved by the use of lenses, prisms, or other mechanical devices.
- It is the employment of objective or subjective physical means to determine accommodative or refractive conditions or muscle equilibrium of the human eye.
- It is to use therapeutic pharmaceutical agents to correct, remedy or relieve a defect or abnormal condition.
- It is the employment of diagnostic pharmaceutical agents for the examination of the human eye for purposes of finding a departure from normal.
- Finally, optometry is defined as the prohibition of invasive procedures, including use of lasers, ionizing radiation, therapeutic ultrasound, injectable medication, and any procedures involving an incision.

More importantly to us as practicing optometrists treating eye disease, is the diagnostic and therapeutic agents that we are able to legally use and prescribe in the State of Michigan. Michigan optometrists currently have the right to use diagnostic and therapeutic pharmaceutical agents. Written in the legislation, a diagnostic pharmaceutical agent is defined as a commercially prepared topical anesthetic, Proparacaine HCL 0.5% or a commercially prepared cycloplegic/mydriatic, Tropicamide in a strength not greater than 1%. Obviously, very few optometrists follow this legal requirement. A therapeutic agent is defined as a topically administered drug used for the purpose of remedying an abnormal condition of the anterior segment of the eye. This classification includes anti-infectives, anti-virals, anti-fungals, anti-inflammatory (non-steroidal and steroidal), local anesthetics, anti-histamine/decongestants, cycloplegic and mydriatics, and topical hyperosmotics. The original TPA Law that passed on December 29, 1994 did not include the use of therapeutic pharmaceutical agents to treat glaucoma. It was not until December 1997 that glaucoma was considered a disease of the anterior segment, and thus Governor John Engler signed legislation that allowed TPA certified optometrists to use topical drugs for treatment of glaucoma into law. Michigan became the 40<sup>th</sup> state to do so. This right did not come without restrictions. When an optometrist suspects a diagnosis of glaucoma, and assumes the responsibility to treat the patient, he/she is to consult and co-manage with an ophthalmologist on the treatment plan.<sup>26</sup>

Michigan currently can not prescribe any form of oral medications, injectable medications, or controlled substances. In that respect, we are lagging behind many of the other progressive states, that include all of the above in their TPA laws. For a Michigan optometrist to obtain DPA/TPA certification there are requirements which are currently included in the present curriculum of Michigan's College of Optometry. Below is a list of Michigan's requirements:

- DPA certification requires 60 classroom hours in general, clinical and ocular pharmacology, successful completion of a board approved examination, completion

of a CPR course, and the establishment of an emergency plan for the management and referral of patients who experience adverse drug reactions.

- TPA certification requires DPA certification, the successful passage of 10 quarter hours or 7 semester hours or 100 classroom hours of study in the clinical use of therapeutic pharmaceutical agents, and the establishment of a management plan in the event a patient has an ocular disease that may be related to a systemic condition or an adverse drug reaction.

The next part of the paper consists of a discussion of the TPA legislation for the other fifty states. The comparisons that are made will be in reference to Michigan. This will enable us to better realize the strengths and/or weaknesses of our current legislation. The data that is listed under some states may be incomplete, as the most current documents that I had obtained were dated June 3, 1997 for some states. Please note that my data may not reflect the changes that may have incurred since that date.

### **ALABAMA**

Alabama defines the profession of optometry with similar terms as Michigan's definition. Included in its definition is the mention of removal of foreign bodies and of providing therapy for developmental and perceptual problems. Alabama's TPA legislation allows its optometrists to use topical drugs, steroids, schedule IV and V oral drugs and schedule III's if under 96 hours. Optometrists also are allowed to use Benadryl, epinephrine, or other medications to counteract anaphylactic reactions. Alabama optometrists are allowed to treat glaucoma with topical and oral agents. Optometrists are currently not allowed to use injectable medication, or perform any type of surgery. For a current licensed optometrist without DPA or TPA certification, this may be obtained by successful completion of a 72-hour course in diagnosis and management of ocular disease within three years time of application.<sup>2</sup>

### **ALASKA**

Alaska's statutes are vague in its description of an optometrist. Optometry is defined as the examination, diagnosis, and treatment of conditions of the human eye, not including the use of laser, X-rays, surgery or pharmaceutical agents other than those permitted. Superficial foreign bodies may be legally removed. Like Michigan, Alaska is only allowed to use topical medications, including those to treat glaucoma. Consultation with an ophthalmologist is necessary when dealing with miotics to treat acute angle closure. Alaska optometrists currently cannot prescribe any form of oral medications or use injectables. To obtain TPA certification, Alaska optometrists need to pass a Board approved pharmacology and ocular disease course of at least 100 contact hours, and the TMOD examination within five years of application.<sup>3</sup>

## ARIZONA

Arizona defines the profession of optometry almost exactly as Michigan. Similarly, its therapeutic law duplicates Michigan as well. Arizona optometrists can legally remove superficial foreign bodies and prescribe topical pharmaceutical agents for use on the human eye, including those to treat allergies, infections, glaucoma, and inflammation. No orals or injectables are permitted at this time. To obtain TPA certification, completion of Board approved pharmacology, diagnosis, and treatment of ocular disease courses that total at least 120 hours, and a passage of a Board examination is required.<sup>4</sup>

## ARKANSAS

Arkansas' TPA law was amplified in February 1997. With the new wording of the "practice of optometry", the law removes the term 'superficial foreign body removal', thus allowing O.D.'s to use professional judgement in removing foreign bodies from the cornea, conjunctiva, or adnexa. The new legislation clarifies the state optometry law by defining the sale of contact lenses as the practice of optometry.

Specific prohibitions in the law include restrictions from performing laser surgery, cataract surgery or RK, and from selling prescription drugs. In regards to therapeutic pharmaceutical agents, Arkansas can prescribe all classes of topicals, including antivirals, which were previously restricted before the passage of the amplified law. A restriction stating that optometrists must consult an ophthalmologist for treatment of glaucoma was lifted with the passage of the new law. Schedule III, IV, and V oral agents are allowed. Administering of epinephrine, Benadryl, or a similar agent for emergency use to counteract anaphylactic reaction is also permitted for use. To be TPA certified in Arkansas, passage of the Boards and an internship established by the Board and supervised by a Board certified ophthalmologist consisting of at least 100 hours involving training in examination, diagnosis, and treatment of ocular disease is required.<sup>1,5</sup>

## CALIFORNIA

California became the 47<sup>th</sup> state to authorize optometrists to use therapeutic pharmaceutical agents in February of 1996. Their TPA bill is written with specific uses for the drugs and gives the O.D's no question as to what they can legally prescribe. They are allowed to use topical medications for various uses and oral medications for the use on active infections only. More specifically, California O.D's are allowed to treat allergies, infectious disease, non-systemic inflammations of the conjunctiva, and eyelid margin inflammation excluding cellulitis. Peripheral infectious corneal ulcers are allowed to be treated under consultation with an ophthalmologist and 24-hour referral requirement. Corneal abrasions, corneal erosions, and surface diseases of the cornea, such as dry eyes are permitted for treatment. Properly certified optometrists can treat the above listed conditions with topical lubricants, non-steroidal anti-inflammatories, non-steroidal anti-allergy agents, non-steroidal antibiotic agents, and hyperosmotics. Oral tetracyclines for the

treatment of blepharitis, topical miotics for diagnosis, and topical agents for reversal of mydriasis are also permitted. Legislation also states that TPA certified optometrists can legally perform mechanical epilation, order smears, cultures and sensitivity tests for diagnosis, use punctal plugs that do not require punctal dilation, prescribe therapeutic contact lenses, remove foreign bodies of the eyelid and conjunctiva, and remove corneal foreign bodies above Bowman's layer. If the foreign body is within 3 millimeters of the central cornea, use of a sharp instrument is prohibited in this case. Optometrists are prohibited from treating children under the age of one year with TPA's. They are also prohibited from performing any type of invasive surgery.

Requirements for TPA certification for licensees that graduated prior to January 1992, are completion of at least 80 hours in diagnosis, pharmacology, and treatment of ocular disease, completion of a preceptorship of at least 65 hours in a ophthalmology or optometry clinic, successful completion 20 hours of self directed education, and passage of the TMOD examination.<sup>55</sup>

## **COLORADO**

Colorado defines practice of optometry in a similar way that Michigan does. Yet, there is one point that is interestingly included in the definition. It states that a licensed optometrist who utilizes pharmaceutical agents is required to provide the same level of care as that provided by an ophthalmologist utilizing the same class of pharmaceutical agents. This statement makes us realize that the State expects us to assume the role of a medical doctor when it comes to using TPA privileges. Colorado's legislation has approved the following class of pharmaceutical agents for optometric use: topical and oral anti-microbials (except for oral antiviral and oral anti-fungal agents), topical and oral antihistamines, topical anti-inflammatory agents, topical and oral non-scheduled analgesics, and any controlled substances for ocular pain and inflammation except schedule I and II. O.D.'s are also allowed to remove superficial foreign bodies from the human eye. Optometrists may treat anterior uveitis and glaucoma, but have to consult with an ophthalmologist when a patient under 12 years old presents with non-traumatic uveitis, or a patient's anterior uveitis is not resolving within 14-days, or if a diagnosis of glaucoma or acute angle closure glaucoma is made.

TPA certification in Colorado includes: a successful completion of a 60 hour course in supervised clinical training in the examination, diagnosis, and treatment of conditions of the human eye, and a successful completion of a CPR course. There are additional requirements for optometrists wishing to treat glaucoma and anterior uveitis. Current TPA certified licensed O.D.'s must complete 60 hours in the treatment of glaucoma and anterior uveitis within 2 years preceding application, and must be completed no later than April 1, 1999, or TPA certification will expire. Candidates applying for their license must complete 60 hours in the treatment of glaucoma and anterior uveitis within 24 months of application or submit proof of active glaucoma therapeutic practice during the 24-month period before application.<sup>56</sup>

## **CONNECTICUT**

Connecticut, like Michigan, went through quite an ordeal to get an updated TPA law passed through legislation. In April of 1996, despite all the mass marketing ploy against optometry by ophthalmologists, the bill was sent for the governor to sign. Connecticut actually divides the definition of optometry into two categories; the 'practice of optometry', and the 'practice of advanced optometric care'. 'Practice of optometry' is similar to the definition Michigan uses, including the following practices and procedures: the examination, diagnosing and treatment of the human eye, excluding the lacrimal drainage system and lacrimal gland; the use of tests, instruments or devices, ocular agents-D or ocular agents-T (diagnostic and therapeutic agents respectively), the application of lenses, prisms, filters, orthoptics, vision training, or the use of ocular agents-D for purposes of diagnosing. Optometrists are also allowed to use ocular agents-T for purpose of correction or alleviation of an abnormal condition, and the fitting or prescribing of contact lenses. The practice of optometry does not include use of surgery, X-rays, photocoagulation, or ionizing radiation, or the treatment of glaucoma.

The 'practice of advanced optometric care', is an updated definition which has added on several practices and procedures. In this definition, optometrists are allowed to treat glaucoma with topical therapeutic agents and emergency oral agents. Controlled substances under schedules II, III, IV, and V, ordering of lab tests for purpose of diagnosis, and removal of superficial foreign bodies that have not perforated Bowman's membrane is also allowed. Other procedures allowed under this section of Connecticut's statute is the use of injectable medication to counteract anaphylaxis and non-surgical care of glaucoma using punctal plugs. Additional restrictions that are included in 'advanced optometric care' include: surgical care of glaucoma, treatment of ocular cancer, treatment of infectious disease of the retina, use of therapeutic lasers, use of general anesthesia, use of IV injections, enucleation of the eye, and extraocular muscle surgery of the eye.

Certification to use "ocular agents D & T" requires that those licensed in Connecticut prior to January 1, 1991 is to complete 96 classroom and 14 clinical hours in the use of ocular agents-T by an accredited school of optometry or medical school. Completion of a CPR course is also required. Certification for 'advanced optometric care' requires successful completion of a course including 75 classroom hours, and 51 clinical hours in the study of advanced optometric care, including glaucoma. Prior authorization to use ocular agents D & T is also required.<sup>10</sup>

## **DELEWARE**

'Optometry' in Delaware is defined as the diagnosis of conditions of the human eye, as well as the employment of any objective or subjective means or methods, including the use of topical pharmaceutical agents for the purpose of determining refractive powers of the eye, visual, muscular, and neurological anomalies of the eye. The prescribing and employment of lenses, prisms, frames, contact lenses or orthoptic exercises for the correction of an abnormal condition of the human eye is also considered the practice of optometry, as well as the removal of foreign bodies.



Diagnostically certified optometrists are permitted to use topical anesthetics, mydriatics, cycloplegics, and miotics. Therapeutically certified optometrists are permitted to use topical and oral administration of decongestants, anti-glaucoma agents, analgesics (non-controlled only), and antibiotics. The classes of drugs that are used for topical use only include, autonomic agents, anesthetics, and anti-infectives, including antivirals and anti-parasitic agents.

To obtain TPA certification in Delaware, successful passage of a nationally recognized standardized test on the diagnosis, treatment, and management of ocular disease as approved by the State Division of Professional Regulation is required. There is also a requirement of 40 hours of clinical experience supervised by a TPA OD or physician. New candidates for licensure must have TPA certification.<sup>11</sup>

### **DISTRICT OF COLUMBIA**

The District of Columbia is very vague in its definition of optometry. It defines practice of optometry as: the application of principles of optometry in the examination of the eye and visual system to detect defects or abnormal conditions, and is the prescription, use of lenses, prisms or ocular exercises to alleviate the abnormal conditions of the visual system. DC optometrists are allowed to use diagnostic agents only, and are required to refer patients to a licensed physician for the medical diagnosis and treatment of abnormal conditions.<sup>12</sup>

### **FLORIDA**

Florida, like the other states we have thus far discussed, defines optometry in a similar manner. Florida also includes “standards of practice” in its written definition. They are as follows: (1) When a licensed practitioner diagnoses angle closure, infantile or congenital forms of glaucoma, shall refer the patient to physician skilled in eye disease. (2) When an infectious corneal disease condition has not responded to standard methods of optometric treatment, consultation with a physician skilled in eye disease shall be made. (3) A licensed practitioner shall promptly advise a patient to seek evaluation by an ophthalmologist for diagnosis and treatment when the patient states the sudden onset of spots or floaters, with loss of all or part of the visual field. Florida optometrists are allowed to remove superficial foreign bodies, as defined as “any foreign matter that has embedded in the conjunctiva or cornea, but which has not penetrated the globe.”

Florida’s pharmaceutical agent statute is very specific in the standards of practice/treatment that it permits optometrists to legally use. Many of the statements actually put limitations on the optometrist’s ability to care for their patients with pharmaceutical agents. These statements are as follows: “no pharmaceutical agent can be used to treat endogenous uveitis, and optometrists shall exercise caution and reservation in the use of Fluoroquinolones, reserving their use as a third choice agent when appropriate”. Certified optometrists using TPA’s to treat glaucoma shall develop a plan of treatment that will be predicted upon the severity of optic nerve damage, the height of the intraocular pressure, and stability of the clinical course. If the certified optometrist cannot otherwise comply with these requirements, a co-

management plan shall be established. Also, an optometrist employing beta-blockers shall ascertain the systemic side effects through case history or by communication with the patient's primary care physician. The certified optometrist shall also be proficient in the use of Goldmann Tonometry, visual field techniques, gonioscopy, fundus photos, detailed sketch of the optic nerve head, and a device to provide stereoscopic viewing of the optic nerve head.

In regards to the therapeutic pharmaceutical agents that Florida optometrists are allowed to use, they are permitted to use topical agents only. Florida specifically lists each and every drug that is permitted. I will not identify the whole list, but the classes of drugs that are permitted include: cycloplegics/mydriatics, local anesthetics, decongestants/antihistamines, antibiotics, sulfonamides, steroids, anti-allergy/anti-inflammatory agents, antiviral agents, anti-glaucoma agents, and hypertonics. TPA certification requires 110 hours of coursework and clinical training, as well as completion of one year of supervised experience in diagnosis of eye disease. Successful completion of the Boards is also a requirement.<sup>13</sup>

## **GEORGIA**

Georgia defines optometry with an interesting statement; "the practice of optometry consists of diagnosis and interpretation of the visual behavior of the human organism by the employment of any means other than surgery." Also stated in the definition is that nothing written in the chapter will prohibit the use, administration, or prescription of pharmaceutical agents for diagnostic purposes or treatment of ocular disease. But restrictions do exist for the use of TPA's. An optometrist cannot administer medication by injection, and can only use oral medications for the treatment of ocular pain, under schedules III or IV, and can be used no more than 72 hours. Georgia optometrists can only use topical pharmaceutical agents, except for the above mentioned purpose. They are allowed to treat glaucoma, but with the restriction of having to refer to a physician if the patient is suspected of having a heart condition, and a referral to an ophthalmologist if the patient does not respond to topically administered agents within 60 days of treatment. Also, if closed angle glaucoma is diagnosed, immediate referral to an ophthalmologist is required. Like Florida, Georgia also includes an extensive list of the pharmaceutical agents that optometrists are allowed to use.

To receive TPA certification, an applicant must have prior certification to use diagnostic agents, have CPR certification, and have passed the TMOD examination. One last requirement, stated in the legislature is that each TPA certified optometrist in Georgia is to maintain at least one million dollars in malpractice insurance coverage.<sup>14</sup>

## **HAWAII**

The definition of optometry in Hawaii is similar to what we have discussed thus far, but has an unusual paragraph dedicated solely to the administration of vision therapy. The paragraph states that any person who prescribes visual training is engaged in the practice of optometry and shall have an unrevoked /unsuspended

license. If an orthoptist is to give the visual training, he/she must be under the supervision of a physician or optometrist.

As of December 1997, Hawaii allows its optometrists to treat eye disease with topical pharmaceutical agents only. The use of oral medications and treatment of glaucoma is prohibited. By definition, Hawaiian optometrists are allowed to treat and manage the conditions of the anterior segment of the human eye, eyelids, and lacrimal system, and perform the non-invasive surface removal of superficial foreign bodies from the anterior segment of the eye. TPA certification requires completion of a 100-hour board approved course in treatment and management of ocular disease, passage of the TMOD, and 100 hours of practical TPA use under the supervision of an ophthalmologist.<sup>16</sup>

## **IDAHO**

Idaho defines optometry as a science and a learned profession that affects public health, welfare and safety, therefore requires regulations, controls, and limitations on the practice of optometry to qualified persons. "The practice of optometry" also means to display any sign or advertisement offering to examine eyes. Idaho is very broad in its regulations on the administration of therapeutic pharmaceutical agents. Optometrists are authorized to prescribe, administer, and dispense such therapeutic pharmaceutical agents for the treatment of conditions of the eye or eyelid. Idaho is allowed to treat with topical and oral agents, including for treatment of glaucoma, but there is nothing written in the legislation regarding any restrictions or limitations of its use. It is legally acceptable to remove superficial foreign bodies. To obtain TPA certification, successful passage of the TMOD examination, and completion of additional educational and clinical experience as established by the Board of Optometry is required. No specifications of the amount of education or clinical experience are listed in the legislation.<sup>17</sup>

## **ILLINOIS**

A person that practices optometry in Illinois is defined as one who performs refractions, or employs any other determinants of visual function, employs the use of lenses or prisms, prescribes corrective lenses, vision therapy, or ocular pharmaceutical agents, prescribes contact lenses for therapeutic or refractive purposes, prescribes low vision aids to partially sighted persons, and diagnoses or treats any ocular abnormality, disease, or visual anomaly of the human eye or visual system. Optometrists in Illinois are allowed to remove superficial foreign bodies from the eye. Diagnostic ocular pharmaceutical agents that Illinois optometrists are allowed to use include, anesthetics, mydriatics, cycloplegics, and miotics. Therapeutic ocular pharmaceutical agents that are permitted include: topical anti-infectives, anti-allergy agents, anti-glaucoma agents, anti-inflammatory agents, over the counter agents, and mydriatic reversing agents. The only oral agents allowed include the use of non-narcotic analgesics. To obtain TPA certification, a new licensee must be DPA certified, and have proof of 30 hours of TPA training in

systemic disease taught by a medical faculty credentialed in appropriate medical specialties.<sup>57</sup>

## INDIANA

Indiana defines optometry with the same principle that Michigan does. It does add the mention that optometry is entitled to use psychological methods for treatment of its patients. Indiana optometrists are permitted to use topically applied drugs. There are no written restrictions on any classes of agents. Other legend drugs that are permitted for use are oral drugs, including anti-histamines, decongestants, anti-microbial, non-steroidal anti-inflammatory drugs, and anti-glaucoma agents. All oral steroid agents and controlled substances are prohibited for use by an optometrist. Those that wish to be DPA/TPA certified must provide proof of education in ocular pharmacology from a school of optometry or medicine (no specifications are made on the number of hours), and pass the TMOD examination.<sup>58</sup>

## IOWA

Iowa defines practice of optometry as persons employing any means other than use of drugs, medicine or surgery for the measurement of the visual power, and visual efficiency of the human eye. Unusual enough, Iowa is allowed to use drugs and medicine to treat eye disease, making the above statements a little confusing. In another section of their statute, a certified licensed optometrist is defined as an optometrist who is licensed to practice optometry and who is certified by the board of optometry examiners to use diagnostic agents. A therapeutic certified optometrist is clarified as being permitted to employ all classes of topical pharmaceutical agents, oral anti-microbial agents, oral anti-histamines, oral anti-glaucoma agents and oral analgesics. Superficial foreign bodies may be removed from the human eye and adnexa. These therapeutic efforts are intended for purpose of examination, diagnosis, and treatment of visual effects, abnormal conditions and diseases of the eye (a statement that clearly contraindicates the opening one regarding the practice of optometry).

Iowa applicants for licensure after January 1, 1986, are required to apply for TPA certification. The requirements for certification include: completion of 40 hours didactic and 60 hours clinical training in treatment and management of ocular disease, and 44 hours of education on treatment and management of glaucoma, and use of oral pharmaceutical agents, if the latter agents are desired for use. A passage of an oral or written examination with emphasis on diagnosis, treatment, and management of glaucoma, and ocular and systemic disease is also required.<sup>18</sup>

## KANSAS

Kansas includes in their definition of practice of optometry, statements on examining the eye by subjective and objective means, the prescribing of lenses, prisms, and visual training, and the administering or dispensing of topical

pharmaceutical agents for the treatment of abnormal conditions of the human eye. Optometrists are not permitted to prescribe oral agents, treat glaucoma with oral agents, and may not perform surgery or use lasers for therapeutic purposes. Optometrists may prescribe topical pharmaceutical drugs for treatment of adult open-angle glaucoma, with the restriction of co-management with an ophthalmologist. This statement in the written legislation implies that no other forms of glaucoma are allowable to treat. An optometrist may also legally remove superficial foreign bodies from the eye or adnexa. TPA certification in Kansas includes successful passage of an examination, and successful completion of a 100-hour course of didactic and clinical training in the examination, diagnosis, and treatment, of conditions of the eye. For glaucoma certification, an additional 24-hour course in the treatment and co-management of adult open angle glaucoma is required.<sup>19</sup>

## **KENTUCKY**

Kentucky defines optometry as “the employment of any means including administration of pharmaceutical agents, except controlled substances classified in schedules I and II, and except surgery in examination, diagnosis and treatment of the human eye, or to determine the powers or defects of vision”. Kentucky optometrists may remove superficial foreign bodies from the eye and its appendages, meaning the eyelids, eyebrows, conjunctiva, and the lacrimal apparatus. The written definition also includes in it a section on defining an orthoptic technician. They are defined as a person who trains and directs individuals in ocular exercises designed to correct visual defects, and who is not required to be licensed, but must be under the instruction of a licensed physician, or optometrist.

A Kentucky optometrist is permitted to administer diagnostic pharmaceutical agents limited to topical use of mydriatics, cycloplegics, anesthetics, and miotics for use in cases of emergency. TPA certified optometrists in Kentucky are allowed to use topical and oral pharmaceutical agents for the treatment and management of ocular disease, including glaucoma. Schedule I and II oral medications are prohibited for use by an optometrist, while schedule III, IV, or V agents are limited for use of up to 72 hours. The use of injections to administer benadryl, epinephrine, or another medication to counteract anaphylactic reaction is permitted. To obtain TPA certification in Kentucky, there are no additional requirements beyond original licensure.<sup>20</sup>

## **LOUISIANA**

Louisiana defines optometry in a similar way that Michigan does. It defines diagnostic and therapeutic pharmaceutical agents as: any chemical in solution, suspension, emulsion, or ointment base other than a narcotic, that is applied topically for the diagnosis, prevention, treatment, or mitigation of abnormal conditions of the human eye, or those which may be used as oral antibiotics, or oral antihistamines for the treatment of disorders of the eye and adnexa. This is the only wording of TPA's, included in the written legislation. No mention of treating glaucoma, of the removal of foreign bodies, or of limitations on the prescribing of therapeutic pharmaceutical

agents is made. But Louisiana optometrists are allowed to treat glaucoma with topical agents only, and use oral agents for the treatment of allergies and infections. Optometrists may not use oral agents for glaucoma, inflammation, or for pain.<sup>21</sup>

To obtain TPA certification, successful completion of additional coursework, including 46 hours of classroom, and 34 hours of clinical training in the examination, diagnosis, and treatment of abnormal conditions and pathology of the eye is required. A course in CPR, and passage of the TMOD examination, is also a requirement for certification.

## MAINE

Maine does not define 'practice of optometry' with any unusual statements or additions. Yet, the statute that describes the use of therapeutic pharmaceutical agents is written very concise, with specific permissions and restrictions. An optometrist in Maine can prescribe topical therapeutic agents for any purpose associated with ocular conditions and diseases. In April of 1996, Maine expanded its TPA law to include oral agents and the treatment of glaucoma, under a new "advanced therapeutic license". The following types of oral agents are permitted: antibiotics up to 10 days, antivirals for up to 72 hours with referral to a physician, antihistamines for up to 72 hours, nonsteroidal anti-inflammatories for up to 7 days, and any analgesic identified in schedules III, IV, and V, as described in the Federal Controlled Substance act for up to three days.

In order for an optometrist to be authorized to independently treat glaucoma, an advanced therapeutic licensee must provide proof that he/she co-managed (referred a patient) a total of 50 cases to consult with a physician specializing in diseases of the eye. The first twenty of these referrals may be retrospective case reviews of either glaucoma suspects or glaucoma patients seen since July 1, 1995. The standard exchange of letters used to document and confirm the diagnosis is sufficient to satisfy the requirement. The next 30 cases need to be new or existing glaucoma patient who will have a consult with an ophthalmologist. The optometrist would send the patient with a proposed diagnosis and treatment plan. The physician examines the patient, reviews the optometrist's treatment plan, and then the optometrist, ophthalmologist, and patient mutually agree on a treatment plan. Practitioners who graduated from optometry school within the past two years are exempt from the requirement of the 20 retrospective patients. New graduates who have completed a one-year residency, may petition the subcommittee to waive the consultation requirement.<sup>15</sup>

"Advanced therapeutic licenses" will be issued to all that apply for licensure after October 1, 1996. Optometrists without TPA licensure must successfully complete a 100-hour course in ocular therapeutics including 25 hours of supervised clinical training with participation of an ophthalmologist. Passage of a written State Board of Optometry exam showing competency in use of therapeutic agents, and successful completion of an additional 25 hours in pharmacology and glaucoma, and 3 hours dedicated in anti-glaucoma agents is also required.<sup>22</sup>

## MASSACHUSETTS

Massachusetts became the 50<sup>th</sup> state to pass its TPA law, on July 31, 1997. A drawn out battle with legislature had been made for Massachusetts's optometrists, as the TPA bill had been filed seven times since 1990. In the bill, the 'practice of optometry' is defined, just as it is in all the other states. Included in this section, is the permission for optometrists to remove superficial foreign bodies, and epilate misdirected eyelashes. Optometrists are permitted to prescribe therapeutic pharmaceutical agents for the purpose of managing or treating ocular disease. Topical agents are only allowed, and this does not include the use of these for treatment of glaucoma. Optometrists may also utilize and prescribe non-legend drugs. However, medications administered by injection, or for the treatment of systemic disease are prohibited. Optometrists may also prescribe non-legend drugs. To be TPA certified in Massachusetts, an optometrist must be board certified in diagnostic pharmaceutical agents, take a board approved exam covering the subject matter of therapeutic pharmaceutical agents, and must complete an additional 90 hours of classroom, and 30 hours of supervised clinical training related to the use of therapeutic pharmaceutical agents.<sup>24</sup>

## MARYLAND

Maryland includes in its definition of optometry a very specific statement on the removal of foreign bodies, and other procedures. An optometrist is only permitted to remove a foreign body with a cotton-tipped applicator or blunt spatula, only if it has not penetrated beyond Bowman's membrane of the cornea and is not within 2.5 millimeters of the visual axis. Optometrists are also allowed to order conjunctival cultures and epilate an eyelash with forceps from the eyelid, adnexa, or lacrimal system.

A therapeutically certified optometrist may administer topical agents limited to the following: ocular antihistamines, decongestants, anti-allergy agents, antibiotics, lubricants, artificial tears, tropicamide, homatropine, primary open angle glaucoma medications, and non prescription drugs that are commercially available. Optometrists are restricted from prescribing steroids, anti-viral agents, anti-fungals, anti-metabolites, and anti-parasitic agents. When an optometrist prescribes a topical pharmaceutical agent and the patient does not respond to treatment within 72 hours, the optometrist is required to consult with an ophthalmologist. The ophthalmologist may want to physically examine the patient. Oral tetracycline is permitted for purpose of treating blepharitis or meibomianitis.

Maryland optometrists may treat primary open angle glaucoma after a referral to an ophthalmologist and they together write a treatment plan, that includes a medication plan, target pressure, and criteria for surgical intervention. The optometrist is also required to refer the patient back to the ophthalmologist after one year, and consult him/her if the patient is not responding to treatment, the target pressure has not been reached, or if the visual field or optic nerve head is worsening.

TPA certification for Maryland optometrists requires prior DPA certification, a successful completion of a 110-hour course in the use of therapeutic pharmaceutical agents, and passage of the TMOD examination. Graduates from optometry school after July 1, 1992, are exempt from the above requirements if they apply for certification within three years of graduation.<sup>23</sup>

### **MINNESOTA**

Minnesota uses a vague definition of the practice of optometry. Optometry is defined as any person displaying a sign or in any way advertise as an optometrist, the employing of any means to measure powers of vision or diagnose a deficiency or deformity of the human eye, and the prescribing of lenses, prisms, or ocular exercises for the correction of an eye condition. Optometrists may administer topical ocular drugs to the anterior segment of the human eyes during an eye examination, and for the purpose of diagnosing, treating or managing an abnormality of the eye, including glaucoma. Oral agents are restricted for use by an optometrist.

TPA certification requires successful completion of 60 hours in general and ocular pharmacology, 100 hours in examination, diagnosis, and treatment of disease with topical legend drugs. Also required is two years of supervised clinical training in eye disease, or one year of supervised training and 10 years of clinical experience as a licensed optometrist.<sup>27</sup>

### **MISSISSIPPI**

Mississippi also uses a vague definition for the practice of optometry. It does include in it, a statement on the removal of foreign bodies, and the prohibition of invasive surgery, including use of a laser. Optometrists are authorized to use diagnostic pharmaceutical agents that are utilized to assess ocular conditions. Mississippi states in its legislature, that topical therapeutic agents may be used. No restrictions or specifications on certain types are listed in the statute, but optometrists may treat glaucoma with topical agents and are currently not allowed to use any type of oral medication. To obtain TPA certification, prior certification to use diagnostic pharmaceutical agents is required. Other requirements that need to be obtained are 64 hours of classroom and 80 clinical hours in the examination, diagnosis, and treatment of ocular disease, and passage of a written exam in pharmacology administered by the Board.<sup>28</sup>

### **MISSOURI**

Missouri has a standard definition of optometry similar to Michigan's, with the addition of a few permissions and restrictions. A certified optometrist may order laboratory and imaging tests for the diagnosis of conditions or diseases of the eye and adnexa, and remove superficial foreign bodies. An optometrist may not perform surgery, including the use of lasers, and may not use injectable agents. An optometrist certified to use TPA's, is expected to perform the same standard of care when treating a patient, that a physician would.



Optometrists in Missouri are permitted to use diagnostic agents for the purpose of conducting an examination upon the eye or adnexa. Therapeutic agents can be used for the treatment of conditions of the eye. Oral agents can be used for ocular pain, not to exceed over 48 hours without a referral or consultation with a physician skilled in eye disease. There are a couple requirements for prescribing oral analgesics: (1) Prior to administration, an optometrist must complete a history of current medications and past drug allergies, and document the history. (2) Since prescription strength analgesics are rarely required for ocular conditions, an optometrist must only use these agents when the etiology can be demonstrated and relief can not be obtained from non-controlled agents. Prescriptions of oral analgesics may not exceed the recommended analgesic dosage, cannot be refilled without the proper follow-up care, and may not be maintained in an optometrist's drug inventory. No Schedule I and II agents are permitted for use.

TPA certification requires a Missouri optometrist to have prior DPA certification, a course in general and ocular pharmacology that includes at least 100 hours of clinical training in the examination and diagnosis of ocular disease, a course of 96 classroom hours of study in general and ocular pharmacology, and passage of a written examination in pharmacology approved by the Board.<sup>51</sup>

## MONTANA

Montana defines practice of optometry in a non-specific manner; "the employment of any optometric means, excluding surgery, for the purpose of detecting any condition of the process of vision that may have any significance in a complete optometric examination." Removal of foreign bodies from the eye is permitted, provided that it is not intraocular. Optometrists in Montana are allowed to administer, dispense or prescribe the oral analgesics: codeine, propoxyphene, hydrocodone, and dihydrocodeine, alone or in combination with non-scheduled drugs. Topical therapeutic agents are permitted for use in ocular treatment of the anterior segment of the eye and include antibiotics, anti-histamines, antivirals, antifungals, and anti-inflammatory agents. Glaucoma is currently not permitted for treatment.

TPA certification requires passage of the TMOD examination, and completion of a 100-hour didactic and clinical instruction in the examination, diagnosis, and treatment of ocular disease by an accredited institution.<sup>29</sup>

## NEBRASKA

Nebraska simply defines optometry as, "the examination of the human eye to diagnose, treat, or refer for consultation or treatment of any abnormal condition of the human eye or lid." Optometrists in Nebraska are allowed to remove superficial foreign bodies from the eyelid, conjunctiva, and from the cornea. TPA certified optometrists are permitted to use topical ophthalmic agents to treat eye infection, inflammation, and superficial abrasions. Oral analgesics in schedules III and IV, and oral pharmaceutical agents to treat infections or inflammations of the eye are also permitted. The use of oral steroids, and immunosuppressive agents are strictly prohibited. To obtain TPA certification, completion of 40 hours of classroom

education, and 60 hours of supervised clinical training, passage of an examination covering the treatment and management of ocular disease, and prior diagnostic pharmaceutical agent certification are all required.<sup>30</sup>

### NEVADA

In its statutes regarding optometry, Nevada lists several acts that are considered the practice of optometry. An individual is considered to be practicing optometry if he/she does the following: advertises as an optometrist, examines the human eye and its appendages to assess refractive error, muscular and neurological function, or deficiencies and abnormalities of the eye, prescribes lenses, ocular exercises, orthoptics, visual training, or contact lenses. There is also mention that an optometrist can not prevent an 'optical mechanic' from doing 'mechanical work' of replacing or duplicating an ophthalmic lens without a prescription. Superficial foreign body removal from the epithelium of the eye can be legally done.

Nevada optometrists can treat allergies and inflammations of the eye with topical pharmaceutical agents. Topical and oral agents are permitted for use on infectious processes of the eye. Oral agents are not permitted for analgesic use, inflammations or allergies, and glaucoma can not be treated with topical or oral agents. To obtain certification to use pharmaceutical agents, a candidate must pass the TMOD examination on or before January 1, 1993, and successfully complete 40 hours of ophthalmologist conducted clinical training in administering and prescribing TPA's.<sup>31</sup>

### NEW HAMPSHIRE

New Hampshire defines optometry with similar terms as Michigan does. "Practice of Optometry", in New Hampshire does not include the treatment of glaucoma or other types of intraocular pressure elevation, and does not permit the use of corticosteroids in any form. Surgical procedures are also prohibited, including the use of lasers for therapeutic and photorefractive purposes, the use of therapeutic ultrasound, and the use of ionizing radiation. Superficial foreign bodies may be removed, but they can be no deeper than the corneal epithelium and can not be within three millimeters of the visual axis.

TPA certified optometrists can use and prescribe non-legend agents, mydriatic and cycloplegic agents for topical application. Antibiotics, sulfonamides, and combinations of the two can be used topically or orally to treat or alleviate abnormal conditions of the eye, excluding the lacrimal gland or drainage system, and structures posterior to the iris. There are a few restrictions on some antibiotics for oral use. Included in this list is: Amikicin, Cephazolin, Ciprofloxacin, Clindomycin, Norfloxacin, Ofloxacin, and Trimethoprim. Antihistamines, decongestants, ocular lubricants, and hypertonic agents can also be used topically. Glaucoma is currently not permitted for treatment with topical or oral pharmaceuticals. Oral pharmaceutical agents are permitted for use as analgesics, as long as they are schedules III and IV controlled substances. The use of diphenhydramine, epinephrine, or equivalent medications is permitted to counteract anaphylaxis.

To obtain TPA certification, applicants licensed before January 1, 1993, must complete a post-graduate course of study consisting of 105 hours of which a minimum of 25 hours shall be in direct clinical training, pass the TMOD examination, and hold current certification in cardiopulmonary resuscitation. Those applying after January 1, 1993 must successfully pass the TMOD exam and hold certification in CPR.<sup>32</sup>

## **NEW JERSEY**

Written in New Jersey's statute, optometry is declared a profession and the practice of optometry is defined as the employment of subjective or objective means to examine the eye for any departure from normal. This includes the use of prescription pharmaceutical agents, excluding the use of controlled substances and those medications taken orally or by injections unless for the use to counteract anaphylactic reaction. An optometrist that utilizes pharmaceutical agents is held to the same standard of care as a physician using the same agents. Superficial foreign bodies may be removed.

New Jersey optometrists can use topical agents to treat deficiencies, deformities, and diseases of the human eye and adnexa. Glaucoma currently can be treated with topical agents, although no mention of this is listed in the statute. To obtain TPA certification in New Jersey, successful passage of the TMOD examination is required. No additional requirements of education are required besides which current enrolled optometry college students need to graduate.<sup>33</sup>

## **NEW MEXICO**

New Mexico does not define practice of optometry with any unusual terms. It does have a clause in the definition regarding the fitting/selling of contact lenses. The clause is as follows: "A person who dispenses eyeglasses upon prescription, but does not prescribe ophthalmic lenses, shall not employ, dispense, sell, or fit contact lenses. The testing, design, dispensing, and monitoring of contact lens fittings are to be performed in an optometrist's place of practice." The practice of optometry does not include the use of surgery or injections in the treatment of eye disease.

The use of topical pharmaceutical agents for the treatment of infections, allergies, inflammations, and glaucoma is permitted. Oral pharmaceutical agents are also permitted for use, including anti-infectives agents, anti-glaucoma agents, anti-allergy medications, non-steroidal anti-inflammatories, and analgesic medications, including schedules III, IV and V. Anti-fungals, osmotic medications, corticosteroids, and immunosuppressive agents are prohibited for oral use.

Topical ocular pharmaceutical agent certification requires completion of a course of 100 classroom/clinical hours in general and ocular pharmacology taught by an accredited institution. Oral TPA certification requires an optometrist to be certified in topical agents, and have successful completion of a 20-hour board approved course in pharmacology with emphasis on oral agents.<sup>34</sup>

## NEW YORK

New York uses the basic definition to define optometry: “the diagnosing and treatment of an abnormality of the eye, and the prescribing of lenses, orthoptics or vision training to correct an abnormality”. Like other states, invasive procedures are not allowed, including surgery, use of lasers, ionizing radiation or therapeutic ultrasound, and the removal of foreign bodies within the tissue of the eye. The wording of this last statement leads us to believe that foreign body removal is not permitted at all, but it can also be translated to mean only that foreign bodies of the superficial surface may be removed.

New York divides the therapeutic pharmaceutical agents that it allows its optometrist to use into two categories or ‘phases’. Phase I includes those drugs that are limited to topical application for therapeutic purposes. Drugs in Phase I include: antibiotic/antimicrobials, decongestants/anti-allergens, non-steroidal and steroidal anti-inflammatory agents, anti-viral agents, hyperosmotic agents, cycloplegics, and artificial tears or lubricants. Phase II therapeutic agents also are drugs which are limited to topical application to the surface of the eye and include beta-blockers, alpha agonists, and direct acting cholinergic agents.

There are some requirements and restrictions for the use of therapeutic agents. An optometrist certified for Phase I agents must receive certification for Phase II within 3 years, or the Phase I certification will be suspended. If glaucoma is diagnosed, the optometrist shall consult an ophthalmologist before initiating the treatment. Consultation is required for a period of three years or until the optometrist has examined and diagnosed 75 patients having glaucoma. This consultation requirement does not apply to a graduate that has successfully passed in examination, the use of diagnostic and therapeutic agents and who has had at least 75 documented examinations and diagnoses of patients with glaucoma, which were part of their training. Concerning anti-virals and steroids, an optometrist who prescribes these must tell the patient that a physician will be notified if the condition does not improve within 5 days. Optometrists in New York are currently not allowed to use oral agents.

Phase I certification for use of TPA’s, requires completion of 300 hours of clinical training in the diagnosis and treatment of ocular disease other than glaucoma, and pass the TMOD examination. Phase II certification requires an optometrist to have Phase I certification, and complete 100 hours of clinical training in diagnosis and treatment of patients with glaucoma and ocular hypertension.<sup>25</sup>

## NORTH CAROLINA

North Carolina also uses the “basic” definition to define optometry. It includes in it, the statement of using pharmaceutical agents to relieve or treat an abnormal condition of the eye. This is the only mention of the use of TPA’s in its statute, or at least of the one that I had obtained to assess. In another source of information, North Carolina optometrists are allowed to use topical and oral agents to treat allergies, infections, glaucoma, and inflammation. There are no restrictions on the use of steroids. Oral agents can be used for pain, including controlled substances.

TPA certification in North Carolina requires that successful completion of all educational requirements established by the Board be achieved. The hours and content of these are equivalent to those required by other North Carolina licensing boards whose licensees are permitted the use of pharmaceutical agents in the course of their professional practice. The exact requirements by the Board were not listed.<sup>35</sup>

## **NORTH DAKOTA**

North Dakota simply defines “optometry as a health care profession whose practitioners evaluate disorders of the human eye, and examine, diagnose, and treat the eye and its appendages.” North Dakota also defines “diagnosis and treatment” as the determination, interpretation, and treatment of any visual, muscular, or neurological anomaly which may be aided, relieved, or corrected through visual training, use of lenses, prisms, and pharmaceutical agents. Laser therapy and the use of invasive surgery are not to be performed by an optometrist. Yet, superficial foreign bodies may be removed and primary care procedures may be performed (but what exactly is a primary care procedure?).

North Dakota optometrists are allowed to use topically administered pharmaceutical agents for treatment of ocular related disorders. Oral agents are also permitted for use and these include anti-infectives, antihistamines, anti-inflammatories, and analgesics for pain. When an optometrist initiates treatment for primary open angle glaucoma, consultation with an ophthalmologist is required. Treatment plans for each patient must be identified with accepted standard of care. If no progress is shown with the chosen treatment plan, or if the optic nerve or visual field is progressively worsening, an immediate referral must be made to an ophthalmologist.

TPA certification requires completion of 76 hours of didactic instruction and 24 hours of clinical training in the use of pharmaceutical agents for the treatment of ocular disease. Also required is passage of TMOD, and certification in Cardiopulmonary Resuscitation instruction.<sup>36</sup>

## **OHIO**

Ohio defines optometry as the application of optical principles in the examination of the human eyes to determine the departures from the normal and to detect an ocular abnormality that may be evidence of disease. A TPA licensed optometrist who practices optometry also has the responsibility of administering or prescribing therapeutic pharmaceutical agents to examine, diagnose, or prevent a disease, or treat or cure an abnormal condition of the anterior segment of the human eye. Invasive procedures are prohibited from optometrist, including the removal of intraocular foreign bodies.

Ohio’s statute considers a “topical ocular pharmaceutical agent” a diagnostic agent, and a “therapeutic pharmaceutical agent” as any agent that is used for prevention or treatment of a disease or abnormal condition of the visual system. The latter classes of drugs include those used as an anti-microbial, anti-allergy, anti-glaucoma agent, anti-inflammatory, cycloplegic agent, or analgesic. Optometrists

may also prescribe oral agents for the treatment of allergies, infections, and glaucoma, but are prohibited from using oral agents to control inflammation. The specific list of these agents is as follows: diphenhydramine, 50% glycerin solution, 45% isosorbide solution, methazolamide, terfenadine, ampicillin, cefaclor, cephalexin, dicloxacillin, doxycycline, erythromycin, penicillin, and tetracycline. A recent revision of the list also permits the use of amoxicillin, ibuprofen, and loratadine. Only analgesics that can be sold without a prescription are allowed to be used, since controlled substances used for pain are not permitted.

New candidates for Ohio licensure must successfully pass the TMOD examination and complete an 87-hour course of study and training at an accredited institution to obtain TPA certification. Currently licensed Ohio optometrists must possess DPA certification, complete 30 hours of study and training in therapeutic pharmacology, and successfully pass the TMOD examination.<sup>37,41</sup>

## **OKLAHOMA**

Oklahoma has a very broad definition of the practice of optometry in its statute. The only listed restriction for an optometrist is the dispensing of drugs to patients. Otherwise, an optometrist practicing in Oklahoma is allowed to examine the human eye, and employ any means to diagnose conditions of the human eye, including any self-testing device, computerized refracting devices, and the use of pharmaceutical agents. Optometrists are also permitted to prescribe 'dangerous' drugs and controlled 'dangerous' substances for all schedules except I and II. The way this statute reads, one can assume that all topical agents, oral agents (except I and II), anti-glaucoma agents, and removal of foreign bodies can all be legally used or performed. There is also no statement on the use of surgery to alleviate an eye condition. Can one assume that this may be done, too? The only requirement that an optometrist needs in Oklahoma to obtain TPA certification is successful completion of courses in general and ocular pharmacology at an accredited institution as approved by the Board.<sup>38</sup>

## **OREGON**

Oregon defines optometry as the employment of any means other than the use of drugs, except topically applied agents for the diagnosis and treatment of conditions of the human eye, and for the measurement of refractive or accommodative state of the eye. In a revision of its statutes, it also included a statement on the prohibition of invasive or laser surgery, and the use or prescribing of injectable or oral pharmaceutical agents. Removal of superficial foreign bodies is permitted. Oregon optometrists must consult with an ophthalmologist or other doctor of medicine before instituting treatment of glaucoma with medication.

Topical agents that are permitted include: ocular lubricants, artificial tears, mydriatics, cycloplegics, anesthetics, miotics, astringents, antiseptics, antihistamines, anti-louse agents, hyperosmotics, anti-infectives, anti-glaucoma agents and anti-inflammatories. Some restrictions are set for the use of the above listed agents. If antivirals are being used for treatment for more than 14 days, consultation with an ophthalmologist is required. Treatment with an anti-fungal agent requires an

ophthalmologist consult before the start of treatment. Prior to administration of an anti-glaucoma agent, a dilated internal exam and measurement of intraocular pressure by applanation is required as well as consultation with an ophthalmologist. Treating a patient with steroids for intraocular inflammation also requires a dilated internal exam and measurement of intraocular pressure by applanation, before treatment is initiated. Consultation with an ophthalmologist is required if the treatment period is longer than 14 days.

TPA certification requires successful completion of a course in pharmacology at an accredited institution as approved by the Board. Passage of the TMOD is also a requirement for certification.<sup>40</sup>

## **PENNSYLVANIA**

Pennsylvania defines practice of optometry as the use of any method for the examination, diagnosis, and treatment of conditions of the human visual system. An optometrist in Pennsylvania can use all types of lenses including contact lenses, administer and prescribe legend and non-legend drugs for the treatment of the anterior segment of the eye, eyelids, lacrimal system, and conjunctiva. Removal of foreign bodies from the ocular surface and adnexa is permitted. Forms of surgery including laser surgery, the use of lasers for therapeutic purpose, and the use of injectable medication to treat eye disease are not permissible. Oral therapeutic pharmaceutical agents are permitted for optometric use, but Schedule I and II agents are restricted from this list. Other prohibitions include, the use of beta-blockers, the use of steroids (topically and orally), the treatment of glaucoma, and the treatment of systemic disease. Topical and oral pharmaceutical agents can be used to treat allergies, infections, and inflammation. Oral medications may also be used as analgesics to treat pain. Use of any permissible pharmaceutical agent for treatment beyond six weeks of initiation, requires a consultation with a licensed physician before treatment continues. TPA certification requires graduation from an accredited school of optometry that included in its curriculum 100 hours discussing the use of TPA's, and passage of licensure exam which included the use of TPA's.<sup>42,43</sup>

## **RHODE ISLAND**

Rhode Island has two key terms included in its definition. A "certified optometrist" is an optometrist licensed in Rhode Island that is authorized to administer and prescribe topical ocular pharmaceutical agents in the treatment of ocular conditions of the anterior segment of the human eye. An optometrist that administers and prescribes topical pharmaceutical agents is said to be participating in "amplified practice". This term also includes the treatment of anterior uveitis and glaucoma. Certified optometrists may remove superficial foreign bodies from the conjunctiva, lids, and cornea, but may not use any invasive techniques. A certified optometrist that is to treat a glaucoma patient with a beta-blocker shall first consult the patient's physician. Infantile and congenital glaucoma are excluded from permissible treatment, while treatment of angle closure glaucoma is limited to initiation of immediate emergency care. The medications that are permitted for use by

a certified optometrist include topical mast cell inhibitors, lubricants, decongestants, mucolytics, antibiotics, and steroids (not exceeding 0.25% methyl prednisolone). If topical steroid treatment is required beyond 14 days, consultation with an ophthalmologist is required.

All applicants for licensure after January 1, 1994, need to be certified to use therapeutic pharmaceutical agents. Certification requirements include: passage of the TMOD, successful completion of clinical therapeutic training supervised by an ophthalmologist consisting of 72 hours of management of ocular disease, completion of a 6 month internship program, and completion of the clinical competency examination administered by the Board. Certification requirements for currently TPA licensed OD's to treat glaucoma and anterior uveitis include: completion of a transcript quality course of 24 hours of classroom study, passage of a written exam, and co-management of a certain number of glaucoma patients prior to treating patients independently.<sup>44</sup>

### **SOUTH CAROLINA**

South Carolina defines optometry with the standard definition of "any person employing any means to measure the power of vision and to ascertain the presence of defects or abnormal conditions of the eye." An optometrist is prohibited from performing surgery, meaning an invasive procedure using an instrument which requires closure by suturing or clamping or in which the presence or assistance of a nurse anesthetist, or anesthesiologist is required. A diagnostically certified optometrist may purchase, possess, and administer pharmaceutical agents for diagnostic purposes, including anesthetics mydriatics, cycloplegics, and over-the-counter drugs. Miotic drugs may not be used for treatment purposes but may be used for an emergency of acute angle glaucoma. A therapeutically certified optometrist may purchase, possess, administer, supply, and prescribe oral agents for diagnostic and therapeutic purposes. When an optometrist prescribes oral agents for treatment of ocular disease, he/she is limited to antihistamines, antimicrobials, anti-glaucoma agents, and analgesics (excluding the use of Schedule I and II controlled substances). If an analgesic is prescribed, the prescription is limited to a seven-day supply. When prescribing topical steroids, and the treatment period needs to be longer than 10 days, a consult with an ophthalmologist is required, and after 21 days, a referral is necessary. Treatment with an oral steroid is not permitted. If an optometrist is to use a beta-blocker when treating glaucoma, a consult or referral to a general practitioner or internist is first required. TPA certification in South Carolina requires successful passage of the TMOD examination, completion of 110 hours of optometric education, of which at least 40 hours must have been clinical instruction specifically related to the diagnosis and treatment of glaucoma, and proof of at least 1200 hours of clinical training.<sup>45</sup>



## SOUTH DAKOTA

In its statute, South Dakota declares optometry a profession and defines the practice of optometry with a standard definition. Its statute is very broad in terms of stating what pharmaceutical agents optometrists may or may not use. Included is the permission for optometrists to remove foreign bodies. An optometrist practicing in South Dakota may prescribe topical pharmaceutical agents and oral analgesics for pain. If an optometrist is to initiate treatment of open angle glaucoma or ocular hypertension, an initial consultation with an ophthalmologist is required, and periodic consults with the ophthalmologist no less than annually is required throughout the course of treatment. Oral agents are not permitted for treating open angle glaucoma or ocular hypertension. The only requirement for TPA certification is successful passage of the TMOD examination or an equivalent examination certified by the Board.<sup>46</sup>

## TENNESSEE

Tennessee defines practice of optometry as the employment of any subjective or objective means to ascertain defects of vision or muscular anomalies. An optometrist is defined as a professional who has sufficient education and competence and who is authorized to examine, diagnose, manage, and treat conditions and diseases of the eye or eyelid. Optometrists in Tennessee are authorized to administer and prescribe pharmaceutical agents to diagnose and treat eye disease. Oral and topical agents are permitted and no restrictions have been set on the type of agents. Ordering of procedures and laboratory tests are allowed as long as it relates to a diagnosis of an eye related disease. Optometrists are also authorized to administer benadryl, epinephrine, and similar agents to counteract anaphylactic reaction. Restrictions on the practice of optometry includes: the use of non-diagnostic lasers, performing cataract surgery or any other surgical procedure that requires more than topical anesthesia, and from performing radial keratotomy. From this statement, you can assume that removal of foreign bodies are allowed although there is not a direct mention of it, and since most foreign bodies can be removed with only a topical anesthetic. Tennessee also provides a standard of co-management that optometrists should partake in. Co-management is defined as eye care services or treatment that may include both consultation and active participation. The decision to receive co-managed care rests solely on the patient; however, the decision should be made during consultation between patient and all health care providers involved. An optometrist may provide follow up care for a patient's medical or surgical eye problem, but the optometrist must provide a report to the surgeon of all treatment and services rendered. TPA certification requirements in Tennessee include completion of at least 140 classroom hours of clinical experience involving diagnosis and treatment of ocular disease, and passage of an examination administered or approved by the Board.<sup>47</sup>

## TEXAS

When you first read how Texas defines optometry, you obtain the view that Texas optometrists are not able to use therapeutic agents. Included in the definition is as follows: "Nothing herein shall be construed to permit optometrist to treat the eyes for any defect whatsoever, unless the optometrist is a regularly licensed physician or surgeon under the laws of the State". Yet, the next paragraph goes on to say essentially the same thing, but adds that optometrists may treat the eye for a defect if he/she is a therapeutically certified optometrist. In Texas, a therapeutic optometrist may administer and prescribe ophthalmic devices, OTC medications, and topical ocular pharmaceutical agents (excluding anti-viral agents and anti-glaucoma agents) for the purpose of diagnosis and treating visual defects. If a TPA certified optometrist prescribes a topical steroid with a concentration of 1% and the condition has not improved within 7 days, consultation with an ophthalmologist is required. If the concentration is less than 1% and improvement is not shown within 14 days, then a consult is required.

Texas includes an extensive list of drugs that are permitted for administration and prescription. The classes of agents are as follows: anti-allergy agents, anti-fungals, anti-infectives, anti-inflammatories, antiseptics, chelating agents, chemical cautery, cycloplegics, hyperosmotics, miotics, and mucolytics. A therapeutic optometrist may possess and administer cocaine eye drops (no greater than 10%) for diagnostic purposes. A therapeutic optometrist is required to fill out the appropriate DEA form for the purchase of the drops. Currently no agents are permitted for oral use and glaucoma can not be legally treated.

To obtain TPA certification in Texas, a completion of accredited academic and clinical courses equivalent in number of hours to the requirements for other health care professionals who are licensed to use pharmaceutical agents is required. This includes at least 90 classroom hours, with at least 20 hours of applied clinical skills. Successful completion of the TMOD exam is also a requirement. All applicants for initial licensure after September 1, 1993, must be TPA certified.<sup>50</sup>

## UTAH

Utah defines practice of optometry with the standard definition that other states use. Included in the definition is that optometry is the prescription, ordering, administration, or adaptation of ophthalmic lenses, contact lenses, ophthalmic devices, pharmaceutical agents, laboratory tests, or ocular exercises to diagnose and treat diseases, defects or other abnormal conditions of the human eye and its adnexa. Optometrists may legally remove a foreign body from the eye or its adnexa, as long as it is no deeper than the anterior half of the cornea. No form of surgery, including laser surgery, is allowed to be performed. Utah optometrists may prescribe or administer any pharmaceutical agent for the eye, including all oral pharmaceutical agents. Oral antibiotics have limitations on their use, and can only be prescribed for eye related ocular disease or condition. Glaucoma is permitted for treatment with oral and topical pharmaceutical agents.

Utah has the following requirements for TPA certification: successful completion of an approved course of study of not less than 100 hours of classroom and clinical study, passage of the TMOD examination, passage of the Utah Controlled Substances Law Examination, Current CPR certification, and submission of a written optometric utilization plan.<sup>48</sup>

## **VERMONT**

Vermont defines “practice of optometry” as the examination of the human eyes and visual system for purposes of ascertaining refractive and functional ability or detecting the possible presence of disease or injury and making appropriate referrals to a licensed physician when signs of possible disease or injury are found. Optometrists are to detect and correct anomalies of the refractive and functional ability of the visual system by the prescribing and employment of lenses, prisms, contact lenses, visual training, orthoptics and pleoptics. Optometrists are legally authorized to remove superficial foreign bodies.

An optometrist in Vermont that is certified to use diagnostic agents may use mydriatics, cycloplegics, and anesthetics for topical use only. These agents may not be used for therapeutic treatment. A TPA certified optometrist is permitted to use topical agents for the diagnosis and treatment of ocular disease. The following class of agents are permitted for topical use: anti-infectives (including anti-viral agents), antibiotic-steroid combination agents, mydriatic reversal agents, and anti-inflammatory agents (including steroid preparations). No oral agents are permitted and glaucoma is not permissible for treatment. An optometrist is to consult with an ophthalmologist if the patient’s condition has not improved within seven days after initiation of treatment. An optometrist is also required to refer a patient to an ophthalmologist if a steroid is to be used for longer than ten days.

TPA certification requires successful completion of at least 100 hours in the diagnosis, pharmacology, and treatment of ocular disease, with 24 of those being clinical hours. Passage of a Board-approved examination in ocular disease treatment and pharmacology is also required.<sup>49</sup>

## **VIRGINIA**

Virginia also uses a standard definition to define the practice of optometry, and includes in it that optometrists may treat certain diseases or abnormal conditions of the human eye. A TPA certified optometrist in Virginia is allowed to treat certain diseases of the eye, including diseases of the lid and adnexa, lacrimal system, cornea, conjunctiva, and episclera, with certain therapeutic pharmaceutical agents specified by the Board. Certification does not allow an optometrist to treat with surgical procedures, but may remove superficial foreign bodies and treat emergency cases of anaphylactic shock with intramuscular epinephrine.

A TPA certified optometrist may also treat glaucoma, with prior consultation with the patient’s physician, and excluding the treatment of congenital and infantile

glaucoma. Treatment of angle closure glaucoma should be limited to the initiation of immediate emergency care with pharmaceutical agents. Optometrists may partake in ocular related post-operative care, with the cooperation of the patient's surgeon. Anterior uveitis is permissible for treatment, as well as ocular trauma to the lids, adnexa, lacrimal system, cornea, or conjunctiva. Treatment with oral therapeutic pharmaceutical agents is limited to analgesics in schedules III and IV. Prescriptions for oral analgesics to relieve ocular pain are limited to dosages for no more than 72 hours. These analgesics are limited to preparations containing codeine or hydrocone in combination with other non-narcotic analgesics. Nonsteroidal anti-inflammatory drugs, and the centrally acting analgesic, tramadol hydrochloride, are approved for use.

TPA certified Virginia optometrists are authorized to use all classes of topical agents for the treatment of ocular disease. The following topical agents are permissible for the treatment of glaucoma: sympathomimetics, beta-adrenergic blockers, miotics, and combination agents. To obtain TPA certification an optometrist in Virginia must be DPA certified, complete a postgraduate optometric training as approved by the board conducted by the Pennsylvania College of Optometry or any other postgraduate optometric program approved by the board, and passage of an examination administered by the Board.<sup>39,52</sup>

### **WASHINGTON**

Washington defines optometry as, "the examination of the human eye to find defects of human vision system and the analysis of the process of vision". This includes the use of lenses, prisms, contact lenses, vision therapy, therapeutic aids and treatment with topically applied drugs. There is no mention in the statute of the authority to perform other procedures, such as remove foreign bodies or the ordering of cultures from the lab.

Washington optometrists are limited to the use of topical pharmaceutical agents and may prescribe any type of oral agent. Glaucoma may be treated topically. Mydriatic, cycloplegics, and miotic agents are permissible for diagnostic and therapeutic purposes. Drugs that are permissible for therapeutic purpose only include: anti-infectives, anti-histamines, decongestants, ocular lubricants, anti-glaucoma agents, anti-inflammatories, and hyperosmotics. To obtain TPA certification, a Washington optometrist must complete 60 hours of classroom and clinical instruction in general and ocular pharmacology as applied to optometry for diagnostic purposes and an additional 75 hours of classroom and clinical instruction in the use of drugs for diagnostic and therapeutic purposes.<sup>53</sup>

### **WEST VIRGINIA**

West Virginia authorizes its optometrists to examine the human eye, with or without the use of drugs applied topically to diagnose or treat an abnormal condition of the eye. An optometrist may not perform any form of surgery and is not permitted to use any form of injectable medication. TPA certified optometrists are authorized to use oral antibiotics, oral non-steroidal anti-inflammatory agents and oral carbonic

anhydrase inhibitors, all which must be in Schedules III, IV, and V. Oral analgesics and oral steroids are not permitted for use. Glaucoma may be treated with topical and oral agents. The only requirement for an optometrist in West Virginia to obtain TPA certification is to satisfactorily complete a Board-approved course in pharmaceuticals. No mention of the number of required hours is listed.<sup>54</sup>

## WISCONSIN

Wisconsin defines the profession of optometry as the employment of any optometric means, including the diagnosis and treatment of the refractive and functional ability of the visual system, and the use of topical ocular diagnostic pharmaceutical agents to determine the presence of ocular disease or ocular manifestations of systemic disease and other departures from normal. An optometrist is authorized to remove superficial foreign bodies from the eye or its appendage. An optometrist is responsible for rendering advice regarding a condition or cause of ocular health or disease. The practice of optometry does not include surgery or medical treatment.

Optometrists are entitled to use diagnostic pharmaceutical agents, including mydriatics, cycloplegics, topical anesthetics, and miotics, to diagnose the presence of ocular disease. Therapeutic pharmaceutical agents are prescribed or administered for ocular therapeutic purposes. These agents include: oral analgesics that are in Schedules III, IV, and V, topical decongestants, topical and oral antihistamine agents, artificial tear solutions and lubricants, hypertonic sodium chloride, yellow mercuric oxide, topical anesthetics, topical and oral antibiotics, topical antivirals, oral non-steroidal anti-inflammatory agents, topical corticosteroid and non-steroidal agents, and topical anticholinergic agents. Glaucoma is permitted for treatment with topical and oral agents, including: Sympathomimetics, miotics (direct acting and cholinesterase inhibitors), topical beta-adrenergic blocking agents, and oral carbonic anhydrase inhibitors. Prior to prescribing beta-blockers or carbonic anhydrase inhibitors for the treatment of glaucoma, an optometrist shall inform the patient's physician of the treatment plans and document that contact with the physician has been made. If the patient does not have a primary physician, an optometrist is required to refer the patient to a physician to determine the presence or absence of any systemic contraindication to the intended therapeutic treatment. Closed angle glaucoma shall be considered an emergency in which the treating optometrist shall make immediate referral directly to a physician who specializes in the treatment of diseases of the eye.

Therapeutic pharmaceutical agents may be prescribed or administered by an optometrist holding a current TPA certificate. An optometrist is not allowed to prescribe or administer a therapeutic pharmaceutical agent which is not listed in the current statute. To obtain TPA certification, a Wisconsin optometrist must complete 100 hours of Board-approved study, pass a Board-approved examination, and submit to the Board an adverse drug reaction referral plan reflecting the use of therapeutic pharmaceutical agents.<sup>59</sup>

## WYOMING

Wyoming defines optometry as the employment of any means other than the use of therapeutic lasers or surgery for diagnosing and treating ocular pathology and for the measurement of the powers or range of human vision. Surgery is defined as the penetration by manual operation into the intraocular tissues or spaces for healing diseases, deformations, or injuries. Optometrists are authorized to remove superficial ocular foreign bodies that have not penetrated the intraocular spaces or tissues.

An optometrist licensed according to the statutes of Wyoming, is allowed to administer and prescribe pharmaceutical agents related to the practice of optometry. A licensed optometrist who administers or prescribes pharmaceutical agents is required to provide the same standard of care to patients as a physician licensed to utilize the same agents. Excluded from the list of permitted agents are the following oral medications: immunosuppressives, steroids, anti-fungals, sedative-hypnotics, and schedule I and II narcotics. No medication is to be given by injection. Oral anti-glaucoma medications may be administered for a period not to exceed 48 hours. No additional requirements beyond original licensure are required for an optometrist in Wyoming to be certified to use therapeutic pharmaceutical agents.<sup>60</sup>

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For the last part of this paper, I will try to reflect on the statutes and bring together some interesting comparisons and conclusions. It is obvious that each state has different ways to define certain terms regarding its professionals. Some are very specific in its definitions, not leaving any question as to what is allowed legally within the scope of practice. Others are very vague in their definitions, leaving several questions confronting the practicing optometrist. If a subject matter is not listed, does this mean that it should not be performed; or may it be done due to lack of a written restriction on the procedure? These are questions that should be sought to be answered by the practicing optometrist, as to prevent a loss in any legal matter that would be brought up against them.

As of December 1, 1997, all states are allowed to use some form of topical pharmaceutical agent for diagnosis and treatment of eye disease. The District of Columbia is the only area that does not permit its optometrists to use TPA's. Thirty-four states are allowed to use some form of an oral agent, either it being for treatment of all types of eye disease, just for infections, or just for use as an analgesic agent. Of the twenty-eight states that can use oral pharmaceutical as analgesics, only three of those are not permitted to use any form of controlled substances. Maryland and California are currently the only states that are allowed to only use oral tetracycline for the treatment of blepharitis or meibomianitis. A total of forty states are allowed to treat glaucoma with either a topical or oral pharmaceutical agent, with Michigan having the most recent bill to pass on December 1, 1997. Twenty-one of those states is allowed to use some form of an oral agent while nineteen of those are only permitted to use topical agents. All states are allowed to treat inflammation of the eye with either a topical or oral agent, but eleven states have restrictions on the use of steroids. (Refer to Table I for a summary of the above mentioned statements.)

Not summarized in the above chart are other interesting facts regarding the legislation of the fifty states. For instance, forty states include in their definition of “practice of optometry”, the mention of permission to remove foreign bodies embedded in the eye. Therefore, ten states and including the District of Columbia have no mention of this procedure. (Refer to Table II for a list of these states). Injectable medication is a category of pharmaceutical that many states are currently fighting to include in their legislation. Currently sixteen states mention the use of injectables in some way in their written legislation, either permitting or prohibiting their use by optometrists. Some of these states specifically state that injectable medication can be used in the form of Epinephrine, Benadryl, or an analog of the two, to counteract anaphylaxis or anaphylactic shock. (Refer to Table III). Of the forty states that are allowed to treat glaucoma, several of them do not permit full freedom of treatment, and include restrictions on the treatment plan. (Specific restrictions are listed in Table IV). Ordering laboratory tests and cultures are of utmost importance to the diagnosis of certain eye diseases. Currently California, Connecticut, Maryland, Missouri, and Tennessee are the only states that include the ordering of cultures and lab tests as ‘the practice of optometry’. This does not mean that other states cannot perform the tests, but the procedures are not directly permitted in the legislation. Again, this leaves question if the procedures could be done legally.

As I reviewed the optometric legislation of each state, I came to realize that no state had a perfect written law. Many states are very specific in their wording of certain procedures and allowable therapeutic agents, which can be beneficial but more often harmful to the status of their privileges. For example, Michigan states in their legislation that a topical pharmaceutical agent is meant for the purpose of remedying an abnormal condition of the anterior segment of the eye. Limiting themselves to the “anterior segment” caused several problems for the political optometrists pushing for the permission to treat glaucoma. Several other states include ‘anterior segment’ in their definitions as well. On the reverse side, many states are very broad in their definitions, permissions, and restrictions. For example, practice of optometry often is defined in several states as “the employment of any means to examine, diagnose and treat an abnormal condition of the human eye”. Without any restrictions listed after this definition, one can assume this to be a very powerful statement that could be easily taken advantage of when it comes to legality of a procedure. Another example of a broad definition that could be taken to have several meanings, is one that North Dakota includes in their legislation, “. . . invasive procedures are prohibited by an optometrist but all primary care procedures may be performed”. What is a primary care procedure? Writers of the legislation expect that we should know.

The impact that the lack of uniformity in each state’s optometric legislation can be predicted to worsen with the increased threat that managed care and insurance reimbursements pose to our profession. Optometry will be judged by the lowest common denominator, which in this case is the District of Columbia, which does not even have a TPA law. Also, optometrists can be left out of a managed care or insurance plan because they are considered only “health care providers” in many states, rather than as “physicians”, who generally have broader powers.<sup>6</sup> In Colorado, for example, a licensed optometrist who utilizes pharmaceutical agents is required to provide the same level of care that an ophthalmologist would provide. This statement

could be taken to mean that an optometrist is to assume the role of a “physician” when it comes to pharmaceutical treatment of their patients. Another example shows that optometrists are only not homogenous amongst other states, but do not even have uniform privileges within their own states. As many as four states separate their optometrists into two different categories, rather than defining every optometrist in the state with the same privileges. Connecticut defines its optometrists as either practicing optometry or practicing ‘advanced optometric care’. Maine requires it optometrists to apply for an ‘advanced therapeutic license’ if they want to treat glaucoma, but did not make it a requirement. New York divides the pharmaceutical agents it allows its optometrists to use into two different ‘Phases’. And Rhode Island defines an optometrist as either ‘certified’ or one that participates in ‘amplified practice’.

The long road that Michigan optometrists have taken to get our legislation to where it is today, is only expected to get longer in the future. We are lagging behind other states when it comes to freedom to practice with our full capabilities and potentials. We, as well as the other states, will continue to update legislation and fight for the expansion of privileges that optometrists deserve.



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**TABLE I**

**SUMMARY – DRUGS PRESCRIBED BY OPTOMETRISTS**

STATE	Medications Used To Treat ALLERGIES	Medications Used To Treat INFECTIONS	Medications Used To Treat GLAUCOMA	Medications Used To Treat INFLAMMATION	Medications Used To Treat PAIN (oral)
Alabama	T-O	T-O	T-O	T-O	O
Alaska	T	T	T	T	
Arizona	T	T	T	T	
Arkansas	T-O	T-O	T-O	T-O	O
California	T	T-O		T*	
Colorado	T-O	T-O	T-O	T-O*	O
Connecticut	T-O	T-O	T-O	T-O	O
Delaware	T-O	T-O	T-O	T	O**
Florida	T	T	T	T	
Georgia	T	T	T	T	O
Hawaii	T	T		T	
Idaho	T-O	T-O	T-O	T-O	O
Illinois	T	T	T	T	O**
Indiana	T-O	T-O	T-O	T-O*	O**
Iowa	T-O	T-O	T-O	T	O
Kansas	T	T	T	T	
Kentucky	T-O	T-O	T-O	T-O	O
Louisiana	T-O	T-O	T	T	
Maine	T-O	T-O	T	T-O*	O
Maryland	T	T-O	T	T*	
Massachusetts	T	T		T	
Michigan	T	T	T	T	
Minnesota	T	T	T	T	
Mississippi	T	T	T	T	
Missouri	T-O	T-O	T-O	T-O	O
Montana	T	T		T	O
Nebraska	T-O	T-O		T-O*	O
Nevada	T	T-O		T	
New Hampshire	T-O	T-O		T*-O*	O
New Jersey	T	T	T	T	
New Mexico	T-O	T-O	T-O	T-O*	O
New York	T	T	T	T	
North Carolina	T-O	T-O	T-O	T-O	O
North Dakota	T-O	T-O	T-O	T-O	O
Ohio	T-O	T-O	T-O	T	
Oklahoma	T-O	T-O	T-O	T-O	O
Oregon	T	T	T	T	
Pennsylvania	T-O	T-O		T*-O*	O
Rhode Island	T	T	T	T	
South Carolina	T-O	T-O	T-O	T	O
South Dakota	T	T	T	T	O
Tennessee	T-O	T-O	T-O	T-O	O
Texas	T	T		T	
Utah	T-O	T-O	T-O	T-O	O
Vermont	T	T		T	
Virginia	T	T	T	T	O
Washington	T	T	T	T	
West Virginia	T	T-O	T-O	T-O*	
Wisconsin	T-O	T-O	T-O	T-O	O
Wyoming	T-O	T-O	T-O	T-O*	O

KEY: T = Topical Pharmaceutical Agents  
 O = Oral Pharmaceutical Agents  
 \* = No steroids.  
 \*\* = No controlled substances (narcotics).

**TABLE II**

**(States that do not mention foreign body removal in their legislation)**

Georgia  
Indiana  
Louisiana  
Maine  
Minnesota  
Montana  
New Mexico  
North Carolina  
Tennessee  
Washington  
West Virginia

**TABLE III**  
**(States that include mention of Injectable medication in their legislation)**

	Injectables Permitted	Injectables Not Permitted	**
Alabama		XX	XX
Alaska		XX	
Arizona		XX	
Arkansas			XX
Connecticut	XX		XX
Georgia		XX	
Kentucky	XX		XX
Massachusetts		XX	
Michigan		XX	
Missouri		XX	
New Hampshire			XX
New Jersey	(only permitted for anaphylaxis)		XX
New Mexico		XX	
Oregon		XX	
Pennsylvania		XX	
West Virginia		XX	

\*\* indicates that optometrists can use Epinephrine, Benadryl or an analog of the two to counteract anaphylaxis or anaphylactic shock.

**TABLE IV**  
**(States that include restrictions on the treatment of Glaucoma)**

	Angle Closure*	Beta-blockers**	Co-Manage with MD***
Alaska	XX		
Colorado	XX		
Florida	XX	XX	#
Georgia	XX	XX	
Kansas			XX
Maine			(until certification obtained)
Maryland			XX
Michigan			XX
New York			(until manage 75 patients)
North Dakota			XX
Oregon			XX
Rhode Island	XX	XX	#
South Carolina		XX	
South Dakota			XX
Virginia			XX <sup>#</sup>
Wisconsin	XX	XX	

\* Indicates that patients with Angle Closure Glaucoma must be immediately referred to a physician that specializes in eye disease. Refer to individual state's legislature for more specific explanations.

\*\* Indicates that if an optometrist is to treat a patient with a Beta-blocker, consultation or referral to a general physician is required to rule out any systemic contraindications.

\*\*\*Indicates that a co-management plan with a physician specializing in eye disease is required either before initiating treatment or throughout treatment of the disease. Refer to individual state's requirements for more specific explanations.

# Indicates specific prohibition of treatment of congenital/infantile glaucoma.