STATE OF CALIFORNIA
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DEPARTMENT OF CONSUMER AFFAIRS

STATE AND CONSUMER SERVICES AGENCY • ARNOLD SCHWARZENEGGER, GOVERNOR
OFFICE OF PROFESSIONAL EXAMINATION SERVICES
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July 1, 2009

Mona Maggio, Executive Officer
California State Board of Optometry
2420 Del Paso Road, Suite 255
Sacramento, CA 95834

RE: Transmittal of Legislatively Mandated Report

Dear Ms. Maggio:

Pursuant to Senate Bill (SB) 1406, Chapter 352, which became effective on January 1, 2009, the California State Board of Optometry appointed the Glaucoma Diagnosis and Treatment Advisory Committee (Committee) for the purposes of establishing certain requirements for glaucoma certification.

The Committee submitted its final recommendations to the Office of Professional Examination Services (OPES) on April 1, 2009. Two separate reports were received; one from the Optometrist members and another from the Ophthalmologist members of the Committee.

OPES hired a Special Consultant, Tony Carnevali, O.D., F.A.A.O., charged to examine the Committee's recommended curriculum requirements as submitted, to determine whether they meet the expectations outlined in SB 1406, and report any necessary findings and/or modifications.

OPES has adopted and is pleased to submit Dr. Carnevali's report, "Glaucoma Certification for Optometrists – Report and Recommendations," with the enclosed modifications.

Sincerely,

Sonja Merold

Sonja Merold, Chief
Office of Professional Examination Services

Enclosures: OPES' Modifications
Glaucoma Certification for Optometrists – Report and Recommendations

cc: Patricia Harris, DCA Acting Chief Deputy Director
Michael Santiago, DCA Staff Counsel

ENCLOSURE A

OPES' MODIFICATIONS

OPES adopts all of Dr. Carnevali's recommendations with the following modifications. Underlined = Additions and changes; ~~Strikethrough~~ = Deleted text.

RECOMMENDATIONS:

1. New graduates of an accredited school or college of optometry after May 1, 2008, are well trained in all aspects of glaucoma diagnosis and management, and therefore are fully qualified to receive glaucoma certification without any additional didactic or case requirements.

   This is also consistent with the wishes of the Legislature and the co-authors of SB 1406.

2. Those graduating from an accredited school or college of optometry prior to May 1, 2000, who have not completed a didactic course of not less than 24 hours in the diagnosis, pharmacological, and other treatment and management of glaucoma, ~~who have not yet taken a 24-hour glaucoma course~~, will be required to take the 24-hour course. Those graduating from an accredited school or college of optometry after May 1, 2000, are exempt from further didactic courses.

3. Those graduating from an accredited school or college of optometry prior to May 1, 2008, who have taken the 24-hour course but not completed the case management requirement under SB 929, will be required to complete a minimum 25- patient case management requirement.

   The case management requirement will consist of, at minimum, 25 patients prospectively treated/managed for one year. This case requirement may be fulfilled by any combination of the following:

   a. Fifteen-patient credit for taking a 16-hour advanced case management course conducted live, web-based, or by use of telemedicine and passing a course examination. California schools and colleges of optometry will work cooperatively to develop uniform curriculum and procedures and obtain approval by the State Board of Optometry. ~~The course is to be developed by an accredited school of optometry in California and approved by the State Board of Optometry.~~

      The 16-hour case management course should be structured in such a way that it will maximize the learning experience. The following are some suggestions:

      1) Case-based course similar to the NBEO Part II examination on patient assessment and management including a specified number of common treatment scenarios, complex

cases and confounding disease processes (similar to the proposal by ophthalmology); including an

~~(2) Course based on~~ individual analysis and presentation by each candidate of at least 10 patient case scenarios most likely to be encountered in clinical practice (as proposed by optometry).

2) ~~3)~~ A written examination administered to each candidate at the conclusion of the course (as recommended by both ophthalmology and optometry).

b. Fifteen patients credit by participating in a 16-hour grand-rounds program with live patients developed by an accredited school of optometry in California and approved by the State Board of Optometry.

A grand-rounds program with live patients that are individually examined by doctors would better mimic real life glaucoma management. Here is an example of such a program:

1) Live patients to include: Glaucoma suspects, narrow angle, POAG (early, moderate, late), and secondary open angle glaucoma like pigment dispersion and pseudoexfoliation. The patient data would be available on site and presented upon request: VA's, IOP, VFs, imaging and pachymetry
2) The doctors would exam the patient (optic nerve, gonioscopy), evaluate data and test results, and commit to a tentative diagnosis and management plan.
3) Conduct a group discussion of the cases with instructor feedback.
4) Follow-up meetings involving the same doctors - could use the same patients or different patients with serial data from VF, imaging, photos, etc.

The accredited optometry schools and colleges in California could develop and recommend to the State Board of Optometry for approval the specific format and content of a case management course and/or a grand rounds program. ~~The specific format and content of a case management course and/or a grand rounds program would most appropriately be decided and approved by the State Board of Optometry.~~

~~c. Ten patients credit may be completed on a retrospective basis by writing a case report, to include a treatment plan and appropriate tests, on currently co-managed patients from the OD's practice…to be reported and conducted in a manner approved by the Board of Optometry.~~

~~This would most likely require the use of experts (i.e. glaucoma certified ODs, glaucoma certified ophthalmologists, faculty members at schools of optometry) to evaluate the written case reports. An appropriate per case fee could be charged of the OD submitting the case report to the Board for processing and expert evaluation.~~

c. ~~d.~~ Those ODs who began the credentialing process under SB 929 but will not be completing the requirement by December 31, 2009, may apply all patients who have been co-managed prospectively for at least one year towards the 25-patient requirement. Full credit should be given for a~~A~~ll these patients that have been or are currently being co-

managed with an ophthalmologist and the optometrist. ~~should therefore be given full credit for that experience.~~

d.~~e.~~ And finally, any or all of the 25 patients may be seen under a preceptorship arrangement with a glaucoma certified OD or ophthalmologist. This preceptorship may all be accomplished by the use of telemedicine/ electronic submission of information, etc., as mutually agreed to by the consulting and treating doctors.

4. Present CE requirement of 50 hours for two years with 35 hours in ocular disease is sufficient for all ODs already certified to treat glaucoma. However, the State Board of Optometry may at its discretion consider specifying a given number of hours (perhaps eight ~~12~~ hours) of glaucoma treatment and management continuing education courses every two years for those who are glaucoma certified ~~ODs who will be going through the glaucoma certification process~~. (This should be part of the 50 hours currently required, not an additional number of hours…perhaps even with an automatic sunset provision for this requirement after 4-6 years.)

OPES' RATIONALE FOR MODIFICATIONS

1. Added "accredited school or college of optometry" to make sure that it was clear that schools need to be accredited by the Accreditation Council on Optometric Education.

2. Added specific text from the California Optometry Law Book about the 24 hour didactic course because no changes were made to this requirement and it keeps with the recommendations given by the glaucoma advisory committee. The current didactic course offered by California schools/colleges of optometry is sufficient and meets the standards necessary for licensure.

3. Added "a minimum" to the 25 patient case management requirement description in order to indicate that if more patients are seen during a course, the course must be completed despite the additional patient credits received. OD's cannot drop out of any course they choose in order to meet these requirements when they reach the 25 patient cut off.

a. OPES recommends that a "uniform curriculum" be developed with the schools/ colleges of optometry in California working together. The Board will approve the final curriculum.

1) & 2) Have been combined in order to facilitate curriculum development. OPES also feels that students should have both 1) and 2) in their training, not just one or the other.

b. OPES recommends that the schools/colleges of optometry in California should develop the format for the grand rounds course and then the Board of Optometry will approve.

c. OPES felt that this recommendation should be removed because it would require statutory and regulatory amendments if a fee is required. Currently, there is nothing in the B&P Code established that would permit the Board to collect fees for expert evaluations. A fee cap would be required in statute in order to ensure that all experts are charging a fair amount to graduates. Also, it would be difficult to determine who would be qualified as an "expert" for the evaluation of the written case reports. The Board would need the schools/colleges of optometry to recommend experts, but again, the question remains on how to establish who is qualified. The evaluations would be subjective depending on the expert and it would be difficult to develop a standard to which each evaluator should be held to in order to ensure that each student is getting the same evaluation.

d. editorial changes only

e. no changes

4. OPES feels that 8 hours are sufficient instead of 12 because OD's are already required to take 35 hours of ocular disease in order to treat glaucoma. Additionally,

courses are usually in 6-8 hour increments. For example, subject matter experts who attend workshop at OPES in order to develop the California Law Examination for optometry receive 8 CE credits for 2-day workshops.

Finally, OPES conferred with Board staff in regards to CE record keeping and the case management process because this process will essentially mirror what is already in place. Thus, it was found necessary to remove the fifth sentence referencing whether OD's will be going through the certification process. It would be difficult for the Board to keep track of these individuals since the Board currently does not have a tracking mechanism in place in order to determine who is in the glaucoma certification process. The only way Board staff will know this information is when an OD has completed the process and turned in their application for evaluation and approval.

Office of Professional Examination Services
Report from Special Consultant

June 25, 2009

Sonja Merold
Chief, Office of Professional Examination Services
2420 Del Paso Road, Suite 265
Sacramento, CA 95834

Dear Ms. Merold:

As commissioned by your office, please find attached my report and recommendations with regards to glaucoma-certification requirements pursuant to Senate Bill 1406 (Statutes 2008, Chapter 352, § 2).

My charge was to provide an independent "examination and evaluation of curriculum for the purpose of establishing entry-level requirements for currently licensed optometrists...who possess a therapeutic level licensure to become certified to treat glaucoma."

I have taken this responsibility very seriously and have committed a great deal of time and effort in producing a report that is not only credible and fair, but more importantly, addresses the issues of doctor competency and ensures the public safety.

However, I am compelled to address several points that have come to light that somehow challenge my objectivity and competence in discharging the responsibilities assigned to me:

First, I am currently a tenured faculty member at the Southern California College of Optometry and Clinic Director of its affiliate clinic the Optometric Center of Los Angeles. I have been in this position since 1994. Rather than create a bias in favor of anything that might benefit the school, it has given me a better insight and understating of the curricular process at all schools of optometry and allows me to provide a more critical assessment of the curriculum.

Second, although not currently glaucoma certified, I do consider myself well qualified to diagnose, treat and manage glaucoma patients and to lecture and train clinicians in a clinical setting. As a perspective, I have been diagnosing and managing glaucoma patients since early in my professional career when I was in private practice in Glendale, CA. Many of the ophthalmologists in the city had enough confidence and trust in my abilities that they would allow me to do all the testing and follow-up on the patients to monitor for IOP control, any progression of glaucoma or compliance to medications and then refer back when necessary. In fact, some of them even hired me to perform and interpret their patient's visual fields over time when tangent fields were still in vogue, Schiotz tonometry was performed routinely, and the primary form of treatment was with pilocarpine and epinephrine. Since coming to OCLA,

I have been deeply involved in the diagnosis, treatment, and management of glaucoma patients both directly and in grand-rounds and in teaching all clinical aspects of glaucoma to the Interns on rotation at our Center. Over the years, I have seen and worked with hundreds of patients with of all types of glaucoma and at different stages and severities of glaucoma progression.

And, finally, I have been and continue to be an active member of the California Optometric Association-a past president and member of the COA Board of Trustees and deeply passionate and committed to the evolution of the profession of optometry in California and on the national scene. That is who I am; therefore, I am not certain that I can completely divorce myself from this bias...nonetheless I have tried.

Given these issues and concerns, sensitivities, and controversy surrounding glaucoma certification, I have been very careful in producing a document that is well-researched and thoughtful. I hope you will also find it so. Commitment to a job-well done and my ethical obligations are the cornerstone of my conduct and would not permit me to do otherwise.

I would like to thank members of your staff, particularly Mike Newbert, for working with me on this project; and would also like to express appreciation to Mona Maggio and Andrea Leiva from the State Board of Optometry for their help with the compilation of state data and information.

Please let me know if I may be of further assistance to answer any questions arising from my report, conclusions and recommendations. Moreover, I stand ready to assist your office and the State Board of Optometry in any way possible to develop and implement regulations that protect the public welfare and ensure a smooth and fair process for glaucoma certification.

Sincerely,

Tony Carnevali, O.D., F.A.A.O.
Special Consultant,
Office of Professional Examination Services

GLAUCOMA CERTIFICATION FOR OPTOMETRISTS

REPORT AND RECOMMENDATIONS

TONY CARNEVALI, O.D., F.A.A.O.
SPECIAL CONSULTANT

OFFICE OF PROFESSIONAL EXAMINATION SERVICES
California Department of Consumer Affairs

Pursuant to California Business & Professions Code Section 3041.10
Enacted by Senate Bill 1406 (Stats. 2008, Chapter 352

June 25, 2009

TABLE OF CONTENTS

OFFICE OF PROFESSIONAL EXAMINATION SERVICES REPORT
EXECUTIVE SUMMARY

The Office of Professional Examination Services, pursuant to a Legislative charge as set forth in Senate Bill 1406, has commissioned my services as a special consultant to assist with "the examination and evaluation of curriculum for the purpose of establishing entry-level requirements for currently licensed optometrists...who possess a therapeutic level licensure to become certified to treat glaucoma." (Tab 1)

Specifically, the charge was to evaluate the recommendations made by the Glaucoma Diagnosis and Treatment Advisory Committee (GDATAC) and determine that the recommendations do the following:

- Adequately protect glaucoma patients;
- Ensure that defined applicant optometrists will be certified to treat glaucoma in an appropriate and timely basis;
- Provide appropriate case management of patients diagnosed with glaucoma;
- Be appropriate for entry level optometrist certification;
- Demonstrate (re: course curriculum) an optometrist's ability to safely and competently diagnose, treat and manage primary open-angle glaucoma, exfoliation, and pigmentary glaucoma;
- Ensure that optometrists can treat narrow angle glaucoma on an emergency basis;
- Be consistent with the Department of Consumer Affairs and the Board's examination validation for licensure and occupational analyses polices adopted pursuant to subdivision (b) of Section 139 of the Business and Professions Code.

To accomplish this charge, I was assigned certain explicit tasks and responsibilities:

- Become familiar with the provisions in Senate Bill 1406, Chapter 352, Statutes 2008 (Correa).
- Gather and analyze existing data regarding the curriculum offered by a sampling of accredited schools of optometry regarding the didactic and case management training in the treatment and management of patients diagnosed with glaucoma. For the purposes of this study, glaucoma means all primary open-angle glaucoma, exfoliation, and pigmentary glaucoma as well as emergency treatment of narrow angle glaucoma.
- Analyze and evaluate the didactic courses of not less than 24 hours in the diagnosis, pharmacological, and other treatment and management of glaucoma currently offered by the University of California, Berkeley, School of Optometry and the Southern California College of Optometry.
- Analyze and evaluate how the diagnosis, pharmacological, and other treatment and management of glaucoma patients are currently integrated into the content of the National Board of Examiners in Optometry (NBEO) examinations.

- Analyze a sampling of other state boards of optometry's criteria for licensure /certification to treat primary open-angle glaucoma, exfoliation, and pigmentary and narrow angle glaucoma.
- Prepare a confidential report regarding the results of the analysis and present the findings to OPES, the Board of Optometry, and Board staff.
- With stakeholders at a public meeting, discuss the results of the analysis and the Committee's recommendation.

In fulfillment of the above charge and assigned tasks and responsibilities, I have done the following:

- Reviewed the two reports of the Glaucoma Diagnosis and Treatment Advisory Committee and listened to the DVDs of the meetings of the Committee
- Reviewed SB 1406, SB 929, and related correspondence
- Prepared a survey for schools and colleges of optometry
- Prepared a survey for all state boards of optometry
- Reviewed AOA and COA relevant documents
- Reviewed OPES/OER documents on occupational analysis of the profession of optometry in California and on an independent audit of the National Board Examinations
- Reviewed documents about the National Board Examinations
- Reviewed documents on the Accreditation Council on Optometric Education
- Reviewed ACOE accreditation standards on curriculum from various schools
- Reviewed the manuals of the 24-hour glaucoma courses offered by SCCO and UCBSO
- Reviewed course syllabi from select courses from SCCO
- Reviewed study conducted by PriceWaterhouseCoopers on competence and cost-effectiveness of optometrists using therapeutic pharmaceutical agents in California
- Reviewed a variety of articles in journals and online
- Conducted personal interviews, meetings, correspondence and communications relative to above activities

Based upon comprehensive review and analysis of the data and information gathered in fulfilling my assigned tasks and responsibilities, I have come to the following conclusions and recommendations:

CONCLUSIONS:

Conclusions-For graduates prior to May 1, 2008:

1. For 35 years optometry has had the privilege of using drugs for diagnostic purposes; for 34 years ODs have prescribed drugs for treating a variety of ocular conditions; and since 1977 ODs have been treating various forms of glaucoma in other states. They have met all didactic and clinical experiences and competencies required by state scope of practice laws, have passed national and state examinations for licensure, and

have performed admirably in a safe and effective manner. To ask California optometrists to have additional training than most of the other states is not fair, reasonable or necessary.

2. In California ODs have had the privilege of treating glaucoma since 2001 and using other therapeutic agents since 1996. Those who have been co-managing patients under SB 929 have been treating glaucoma prospectively for several years. Even those who have not been involved in the direct treatment of glaucoma have acquired much experience in the diagnosis and management of glaucoma. ODs who have been co-managing patients under SB 929 should be given credit for prior experience.
3. For continuing proficiency and competency, therapeutically licensed ODs in California are required to take 50 hours of continuing education every two years to include 35 hours in six ocular disease topics. From 2001 to 2006, there was a specific requirement of 12 hours in glaucoma education. Since then the glaucoma requirement became incorporated within the 35 hours in ocular disease. This is consistent with the majority of states that include glaucoma education as part of the general CE requirement for TPA certified ODs.
4. ODs have been licensed to practice in all parts of the country and have demonstrated a remarkable safety record as evidenced by the low number of malpractice claims and disciplinary actions against optometrists in all states. This conclusion has also been supported by surveys and other documents, and studies in California.
5. There are currently 34 states plus DC that do not have any restrictions on treatment and management of glaucoma by optometrists. Eight states have some form of co-management, but with some provisions for waivers or reductions-seven have eliminated the requirement completely for those graduating after a certain date. And several have other restrictions and consultation requirements-all of which are included in California law.
6. ODs are being authorized under SB 1406 to treat and manage glaucoma at entry-level competency. The law already restricts the types of glaucoma ODs may treat, prohibits treating glaucoma in those under age 18, requires consultation for patients with diabetes, allows use of topical medications and restricts use of oral medications to emergency stabilization of acute angle closure glaucoma. ODs are prudent enough to refer when medical treatment is no longer effective or when the type of glaucoma falls outside scope of practice.
7. Current law in California already requires ODs to comply with standards of care that are the same for ophthalmology as for optometry when treating the same conditions of the eye. Standard of care is defined by care given not training received.
8. The 24-hour didactic glaucoma course appears to satisfactorily cover the necessary knowledge to diagnose, treat and manage all types of glaucoma, but with special emphasis on the types authorized by SB 1406. The course also covers in great detail narrow angle glaucoma (or angle closure glaucoma)-and emergency care. There is full agreement among the members of the Glaucoma Advisory Committee that this course is sufficient in meeting the requirements for didactic education on glaucoma.
9. A 25-patient prospective case management requirement for those graduating prior to May 1, 2008, would provide a sufficient level of experience for optometrists to treat and manage patients with glaucoma competently and safely at an entry-level stage. This requirement could be fulfilled by any one or a combination of the following:

taking a 16-hour advanced case management course; participating in a 16-hour grand-rounds program; retrospective case reports; credit for patients co-managed for at least one year; and preceptoring glaucoma patients with a glaucoma-certified OD or ophthalmologist.

Conclusions-For the new graduate after May 1, 2008:

1. The intent of the legislature in passing the new law SB 1406, supported by letters from Senators Correa and Aanestad, co-sponsors of SB 1406, is very clear: that graduates after May 1, 2008, are "presumed" to have met all prerequisites for glaucoma certification and therefore need no additional requirements. The State Board of Optometry has the authority to monitor and impose additional requirements as it deems appropriate.
2. After reviewing the didactic and clinical programs at various schools, it appears that the current curriculum provides a comprehensive foundation of knowledge and skills for the entry-level practice of optometry and glaucoma diagnosis, treatment and management. And, based upon reports from the schools, students graduate with adequate proficiencies and clinical experiences with regards to patient care, patient numbers and patient encounters. Moreover internal mechanisms consisting of course grades, chart reviews, and clinical evaluations by faculty for ensuring proficiency and competency by students are well established and effective.
3. The Curriculum Review process at each institution is more than adequate to ensure the continuing evolution of the curriculum to make certain that it is always current, up to date, and addresses the changing nature of the profession: entry-level definition, standards of care, etc.
4. The ACOE Accreditation process is sufficiently detailed to validate the depth and quality of the curriculum at each institution.
5. All students are required to pass the three-part National Board examinations that adequately test the entry-level knowledge and skills of the graduates as a pre-requisite for licensure in most states; and Parts I and II of the Board examinations in all states.
6. The laws in all states, even those that had co-management requirements, are taking in consideration the comprehensive nature of the training of optometry graduates, and therefore have been willing to abolish co-management requirements rather than impose such requirements. Only one state retains co-management requirements for "new" graduates.
7. Over 200 graduates after May 1, 2008, (and an additional 200 or so new graduates from May 2009 will be added soon) have already been licensed with glaucoma certification and have been practicing for at least one year without problems. There have been no reported incidents or disciplinary actions taken by the State Board of Optometry against any such licensees.
8. During the past year OD graduates after May 1, 2008, have been licensed to practice in California and in other states and have demonstrated that they are safe and effective in treating glaucoma. There have been no reported incidents, disciplinary actions, or malpractice claims filed against them.
9. The proposal submitted by the Ophthalmology members of the GDATAC would establish two separate glaucoma certification requirements for "new" graduates after

May 1, 2008, in addition to the requirement for graduates prior to 2008. These requirements, besides delaying the certification process and not adding materially to the competency of the new doctors, will create some difficulties: retroactive chart audits/reviews and patient counting requirements may not only be impractical but under HIPAA regulations may even be legally questionable; and the status of ODs graduating in May 2009 remains uncertain. Moreover, managing and administering this three-tiered certification program would create a significant burden on the State Board of Optometry.

10. The proposal submitted by the Optometry members of GDATAC is simple and straightforward and ensures that ODs can be certified in a timely manner: no additional requirements for certification for ODs graduating after May 1, 2008. This approach makes sense and is consistent given the legislative intent and the fact that most other states have also repealed co-management requirements for "new" graduates after a particular date.
11. The current continuing education requirement for renewal of license which includes 35 hours of courses in ocular disease is sufficient for the maintenance of continuing competence in glaucoma. However, the State Board of optometry may at its discretion require a specific number of hours in the treatment and management of glaucoma within the 35 hours for those ODs who are going through the glaucoma certification process.

RECOMMENDATIONS:

1. New graduates after May 1, 2008, are well trained in all aspects of glaucoma diagnosis and management, and therefore are fully qualified to receive glaucoma certification without any additional didactic or case requirements.

   This is also consistent with the wishes of the Legislature and the co-authors of SB 1406.

2. Those graduating prior to May 1, 2000 who have not yet taken a 24-hour glaucoma course, will be required to take the 24-hour course. Those graduating after May 1, 2000, are exempt from further didactic courses.

3. Those graduating prior to May 1, 2008, who have taken the 24-hour course but not completed the case management requirement under SB 926, will be required to complete a 25- patient case management requirement.

   The case management requirement will consist of 25 patients prospectively treated/managed for one year. This case requirement may be fulfilled by any combination of the following:

   a. Fifteen-patient credit for taking a 16-hour advanced case management course conducted live, web-based, or by use of telemedicine and passing a course examination. The course is to be developed by an accredited school of optometry in California and approved by the State Board of Optometry.

The 16-hour case management course should be structured in such a way that it will maximize the learning experience. The following are some suggestions:

1) Case-based course similar to the NBEO Part II examination on patient assessment and management including a specified number of common treatment scenarios, complex cases and confounding disease processes (similar to the proposal by ophthalmology).
2) Course based on individual analysis and presentation by each candidate of at least 10 patient case scenarios most likely to be encountered in clinical practice (as proposed by optometry).
3) A written examination administered to each candidate at the conclusion of the course (as recommended by both ophthalmology and optometry).

b. Fifteen patients credit by participating in a 16-hour grand-rounds program with live patients developed by an accredited school of optometry in California and approved by the State Board of Optometry.

A grand-rounds program with live patients that are individually examined by doctors would better mimic real life glaucoma management. Here is an example of such a program:

1) Live patients to include: Glaucoma suspects, narrow angle, POAG (early, moderate, late), and secondary open angle glaucoma like pigment dispersion and pseudoexfoliation. The patient data would be available on site and presented upon request: VA's, IOP, VFs, imaging and pachymetry
2) The doctors would exam the patient (optic nerve, gonioscopy), evaluate data and test results, and commit to a tentative diagnosis and management plan.
3) Conduct a group discussion of the cases with instructor feedback.
4) Follow-up meetings involving the same doctors - could use the same patients or different patients with serial data from VF, imaging, photos, etc.

The specific format and content of a case management course and/or a grand rounds program would most appropriately be decided and approved by the State Board of Optometry.

c. Ten patients credit may be completed on a retrospective basis by writing a case report, to include a treatment plan and appropriate tests, on currently co-managed patients from the OD's practice...to be reported and conducted in a manner approved by the Board of Optometry.

This would most likely require the use of experts (i.e. glaucoma certified ODs, glaucoma certified ophthalmologists, faculty members at schools of optometry) to evaluate the written case reports. An appropriate per case fee could be charged of the OD submitting the case report to the Board for processing and expert evaluation.

d. Those ODs who began the credentialing process under SB 929 but will not be completing the requirement by December 31, 2009, may apply all patients who have been co-managed prospectively for at least one year towards the 25-patient requirement. All these patients have been or are currently being co-managed with an ophthalmologist and the optometrist should therefore be given full credit for that experience.

e. And finally, any or all of the 25 patients may be seen under a preceptorship arrangement with a glaucoma certified OD or ophthalmologist. This preceptorship may all be accomplished by the use of telemedicine/ electronic submission of information, etc., as mutually agreed to by the consulting and treating doctors.

4. Present CE requirement of 50 hours for two years with 35 hours in ocular disease is sufficient for all ODs already certified to treat glaucoma. However, the State Board of Optometry may at its discretion consider specifying a given number of hours (perhaps 12 hours) of glaucoma treatment and management continuing education courses every two years for those ODs who will be going through the glaucoma certification process. (This should be part of the 50 hours currently required, not an additional number of hours...perhaps even with an automatic sunset provision for this requirement after 4-6 years.)

I feel very confident that the recommendations made above do accomplish the intent of the legislature in passing SB 1406 as well as the mandate of OPES to: "adequately protect glaucoma patients" while at the same time ensuring that "defined applicant optometrists will be certified to treat glaucoma on an appropriate and timely basis"-all consistent with "the department's and board's examination validation for licensure and occupational analyses policies adopted pursuant to subdivision (b) of Section 139."

As a last comment: It is perhaps appropriate to quote from a commentary in the British Journal of Ophthalmology Even though it was written in 2001; it is just as compelling today as it was then. "The services offered by the two professions (optometry and ophthalmology) are complementary and any animosities that used to exist should be consigned to history...With an ageing population, and therefore increasing prevalence of eye disease, it would appear essential to have an extended workforce undertaking screening for and monitoring of eye disease...Why should each group be defensive towards the other or afraid that their work will be usurped or negated? Clearly, there is plenty of work for all of us." [1]

PROVISIONS IN SENATE BILL 1406, CHAPTER 352, STATUTES 2008 (CORREA).

Senate Bill 1406 expands the scope of practice of optometry to include the diagnosis, treatment and management of Primary Open Angle Glaucoma, Pigmentary Glaucoma, and Pseudoexfoliation (or Exfoliation) Glaucoma for those who are certified to treat glaucoma. Moreover, all licensees are given independent and immediate authority under SB 1406 in an emergency to stabilize, if possible, and immediately refer a patient with an acute angle closure to an EyeMD. (Tab 2)

This law mandates a process for developing glaucoma certification requirements. The first step in the process: the appointment of a Glaucoma Diagnosis and Treatment Advisory Committee (GDATAC) consisting of three optometrists and three ophthalmologists to make recommendations on what should be the glaucoma requirements for a certain class of California optometrists. Their work was completed as of April 1, 2009. The second step: a mandate to the Office of Professional Examination Services (OPES) to evaluate and analyze the recommendations from the GDATAC and submit to the State Board of Optometry a final proposal with regards to the glaucoma certification requirements by July 1, 2009. And the final step: the State Board of Optometry is to adopt the glaucoma certification requirements recommended by OPES by January 1, 2010.

The charge to GDATAC is specific and clearly stated in new Section 3041.10 of the California Business and Professions Code:

> (d) The committee shall establish requirements for glaucoma certification, as authorized by Section 3041, by recommending both of the following:
>
> (1) An appropriate curriculum for case management of patients diagnosed with glaucoma for applicants for certification who completed a didactic course of not less than 24 hours in the diagnosis, pharmacological, and other treatment and management of glaucoma (as described in paragraph (4) of subdivision (f) of Section 3041), and
>
> (2) An appropriate combined curriculum of didactic instruction in the diagnostic, pharmacological, and other treatment and management of glaucoma, and case management of patients diagnosed with glaucoma, for applicants for certification who graduated from an accredited school of optometry on or before May 1, 2008 and not completed either a 24-hour didactic course or case management requirements under SB 929 (as described in paragraph (5) of subdivision (f) of Section 3041).
>
> In developing its findings, the committee shall presume that licensees who apply for glaucoma certification and who graduated from an accredited school of optometry on or after May 1, 2008 possess sufficient didactic and case management training in the treatment and management of patients diagnosed with glaucoma to be certified. After reviewing training programs for representative graduates, the committee in its discretion may recommend additional glaucoma training to the Office of Examination Resources (now OPES) pursuant to subdivision (f) to be completed before a license renewal application from any licensee described in this subdivision is approved.

Furthermore, SB 1406 includes the following exemptions to the new certification requirements:

1. Optometrists who met or will meet the specific requirements for certification under the provisions in effect between January 1, 2001 and January 1, 2009 (under SB 929) by December 31, 2009 are exempt from additional certification requirements under SB 1406.

2. Any applicant who graduated from an accredited California school of optometry on or after May 1, 2000 is exempted from the didactic course requirement.

Therefore, the requirements for the Glaucoma Diagnosis and Treatment Advisory Committee were three:

1. To make recommendations for a curriculum for case management of patients with glaucoma for licensees who graduated prior to May 1, 2008, who completed a 24-hour approved course but not completed or will not complete the case management requirement by December 31, 2009.
2. To make recommendations of a combined curriculum of didactic instruction and case management for licensees who graduated prior to May 1, 2000, and who have not taken either a 24-hour didactic course or completed the case management requirement.
3. To use their discretion to review curriculum of those graduating after May 1, 2008 and if necessary recommend additional requirements. However, SB 1406 clearly states that licensees who apply for glaucoma certification and who graduated from an accredited school of optometry on or after May 1, 2008, shall be presumed to possess sufficient didactic and case management training in the treatment and management of patients diagnosed with glaucoma to be certified.

With regards to this last charge to GDATAC, each of the two sponsoring authors of SB 1406, Senators Lou Correa and Sam Aanestad, have submitted letters to clarify legislative intent. (Tab 3)

The letter from Sen. Lou Correa dated August 29, 2008, to the Legislative Journal, states, in part, that the "intent of this addition to the law is to clarify the authority of the committee to recommend to the Office of Examination Resources (now OPES) additional educational requirements to those specified in Section 3041 (f)(1) {for graduates on or after May 1, 2008} for glaucoma certification as are deemed necessary by the committee." Then again, on March 31, 2009, Senator Correa sent another letter to the Chief of Professional Examination Services, to further clarify the intent of SB 1406 stating emphatically that " We were <u>very specific</u> that GDATAC shall presume that licensees who apply for certification and who graduated from an accredited school of optometry on or after May 1, 2008, <u>possess sufficient didactic and case management training</u> in the treatment and management of patients diagnosed with glaucoma to be certified." (Underlining from Sen. Correa).

This same intent was confirmed by Senator Sam Aanestad in a letter also dated March 31, 2009, to the Chief of Professional Examination Services. He states: "The legislation says very clearly that those who graduated on or after May 1, 2008, shall be considered capable of treating glaucoma."

Despite these entreaties by the Senators and the clear mandate in SB 1406, there was much deliberation about what to do with ODs graduating after May 1, 2008, and with regards to the case management requirements for those ODs graduating prior to May 1, 2008. Because there was no agreement about these issues, the Glaucoma Diagnosis and Treatment Advisory Committee members, decided to submit two separate reports on glaucoma certification requirements.[2,3]

RECOMMENDATIONS BY OPTOMETRY [2]

For ODs graduated prior to May 1, 2008:

1. Didactic course: Those ODs graduating prior to May 1, 2008, who have not taken the 24- hour didactic course prescribed by SB 929, will be required to take the 24-hour course. Those graduating after May 1, 2000, are exempt.
2. Case management: Those ODs who graduated prior to May 1, 2008, and did take the 24-hour didactic course prescribed by SB 929 by January 1, 2009, should be required to complete a not less than 16 hours Board-approved course in case management of patients diagnosed with glaucoma. The course is to include individual analysis and presentation by each candidate of at least 10 patient case scenarios; supervised by at least one glaucoma-certified optometrist in active practice or one board-certified ophthalmologist with a specialty or subspecialty in glaucoma in active practice; and a final written examination administered to each candidate at the conclusion of the course.
3. Combined Didactic Course and Case management: For ODs who graduated prior to May 1, 2008, who did not take the 24-hour didactic course prescribed by SB 929, and will not complete the case management requirement by December 31, 2009, the recommended didactic and case management courses in paragraphs 1 and 2 above be combined to form this required curriculum, with the understanding that these courses are not required to be offered and taken on consecutive days.
4. The Optometry members also recommend that the State Board, in its final glaucoma regulations, reserve sufficient authority to –
    - Review individual certification applications, including the licensee's practice records, course work, and examination results;
    - Require the submission of additional information on the applicant's practice based diagnosis and case management experience; and
    - Impose additional case management requirements in those cases where it finds it necessary to do so, to fully protect the public.
    - Moreover, the State Board should also review its certification regulations periodically to assure that course subject requirement reflect the contemporary standard of care in glaucoma diagnosis, treatment, and management.

For ODs graduated after May 1, 2008:

1. Didactic course: None required
2. Case management requirements: None required.
3. The Optometry members of the GDATAC recommend: "the State Board of Optometry, as part of the exercise of its responsibility to protect the public, periodically evaluate glaucoma continuing education courses submitted for their approval to determine whether they reflect the contemporary standard of care in glaucoma diagnosis, treatment, and management. If necessary, the State Board can either amend its regulations or seek legislation to amend Business and Professions Code Section 3059 to assure that every certified licensee's continuing education in glaucoma is sufficient to warrant license renewal."

RECOMMENDATIONS BY OPHTHALMOLOGY [3]

For ODs graduated prior to May 1, 2008:

1. Didactic course: Those ODs graduating prior to May 1, 2008 will be required to take the 24-hour Didactic Course established by SB 929. Those graduating after May 1, 2000 are exempt.
2. Case management: Following 50 distinct (unshared) patients with SB 1406 authorized glaucoma under active prospective treatment directed by the supervised optometrist for a minimum of 24 months. At least 20 of these patients must have been initially diagnosed as having glaucoma requiring treatment by the optometrist seeking certification

   The 50-patient count may be reduced by: a) 10 patients for participating in and passing an examination related to an optional Case Management Course of a minimum of 16 hours covering 50-75 case histories; and/or b) up to 10 patients for documenting evidence of prior collaborative treatment with an ophthalmologist for SB 1406 glaucoma.

   The 24 months follow up period may be reduced to 18 months for those who can document sufficient "prior collaborative treatment" experience to qualify for a reduction of at least 5 of the maximum 10 patients.

For ODs graduated after May 1, 2008 but before May 1, 2009:

1. Didactic course: Those ODs graduating after May 1, 2008, are exempt from any didactic course.
2. Case Management: Prior to the next reissuance of a license that is at least 12 months after implementing regulations are adopted: a) Participate and pass an examination related to a Case Management Course (of a minimum 16 hours covering 50-75 case histories); and b) one of the following:
   1) Following 20 distinct (unshared) patients with SB1406 glaucoma under active prospective treatment for a minimum of 12 months. Or
   2) By retrospectively documenting the clinical encounters and performing the chart review required for those graduating May 1, 2009 and beyond.

For ODs graduating May 1, 2009 and thereafter:

1. Didactic course: Those ODs graduating after May 1, 2008, are exempt from any didactic course.
2. Case Management: Document 325 one patient/one trainee supervised encounters with at least 50 distinct SB 1406 glaucoma patients under active treatment and seen at clinically appropriate intervals- at least 20 initial diagnoses of SB 1406 glaucoma by the trainee.

   Additionally, within 3 months prior to graduation (or after graduation and prior to licensure/certification) students would perform a chart review of at least 20 of the patients seen during training with a supervisor.

   Should trainee have insufficient encounters during optometry school to meet this standard, the 50 patients may be reduced: a) by 10 patients for taking the Case Management Course described above; and/or b) the remaining 40 patients (with course) or 50 (without course) reduced by an appropriate fraction for encounters actually experienced to 325 required encounters.

   Moreover, candidates for certification would need to make initial diagnosis of the remainder of the 20 required patients (not completed in optometry school) and complete the balance of patients from the 50 patients for a period of 24 months under active treatment. This time period would be reduced to 18 months if at least 150 encounters achieved in optometry school.

SB 1406 Charge to the Office of Professional Examination Services:

The Office of Professional Examination Services (known as the Office of Examination Resources when SB 1406 was enacted) is required to "examine the committee's recommended curriculum requirements to determine whether they will do the following:

1. Adequately protect glaucoma patients.
2. Ensure that defined applicant optometrists will be certified to treat glaucoma on an appropriate and timely basis.
3. Be consistent with the department's and board's examination validation for licensure and occupational analyses policies adopted pursuant to subdivision (b) of Section 139."

GLAUCOMA DIDACTIC AND CASE MANAGEMENT CURRICULUM AT A SAMPLING OF ACCREDITED OPTOMETRY SCHOOLS

The task was to gather and analyze existing data regarding the didactic and case management curriculum in the treatment and management of patients diagnosed with glaucoma offered by a sampling of accredited schools of optometry. For purposes of this study, glaucoma means all primary open-angle glaucoma, exfoliation or pseudoexfoliation, and pigmentary glaucoma as well as emergency treatment of narrow angle glaucoma.

To address this task a survey was developed and sent to all the schools and colleges of optometry in the U.S.-including the three new ones- to determine the content of didactic courses as well as the clinical program and experiences offered by each institution in the diagnosis, treatment and management of glaucoma, specifically those authorized by SB 1406. (Tab 4)

The survey was sent to 20 schools (which include the three new schools-Western, Midwestern, and the University of The Incarnate Word). Besides the two California schools, only six responded -a total of 8 schools:
Indiana University School of Optometry-IUSO
Illinois College of Optometry-ICO
Ohio State University College of Optometry-OSUCO
Pacific University College of Optometry in Oregon-PUCO
Southern College of Optometry in Tennessee-SCO
University of the Incarnate Word School of Optometry in Texas-UIWSO
Southern California College of Optometry in Fullerton-SCCO
University of California, at Berkeley, School of Optometry-UCBSO

The Didactic Glaucoma Program at these schools:

The schools and colleges outside of California generally report an integrated didactic program that cover all aspects of glaucoma-from epidemiology to anatomy and physiology, etiology and pathophysiology, instrumentation and interpretation, ocular and systemic associations, risk factors, pharmacology, diagnostic testing procedures and protocols, and treatment and management approaches-medical, surgical/laser procedures. They also incorporate within their curriculum the AOA Clinical Practice Guidelines for glaucoma and other ocular conditions. [4,5,6]

The new school in San Antonio, Texas, the University of the Incarnate Word School of Optometry, has provided a very detailed outline of didactic course topics related to glaucoma, totaling about 155 hours of didactic coverage (including a 45 hour glaucoma course). (Tab 5) Indeed after reviewing individual course syllabi from SCCO, the same material and information appears to be covered to almost the same degree. Although the other institutions did not provide a breakdown of their courses as thoroughly as UIWSO and did not provide number of hours of glaucoma related instruction within their program, it would not be farfetched to assume that the same material and information is covered with as great

specificity and depth at other institutions especially since their programs are accredited and their students must pass national and state examinations the same as all others.

The other schools of optometry: Pacific offers an integrated program with about 63 hours in glaucoma related topics plus a glaucoma course of unspecified length; Illinois offers an integrated program of lectures and laboratory of about 59 hours plus a 30 hour glaucoma course; Indiana University School of Optometry offers an integrated program with 22 hours of glaucoma specific topics; The Ohio State University College of Optometry offers an integrated program with a 30 hour glaucoma course; Southern College of Optometry offers an integrated program as well as 28 hours on the diagnosis, management and treatment of the various glaucomas.

The Clinical Program at these schools:

Number of hours in clinic devoted to glaucoma- Some schools provided this information, while others reported only that these are not specifically tracked or that the hours vary depending on the clinical sites but did not elaborate further. The three schools that did not track or report information or require specific encounters in glaucoma are ICO, PUCO, and SCO respectively. The three schools that reported specific numbers with regards to hours in clinical curriculum associated with glaucoma are IUSO-48-96 hours of heavy concentration in glaucoma clinic on campus plus experience at external sites such as VAs, referral centers, and tertiary eye hospitals; OSUCO- reported 190 hours and UIWSO -200 hours.

Number of patient encounters in glaucoma and where these encounters take place- generally not specified by the schools; but most make use of VA sites, referral centers, etc. for their clinical experience in glaucoma. There is an apparent reluctance on the part of many of the schools to provide or share specific numbers because of their prior experience with ophthalmology in their state's own attempts to expand scope of practice. Three colleges- PUCO, SCO, and UIWSO-did not provide any information; three schools provided some information. However, even that information may not be complete.

Based on personal communications, many schools report glaucoma encounters as part of ocular disease encounters, while those that report separate numbers do not always include patient encounters with glaucoma patients that may occur in Low Vision or that may have glaucoma assessments but turn out not to have glaucoma.

In terms of the amount of time spent with each encounter, this also varies by site, type of examination provided, and whether students are expected to complete all services and testing at one visit or allow multiple visits to complete these services. Some sites use the medical-model of care in which patients are scheduled every 15 minutes; but the majority, especially those on campus clinics, allow 30-60 minutes and even up to 90 minutes for each examination depending on whether it is a problem-focused or comprehensive examination.

Illinois College of Optometry

Number of encounters/sites: reports an average number of glaucoma encounters as 338 from in-house Primary Care and Advanced Care Departments as well as VA facilities (about 25% are seen at the Illinois Eye Institute-associated with ICO- and 75% at external sites).
Types of patients: while most glaucoma patients are POAG, students are exposed to all types of glaucoma-uveitic, neovascular, acute/chronic angle closure, pseudoexfoliation, malignant, etc.
What students do/Treatment plan: students perform all tests from simple IOP/medical check for established patient to full glaucoma workup including visual fields, pachymetry, gonioscopy, disc assessment, nerve fiber layer analysis and initiation of treatment; acute angle closure management; evaluation of neovascular glaucoma, and pre-post op surgical evaluation for advanced glaucoma. Students are also expected to recommend a treatment plan, identify any potential side effects, educate the patient, discuss expected outcome and recommend an appropriate follow up interval; they are also expected to recommend referral for laser/surgical care as appropriate. The treatment plan is discussed with Attending Staff and a final treatment plan is developed. All training is done on a one-to-one basis with some group discussions.

Indiana University School of Optometry
Number of encounters/site: reports 150 to 400 patients (not encounters) during the 3rd and 4th year from a heavily concentrated glaucoma clinic during a 12 week disease rotation and such external sites as the VAs, referral centers, and tertiary eye hospitals.
Types of patients: students manage everything from glaucoma suspects to severe glaucoma of all types and severities, including post-op surgical cases and their complications.
What students do/Treatment Plan: students perform all required testing and workups on patients. They are given the liberty of developing a treatment plan that is then modified or guided by the consulting doctor; clinical training is done on a one-to-one basis with a group discussion at the end of the day.

The Ohio State University College of Optometry [9]
Number of encounters/site: reports an average of 251 encounters and approximately 190 clinical hours devoted to glaucoma diagnosis, treatment and management; Most of clinical experiences in glaucoma occur in the school clinic and at Advanced Practice and Disease Sites that include VA Medical Centers and ophthalmology practices.
Types of patients: all types of glaucoma patients are seen, but no greater specificity provided as to type and severity of glaucoma.
What students do/Treatment Plan: perform all evaluations and testing and prepare a treatment plan which is then discussed with the Attending Staff on a one-to-one basis.

For comparative purposes, and in greater detail, the didactic and clinical programs at the Southern California College of Optometry and the UC Berkeley School of Optometry are presented below:

Southern California College of Optometry

Didactic Program: The comprehensive didactic curriculum in glaucoma management is integrated within 10 courses presented in the first 3 years of the professional program. The lecture and laboratory content related to glaucoma exceeds 100 contact hours for each

student.(Tab 6) The total number of clock hours of instruction for the 4-year program exceeds 4900 hours-comprising of about 40% of didactic and laboratory instruction and about 60% clinical instruction and patient care.[7]

Clinical Program: The total number of glaucoma encounters ranges from an average of 250 to 500 patient encounters. This number is inclusive of all glaucoma types and severities and new and established patients as well as ocular hypertensives and other glaucoma suspects. This number does not include patients in whom glaucoma may have been part of the differential diagnosis and therefore had to be ruled-out or perhaps patients seen in Low Vision Clinic as end-stage glaucoma.

The student's clinical experience begins in the second professional year with patients seen in the Eye Care Center on campus; the third year clinical experience includes direct patient care at the Eye Care Center and in local community clinics; and the fourth year experience in case management occurs in both at the campus Eye Care Center (12 weeks) and at external clinical rotations (36 weeks). These external rotations are primarily at the Optometric Center of Los Angeles (60% of 4th year students rotate through this college-owned facility; for a personal perspective on glaucoma care, see attached description on OCLA) (Tab 7) and in Veterans Affairs Clinics and Hospitals, Indian Health Centers, military hospitals, and referral centers. These sites are selected to provide a rich diversity of ocular disease encounters including glaucoma management. Patient encounters are recorded and continuity of care is provided at each site to meet all prevailing standards of care, and accreditation and licensing requirements.[7]

Students are required to provide all services-examinations, special testing, patient education, assessments and treatment plans appropriate to the patient's eye and vision care needs. These are then discussed and finalized with Attending Staff. All training is conducted on a one-to-one basis with supervising staff doctors as well in grand-rounds and group settings.

UCB School of Optometry

Didactic Program: Glaucoma diagnosis, management and treatment are covered extensively in the professional curriculum at UCB. Lecture presentations are complemented with laboratory experience, grand rounds and direct patient care. The comprehensive didactic curriculum in glaucoma management is integrated within 13 courses presented in the first 3 years of the professional program.[8] The lecture and laboratory content related to glaucoma exceeds 90 contact hours for each student. (Tab 8)

Clinical Program: Students receive almost 50 weeks of clinical education with a minimum of 166 patients in glaucoma clinical care. An estimate of a subset of students analyzed determined the clinical experience in glaucoma to be between 450-600 patient encounters. These numbers include new and established patients, all types of glaucoma and glaucoma suspects, and all levels of severity, but may not include patients in whom glaucoma was a differential and had to be ruled-out, or patients in Low Vision Clinic with end-stage glaucoma.

Students begin their patient encounters in the fall of their second year. During the third year, the emphasis is on primary care, but also gain experience in multi-level teaching programs working with fourth year students and O.D. residents at the Tang Center, Contact Lens, and Low Vision clinics. The students also have the opportunity to observe and gain hands-on experience at various specialty clinics.

The fourth year is typically made up of five clinic sessions where students spend two of those sessions on-campus (18 or 22 weeks) and the remaining three sessions at either in-state or out-of-state external rotations. The fourth year program requires that all students receive a substantial amount of experience at external clinics as well as exposure within the school's primary care clinic, ocular disease, and various specialty clinics. The external clinics are selected to ensure that students obtain experience in the treatment and management of eye disease, have exposure to a wide diversity of patient types, and have worked within different modes of practice in clinical optometry. These external clinics settings include Veterans Administration Hospitals, Indian Health Services, surgical centers, and Health Maintenance Organizations. Students are required to select at least one ocular disease external rotation at a Veterans Administration Hospital, Bascom Palmer, or an Omni.[8]

Although no standard curriculum has been proposed for optometry schools, all generally cover the same topics and the same information about glaucoma [5,6] simply because they all have to prepare students to take national and state standardized examinations; but also must prepare them to practice in every state with entry-level knowledge and skills consistent with the evolving scope of practice of optometry in all 50 states. Graduates from all schools practice in virtually every state and meet scope of practice requirements for each state.

To ensure that the didactic and clinical programs are comprehensive and contemporaneous, several internal and external mechanisms are employed to validate individual clinician performance and competence and to validate adequacy and quality of the educational program at each institution.

Internal Procedures

Student achievement and performance -There are numerous means by which each student achievement and performance are assessed in didactic courses and in clinical experience. Criteria and behavioral objectives are established and communicated to every student for each course, program or clinical activity. Midterms, finals, practical examinations are graded. Students are expected to pass clinical proficiency examinations, generally modeled after the NBEO Clinical Skills examination, before they begin their clinical experience in earnest. Once in clinic, clinical performance is evaluated by clinical faculty on a per patient encounter basis and/or on overall proficiency as demonstrated over a period of time. Chart reviews are conducted on a regular basis to ensure not only that recording of information is complete and accurate, but more importantly that students demonstrate good clinical knowledge, analytical abilities, competence and proficiency in all aspects of clinical care-from quality of history taking to data collection to proper assessment and to the development of an appropriate treatment plan. Substandard performance at any level is taken very seriously and corrective

action taken immediately: mentors are assigned, additional course work may be required, clinical privileges may be withheld, and clinical rotations may be repeated.[7,8,9]

Curriculum review-The curriculum at all educational institutions is a dynamic process. To ensure that the curriculum is always current with regards to entry-level and standards of care, the curriculum is periodically evaluated to make certain that it is up to date in every respect particularly with regards to course content, omissions, redundancies, adequacy and relevancy of subject matter, proper sequencing of courses. Changes are dictated by a number of factors including changing definitions of entry-level practice, scope of practice laws, standards of care (AOA Practice Guidelines)[4] state and national exam requirements (NBEO examination restructuring), and accreditation requirements. This is an ongoing responsibility of the Curriculum Committee with input from faculty, students, administrators, and alumni.[7,8,9] The SCCO process described in the attachment (Tab 9) is typical of curriculum review that is conducted at UCB and other schools on a regular basis. [7,8,9]

Most entry-level definitions adopted by the schools of optometry are derived from a statement adopted by The American Optometric Association and the Association of Schools and Colleges of Optometry (ASCO) at the AOA's Georgetown Summit: A Critical Assessment of Optometric Education (1992-1994):

"The scope of optometric knowledge and practice includes the prevention, examination and evaluation, diagnosis, rehabilitation and management of disorders, dysfunctions and diseases of the visual system, the eye and associated structures; and the evaluation and diagnosis of related systemic conditions...Entry-level competencies include the professional attitudes, skills and knowledge to ensure safe and effective patient care outcomes and to support life-long learning." (Tab 10)

Together with the mission, goals and objectives of an institution, the entry-level definition adopted by the school drives the educational curriculum of that institution. Thus it serves as the foundation for providing students with the necessary knowledge and skills in the diagnosis, treatment and management of glaucoma.

With regards to scope of practice for optometry, in all 50 states optometrists are empowered to diagnose, treat and manage a wide variety of ocular conditions. State laws define the scope of practice of optometry differently and change quite frequently. Almost all states (except for one) authorize ODs to diagnose and treat various types of glaucoma. (Tab 13)

External Procedures

National Board of Examiners in Optometry (NBEO) Examinations:

In addition to internal mechanisms for the continual evaluation of student performance before graduation, the National Board of Examiners in Optometry examinations serve to validate individual competency with entry-level knowledge and skills in all aspects of optometry prior to licensure.

All fifty states accept the NBEO Parts I and II exams as validation of entry-level knowledge and skills sufficient to practice optometry in their states. All states also accept Part III, except for Florida, Louisiana, and North Carolina. These states have their own practical and/or written exams. Moreover, most states with the exception of Alabama, California, Louisiana, Michigan, Nevada, Oklahoma, and Wisconsin, also require a TMOD exam. Oklahoma requires a written, oral and practical exam (for laser certification only).[10]

The National Board examinations have recently been restructured to enhance the "clinicality" of the exams to ensure "a clinically-relevant, entry-level, conditions-based examination that audits the knowledge deemed necessary for competence to begin the general practice of optometry." This required the changing of the current three exam content outlines that are discipline and topic based, to a single 3-part conditions based, integrated content matrix. [10,11] The restructured exams will have the greatest impact on the classes of 2010 and thereafter. The Class of 2009 was the last to take all components of National Board exams in their "Old" format prior to graduation in May 2009.

The "old" NBEO examinations with regards to glaucoma have been discussed in great detail in the Optometry Report of the GDATAC. [2]

The new examinations will contain the following[10]:

Part I, renamed "Applied Basic Science" (ABS), consists of a blend of current Basic Science test items (from the old Part I), and much of current Clinical Science test items (from old Part II). The new Part I has been lengthened to four sessions (from the current three), each one 3½ hours in length containing 125 items, for a total of 500 items (from the current 435). The test assesses two major condition areas-Refractive Status/Sensory Processes/Oculomotor Processes (175 items) and Normal Health/Disease/ Trauma (325 items). However, as a result of the greater "clinicality" of new Part I, students will be taking the exam in the spring of the 3rd academic year (which in some schools necessitated a shifting of clinical science courses and an expansion of the basic science courses to accommodate the new exam content). The new Part I has already been given in March 2009 for the Class of 2010.

Glaucoma is one of a total of 17 specific condition areas that are tested in Part I and encompasses 20-30 test items:

> -Gross anatomy of the eye as it relates to primary open angle glaucoma, angle-closure glaucoma, and secondary glaucoma such as pigmentary dispersion glaucoma, pseudoexfoliation glaucoma, etc.
> -Physiology-intraocular pressure (IOP)-methods of measurement, normative values, factors controlling aqueous production and outflow, nervous system regulation of IOP, factors influencing IOP (body position, corneal thickness, blood pressure); aqueous-functions of aqueous, volume, osmolarity, viscosity, formation (ultrafiltration, active transport), factors influencing rate of flow. Composition, blood aqueous barriers (location, ultrastructure, function)

-Pathology-epidemiology, history and symptom inventory; observation, inspection, recognition of signs, and techniques and skills; diagnostic testing (applications and interpretations); pathophysiology and diagnosis.
-Pharmacology-general principles (factors affecting bioavailability, routes of administration, mechanisms of action); antiglaucoma agents; hyperosmotic agents, mydriatics and cycloplegics; indications/ contraindications/side effects/drug interactions

Part II, renamed "Patient Assessment and Management" (PAM), is a lengthened version of the PAM section of the old Part III. As the new Part II exam, PAM will be lengthened to two sessions-each of 3½ hours. Each session will consist of 30 cases with a total of 350 items for both sessions. The cases will be of variable length and will include items relating to the correlation of basic science principles, Public Health, Legal and Ethical issues, and/or Treatment and Management of Ocular Disease (TMOD). This test is given during the 4th academic year; the new test will be given for the first time in December 2009-for the Class of 2010.

Glaucoma is one of the conditions that will be covered extensively. The following describes the anticipated content of case items (similar to the old Part III PAM):

With regards to diagnosis, data interpretation, etiology, clinical and correlation-

1. Select most appropriate diagnosis
2. Indicate data supporting the diagnosis
3. Indicate correlation of potential additional data
4. Indicate pathophysiology/etiology
5. Select next clinical procedure needed
6. Indicate additional data needed to support or clarify diagnosis

With regards to treatment, pathophysiology, etiology, follow-up, and prognosis-

1. Select most appropriate treatment
2. Indicate pathophysiology/etiology
3. Indicate why treatment likely to be effective
4. Follow-up/management
5. Prognosis
6. Patient education

A TMOD breakout score and pass-fail decision will be reported for state boards requirements. Beginning in 2010, the stand-alone version of TMOD will no longer be administered; any candidate who needs a TMOD score will be required to sit for the PAM exam.

Part III, renamed "Clinical Skills," is a lengthened version of the current Clinical Skills section of the old Part III. The new Part III Clinical Skills remains a single session exam; but has been lengthened in assessment time and in the number of skills assessed. The new format and number of skills to be tested have not been announced. Students are eligible to take the new Part III in the spring of their 4th academic year. The new Part III will be given for the first time in April 2010 for the Class of 2010.

Part III assesses examination of actual patients, evaluation of clinical data, and rendering patient care decisions. Pertinent skills to glaucoma that have been tested in the old Part III and are anticipated to be included in the new test as a minimum are:

Case history/patient communications
Blood pressure measurement
Pupil testing
Biomicroscopy of anterior segment, lens, and anterior vitreous
Goldmann applanation tonometry
Gonioscopy
Binocular indirect ophthalmoscopy
Dilated biomicroscopy and non-contact fundus lens evaluation
Ocular disease management: Patient education

For all schools of optometry, performance on the National Board examinations Part I, II, and III is an essential measure of the effectiveness of the basic and clinical science and skills curricula in preparing students for clinical practice. Given that the examinations are standardized, outcomes are carefully monitored by the schools to ensure that their didactic curriculum and clinical experiences are reviewed and updated as necessary. National pass rates since 2002 for each of the separate parts of the "old" NBEO examinations are: Part I-Basic Science, 72%; Part II-Clinical Science, 90.6%, and for Part III-Patient care, 92.9%. The overall pass rate on all three parts is 89.9%.[11]

The SCCO pass rate on the "old" Part I Basic Science Exam for the past ten years has averaged 6 to 14% above the national pass rate; the pass rate on "old" Part II Clinical Science Exam has surpassed the national pass rate by 4 to 8% per year; and the pass rate for SCCO students on the Part III Clinical Skills (Patient Care) Exam has been nearly 100% since the first administration of the exam in 1994-that is an average of 5 to 6% above the national pass rate.[7]

The performance on the Board Examinations by UCBSO is equally impressive. Since 2002, the average for UCB ranged from 4.2 to 10.8% above the national average for all three parts of the NBEO. In Part I, students scored 12.5 to 27.3% above the national average; and in Part II, 5.8 to 9.3%, and in Part III, 4.0 to 8.0% above the national average. The pass rate for Part III has been 100% in 5 out of the last 7 years.[8]

Results from the NBEO examinations clearly demonstrate that the SCCO and UCBSO didactic and clinical curricula have provided California students with the necessary preparation to practice at a level of knowledge and skill accepted as satisfactory in any state.

In California, even the National Board Examinations have been subjected to validation.

In September 2001, the State Board of Optometry requested an independent audit of the NBEO examinations to determine whether or not they meet psychometric standards adopted by all boards within the Department of Consumer Affairs. After evaluating all areas critical to effective examination development and administration, the audit team concluded, with reservations, that the NBEO examinations are valid measures of optometric competencies.

The reservations were specific to the need for a practice-oriented job analysis to further support and strengthen the validity of the examinations.[12]

In November of the same year, the Office of Examination Resources (predecessor to OPES) was asked by the State Board of Optometry, as part of the Board's comprehensive review of optometry practice in California, to conduct a validation study to identify critical job activities performed by optometrists. The purpose of the occupational analysis was to define practice for optometrists in terms of the actual tasks new licensees must be able to perform safely and competently.[13]

The results of this occupational analysis and independent audit of the NBEO examinations served as the basis for the examination program for optometrists in subsequent years. In fact soon thereafter, the State Board of Optometry decided to recognize Part III of the NBEO examination and replace its state practical examination heretofore required for licensure in California.

Of further interest, another occupational analysis of optometry had been performed in 1993 under the auspices of the Department of Consumer Affairs and conducted by HR Strategies. In utilizing the NBEO examination outline for developing a series of "79 KSAs" (knowledge, skills, and abilities) and requiring participating optometrists to indicate the importance of each of these KSAs to practice, frequency of use, difficulty in acquiring/learning, and requirement for entry-level licensure, the study indirectly validated the NBEO examinations as an adequate test of entry-level competencies.[14]

Accreditation Council on Optometric Education (ACOE)

As further validation of the curriculum, each school periodically undergoes an extremely rigorous and demanding accreditation process by the Accreditation Council on Optometric Education (ACOE). ACOE is recognized by the United States Department of Education and the Council on Higher Education Accreditation as an authority on the quality of the educational programs within optometry. Presumably, if all states have the same requirements as California, graduates from non-accredited schools are not eligible for licensure.

The purpose of the accreditation process is to ensure that an educational program meets or exceeds predetermined standards. The ACOE accreditation process has several important components[15]:

1) Educational standards: these are standards that must be met for programs to be accredited. Standards are developed with input from the profession of optometry, higher education community, and the public at large to ensure standards truly reflect essential requirements for an optometric program;
2) Self-study: this allows each institution to examine itself in light of how it achieves its own mission, goals and objectives for purposes of self-improvement and planning. Each standard contains a list of items that must be submitted with the self-study as documentation prior to the site visit; other documentation must be made available on site;

3) Site visit: an in-person visit is conducted by a team of impartial and objective evaluators from ACOE with expertise in optometric education and practice. The team assesses the program and its compliance with ACOE standards and validates the self-study by interviewing students, faculty and administrators, reviewing records, files, and other pertinent documentation, and examining facilities;
4) Written report: a thorough report from the evaluation team is prepared and includes the team's findings regarding compliance with ACOE standards;
5) Accreditation Decision: ACOE reviews reports to determine if educational program meets the standards of accreditation and to award an appropriate accreditation category such as "accredited" (no major deficiencies that compromise educational effectiveness) or "accredited with conditions" (indicating major deficiencies or weaknesses in reference to the standards)- the Council publishes lists of accredited programs; and
6) ACOE monitors accredited programs in between evaluation visits through annual reports, progress reports and sometimes, interim visits to ensure program addresses recommendations for compliance in a timely fashion.

ACOE uses eight Professional Optometric Degree Standards that evaluate every aspect of the educational programs: mission, goals and objectives; curriculum; research and scholarly activity; governance, administration, and finance; faculty; students; facilities, equipment and resources; and clinic management and patient care policies.

The standard of interest to this report is the Curriculum Standard. This standard consists of 10 categories and sub-categories that provide the basis for a well-balance and comprehensive didactic and clinical program. What follows is a detailed outline of Curriculum Standard VI (renumbered Standard II as of January 1, 2009) [15]

6.1 The optometric curriculum must fulfill the intent of the mission statement of the program to prepare graduates for entry-level practice as defined by the program.
6.2 The minimum length of the professional optometric curriculum must be four academic years or its equivalent.
6.3 Procedures must be employed to assess each student's achievement of curricular outcomes.
6.4 The program must engage in periodic and systematic curricular evaluations by students, faculty, and administrators.
6.5 If instruction in the optometric program is shared with another program or institution, the optometric program must retain primary responsibility for its curriculum.
6.6 Basic science instruction must provide a foundation of knowledge in physical, biological and behavioral sciences essential for clinical optometric care.
6.7 Clinical instruction and practice must consist of didactic, laboratory and supervised clinical experience in the examination, diagnosis, treatment and management of patients.
6.8 The quantity, quality and variety of experiences in the supervised care of patients must be sufficient to develop clinical competency for entry-level practice.
6.9 The program must establish and apply a published set of clinical outcomes to prepare students for entry-level practice. At a minimum the graduate must be able to:

6.9.1 Identify, record and analyze pertinent history and problems presented by the patient.

6.9.2 Demonstrate the necessary skills to examine and evaluate the patient to arrive at a rational diagnosis.
6.9.3 Formulate a treatment plan and understand the implications of various treatment options.
6.9.4 Provide preventive care, patient care and counseling
6.9.5 Recognize when it is necessary to obtain a consultation and to coordinate care provided by others.
6.9.6 Demonstrate knowledge of professional, ethical, legal, personal, practice management, and public health issues applicable to the delivery of optometric care.
6.9.7 Effectively communicate orally and in writing with other healthcare professionals and patients.
6.9.8 Demonstrate basic life support skills for emergencies encountered in optometric practice.

6.10 Any external clinical program must be formalized by written agreement and be consistent with the program's goals.

This list of requirements is rather extensive and comprehensive. Each category and sub-category is reviewed, clarified and verified. Marginal compliance and major deficiencies in any component that compromise the educational effectiveness of the program are identified and recommendations to address these areas and suggestions for program improvement are included in the evaluation report. The category of "accredited with conditions" is assigned when major deficiencies or weaknesses in reference to the standards exist. The ACOE monitors programs in between evaluation visits through annual reports, progress reports and, in some cases, interim visits to ensure that the programs address the recommendations to come into compliance with any unmet standards in a timely fashion.

All optometry schools in the US and Canada have received accreditation by ACOE-the majority of schools since 2005. The three new schools have received preliminary approval. In particular, SCCO and UCBSO have received full "accredited" status for the maximum period of eight years- indicating that the program generally meets the standards of accreditation and that there are no major deficiencies in the program that compromise the educational effectiveness of the total program.(Tab 11)

Many schools of optometry also receive accreditation from regional accrediting bodies. SCCO is accredited through the Western Association of Schools and Colleges and is currently undergoing this regional process.

Summary for Curriculum: Several conclusions can be drawn from a careful and thorough review and evaluation of all pertinent documents relative to the curricular programs:

1. Glaucoma diagnosis, management and treatment are covered extensively in the professional curriculum at all schools of optometry. Lecture presentations are complemented with laboratory experience, grand rounds and direct patient care. The amount of time related to all aspects of glaucoma in the didactic programs offered by the optometry educational institutions as best as can be determined range from about 90 hours to a high of 155 hours.
2. Although clinical experience varies somewhat from school to school,

all clinicians have significant exposure to glaucoma patients and are thoroughly involved in their care-from the diagnostic work up to the treatment and management of the condition. The total number of hours reported in the clinical care of glaucoma ranges from the low 100's to the 200's; and glaucoma encounters are reported in the range of 250 to 500 at all the schools.

3. Generally schools require their students to provide all patient services, perform testing, and develop a treatment plan for their patients under the direct supervision of Attending Staff Doctors on a one-to-one basis.
4. Internal mechanisms are in place at all schools to properly evaluate student academic and clinical performance and proficiency-course grades, proficiency tests, chart reviews, and clinical faculty evaluations.
5. All fifty states accept the NBEO Parts I and II exams as validation of entry-level knowledge and skills sufficient to practice optometry in their states; California and 46 other states accept all parts of the NBEO examinations; three states (Florida, Louisiana, and North Carolina) have their own practical and/or written exams; Oklahoma requires a written, oral and practical exam for laser certification only; and most states also require a TMOD exam as a prerequisite for licensure.
6. All optometry schools in the US and Canada have undergone a very rigorous and extensive review process and have received full accreditation by ACOE confirming that their didactic and clinical programs have met or surpassed all appropriate standards.

EVALUATION OF 24- HOUR GLAUCOMA COURSE OFFERED BY SCCO AND UCB

SB 929 mandated satisfactory completion of a didactic course of not less than 24 hours in the diagnosis, pharmacological and other treatment and management of glaucoma for those optometrists who were licensed to use therapeutic pharmaceutical agents as a requirement for glaucoma certification. The course was to be developed by accredited schools of optometry in California. This course applied only to ODs graduating prior to May 1, 2000. All optometrists graduating after this date were exempt from this requirement.

The Glaucoma Diagnosis and Treatment Advisory Committee affirmed the need for this course for those ODs who graduated prior to May 2000 but have not yet taken the course. Therefore it is worthwhile to review the course to ensure that it continues to serve the purposes of SB 1406.

SCCO and UCBSO are the two schools of optometry in California that have been involved in developing and presenting a 24-hour glaucoma course as charged by SB 929 and approved by the State Board of Optometry. The courses have been offered since 2001. SCCO conducts the course over a three-day period in a traditional lecture format with case presentations and discussions. The course is then followed by a comprehensive examination. UCBSO, on the other hand, presents its course in an entirely case-based format with every case and related review issues and questions planned to maximize the learning experience. An examination is also given at the end of this course.

The topical outline of the course from SCCO includes the following[16]:
The Pharmacological Management of Glaucoma
Neuroprotection – What We Currently Know
Automated Static Threshold Perimetry
Glaucoma: Medical Co-Management/Surgery Update
Glaucoma: Clinical Diagnosis & Management
Glaucoma or not Glaucoma? That is the Question!
Clinical Cases: Diagnosis, Treatment, & Management
Sample Question Review (Glaucoma Jeopardy)
Case Analysis & Clinical Management
Treatment & Management of Glaucoma Pharmaceuticals in the Office

The topical outline of the course from UCBSO includes the following[17]
Pharmacology of glaucoma medications
Physiology
Anatomy
Medical Decision Making
Risk Factor Analysis in diagnosis and management of glaucoma
Techniques for diagnostic procedures
Cases in glaucoma diagnosis, treatment and management

In reviewing the course manuals from SCCO and UCBSO, it is clear that the information presented is current and comprehensive-although in different formats; each of the instructors in the course are required to review and update their assigned topics before each presentation. Each course provides extensive coverage and discussion on every aspect of glaucoma diagnosis, treatment and management-particularly:

Anatomy, physiology and pathophysiology of glaucoma
- Gross anatomy of the eye as it relates to primary open angle glaucoma, angle-closure glaucoma, and secondary glaucoma such as pigmentary dispersion glaucoma, pseudoexfoliation glaucoma, etc.
- Physiology and factors in aqueous production, outflow and functions, and factors influencing IOP regulation and measurement
- Pathophysiology and epidemiology of glaucoma

The Pharmacological Management of Glaucoma
- History of medical treatment
- Drugs in current use-pharmacology, clinical uses, adverse ocular and systemic effects, contraindications
- Neuroprotection- pathways and current glaucoma drugs

Glaucoma diagnosis
- Definition of glaucoma
- General concepts in glaucoma diagnosis
- Early natural history of chronic open angle (COAG/POAG) and other glaucoma
- Overall strategy in glaucoma diagnosis
- Diagnosis of POAG and other glaucoma
- When to treat-Risk Factors Reviewed
- The glaucoma workup-procedures prior to initiation of therapy
- Instrumentation and interpretation and when to perform tests: gonioscopy, pachymetry, automated perimetry-standard, SITA, SWAP, FDT, OCT/HRT/GDX, stereo disc photography, etc.

Glaucoma management
- Who to treat or follow
- Initiation of glaucoma therapy and treatment goals
- Medical treatment and management
- Laser and surgical management of open angle glaucoma (and other glaucomas)-pre and post op care
- Patient education-what is glaucoma and what to expect
- Follow-up evaluations-frequency and what to test
- Determining glaucoma progression

Determining when to refer

Medical management of glaucoma from an evidence-based perspective
- Detailed coverage of the various clinical studies and comparative clinical trials in glaucoma:
- Randomized control studies for management of glaucoma: Ocular Hypertensive Treatment Study (OHTS), European Glaucoma Prevention Study (EGPS), Early Manifest Glaucoma Trial (EMGT), Normal Tension Glaucoma Study (NTGS), and Advanced Glaucoma Intervention Study (AGIS), CIGTS

How to incorporate the evidence to clinical practice
Medical management of glaucoma (as required under SB 929 and now under SB 1406)

Case presentations- approximately 30 or more cases:

To illustrate the different types of glaucoma, case analysis and clinical management of common treatment scenarios, complex cases and confounding disease processes.

The UCB School of Optometry 24-hour course is currently being reformatted and will be offered in an electronic case-based format sometime in the near future.

Summary for 24-hour course: The 24-hour courses offered by the two California schools cover essentially the same information about glaucoma and have already been approved by the State Board of Optometry as required by SB 929. These courses are thorough and current in all aspects of diagnosis, treatment and management of glaucoma, but more particularly, primary open angle glaucoma, pigmentary glaucoma, exfoliation or pseudoexfoliation glaucoma, and the emergency treatment of acute angle closure glaucoma as authorized by SB 1406.

OTHER STATE BOARDS OF OPTOMETRY CRITERIA FOR LICENSURE/CERTIFICATION TO TREAT GLAUCOMA

The task was to analyze a sampling of other state boards of optometry criteria for licensure and/certification to treat primary open-angle glaucoma, exfoliation, and pigmentary and narrow angle glaucoma.

A survey was sent to all the state boards of optometry in the U.S. (Tab 12) Unfortunately only 14 state boards responded. In order to provide a much more thorough analysis, documents from the American Optometric Association (Tab 13) and the California Optometric Association[2] have been reviewed to create a composite status of glaucoma-treatment authorization laws:

- Glaucoma treatment is allowed in 49 states, plus Washington DC and Guam. The only state currently not authorizing the treatment of glaucoma is Massachusetts.
- All 49 states (plus DC and Guam) authorize the use of topical medications.
- 43 states plus DC authorize the use of oral medications-but some for emergency use only (California, Connecticut, Nevada, New Hampshire, Texas, and Wyoming). Maine just became the first state in 2009 to expand its scope of practice by including "any diagnostic and therapeutic substances for use in the diagnosis, cure, treatment, management or prevention of ocular conditions and diseases...(no injections except for anaphylactic shock)"
- Seven states do not allow any orals: Arizona, Florida, Maryland, Massachusetts, Nebraska, New York, and Pennsylvania.
- There are 34 states plus DC that do not have any restriction on treatment and management of glaucoma by optometry.
- Only 8 states require some form of co-management: California, Kansas, Maine Nevada, New Hampshire, New York, Rhode Island, and Vermont. These states co-manage either a specific number of patients with glaucoma and/or patients with glaucoma for a specific period of time prior to obtaining authorization to independently treat glaucoma.
- Seven (if California is included) of the 8 states that require co-management have eliminated that requirement for OD graduating after a particular date. In 2009, Maine repealed its co-management requirement for graduates after 1996 and permits reduction or waiver of patient co-management for those prior to 1996 based on education, training, practical experience, or licensure in other jurisdictions. Nevada id the only other state in which co-management is still required for all ODs.
- Seven states plus DC have consultation requirements: California, D.C., Florida, Nevada, New Hampshire, Oregon, Texas and Vermont. And many states (12) have some restrictions on treatment of certain types of glaucoma-California, Connecticut,

Florida, Georgia, Nebraska, Nevada, New Hampshire, Pennsylvania, Texas, Vermont, Virginia, and Wisconsin.

- Four states have all forms of restrictions on glaucoma treatment: restricted use of oral medications, types of glaucoma authorized, and referral, consultation, and co-management requirements: California, Nevada, New Hampshire, and Vermont.

What follows is a detailed view of each state that requires co-management of patients before ODs are permitted to treat glaucoma patients independently:

California-new law effective January 1, 2009; authorized to treat POAG, exfoliative and pigmentary glaucoma, and emergency treatment of acute angle closure glaucoma in patients 18 and over. Law provides for certification for those graduating after May 1, 2008; those certified ODs already certified are exempt from additional requirements; those graduating after May 1, 2000 are exempt from the 24-hour glaucoma course; those graduating prior to May 1, 2008, and have taken a 24-hour glaucoma didactic course will need to meet case management requirement for certification; those graduating prior to 2000, and have not taken the course will need to meet new didactic and case management requirements for certification. Law requires the appointment of an advisory committee to the State Board of Optometry to recommend appropriate didactic and/or case management curricula for pre-2008 graduates. All certified ODs may use topical and oral TPAs (orals for emergency treatment of angle closure glaucoma).All TPA licensed ODs must take 50 hours of CE every 2 years with 35 hours in ocular disease including glaucoma prior to renewal of license.

Kansas-the original law was enacted on 4/1/1996; graduates after 7/1/1998 were not required to comanage patients; and this requirement will repeal on 5/31/2010: requires 24 hours course on adult open-angle glaucoma and co-management for a period of at least 24 months and not less than 20 diagnosis of suspected or confirmed glaucoma. After May 31, 2010, all optometrists must meet all requirements and become therapeutic and glaucoma licensed. A certified OD may prescribe topical and oral drugs to treat adult open angle glaucoma.

Maine-just enacted new legislation on 5/22/09 ME S 258 that gives authority to an optometrist graduated in the year 1996 or thereafter and who has an advanced therapeutic licensee to independently treat glaucoma; those graduating prior to this date must provide evidence to the board of no more than 30 glaucoma-related consultations with a physician specializing in diseases of the eye. A Glaucoma Consultation Subcommittee of two optometrists and two ophthalmologists reviews evidence of consultations. The committee may reduce or waive number of consultations required based on ODs optometric education, residency, practical experience, certifications in other states, ongoing education, any other relevant factors. An optometrist may use any diagnostic or therapeutic substance (no injections except for anaphylactic shock) in the diagnosis, cure, treatment, management or prevention of ocular conditions and diseases.

Nevada-completion of TMOD or equivalent on or after 1/1/1993; license to practice optometry; proof of treatment of at least 15 patients diagnosed by an ophthalmologist and in consultation with that ophthalmologist for at least 12 consecutive months. Patients under 16 years of age, malignant or neovascular or acute closed angle glaucoma (after emergency

treatment by OD) must be referred to an ophthalmologist; or glaucoma caused by diabetes must consult with physician and ophthalmologist.

New Hampshire-law was enacted 5/18/2002; graduates after 2002 do not have to comanage patients or take course. Must have 40 hour didactic course and pass an exam; plus collaborative treatment and co-management of 25 glaucoma patients, up to 5 may be established patients, during a period of not less than 18 months for each patient. Consultation required if IOP target not reached within 90 days; progression of optic nerve damage; progression of visual filed loss; or patient develops angle closure or other secondary glaucoma. Glaucoma for 18 years of age or older; topical anti-glaucoma drugs; orals only for emergency treatment of acute angle closure glaucoma. Requirements may be reduced or waived by a Joint Pharmaceutical Formulary and Credentialing Committee for those with out-of-state license and proof of glaucoma treatment for 12 months and for those with a residency or equivalent.

New York-law was enacted on 8/2/1995; graduates after 1/1/1999 do not have to comanage patients. Written consultation is required for 3 years or until optometrist has examined and diagnosed 75 patients with glaucoma or ocular hypertension. This does not apply to those who graduated after 1/1/1999. OD may use topical drugs.

Rhode Island-rule originally enacted in February 1997; the rule was later amended to exempt graduates after January 2007; graduates after 1/1/2007 do not have to comanage patients. Requires passage of TMOD after 1/1/1999. Written consultations with an ophthalmologist or optometrist certified to treat glaucoma for no less than 3 years-for no less than 20 glaucoma-related patients (10 of these may be diagnosed 1 year prior to completion of requirements) and followed for a minimum of 1 year or until patient stabilized. Method of consultation at discretion of consulting doctor.

Vermont-law enacted on 5/11/2004; graduates after 2002 do not have to comanage patients. For a licensed TPA optometrist who graduated prior to 2003 and not certified to treat glaucoma in any other jurisdiction-18 hour course and examination offered by the State University of New York State College of Optometry or similar accredited institution and taught by both ophthalmologists and optometrists; plus collaboration with an ophthalmologist in treating at least 5 new glaucoma patients for 6 months. The patient must be seen at least once during this period by the collaborating ophthalmologist. As of March 9, 2005, all oral or topical drugs may be used to treat following types of glaucoma: adult POAG, exfoliative, pigmentary, low tension, inflammatory, and emergency treatment of angle closure glaucoma. If patient not respond to up to 3 topically administered agents within reasonable time, patient must be referred to ophthalmologist.

Although these 8 states have required some form of co-management for all ODs at some point in time; it is noteworthy, however, that all, except for California and Nevada, have already repealed their requirement for co-management for graduates as early as 1996 and 1998 (Maine and Kansas) and as late as 2007 for Rhode Island. In addition two allow waivers and reductions of co-managed patients based upon education, training, practical experience, and licensure in other states (Maine and New Hampshire).

Seventeen states do not require additional CE for those ODs with prescriptive authority; the majority of the states do require some additional continuing education for those who hold a TPA license in the diagnosis, treatment and management of ocular disease (which includes glaucoma), but only four states require specific CE in glaucoma-New Hampshire requires 10 hours out of 50/year to be on glaucoma, Pennsylvania-4 hours out of 30/2 years, Vermont-50% of required CE (16 hours/year) must be on use of pharmaceuticals and treatment of glaucoma, and 7 hours out of 30/2 yrs must be in glaucoma. (Tab 14)

Summary for State Laws: A number of conclusions can be drawn from the state surveys and from the AOA documents:

1. The majority of states currently have no restrictions on the treatment and management of glaucoma by optometrists; some states require consultation with ophthalmology for certain types of glaucoma or when medical treatment not effective; some restrict the types of glaucomas that can be treated or restrict the types of medications that can be used; and some have co-management requirements for a certain number of patients and/or certain amount of time. Of significance, there have been no new laws in the recent past that have imposed any co-management requirement; rather all states with co-management, except Nevada, have virtually eliminated this requirement for graduates after 1996 for Maine (the earliest) and after 2007 for Rhode Island (the latest)...and California after 2008 will be upheld as well.
2. A significant number of states have no additional requirements for ODs with glaucoma certification; the majority includes glaucoma education as part of the general CE requirement for TPA certified ODs. Only four states require an additional requirement in glaucoma. Thus there is recognition by most states that optometrists can be trusted to maintain competency without further mandates.
3. Conceivably many of the laws that have been passed regulating treatment of glaucoma by optometrists and either removing or reducing restrictions and co-management requirements have been negotiated with or at least with the cooperation of the ophthalmological societies/ associations within those states. The recent passage of the law in Maine is an example of such cooperation between the Maine Optometric Association and the Main Society of Eye Physicians and Surgeons. What works in one state should also work in other states.

EVALUATION AND ANALYSIS

Competency of Doctors of Optometry

OPES is responsible to ensure the competency of doctors of optometry in treating glaucoma. The two basic tasks assigned by OPES about competency that need to be address are:

- Evaluate and determine if the recommended combined curriculum of didactic instruction in the diagnostic, pharmacological, and other treatment and management of glaucoma, and case management of patients diagnosed with glaucoma, is appropriate for entry level optometrist certification.
- Evaluate and assure that optometrists can treat narrow angle glaucoma on an emergency basis

The first task: Evaluate and determine if the recommended combined curriculum of didactic instruction in the diagnostic, pharmacological, and other treatment and management of glaucoma, and case management of patients diagnosed with glaucoma, is appropriate for entry level optometrist certification.

The members of the Glaucoma Diagnosis and Treatment Advisory Committee agreed on the following points, at least in principle: [2]

- Additional didactic training should not be required for licensed optometrists who graduated between May 1, 2000 and May 1, 2008, for two reasons:
  - These graduates were exempt from the 24-hour, didactic course requirement under the original SB 929 glaucoma certification process, and
  - In 2004, the Legislature amended existing continuing education requirements to add glaucoma as one of the six specific disease states that optometrists must take courses in over 35 hours every two years for license renewal.
- Given the Legislature's elimination of individual, in-person co-management requirements to gain case management experience toward certification, attention should be given to utilizing more efficient tools to provide both didactic and case management instruction, such as real-time group instruction, both in-person and remotely via telemedicine.
- The curriculum of a glaucoma case management course could be presented to certification candidates in a "grand rounds" setting, similar to the type of training provided to medical residents. As an example, the CAEPS representatives suggested a 16-hour course, offered over two days.
- The qualifications and experience of glaucoma-certified optometrists should be utilized for instruction and supervision of certification candidates, if required.

Although the members of the Glaucoma Advisory Committee agreed on these issues, they did not agree on how to achieve competency for glaucoma certification with regards to case management.

The proposal from Ophthalmology for graduates prior to May 1, 2008:

The proposal exempts those graduating after May 1, 2000, from a 24-hour didactic course as currently required under SB 929; but affirms that the 24-hour glaucoma course would suffice for the didactic component for those graduating prior to May 1, 2000.

However, the proposal still requires a significant prospective 50-patient case management program and an 18-month to 24-month certification process for all those who have not completed the certification requirements under SB 929 by December 31, 2009. They propose an optional 16-hour case management course of 50-75 select cases (with an examination) and credit for some prior patient co-management experiences to offset the 50-patient requirement. The balance of the patients (30 patients if credit given for the course and for prior co-managed patients) would be in a co-management arrangement with a collaborating glaucoma-certified OD or ophthalmologist for a period of 18 to 24 months depending on the degree of the prior co-management experience. A physical evaluation of the patient or use of telemedicine would be at the discretion of the consulting doctor.

Although this process makes an attempt at addressing some of the problems with the SB 929 requirements, it is still very burdensome, restrictive, and well beyond the competency needed for entry-level treatment of glaucoma. It is burdensome and onerous because it still requires a considerable number of patients (minimum of 30) to be co-managed for almost the same length of time as under SB 929. It is not clear why patients seen under SB 929, presumably already being co-managed by the OD on a prospective basis, should not be fully credited towards the 50-patient number. Also for those who have been co-managing, this requirement will be in addition to time already "served". And the idea that a single standard of training should apply to both optometry and ophthalmology is somewhat disingenuous and not convincing.

The proposal from Optometry for graduates prior to May 1, 2008:

The proposal from optometry exempts those graduating after May 1, 2000, from a 24-hour didactic course; but affirms that the 24-hour glaucoma course would suffice for the didactic component for those graduating prior to May 1, 2000. For the case management component, they propose only a 16-hour Board-approved course in the case management of patients diagnosed with glaucoma (with an examination). No actual patients have been proposed as a part of the case management requirement.

The proposal from Optometry is a much-simplified process that would allow for an efficient, effective and expedited method to achieving certification. However, it would not appear that even a well designed 16-hour course on case management with examination as an added requirement to the 24-hour didactic course already required by SB 929 and to which ophthalmology has already agreed to continue, is sufficient to ensuring competency and

public safety. Some additional prospective patients and/or some additional clinical experiences on the treatment and referral of patients could provide a greater level of competence and safety for the public.

In making these recommendations, the Ophthalmology and Optometry members of GDATAC, in their reports and in discussions at the meetings of the committee, touched upon several points that bear on the issue of competency that merit further exploration and comment:

1. The discussion on curriculum, NBEO examinations, and ACOE accreditation, makes it abundantly clear that optometrists are well trained with entry-level competencies to properly diagnose and treat the types of glaucoma authorized under SB 1406 or refer when necessary.

ODs do not want to manage glaucoma beyond their competence or comfort level; the prudent OD will generally refer a patient when he or she reaches that point. The law already imposes restrictions on the types of glaucoma ODs may treat, prohibits treating glaucoma in those under age 18, requires consultation for patients with glaucoma and diabetes, allows use of topical medications and restricts use of oral medications to emergency stabilization of an acute angle closure glaucoma. Moreover, the prudent OD will make referrals when medical treatment is no longer effective in controlling IOP or in preventing further damage to the optic nerve or visual field loss. He or she can use common sense and professional judgment and standards of care and ethical principles much like ophthalmology can in making such decisions.

2. There is no need to follow a patient for two years to monitor for side effects of medicines or for glaucomatous changes. Cross-sectional observations and studies are common in all fields of research as compared to longitudinal studies simply because it is often impossible to follow the same subject or patient over a long period of time to monitor for changes. Cross-sectional observations allow for a snapshot view at any particular point in time for any single patient thus permitting a composite assessment and comparisons over an entire population of patients. New patients if caught early generally will show very little damage to the optic nerve and visual field loss might be minimal; but established glaucoma patients may be seen at various levels of glaucoma progression. Therefore a shorter period of consultation will accomplish the same goal.

3. It is not fruitful to compare optometry to ophthalmology. Ophthalmology's proposal is based on the assumption that optometry's patient encounter numbers must be equal to ophthalmology's numbers. They never will be because the training and approach to delivering patient care are different between the two professions.

First, the residency program is three years long and therefore the ophthalmologist in training will see a larger number of patients simply because their training program is longer. Second, the number of patients seen by EyeMDs are inclusive of all types of glaucoma and all types of treatment modalities including all the glaucomas that optometrists are prohibited from treating, advanced stages of glaucoma, and patients that need surgeries and laser procedures. And third, ophthalmology most often utilizes a problem-focused approach in delivering

patient care that is much shorter in time and therefore can see many more patients. In contrast, the optometric approach, particularly in the school setting, usually emphasizes comprehensive assessments of refractive status, binocular and accommodative functions, and very thorough anterior segment and posterior segment evaluations. These examinations, performed entirely by students without ancillary assistance, are much more time consuming and thus, by their very nature, limit the number of patients that can be seen in a given interval. Therefore EyeMDs will always see more patients than ODs.

4. To ask California optometrists to have additional training than most of the other states does not appear to be fair or reasonable or persuasive since: (1) glaucoma patients in California are not any more complex or difficult to treat than any other state- there is absolutely no difference in eyes with glaucoma in states with small or large populations, or in those with restrictions or without...and there is no evidence to suggest that location is a risk factor for glaucoma or that it has any impact on the course or treatment or management of glaucoma; and (2) ODs in and from California have the same level of intelligence and competence and training as do their colleagues in other parts of the country and have been treating glaucoma safely and effectively in other states for many years; they should thus be equally qualified to treat glaucoma patients in California.

5. Current law in California already requires ODs to comply with standards of care that are the same for ophthalmology as for optometry when treating the same conditions of the eye. [18] However, contrary to the stated position of the ophthalmology members of the Glaucoma Advisory Committee, standards of care is based upon care given not training received.

Standard of care in law and in practice has been defined as a diagnostic and treatment process that a clinician should follow for a certain type of patient, illness, or clinical circumstance. [19,20] Each profession has its own standards; optometry is no different. AOA has published Practice Guidelines on a number of conditions utilizing an evidence-based approach to provide optometrists with appropriate evaluation, treatment and management protocols. Although optometrists are not trained the same as ophthalmologists, optometrists do use the same tools (instruments and medicines) as ophthalmologists in diagnosing and medically treating and managing glaucoma patients.

If the standard of care is on training received as EyeMDs indicated during the Glaucoma Advisory Committee deliberations than this should also apply to Primary Care Physicians who treat many conditions of the eye without adequate training[21,22,23,24] and in some instances even renew prescriptions for glaucoma for their patients without proper evaluations; and to ophthalmologists who should not be allowed to perform refractions or fit contact lenses because their training in refractive and binocular vision problems as well as in ophthalmic lenses and contact lenses is very limited (personal communications with a number of ophthalmologists in the Los Angeles area).

6. Unlike previous arguments against optometrists treating ocular disease because they have not had exposure, OD graduates from California schools have been treating many conditions of the eyes and using therapeutic agents since the mid-1970's in many states, and in California since 1996 (albeit minimally) and further expanded in 2001 to treat glaucoma. In

fact a study mandated by the California legislature in 1996, found ODs to be safe and effective in treating eye conditions and using therapeutic agents. [25]

Ophthalmology makes the point that public safety is a state's right and should be the responsibility of the individual state to enact laws and regulations that serve and ensure the safety of its citizens. There is no real disagreement with the concept, but to completely disregards the safety record that optometry has demonstrated in every state is not logical and not in the public's best interest.

7. Those ODs who have been co-managing patients under SB 929 have been treating glaucoma prospectively for several years by properly evaluating the patient, performing all the necessary tests, arriving at a diagnosis, recognizing the type of glaucoma within their scope of practice, and creating a treatment plan with proposed medications and target pressures. Then after consultation with an ophthalmologist, have followed the patient during the course of treatment, and made subsequent decisions about changes in medication, achieving treatment goals, monitoring for glaucoma progression by analyzing optic nerve damage and visual fields, recognizing when medical treatment is no longer adequate, and making appropriate and timely referrals. All of these activities have fostered the diagnostic skills and critical thinking necessary for properly diagnosing, treating and managing glaucoma patients. Furthermore by following new as well as established patients over time, these ODs have certainly gained an appreciation for the subtleties of glaucoma management. These ODs should be given full credit for such experiences.

Even ODs who have chosen not to go through the glaucoma certification process as mandated by SB 929 do gain experience in working with glaucoma patients. They do measure IOPs, perform biomicroscopy, gonioscopy and visual fields, dilate eyes and evaluate optic nerves, and assess risk factors for glaucoma; they make diagnostic decisions and if necessary refer for treatment.

Moreover, the therapeutically licensed ODs in California were required to take 12 hours in glaucoma courses every two years until 2006 as a component of the 50 hours required for continuing education every two years. However, that specific requirement was deleted and now the ODs are expected to stay current in glaucoma by taking a minimum of 35 hours in six ocular disease topics, which includes glaucoma, as part of their general CE obligation. [26]

8. The Ophthalmology Report chooses to raise dire consequences of blindness caused by glaucoma and the inexperience of optometrists that treat it. Historically that has been ophthalmology's approach each time optometry has tried to enhance or expand its scope of practice[27]. Create fear and distrust in the minds of the public that somehow optometry is a dangerous profession and optometrists will sacrifice the public's welfare. None of these predictions have ever come to pass-especially with the safety record that optometry has demonstrated over the years. There is absolutely no evidence to suggest that optometrists are unsafe in delivering any type of patient care.

9. The Optometry Report presents some rational and legitimate arguments that optometry should be treated as an independent profession much like medicine and dentistry. Medical

doctors have an unrestricted license to practice on any part of the human body and to prescribe any medication and perform any procedure by law. The Medical Board of California has not imposed any restrictions on the scope of practice of a "physician and surgeon". Likewise "Doctors of Dental Surgery" have a similar law that allows them to practice "as trained" on that part of the human anatomy pertinent to their profession. The Dental Board of California Board also has not added any further restrictions on the practice of dentistry except for those already mandated by statute. Internal mechanisms established by the medical and dental professions such as board certification for sub-specialties, malpractice insurance restrictions, and the granting of hospital privileges ensure that these "doctors" practice within their trained competencies. Optometrists, on the other hand, even though their training and requirements are equivalent in many respects to those of medicine and dentistry, do not enjoy the same privileges to practice "as trained". Every aspect of its scope of practice has been hard-fought in the legislature and is highly regulated. It is time that optometry be judged on its own merits and be given the same opportunity to work towards "as taught" scope of practice.

Summary for case management for ODs graduating prior to May 1, 2008:

1. To ask California optometrists to have additional training than most of the other states is neither fair, reasonable or persuasive since: (1) glaucoma patients in California are not any more complex or difficult to treat than any other state (2) ODs in and from California have been treating glaucoma safely and effectively in other states for many years; they should thus be equally qualified to treat glaucoma patients in California.
2. ODs are being authorized under SB 1406 to treat and manage glaucoma at entry-level competency. The law already imposes restrictions on the types of glaucoma ODs may treat, prohibits treating glaucoma in those under age 18, requires consultation for patients with glaucoma and diabetes, allows use of topical medications and restricts use of oral medications to emergency stabilization of acute angle closure glaucoma. ODs are prudent enough to refer when medical treatment is no longer effective or when the type of glaucoma falls outside scope of practice.
3. Current law in California already requires ODs to comply with standards of care that are the same for ophthalmology as for optometry when treating the same conditions of the eye. Standard of care is defined by care given not training received. Thus it is not productive to compare optometry to ophthalmology because their training and approach to delivering patient care are different.
4. ODs should be given credit for prior experience. ODs who have been co-managing patients under SB 929 have been treating glaucoma prospectively for several years; and even ODs who have chosen not to go through the glaucoma certification process as mandated by SB 929 do gain experience in working with glaucoma patients. Moreover they have maintained proficiency and competence by taking 35 hours (of the total of 50 hours of CE every 2 years) in six ocular disease topics-which includes glaucoma.
6. Long-term follow up of patients to monitor progression or side-effects of medications is not necessary since cross-sectional observations of new and established patients will accomplish the same goal
7. Therefore, a 25-patient prospective case management requirement for those graduating prior to May 1, 2008, would provide a sufficient level of experience for optometrists to treat

and manage patients with glaucoma competently and safely at an entry-level stage. This requirement could be fulfilled by any one or a combination of the following: taking a 16-hour advanced case management course conducted live, web-based, or by use of telemedicine and passing a course examination; participating in a 16-hour grand-rounds program with live patients; retrospective case reports on patients already under co-management; receiving full credit for patients co-managed for at least one year; and preceptoring of any patient with a glaucoma-certified OD or ophthalmologist.

The proposal by Ophthalmology for those graduating between May 1, 2008, and May 1, 2009:

The proposal by Ophthalmology for those graduating between May 1, 2008, and May 1, 2009, would add an additional requirement for case management. This would include a 16-hour Case Management Course and co-managing 20 distinct new patients for a minimum of 12 months or documenting 325 glaucoma encounters and performing a chart review of 20 patients seen during school. This requirement is to be completed prior to the next reissue of a license (at least 12 months after implementing regulations).

This proposal would impose a retroactive requirement on all those graduates who have already been issued a license with certification to treat glaucoma and have been doing so for at least one year in a safe and effective manner. What is more, retroactive chart reviews may not be practical or even possible because of HIPAA restrictions on accessing patient records and patient counts might not be available at this late stage. Thus the only alternative is to take the case management course and co-manage 20 patients for 12 months.

These graduates have already taken and passed the National Board examinations that tested their knowledge and skills on entry-level competencies. Their clinical experience in school with glaucoma patients has been deemed satisfactory through adequate numbers of patients or encounters, chart audits and faculty evaluations, and accreditation standards. Therefore this requirement would add nothing more to the new graduates' competencies and would create an additional burden and unnecessary time delay in the certification of these graduates.

Moreover, during this past year there have been no complaints or disciplinary actions taken by the State Board of Optometry against any of these graduates. The State Board of Optometry would certainly have been informed or would have become aware of any OD practicing in an unsafe, incompetent or inefficient manner. The Board has the authority under current laws and regulations to investigate, fine, discipline, suspend and revoke licenses of any such OD. The Board even has the authority to impose additional educational requirements on ODs whose competency is called into questions by their actions or conduct. None of these actions have occurred. [28]

The proposal by Ophthalmology for those graduating after May 1, 2009 and thereafter:

The proposal by Ophthalmology for those graduating after May 1, 2009 and thereafter mandates that a student prior to graduation must have at least 50 distinct SB 1406 glaucoma

patients (at least 20 initial diagnosis) with documentation of 325 of one patient/one trainee supervised encounters plus a chart review requirement of at least 20 patients seen during training with a supervisor.

If the graduate has an insufficient number of encounters, the proposal introduces a cumbersome formula for determining the case management requirement for certification. First, taking a 16-hour Case Management Course would reduce the 50 patients by 10. Second, the remaining 40 patients (or 50 if there was no course credit) could be further reduced by a fraction of the number of encounters seen to a standard of 325. The remainder of the patient encounters would have to be met after graduation by new patients diagnosed with glaucoma and under co-management for a period of at least 18 months to 2 years depending if the student had at least 150 encounters while in optometry school.

As proposed, this requirement for the May 2009 graduates is somewhat belated. By the time the State Board of Optometry considers these recommendations and appropriate regulations are developed and implemented, the graduates from May 2009, would already have been licensed by the State Board with glaucoma certification. Thus this requirement would most appropriately apply to those ODs graduating in May of 2010. Meanwhile the status of those graduating in May 2009 is not clear under this proposal. Would they be required to follow the requirements for those graduating in May 2008?

This proposal appears to create a significant burden-one that cannot possibly be met under the current rotational system of clinical training. It is not difficult to meet the requirement of 50 patients (or patient encounters) since all students graduating already do so. But these patients may not all be SB 1406 patients. Presumably if the OD is expected to rule-out glaucoma that is not within their scope of practice, they must be able to perform a proper evaluation and assessment of the other types of glaucoma; thus there is no reason why these patients should not be counted as well. What is difficult is the requirement for follow-up of patients for 12 months since clinicians during their 4^{th} year are generally on rotation to outreach or external sites. They are usually required to be at their in-school clinic during their 3^{rd} year and perhaps one rotation during their 4^{th} year. But the length and number of rotations may vary from school to school-from a few weeks to 10-12 week rotations. The total number of patients and patient encounters has already been deemed sufficient in every respect by the ACOE standards and by all the states in which California graduates practice and treat and manage glaucoma.

At every rotation where they are exposed to glaucoma patients, the clinicians do fully participate in the diagnosis, treatment and management of new and established patients, develop treatment plans, perform all necessary testing, and monitor patients for at least 1 to 3 encounters during their rotation. Moreover they do see patients at different stages of disease progression and therefore have a good idea of the disease and its consequences over time. Additionally they see and work with patients who have end-stage glaucoma for low vision rehabilitation once the patient reaches a level of visual disability where they lose their functionality.

The chart review requirement is superfluous and unnecessary since student's patient records are constantly subject to review while they are at school or on rotation. Chart review is an ongoing process of evaluating student performance, completeness of care, and accuracy and thoroughness of documentation. Additionally, the student's competence and performance is continually being evaluated by their supervising faculty to ensure the intern has the necessary knowledge and skills to perform a proper history, select and conduct testing, interpretation and analyses of collected data, provide a proper assessment of the patient needs with respect to examination findings, and develop an appropriate treatment plan.

The proposal by Optometry for those graduating after May 1, 2008 and thereafter:

The proposal by optometry made no specific proposals either for additional didactic or case management experiences. They accepted the SB 1406 mandate that the new graduates after May 1, 2008, should be considered to be fully qualified to diagnose, treat and manage glaucoma as authorized in SB 1406 and as further emphasized by letters from Senators Correa and Aanestad, co-authors of SB 1406.

However, they do recommend that the State Board of Optometry periodically evaluate glaucoma continuing education courses submitted for their approval to determine whether they reflect the contemporary standard of care in glaucoma diagnosis, treatment, and management. If necessary, the State Board can either amend its regulations or seek legislation to amend Business and Professions Code Section 3059 to assure that every certified licensee's continuing education in glaucoma is sufficient to warrant license renewal.

Summary for case management for ODs graduating after May 1, 2008:

1. It appears that the requirements proposed by the Ophthalmology members of the GDATAC for ODs graduating after May 1, 2008, are not only overly cumbersome and superfluous, but given the current level of education and training, completely unnecessary. The new graduates have the knowledge and skills to effectively diagnose and treat and manage glaucoma.
2. Despite ophthalmology's insistence that they have the authority to impose additional requirements, the legislature in passing SB 1406 directed that the new graduates after May 1, 2008, should be "presumed" to be qualified to treat and manage certain types of glaucoma. This is totally consistent with actions taken by all states (except for one) to repeal any co-management requirement for ODs starting with graduates from 1996 in Maine to 2007 in Rhode Island.
3. The current continuing education requirements for all ODs who are TPA certified of 50 hours every two years with 35 hours in six areas of ocular disease (one of which is glaucoma) is sufficient to maintain competency. However, at the discretion of the State Board of Optometry, may by regulation or change in law require a specified number of hours in glaucoma.

<u>The second task: Evaluate and assure that optometrists can treat narrow angle glaucoma on an emergency basis</u>[6]:

The mechanism of acute or angle closure glaucoma is well understood. In patients whose angle (where the iris and cornea meet) is anatomically narrow or in patients in whom the iris crowds against the Trabecular Meshwork (TM) obstructing aqueous outflow channels, the potential exists in which the sudden closing of the angle initiates an acute angle closure. In Primary Angle Closure Glaucoma (PACG) there is a rapid increase in IOP due to the sudden blockage of the TM by the iris.

This condition results in ocular pain, halos, blurred vision, nausea and vomiting. Additionally, there are other signs that indicate an acute attack: aqueous flare, ciliary flush, closed angle on gonioscopy, congested episcleral and conjunctival blood vessels, corneal edema, high IOP, mid-dilated, sluggish, and irregular pupil, reduced vision, hyperemic and swollen optic disc, and shallow anterior chamber and narrow angle in fellow eye.

Besides the presenting signs and symptoms, evaluation with slit lamp, gonioscope (with indentation), and tonometry-usually help determine the diagnosis.

Medical treatment strategy includes the use of pilocarpine to induce miosis to draw the iris away from the TM (if IOP too high, this medication will not work); inhibition of aqueous inflow with beta-blockers, Carbonic Anhydrase Inhibitors (CAIs), or alpha agonists; and hyperosmotics to rapidly reduce vitreous volume to lower IOP, especially if pupil is unresponsive to miotics.

The objectives in treatment of PACG are to rapidly abort the attack with medical therapy to minimize damage to the optic nerve. Once this is achieved a laser procedure such as an iridotomy or iridectomy or iridoplasty is performed to restore the flow of aqueous and to prevent further closure and protect the fellow eye. In California these procedures may only be performed by an ophthalmologist.

All optometrists are well trained to recognize the signs and symptoms of an acute angle closure. They are also well trained to provide immediate "first aid" by using topical and oral medications to lower the pressure as quickly as possible and stabilize the IOP before referring for more appropriate effective treatment by an ophthalmologist. Moreover, optometrists are also trained to evaluate and diagnose a narrow angle that may be at risk of closure and refer for a prophylactic laser procedure to prevent an acute angle closure and possible loss of vision.

Summary-treating narrow angle glaucoma: The nature of narrow angle glaucoma (primary angle closure glaucoma), the possible consequences of this condition, and the proper treatment and management of this condition are well covered in both the general curriculum and the 24-hour glaucoma course. SB 1406 authorizes the emergency treatment of acute angle closure with topical and oral medications in order to stabilize the eye before referral.

Timely Process for Certification

A second responsibility of OPES is to balance the need to "adequately protect glaucoma patients" with ensuring that "defined applicant optometrists will be certified to treat glaucoma

on an appropriate and timely basis" –consistent with established OPES examination validation policies.

SB 1406 rejected the process required under SB 929 as being too long and arduous. There were too many problems with the "old" certification model-
it was a complex and cumbersome process for both ODs and EyeMDs, and there were too many barriers that prevented a timely completion of certification; thus only 177 ODs ever completed the glaucoma certification requirements from 2001 to the end of 2008 under SB 929. The obstacles preventing timely OD certification under SB 929 were numerous[2]:

Not finding EyeMD willing to co-manage
Not finding EyeMD in geographic area of patient
Patients required to pay for multiple visits while insurance only covered one visit
EyeMD changing diagnosis from POAG to a secondary form not permitted to be treated by OD
EyeMD refusing to sign forms after co-managing patients
Patients moving or changing doctors prior to 2 years-encounters not counted

Thus the intent of SB 1406 was to develop a process that would lead to a more appropriate and timely route for certification by resolving some of these problems, while at the same time ensuring the competency of the doctor and not compromising public safety.

The proposal from Ophthalmology for those ODs graduating prior to May 1, 2008: would still require an 18-month to 24-month certification process in order to co-manage at least 30 new patients (the number remaining after the OD is allowed credit for taking an optional Case Management Course and patient credit for evidence of prior collaborative treatment with ophthalmology). They would allow an 18 month process if the OD could demonstrate a significant co-management experience under SB 929; otherwise they would need 24 months. This would be in addition to time already "served" for those already co-managing patients.

The proposal from Optometry for those ODs graduating prior to May 1, 2008: involves a simplified process by which the case management requirement could be met merely by participating in a 16-hour case management course. Although this would certainly create a more expedient process for achieving glaucoma certification, it would not necessarily ensure the optometrist's effectiveness in treating glaucoma. To make sure that ODs are fully proficient, additional requirements would have to be imposed as detailed previously.

Summary on timely process for graduates prior to May 1, 2008: The proposal from the EyeMDs does not appear to create a fair or equitable process and does not ensure a timely completion of the certification process. In fact, for those already trying to fulfill the co-managing requirement but will not complete that requirement by December 31, 2009, they will have an additional perhaps 18 months to 2 years above and beyond the time already spent in co-managing. On the other hand the optometric proposal, although expedient, falls short of ensuring competency.

The proposal from Ophthalmology for those ODs graduating after May 1, 2008, but before May 1, 2009: the proposal by the EyeMDs would add an additional requirement for case management- to take a 16-hour Case Management Course and co-managing 20 distinct new patients for a minimum of 12 months. As explained earlier, since documenting 325 glaucoma encounters and performing a chart review of 20 patients seen during school, may not be possible because of HIPAA or availability of data, the only alternative would be to take the course and co-manage 20 patients for 12 months.

The proposal from Ophthalmology for those ODs graduating after May 1, 2009 and thereafter: mandates that a student prior to graduation must have at least 50 distinct SB 1406 glaucoma patients (at least 20 initial diagnosis) with documentation of 325 of one patient/one trainee supervised encounters plus a chart review requirement of at least 20 patients seen during training with a supervisor. If the student could not meet the specified number of patients or encounters and chart reviews prior to graduation, the remainder (determined by a complex formula) would have to be met after graduation by new patients diagnosed with glaucoma and under co-management for a period of at least 18 months to 2 years (if the student had at least 150 encounters while in optometry school, the co-management period would be shortened to 18 months). Once again, as discussed earlier, this requirement could not be applicable to those graduating in May of 2009 since they would already be licensed with glaucoma certification by the time new regulations go in effect in January 1, 2010.

Neither of these requirements-the one for the May 1, 2008, graduates and the one for those graduating after May 1, 2009, would add anything more to the new graduates' competencies and would create an additional burden and unnecessary time delay in the certification of these graduates.

The proposal from Optometry which proposes no additional requirements on graduates after May 1, 2008, is a much simplified process that would allow for an efficient, effective and expedited method to achieving certification while at the same time ensuring public safety and easier excess by the public to much needed eye and vision care in a cost-effective manner.

Access to cost-effective care for glaucoma is especially important in these challenging economic times. The economic impact of glaucoma is considerable. According to Prevent Blindness America, glaucoma accounts for over 7 million visits to physicians each year throughout the United States. In terms of Social Security benefits, lost income tax revenues, and health care expenditures, the cost to the U.S. government is estimated to be over $1.5 billion annually.[29] Moreover the cost to individuals can also be an economic burden. A study in 2004 found that for patients over age 40 to 64 with glaucoma, outpatient costs can average about $276 per year and for prescriptions medicines the average is about $806 per year; although very few patients receive inpatient services for glaucoma, the costs average $2270 per year. While for those over age 65, the cost per patient is about $254 per year for outpatient services and $60 average cost per glaucoma medicine; and for inpatient services the average is $4929 per year.[30] Thus providing access to patients in the early stages of glaucoma can produce significant cost savings. A study by Paul Lee, et al, found that treatment costs at an early stage of glaucoma are about $2000 less than those in a later stage of glaucoma.[31]

Optometrists have proven over time that they can provide eye and vision care effectively and at very reasonable cost. The same study by PriceWaterhouseCoopers that found optometrists to be effective and competent, also found that optometrists to be very cost effective. The results show that TPA certified optometrists charge, on the average, 50% less than ophthalmologists and 46% less than primary care physicians in treating the same condition. If these figures are extrapolated across all TPA optometrists in the state treating an average of 32 patients with common eye conditions each month, then the reduction in charges as a result of optometric care exceeds $30,000,000 annually. The conclusion of the study: the magnitude of the savings is substantial, and that, in California, TPA certified optometrists provide a significant economic benefit to their patients and their health plans. [25]

Summary on timely process for graduates after May 1, 2008: The additional requirements for certification for those graduating after May 1, 2008, are being imposed by ophthalmology despite SB 1409 authority to presume that these graduates are ready to be certified to treat glaucoma and despite Senator's Correa charge that one of the main goals for SB 1409 was to expedite the certification process and increase the access to care for glaucoma patients, while at the same time reducing the cost of care to government and individual patients. And since competency has already been established by a variety of other means, any imposition of requirements upon these graduates therefore delays this process and the requirements appear to be unnecessary.

Public Protection and Safety:

A third and most important responsibility of OPES is to determine whether the Committee's recommended curriculum requirements will adequately protect glaucoma patients.

- Evaluate and determine how the course curriculum will demonstrate an optometrist's ability to safely and competently diagnose, treat and manage primary open-angle glaucoma, exfoliation, and pigmentary glaucoma.

There are several important factors that enter in this discussion: safety as matter of doctor competency; safety as a matter of providing access to care and delivering care in a timely fashion; and safety as a matter of professional responsibility. Finally, the role of the State Board of Optometry is paramount in ensuring the public's safety.

Safety as a matter of doctor competency:

As discussed under curriculum, optometrists do have the necessary foundational knowledge and skills to diagnose treat and manage glaucoma, particularly POAG, pigmentary, pseudoexfoliation glaucoma and provide emergency treatment for narrow angle glaucoma. Graduates of optometry schools have been providing such services in all parts of the country where permitted by law for many years. There is no evidence to suggest that ODs are unsafe, but there is documented evidence that ODs are extremely safe as confirmed by a study conducted by PriceWaterhouseCooper in California after 1996 and data on complaints/ disciplinary action/malpractice lawsuits and professional liability insurance rates throughout the country. [25]

For 35 years optometry has had the privilege of using drugs for diagnostic purposes; for 34 years ODs have prescribed drugs for treating a variety of ocular conditions; and since 1977 ODs have been treating various forms of glaucoma...all with no significant complaints or disciplinary actions against ODs or increases in malpractice rates. This is a significant record of safety unparalled among other healthcare professionals.

California optometrists were first afforded the opportunity to use therapeutic pharmaceutical agents by legislation passed in 1996 (SB 668). At that time there was an agreement between the California Optometric Association (COA) and the California Association of Ophthalmology (CAO) to have COA commission an independent evaluation limited to assessing the competency and cost effectiveness of optometric care under the expanded scope of practice as authorized by SB 668. COA engaged the firm of PriceWaterhouseCoopers to perform the evaluation[25]. The Eye Care Standards used were based on the guidelines for care provided by American Academy of Ophthalmology and American Optometric Association.

The study concluded that optometrists perform at least at the safe level of competence of ophthalmologists and primary care providers managing the same problems authorized under SB 668. This conclusion is based on the analysis of charts that show no significant difference from ophthalmology charts in compliance with Eye Care Standards with regards to history, examination and treatment; and optometrists were significantly more compliant than primary care physicians and mid-level practitioners (PAs and NPs).

Studies in other parts of the world where optometrists are recognized have also demonstrated the safety and competence of the optometrist in treating glaucoma. A study at the Eye Clinic in Aberdeen, UK, demonstrated that community optometrists trained in glaucoma provided satisfactory decisions regarding diagnosis and initiation of treatment for glaucoma. With training, optometrists were found to be at least as accurate as junior ophthalmologists. [32]

Additionally, responses to the state survey indicate that there are no or very few reported incidents or disciplinary actions taken against optometrists generally...and there is no difference in states with restrictions and without; and no difference in small or large states. The only states reporting some incidences involving glaucoma are: Arizona-one case in 2005; Virginia-two cases where OD missed diagnosis of glaucoma or failed to follow up appropriately; North Carolina-one case in past 32 years-malpractice settled out-of-court; and California-with two cases in which ODs who were not certified to treat glaucoma had complaints filed for failure to refer to an ophthalmologist.

Federal law requires all medical malpractice carriers to report every malpractice payment made on behalf of insured healthcare providers to the National Practitioner Data Bank (NPDB). The NBDB website currently contains data on malpractice payments made on behalf of all classes of healthcare providers from September 1, 1990 to December 28, 2008—a total of 18 years and 4 months. The following is the total numbers of malpractice payments made by carriers during this period: [33,43]

Medical physicians..... 240,514

Osteopathic Physicians... 15,268
Dentists..... 41,346
Podiatrists..... 6,842
Optometrists..... 611

This record of only 611 reported payments made on behalf of optometrists clearly shows that optometry as a profession has maintained a notable track record in providing safe and effective patient care throughout the country. This remarkable safety record is further supported by data reported to the National Practitioner Data bank and Healthcare Integrity and Protection Data Banks comparing the total adverse actions against physicians, dentists, and optometrists in California, Oklahoma (with laser authority for ODs), and in the United States during the period of September 1, 1990 and March 17, 2008. The table at (Tab 15) was created by the California Optometric Association.

Likewise, malpractice insurance premiums for optometrists are and remain the lowest of any independent doctoral-level healthcare profession. Insurance companies are in the business of turning a profit for their shareholders. If there were any reason for increasing premiums, it would make good sense to do so. Yet these premiums are lower than those paid by non-doctoral supervised allied health professions such as nurse practitioners and physician assistants. The rate for optometrists in Territory 1(lowest rate area in the country) for the AOA's endorsed malpractice insurance plan is $598/year/$2 million professional liability coverage per incident for self-employed optometrists in full time practice; for $1 million the rate drops to $511 per year. In comparing rates in Oklahoma (with broad scope authority) and Maryland (with limited scope authority), optometrists in these states pay the same rate. Thus there is no difference in states with or without TPA, glaucoma or laser use authority for optometrists. [43]

Summary-competence and safety: The best way that optometrists can ensure the safety of the public is to be well educated and trained and to practice at their highest level of competency. The safety record that optometry has amassed over the years is a vindication that they have performed very well indeed with respect to addressing the needs of the public in an effective and safe manner.

Safety as a matter of access and timeliness of delivery of services:

Authorizing optometrists to diagnose and treat glaucoma is in the public's best interest by increasing access to care that is more readily available and cost effective. The damage caused by optometrist's involvement is far less than the damage caused by denying patients' access to ODs. Given that there are so many people that do not have access to care, the potential damage in not identifying people with glaucoma and treating those that have a need is far greater than the damage that is caused by optometrists treating the condition.

The epidemiological and demographic information on glaucoma has been well presented and documented in the Optometry Report of the GDATAC. Some of that data bears repeating:

- Glaucoma is the second leading cause of blindness in the United States [34] consisting of 9-12% of all cases of blindness in the U.S[35]
- Glaucoma affects 1 in 200 people aged 50 and younger; and 1 in 10 of those over age 80. [36]
- In 2002, Friedman estimated that 2.2 million Americans aged 40 and older (1.9% of the population) and 711,000 age 80 and over (7.7% of that population) had open angle glaucoma. That percentage is expected to grow by 50% by 2020. Half of those with glaucoma are not aware they have the disease. [37]
- The percentage of undiagnosed patients with glaucoma in the United States ranges from 56% to 92%.[38,39]
- African-Americans are 5 times more likely to develop open-angle glaucoma and six times more likely to develop blindness; and glaucoma occurs about 10 years earlier than in other ethnic populations. Making prescription eye drops available could delay or prevent glaucoma-caused vision loss in at least 50% of that population. [40]
- The risk of developing glaucoma in Hispanics is greater than in the Caucasian population and among the over 60 the risk increases 7-fold. [41]
- The Los Angeles Latino Eye Study found that of the study participants who had open-angle glaucoma, 75% were previously undiagnosed. [38]
- Using rates from the 2002 Friedman study and California population data from 2005, the California Optometric Association extrapolated the following data[2] :
    - Glaucoma affected an estimated 132,820 Californians of all races and ages under the age of 50.
    - Assuming a 2.0% prevalence factor for all races and ethnic groups, 108,056 Californians between 50 and 65 had open-angle glaucoma.
    - Assuming a 5.0% prevalence rate for all races and ethnic groups, 194,149 Californians over age 65 had open-angle glaucoma.
    - More that 30,000 cases of blindness in California will be caused by glaucoma.
    - African-American Californians over the age of 50 accounted for at least 32,234 potential diagnosis of open angle glaucoma
    - Assuming a slightly higher risk factor than Whites, 72,417 Latinos were diagnosable with glaucoma, and at least 20,000 of that number will result in blindness.
    - Conservatively, more than 435,000 Californians with glaucoma are unaware they have it.

The Olmstead County Study[42] concluded that patients at greatest risk of blindness were those with initial visual field loss at time of diagnosis- implying that the earlier a patient is evaluated, the earlier the diagnosis, and the fewer people progress to blindness with proper treatment. Thus providing access to care may be one of the single most important factors in reducing the public health consequences of glaucoma.

As Senator Correa stated in his letter of March 31, 2009, to Sonja Merold, Chief of OPES, "We wanted to guarantee that SB 1406 would make it possible for more optometrists to be treating vulnerable populations in the state of California...At a time when health care is

expensive to the point of being prohibitive, this bill will allow more people at risk for vision loss to receive much needed attention." (Tab 3)

To date there are only 177 ODs who qualified under SB 929. In 2008 an additional 206 ODs were added to the roles of licensed ODs certified to treat glaucoma, and another 200 or so will be added by July of this year. By the time this report is presented, approximately 680 ODs will be licensed to treat glaucoma in California. That is certainly moving in the right direction. However, even this increase in licensed optometrists is not enough to meet the public needs.

Summary-timely process and safety: Glaucoma is a public health concern. Glaucoma can cause blindness. The primary reason for this blindness is that glaucoma is not detected early enough and not treated early enough because most people that have glaucoma do not know they have it. Thus providing access to care is the single most important factor in reducing the public health consequences of this condition. Optometrists are well qualified to diagnose and treat the most prevalent form of glaucoma. The best solution of course would be for the two professions (optometry and ophthalmology) to form a partnership in addressing the needs of the public by lessening the impact of this insidious eye disease on individuals and on society.

Safety as a matter of professional responsibility:

Most basic and overriding requirement of all health care professions
is the public's safety. Optometrists are no less concerned about public safety than EyeMDs and other health care providers. ODs have a legal and ethical responsibility not to harm the patient (the same as do MDs).

Throughout its history, optometry has fought for public acceptance and recognition and gaining the public's trust and confidence. They have done so by adopting codes of ethics and conduct, establishing educational institutions that are fully accredited to prepare its graduates with all the necessary tools to practice safely and competently, and developing standards of care and practice guidelines that ensure ODs practice as effectively as possible. At this very moment the American Optometric Association is considering the adoption of national board credentialing requirements to make sure that its members are not only competent but constantly strive to improve and maintain their knowledge and skills at an optimum level.

The notion that somehow optometry is dangerous and should be feared by the public has no basis in fact. Time and again optometry has proven itself as being safe and effective. None of the concerns or fears expressed by ophthalmology has ever come to pass; and given the safety record and restraints demonstrated by optometry over its long history, none of these arguments are now persuasive.

Summary-professional responsibility and safety: Today optometrists provide approximately 70% of all eye and vision care in the country...and for the past 35 years, ODs have established an envious safety record. ODs are taught to practice up to their level of competence, confidence, and comfort...and they do not take unnecessary chances because

they understand full well the constant scrutiny to which they are subjected by state boards, the legislature, and other health care professionals.

Role of State Board of Optometry:

The role of the State Board of Optometry is paramount in ensuring the public's safety (B&P Code Section 3010.1). The Board has the statutory responsibility to set standards, prepare and conduct examinations, conduct investigations, issue citations and impose penalties, and to deny, suspend or revoke licenses-all for the purpose regulating the profession of optometry to ensure the public's health, safety and welfare. The Board may take action against all licensees guilty of violating laws and regulations pertaining to the practice of optometry. The Board may also, at its discretion, issue probationary licenses with specific conditions such as practicing under supervision, restricting prescribing privileges or other type of practice activity, requiring additional professional/clinical training and examinations if licensee is unable to practice optometry with reasonable skill and safety, or any other condition deemed appropriate by the Board. The Board also holds ODs who diagnose and treat eye disease to the same standards as physician and surgeons and osteopathic physician and surgeons. (B&P Sections 108, 3010.1, 3014, 3027.5, 3090-3110) [29]

The Optometry Report suggests a number of ongoing actions by the Board as the glaucoma certification process moves forward:

- Review individual certification applications, including the licensee's practice records, course work, and examination results;
- Require the submission of additional information on the applicant's practice based diagnosis and case management experience; and
- Impose additional case management requirements in those cases where it finds it necessary to do so, to fully protect the public.
- Moreover, the State Board should also review its certification regulations periodically to assure that course subject requirement reflect the contemporary standard of care in glaucoma diagnosis, treatment, and management.

Under their authority, these would appear to be appropriate activities of the Board in ensuring that the public is well protected.

CONCLUSIONS:

Conclusions-For graduates prior to May 1, 2008:

1. For 35 years optometry has had the privilege of using drugs for diagnostic purposes; for 34 years ODs have prescribed drugs for treating a variety of ocular conditions; and since 1977 ODs have been treating various forms of glaucoma in other states. They have met all didactic and clinical experiences and competencies required by state scope of practice laws, have passed national and state examinations for licensure, and have performed admirably in a safe and effective manner. To ask California optometrists to have additional training than most of the other states is not fair, reasonable or necessary.
2. In California ODs have had the privilege of treating glaucoma since 2001 and using other therapeutic agents since 1996. Those who have been co-managing patients under SB 929 have been treating glaucoma prospectively for several years. Even those who have not been involved in the direct treatment of glaucoma have acquired much experience in the diagnosis and management of glaucoma. ODs who have been co-managing patients under SB 929 should be given credit for prior experience.
3. For continuing proficiency and competency, therapeutically licensed ODs in California are required to take 50 hours of continuing education every two years to include 35 hours in six ocular disease topics. From 2001 to 2006, there was a specific requirement of 12 hours in glaucoma education. Since then the glaucoma requirement became incorporated within the 35 hours in ocular disease. This is consistent with the majority of states that include glaucoma education as part of the general CE requirement for TPA certified ODs.
4. ODs have been licensed to practice in all parts of the country and have demonstrated a remarkable safety record as evidenced by the low number of malpractice claims and disciplinary actions against optometrists in all states. This conclusion has also been supported by surveys and other documents, and studies in California.
5. There are currently 34 states plus DC that do not have any restrictions on treatment and management of glaucoma by optometrists. Eight states have some form of co-management, but with some provisions for waivers or reductions-seven have eliminated the requirement completely for those graduating after a certain date. And several have other restrictions and consultation requirements-all of which are included in California law.
6. ODs are being authorized under SB 1406 to treat and manage glaucoma at entry-level competency. The law already restricts the types of glaucoma ODs may treat, prohibits treating glaucoma in those under age 18, requires consultation for patients with diabetes, allows use of topical medications and restricts use of oral medications to emergency stabilization of acute angle closure glaucoma. ODs are prudent enough to refer when medical treatment is no longer effective or when the type of glaucoma falls outside scope of practice.

7. Current law in California already requires ODs to comply with standards of care that are the same for ophthalmology as for optometry when treating the same conditions of the eye. Standard of care is defined by care given not training received.
8. The 24-hour didactic glaucoma course appears to satisfactorily cover the necessary knowledge to diagnose, treat and manage all types of glaucoma, but with special emphasis on the types authorized by SB 1406. The course also covers in great detail narrow angle glaucoma (or angle closure glaucoma)-and emergency care. There is full agreement among the members of the Glaucoma Advisory Committee that this course is sufficient in meeting the requirements for didactic education on glaucoma.
9. A 25-patient prospective case management requirement for those graduating prior to May 1, 2008, would provide a sufficient level of experience for optometrists to treat and manage patients with glaucoma competently and safely at an entry-level stage. This requirement could be fulfilled by any one or a combination of the following: taking a 16-hour advanced case management course; participating in a 16-hour grand-rounds program; retrospective case reports; credit for patients co-managed for at least one year; and preceptoring glaucoma patients with a glaucoma-certified OD or ophthalmologist.

Conclusions-For the new graduate after May 1, 2008:

1. The intent of the legislature in passing the new law SB 1406, supported by letters from Senators Correa and Aanestad, co-sponsors of SB 1406, is very clear: that graduates after May 1, 2008, are "presumed" to have met all requirements for glaucoma certification and therefore need no additional requirements. The State Board of Optometry has the authority to monitor, penalize, and impose additional requirements as it deems appropriate.
2. After reviewing the didactic and clinical programs at various schools, it appears that the current curriculum provides a comprehensive foundation of knowledge and skills for the entry-level practice of optometry and glaucoma diagnosis, treatment and management. And, based upon reports from the schools, students graduate with adequate proficiencies and clinical experiences with regards to patient care, patient numbers and patient encounters. Moreover internal mechanisms consisting of course grades, chart reviews, and clinical evaluations by faculty for ensuring proficiency and competency by students are well established and effective.
3. The Curriculum Review process at each institution is more than adequate to ensure the continuing evolution of the curriculum to make certain that it is always current, up to date, and addresses the changing nature of the profession: entry-level definition, standards of care, etc.
4. The ACOE Accreditation process is sufficiently detailed to validate the depth and quality of the curriculum at each institution.
5. All students are required to pass the three-part National Board examinations that adequately test the entry-level knowledge and skills of the graduates as a pre-requisite for licensure in most states; and Parts I and II of the Board examinations in all states.
6. The laws in all states, even those that had co-management requirements, are taking in consideration the comprehensive nature of the training of optometry graduates, and therefore have been willing to abolish co-management requirements rather than

impose such requirements. Only one state retains co-management requirements for "new" graduates.

7. Over 200 graduates after May 1, 2008, (and an additional 200 or so new graduates from May 2009 will be added soon) have already been licensed with glaucoma certification and have been practicing for at least one year without problems. There have been no reported incidents or disciplinary actions taken by the State Board of Optometry against any such licensees.
8. During the past year OD graduates after May 1, 2008, have been licensed to practice in California and in other states and have demonstrated that they are safe and effective in treating glaucoma. There have been no reported incidents, disciplinary actions, or malpractice claims filed against them.
9. The proposal submitted by the Ophthalmology members of the GDATAC would establish two separate glaucoma certification requirements for "new" graduates after May 1, 2008, in addition to the requirement for graduates prior to 2008. These requirements, besides delaying the certification process and not adding materially to the competency of the new doctors, will create some difficulties: retroactive chart audits/reviews and patient counting requirements may not only be impractical but under HIPAA regulations may even be legally questionable; and the status of ODs graduating in May 2009 remains uncertain. Moreover, managing and administering this three-tiered certification program would create a significant burden on the State Board of Optometry.
10. The proposal submitted by the Optometry members of GDATAC is simple and straightforward and ensures that ODs can be certified in a timely manner: no additional requirements for certification for ODs graduating after May 1, 2008. This approach makes sense and is consistent given the legislative intent and the fact that most other states have also repealed co-management requirements for "new" graduates after a particular date.
11. The current continuing education requirement for renewal of license which includes 35 hours of courses in ocular disease is sufficient for the maintenance of continuing competence in glaucoma. However, the State Board of optometry may at its discretion require a specific number of hours in the treatment and management of glaucoma within the 35 hours for those ODs who are going through the glaucoma certification process.

RECOMMENDATIONS:

1. New graduates after May 1, 2008, are well trained in all aspects of glaucoma diagnosis and management, and therefore are fully qualified to receive glaucoma certification without any additional didactic or case requirements.

   This is also consistent with the wishes of the Legislature and the co-authors of SB 1406.

2. Those graduating prior to May 1, 2000 who have not yet taken a 24-hour glaucoma course, will be required to take the 24-hour course. Those graduating after May 1, 2000, are exempt from further didactic courses.

3. Those graduating prior to May 1, 2008, who have taken the 24-hour course but not completed the case management requirement under SB 926, will be required to complete a 25- patient case management requirement.

   The case management requirement will consist of 25 patients prospectively treated/managed for one year. This case requirement may be fulfilled by any combination of the following:

   a. Fifteen-patient credit for taking a 16-hour advanced case management course conducted live, web-based, or by use of telemedicine and passing a course examination. The course is to be developed by an accredited school of optometry in California and approved by the State Board of Optometry.

   The 16-hour case management course should be structured in such a way that it will maximize the learning experience. The following are some suggestions:

   4) Case-based course similar to the NBEO Part II examination on patient assessment and management including a specified number of common treatment scenarios, complex cases and confounding disease processes (similar to the proposal by ophthalmology).
   5) Course based on individual analysis and presentation by each candidate of at least 10 patient case scenarios most likely to be encountered in clinical practice (as proposed by optometry).
   6) A written examination administered to each candidate at the conclusion of the course (as recommended by both ophthalmology and optometry).

   b. Fifteen patients credit by participating in a 16-hour grand-rounds program with live patients developed by an accredited school of optometry in California and approved by the State Board of Optometry.

   A grand-rounds program with live patients that are individually examined by doctors would better mimic real life glaucoma management. Here is an example of such a program:

   5) Live patients to include: Glaucoma suspects, narrow angle, POAG (early, moderate, late), and secondary open angle glaucoma like pigment dispersion and pseudoexfoliation. The patient data would be available on site and presented upon request: VA's, IOP, VFs, imaging and pachymetry
   6) The doctors would exam the patient (optic nerve, gonioscopy), evaluate data and test results, and commit to a tentative diagnosis and management plan.
   7) Conduct a group discussion of the cases with instructor feedback.
   8) Follow-up meetings involving the same doctors - could use the same patients or different patients with serial data from VF, imaging, photos, etc.

The specific format and content of a case management course and/or a grand rounds program would most appropriately be decided and approved by the State Board of Optometry.

c. Ten patients credit may be completed on a retrospective basis by writing a case report, to include a treatment plan and appropriate tests, on currently co-managed patients from the OD's practice...to be reported and conducted in a manner approved by the Board of Optometry.

This would most likely require the use of experts (i.e. glaucoma certified ODs, glaucoma certified ophthalmologists, faculty members at schools of optometry) to evaluate the written case reports. An appropriate per case fee could be charged of the OD submitting the case report to the Board for processing and expert evaluation.

d. Those ODs who began the credentialing process under SB 929 but will not be completing the requirement by December 31, 2009, may apply all patients who have been co-managed prospectively for at least one year towards the 25-patient requirement. All these patients have been or are currently being co-managed with an ophthalmologist and the optometrist should therefore be given full credit for that experience.

e. And finally, any or all of the 25 patients may be seen under a preceptorship arrangement with a glaucoma certified OD or ophthalmologist. This preceptorship may all be accomplished by the use of telemedicine/ electronic submission of information, etc., as mutually agreed to by the consulting and treating doctors.

4. Present CE requirement of 50 hours for two years with 35 hours in ocular disease is sufficient for all ODs already certified to treat glaucoma. However, the State Board of Optometry may at its discretion consider specifying a given number of hours (perhaps 12 hours) of glaucoma treatment and management continuing education courses every two years for those ODs who will be going through the glaucoma certification process. (This should be part of the 50 hours currently required, not an additional number of hours...perhaps even with an automatic sunset provision for this requirement after 4-6 years.)

References

1. Ingram DV, Culham LE: Commentary: Ophthalmologists and Optometrists- interesting times? British Journal of Ophthalmology 2000; 85:769-770.
2. Glaucoma Diagnosis and Treatment Advisory Committee Report of the Optometrist Committee Members, April 1, 2009.
3. Glaucoma Diagnosis and Treatment Advisory Committee Report of the Ophthalmologist Committee Members, April 1, 2009.
4. AOA Optometric Clinical Practice Guidelines: access to all documents. Source: http://www.aoa.org/x4813.xml Attach 14
5. AOA Clinical Practice Guideline: Care of the Patient with Open Angle Glaucoma. 2nd Edition, 2002. http://www.aoa.org/documents/CPG-9.pdf
6. AOA Clinical Practice Guideline: Care of the Patient with Primary Angle Closure Glaucoma. Reviewed 2001. http://www.aoa.org/documents/CPG-5.pdf
7. Southern California College of Optometry: ACOE Accreditation Self-Study 1998-2005 Standard VI: Curriculum
8. UC Berkeley: ACOE Accreditation Self-Study 2007 Standard VI: Curriculum
9. College of Optometry at The Ohio State University: ACOE Accreditation Self-Study 2003 Standard VI: Curriculum
10. National Board of Examiners in Optometry- state requirements: http://www.optometry.org/state_requirements.cfm
11. National Board of Examiners in Optometry - examination statistics: http://www.optometry.org/stats.cfm
12. An Independent Audit of the Examinations of the National Board of Examiners in Optometry. Directed by the Office of Examination Resources, Department of Consumer Affairs, for the State Board of Optometry. November 19, 2001.
13. Validation Report-Licensed Optometrist: An Occupational Analysis. Prepared by the Staff of the Office of Examination Resources, Department of Consumer Affairs, for the State Board of Optometry; Norman R. Hertz, Ph.D., Chief. November 2001.
14. Occupational Analysis of Optometry. Conducted by HR Strategies on behalf of the State Board of Optometry. 1993.
15. Accreditation Council on Optometric Education website http://www.aoa.org/x5153.xml
16. Southern California College of Optometry. Treatment and Management of Glaucoma: 24-hour Course Manual.
17. UCB School of Optometry. Treatment and Management of Glaucoma: 24-hour Course Manual.
18. Business and Professions Code Section 3027.5 on OD standard of care.
19. Definition of Standards of Care. MedicineNet.com. Source: http://www.medterms.com
20. Standards of Care. Source: http://en.wikipedia.org/wiki/standards of care
21. Quillen, David A et al. (2005) Medical student education in ophthalmology: crisis and opportunity. Ophthalmology. 112:1867-8.
22. Stern GA. Teaching ophthalmology to primary care physicians. Archives of Ophthalmology. 1995;113:722-4.
23. McDonnell, Peter J.. Medical schools need to emphasize ophthalmology in their curricula. Ophthalmology Times; March 15, 2005.

24. Shields T, Sloane PD. A comparison of eye problems in primary care and ophthalmology practices. Family Medicine. 1991 Sep-Oct; 23 (7):544-6.
25. PriceWaterhouseCooper: Optometric Use of Therapeutic Pharmaceutical Agents in California: A Study of Competence and Cost Effectiveness. Prepared for the California Optometric Association, July 30, 1998.
26. Business and Professions Code Section 3059 - CE requirement
27. Arrington E.E.: History of Optometry. White Printing House, Chicago, 1929.
28. Business and Professions Code Sections 108, 3014-3027.5, 3090-3110
29. National Eye Institute, Report of the Glaucoma Panel, Fall 1998
30. Rein DB, Zhang P, Wirth KE, et al. The economic burden of major adult visual disorders in the United States. Archives of Ophthalmology, December 2006.
31. Lee PP, Walt GW, Doyle JL, et al: A multicenter retrospective pilot study of resource use and costs associated with disease in glaucoma. Archives of Ophthalmology, 124(1): 12-9.
32. Azuara-Blanco A, Burr J, Thomas R, et al. The accuracy of accredited glaucoma optometrists in the diagnosis and treatment recommendation for glaucoma. British Journal of Ophthalmology. 2007 Dec; 91(12): 1639-43.
33. National Practitioner Data Bank and Healthcare Integrity and Protection Data Banks, Health Resources and Services Administration of the U.S. Department of Health Human Services: http://www.npdb-hipdb.hrsa.gov/pubs/stats/NPDB_Summary_Report.pdf
34. National Institutes of Health, National Eye Institute, and Prevent Blindness America. "Vision Problems in the U.S., 2002".
35. Glaucoma Research Foundation: Glaucoma facts and Stats." 2006.
36. Prevent Blindness America: "The Glaucoma learning center." 2006.
37. Friedman DS, Wolfs Roger CW, O'Colmain BJ, et al: Prevalence of Open Angle Glaucoma Among Adults in the United States. Archives of Ophthalmology. Vol. 122; 4: 532-8.
38. Varma R, Ying-Lai M, Francis BA, et al: Los Angeles Latino Study Group. Prevalence of open angle glaucoma and ocular hypertension in Latinos: The Latino Eye Study. Ophthalmology. 2004;111:1439-1448.;
39. Quigley HA, West SK, Rodriguez J, et al. The prevalence of glaucoma in a population-based study of Hispanic subjects: Proyecto VER. Archives of Ophthalmology. 2001;119:1819-1826.
40. Higginbotham EJ, Gordon MO, Beiser JA, et al: The Ocular Hypertension Treatment Study: Topical medication delays or prevents primary open-angle glaucoma in African-American individuals. Archives of Ophthalmology. Vol 122; 6:813-20.
41. Glaucoma Research Foundation: "Are You at Risk for Glaucoma?" http://www.glaucoma.org/learn/are_you_at_risk.php
42. Oliver JE, Hattenhaur MG, Herman D, et al. Blindness and glaucoma: a comparison of patients progressing to blindness from glaucoma with patients maintaining vision. American Journal of Ophthalmology. 2002;133: 764-772
43. AOA Chart on Malpractice Record and Insurance Rates for Optometrists-January 29, 2009. Sherry L. Cooper, AOA State Government Relations, SLCooper@AOA.org.

APPENDICES

Tab 1
Special Consultant Tasks and Responsibilities

Classification Title	**Board/Bureau/Division**
Special Consultant	Office of Administrative and Support Services
Working Title	**Office/Unit /Section / Geographic Location**
Special Consultant for Optometry Study	Office of Professional Examination Services
Position Number	**Effective Date**
610-600-4660-907	January 21, 2009

Under the administrative direction of the Chief, Office of Professional Examination Services (OPES), the incumbent will serve as a high-level research consultant in the field of optometry. The incumbent will be required to independently analyze and evaluate curriculum for the purpose of establishing entry-level requirements for currently licensed optometrists in the State of California who possess therapeutic level licensure to become certified to treat glaucoma.

Background Leading to the Special Consultant Position
Senate Bill 1406, Chapter 352, which became effective on January 1, 2009, in part requires the California State Board of Optometry (Board) to appoint the Glaucoma Diagnosis and Treatment Advisory Committee (Committee) for the purposes of establishing certification requirements for glaucoma certification. The Committee shall submit its final recommendations to OPES, formerly the Office of Examination Resources, on or before April 1, 2009. The OPES is responsible for examining the Committee's recommended curriculum requirements and presenting its findings and any modifications necessary to meet the requirements identified in SB 1406 to the Board on or before July 1, 2009. The Board shall adopt the findings of OPES and shall implement certification requirements pursuant to this section on or before January 1, 2010.

The Special Consultant will be expected to:

- Determine whether the Committee's recommended curriculum requirements will adequately protect glaucoma patients;
- Ensure that defined applicant optometrists will be certified to treat glaucoma in an appropriate and timely basis;
- Evaluate and determine if the recommended curriculum for optometrist certification provides appropriate case management of patients diagnosed with glaucoma;
- Evaluate and determine if the recommended combined curriculum of didactic instruction in the diagnostic, pharmacological, and other treatment and management of glaucoma, and case management of patients diagnosed with glaucoma, is appropriate for entry level optometrist certification;
- Evaluate and determine how the course curriculum will demonstrate an optometrist's ability to safely and competently diagnose, treat and manage primary open-angle glaucoma, exfoliation, and pigmentary glaucoma;
- Evaluate and assure that optometrists can treat narrow angle glaucoma on an emergency basis;
- Determine if the recommended course work is consistent with the Department of Consumer Affairs and the Board's examination validation for licensure and occupational analyses polices adopted pursuant to subdivision (b) of Section 139 of the Business and Professions Code.

A. 100% Specific Tasks and Responsibilities to be Accomplished

- Become familiar with the provisions in Senate Bill 1406, Chapter 352,

Statutes 2008 (Correa).

- Meet with OPES and Board management regarding project details and expectations.
- Gather and analyze existing data regarding the curriculum offered by a sampling of accredited schools of optometry regarding the didactic and case management training in the treatment and management of patients diagnosed with glaucoma. For the purposes of this study, glaucoma means all primary open-angle glaucoma, exfoliation, and pigmentary glaucoma as well as emergency treatment of narrow angle glaucoma.
- Analyze and evaluate the didactic courses of not less than 24 hours in the diagnosis, pharmacological, and other treatment and management of glaucoma currently offered by the University of California, Berkeley, School of Optometry and the Southern California College of Optometry.
- Analyze and evaluate how the diagnosis, pharmacological, and other treatment and management of glaucoma patients are currently integrated into the content of the National Board of Examiners in Optometry (NBEO) examinations.
- Analyze a sampling of other state boards of Optometry's criteria for licensure and/certification to treat primary open-angle glaucoma, exfoliation, pigmentary and narrow angle glaucoma.
- Prepare a confidential report regarding the results of the analysis and present the findings to OPES, the Board, and Board staff.
- With stakeholders at a public meeting, discuss the results of the analysis and the Committee's recommendation.

B. Supervision Received

The Special Consultant will receive administrative direction from the Chief, but is expected to work independently to provide expert research and analysis in assessing the curriculum requirements that will adequately protect glaucoma patients.

C. Supervision Exercised

None

D. Administrative Responsibility

None

E. Personal Contacts

Has contact with OPES staff; Board of Optometry staff; individuals associated with the University of California, Berkeley, School of Optometry and the Southern California College of Optometry; and others necessary to complete the assignment.

F. Actions and Consequences

Failure to fulfill the tasks and responsibilities would jeopardize the Board's ability to meet the requirements of SB 1406 and could delay the certification of currently licensed optometrists to treat patients with glaucoma. Ultimately, this could have substantial monetary and political impact on the clients, the Department, licensing examination candidates, and the consumer who may be harmed by candidates being licensed when the examinations do not measure minimum competency.

G. Functional Requirements

The Special Consultant will attend up to four (4) public meetings statewide and also meet with OPES and Board staff, as needed, in person, by telephone, or electronic mail.

H. Minimum Qualifications

The Special Consultant should:

- Be an optometrist or physician (ophthalmologist) currently licensed to practice in his or her respective profession(s). Said license must be active, in good standing, with no prior restrictions to practice or disciplinary action and at least five years of related work experience.
- Actively participate in the training of optometry students.
- Be an expert in the treatment of glaucoma.
- Have personal experience in treating more than 50 cases (patients) diagnosed with glaucoma.
- Be familiar with the accreditation process for colleges or schools of optometry.
- Have knowledge in curriculum development and curriculum evaluation.
- Be able to substantiate by a copy of a degree as a doctor of optometry or medicine and résume or CV that indicates the above criteria are met.

I have read and understand the duties listed above and I can perform these duties without reasonable accommodation. (If you believe reasonable accommodation is necessary, discuss your concerns with the hiring supervisor. If unsure of a need for reasonable accommodation, inform the hiring supervisor, who will discuss your concerns with the Health & Safety analyst.)

_____

Employee Signature Date

_____

Printed Name

I have discussed the duties of this position with and have provided a copy of this duty statement to the employee named above.

_____

Supervisor Signature Date

_____

Printed Name

HR-41 (new 05/04)

Tab 2

Senate Bill No. 1406
CHAPTER 352
An act to amend Sections 3041 and 3152 of, and to add and repeal Section 3041.10 of, the Business and Professions Code, relating to optometry.
[Approved by Governor September 26, 2008. Filed with Secretary of State September 26, 2008.]

Legislative Counsel's digest

SB 1406, Correa. Optometry.
Existing law, the Optometry Practice Act, creates the State Board of Optometry, which licenses optometrists and regulates their practice. The act defines the practice of optometry as including the prevention and diagnosis of disorders and dysfunctions of the visual system, and the treatment and management of certain disorders and dysfunctions of the visual system. The act also prescribes certain eye or eye appendage conditions which an optometrist who is certified to use therapeutic pharmaceutical agents may diagnose and treat, as specified and subject to certain limitations, and requires additional certification for the performance of primary open-angle glaucoma and lacrimal irrigation and dilation procedures, respectively. This bill would revise and recast those provisions to further allow an optometrist who is certified to use therapeutic pharmaceutical agents to, among others, treat glaucoma, as defined, under specified certification standards, order X-rays necessary for the diagnosis of conditions or diseases of the eye or adnexa, perform venipuncture for testing patients suspected of having diabetes, administer oral fluorescein to patients suspected of having diabetic retinopathy, prescribe lenses or devices that incorporate a medication or therapy the optometrist is certified to prescribe or provide, and use specified instruments within the central 3 millimeters of the cornea. The bill would further allow an optometrist who graduated from an accredited school of optometry on or after May 1, 2000, to perform lacrimal irrigation and dilation procedures without additional certification. The bill would also make other changes with regard to the circumstances under which an ophthalmologist or an appropriate physician and surgeon is required to be consulted with, or patients referred to, and to certain age requirements related to treatment or diagnosis, as specified. The bill would further make a conforming change to a related provision. Until January 1, 2010, this bill would also provide for a Glaucoma Diagnosis and Treatment Advisory Committee to consist of 6 members appointed by the State Board of Optometry for purposes of establishing certain requirements for glaucoma certification. The bill would require the committee to submit its final recommendations to the Office of Examination Resources of the Department of Consumer Affairs by April 1, 2009, would require the office to present its findings and any modifications thereof to the board by July 1, 2009, and require the board to adopt the office's findings by January 1, 2010.
The people of the State of California do enact as follows:

SECTION 1. Section 3041 of the Business and Professions Code is amended to read:
3041. (a) The practice of optometry includes the prevention and diagnosis of disorders

and dysfunctions of the visual system, and the treatment and management of certain disorders and dysfunctions of the visual system, as well as the provision of rehabilitative optometric services, and is the doing of any or all of the following:

(1) The examination of the human eye or eyes, or its or their appendages, and the analysis of the human vision system, either subjectively or objectively.

(2) The determination of the powers or range of human vision and the accommodative and refractive states of the human eye or eyes, including the scope of its or their functions and general condition.

(3) The prescribing or directing the use of, or using, any optical device in connection with ocular exercises, visual training, vision training, or orthoptics.

(4) The prescribing of contact and spectacle lenses for, or the fitting or adaptation of contact and spectacle lenses to, the human eye, including lenses that may be classified as drugs or devices by any law of the United States or of this state.

(5) The use of topical pharmaceutical agents for the purpose of the examination of the human eye or eyes for any disease or pathological condition.

(b) (1) An optometrist who is certified to use therapeutic pharmaceutical agents, pursuant to Section 3041.3, may also diagnose and treat the human eye or eyes, or any of its appendages, for all of the following conditions:

(A) Through medical treatment, infections of the anterior segment and adnexa, excluding the lacrimal gland, the lacrimal drainage system, and the sclera in patients under 12 years of age.

(B) Ocular allergies of the anterior segment and adnexa.

(C) Ocular inflammation, nonsurgical in cause except when comanaged with the treating physician and surgeon, limited to inflammation resulting from traumatic iritis, peripheral corneal inflammatory keratitis, episcleritis, and unilateral nonrecurrent nongranulomatous idiopathic iritis in patients over 18 years of age. Unilateral nongranulomatous idiopathic iritis recurring within one year of the initial occurrence shall be referred to an ophthalmologist. An optometrist shall consult with an ophthalmologist or appropriate physician and surgeon if a patient has a recurrent case of episcleritis within one year of the initial occurrence. An optometrist shall consult with an ophthalmologist or appropriate physician and surgeon if a patient has a recurrent case of peripheral corneal inflammatory keratitis within one year of the initial occurrence.

(D) Traumatic or recurrent conjunctival or corneal abrasions and erosions.

(E) Corneal surface disease and dry eyes.

(F) Ocular pain, nonsurgical in cause except when comanaged with the treating physician and surgeon, associated with conditions optometrists are authorized to treat.

(G) Pursuant to subdivision (f), glaucoma in patients over 18 years of age, as described in subdivision (j)(2) For purposes of this section, "treat" means the use of therapeutic pharmaceutical agents, as described in subdivision (c), and the procedures described in subdivision (e).

(c) In diagnosing and treating the conditions listed in subdivision (b), an optometrist certified to use therapeutic pharmaceutical agents pursuant to Section 3041.3 may use all of the following therapeutic pharmaceutical agents:

(1) Pharmaceutical agents as described in paragraph (5) of subdivision (a), as well as topical miotics.
(2) Topical lubricants.
(3) Antiallergy agents. In using topical steroid medication for the treatment of ocular allergies, an optometrist shall consult with an ophthalmologist if the patient's condition worsens 21 days after diagnosis.
(4) Topical and oral antiinflammatories. In using steroid medication for:

(A) Unilateral nonrecurrent nongranulomatous idiopathic iritis or episcleritis, an optometrist shall consult with an ophthalmologist or appropriate physician and surgeon if the patient's condition worsens 72 hours after the diagnosis, or if the patient's condition has not resolved three weeks after diagnosis. If the patient is still receiving medication for these conditions six weeks after diagnosis, the optometrist shall refer the patient to an ophthalmologist or appropriate physician and surgeon.

(B) Peripheral corneal inflammatory keratitis, excluding Moorens and Terriens diseases, an optometrist shall consult with an ophthalmologist or appropriate physician and surgeon if the patient's condition worsens 72 hours after diagnosis.

(C) Traumatic iritis, an optometrist shall consult with an ophthalmologist or appropriate physician and surgeon if the patient's condition worsens 72 hours after diagnosis and shall refer the patient to an ophthalmologist or appropriate physician and surgeon if the patient's condition has not resolved one week after diagnosis.

(5) Topical antibiotic agents.
(6) Topical hyperosmotics.
(7) Topical and oral antiglaucoma agents pursuant to the certification process defined in subdivision (f).

(A) The optometrist shall refer the patient to an ophthalmologist if requested by the patient or if angle closure glaucoma develops.

(B) If the glaucoma patient also has diabetes, the optometrist shall consult with the physician treating the patient's diabetes in developing the glaucoma treatment plan and shall inform the physician in writing of any changes in the patient's glaucoma medication.

(8) Nonprescription medications used for the rational treatment of an ocular disorder.
(9) Oral antihistamines.
(10) Prescription oral nonsteroidal antiinflammatory agents.
(11) Oral antibiotics for medical treatment of ocular disease.

(A) If the patient has been diagnosed with a central corneal ulcer and the central corneal ulcer has not improved 48 hours after diagnosis, the optometrist shall refer the patient to an ophthalmologist.

(B) If the patient has been diagnosed with preseptal cellulitis or dacryocystitis and the condition has not improved 48 hours after diagnosis, the optometrist shall refer the patient to an ophthalmologist.

(12) Topical and oral antiviral medication for the medical treatment of the following: herpes simplex viral keratitis, herpes simplex viral conjunctivitis, and periocular

herpes simplex viral dermatitis; and varicella zoster viral keratitis, varicella zoster viral conjunctivitis, and periocular varicella zoster viral dermatitis.

(A) If the patient has been diagnosed with herpes simplex keratitis or varicella zoster viral keratitis and the patient's condition has not improved seven days after diagnosis, the optometrist shall refer the patient to an ophthalmologist. If a patient's condition has not resolved three weeks after diagnosis, the optometrist shall refer the patient to an ophthalmologist.

(B) If the patient has been diagnosed with herpes simplex viral conjunctivitis, herpes simplex viral dermatitis, varicella zoster viral conjunctivitis, or varicella zoster viral dermatitis, and if the patient's condition worsens seven days after diagnosis, the optometrist shall consult with an ophthalmologist. If the patient's condition has not resolved three weeks after diagnosis, the optometrist shall refer the patient to an ophthalmologist.

(13) Oral analgesics that are not controlled substances.

(14) Codeine with compounds and hydrocodone with compounds as listed in the California Uniform Controlled Substances Act (Section 11000 of the Health and Safety Code et seq.) and the United States Uniform Controlled Substances Act (21 U.S.C. Sec. 801 et seq.). The use of these agents shall be limited to three days, with a referral to an ophthalmologist if the pain persists.

(d) In any case where this chapter requires that an optometrist consult with an ophthalmologist, the optometrist shall maintain a written record in the patient's file of the information provided to the ophthalmologist, the ophthalmologist's response and any other relevant information. Upon the consulting ophthalmologist's request and with the patient's consent, the optometrist shall furnish a copy of the record to the ophthalmologist.

(e) An optometrist who is certified to use therapeutic pharmaceutical agents pursuant to Section 3041.3 may also perform all of the following:

(1) Corneal scraping with cultures.

(2) Debridement of corneal epithelia.

(3) Mechanical epilation.

(4) Venipuncture for testing patients suspected of having diabetes.

(5) Suture removal, with prior consultation with the treating physician and surgeon.

(6) Treatment or removal of sebaceous cysts by expression.

(7) Administration of oral fluorescein to patients suspected as having diabetic retinopathy.

(8) Use of an auto-injector to counter anaphylaxis.

(9) Ordering of smears, cultures, sensitivities, complete blood count, mycobacterial culture, acid fast stain, urinalysis, and X-rays necessary for the diagnosis of conditions or diseases of the eye or adnexa. An optometrist may order other types of images subject to prior consultation with an ophthalmologist or appropriate physician and surgeon.

(10) Punctal occlusion by plugs, excluding laser, diathermy, cryotherapy, or other means constituting surgery as defined in this chapter.

(11) The prescription of therapeutic contact lenses, including lenses or devices that incorporate a medication or therapy the optometrist is certified to prescribe or provide.

(12) Removal of foreign bodies from the cornea, eyelid, and conjunctiva with any appropriate instrument other than a scalpel or needle. Corneal foreign bodies shall be

nonperforating, be no deeper than the midstroma, and require no surgical repair upon removal.

(13) For patients over 12 years of age, lacrimal irrigation and dilation, excluding probing of the nasal lacrimal tract. The board shall certify any optometrist who graduated from an accredited school of optometry before May 1, 2000, to perform this procedure after submitting proof of satisfactory completion of 10 procedures under the supervision of an ophthalmologist as confirmed by the ophthalmologist. Any optometrist who graduated from an accredited school of optometry on or after May 1, 2000, shall be exempt from the certification requirement contained in this paragraph.

(f) The board shall grant a certificate to an optometrist certified pursuant to Section 3041.3 for the treatment of glaucoma, as described in subdivision (j), in patients over 18 years of age after the optometrist meets the following applicable requirements:

(1) For licensees who graduated from an accredited school of optometry on or after May 1, 2008, submission of proof of graduation from that institution.

(2) For licensees who were certified to treat glaucoma under this section prior to January 1, 2009, submission of proof of completion of that certification program.

(3) For licensees who have substantially completed the certification requirements pursuant to this section in effect between January 1, 2001, and December 31, 2008, submission of proof of completion of those requirements on or before December 31, 2009. "Substantially completed" means both of the following:

(A) Satisfactory completion of a didactic course of not less than 24 hours in the diagnosis, pharmacological, and other treatment and management of glaucoma.

(B) Treatment of 50 glaucoma patients with a collaborating ophthalmologist for a period of two years for each patient that will conclude on or before December 31, 2009.

(4) For licensees who completed a didactic course of not less than 24 hours in the diagnosis, pharmacological, and other treatment and management of glaucoma, submission of proof of satisfactory completion of the case management requirements for certification established by the board pursuant to Section 3014.10.

(5) For licensees who graduated from an accredited school of optometry on or before May 1, 2008, and not described in paragraph (2), (3), or (4), submission of proof of satisfactory completion of the requirements for certification established by the board pursuant to Section 3014.10.

(g) Other than for prescription ophthalmic devices described in subdivision (b) of Section 2541, any dispensing of a therapeutic pharmaceutical agent by an optometrist shall be without charge.

(h) The practice of optometry does not include performing surgery. "Surgery" means any procedure in which human tissue is cut, altered, or otherwise infiltrated by mechanical or laser means. "Surgery" does not include those procedures specified in subdivision (e). Nothing in this section shall limit an optometrist's authority to utilize diagnostic laser and ultrasound technology within his or her scope of practice.

(i) An optometrist licensed under this chapter is subject to the provisions of Section 2290.5 for purposes of practicing telemedicine.

(j) For purposes of this chapter, "glaucoma" means either of the following:

(1) All primary open-angle glaucoma.

(2) Exfoliation and pigmentary glaucoma.

(k) In an emergency, an optometrist shall stabilize, if possible, and immediately refer any patient who has an acute attack of angle closure to an ophthalmologist.

SEC. 2. Section 3041.10 is added to the Business and Professions Code, to read:

3041.10. (a) The Legislature hereby finds and declares that it is necessary to ensure that the public is adequately protected during the transition to full certification for all licensed optometrists who desire to treat and manage glaucoma patients.

(b) The board shall appoint a Glaucoma Diagnosis and Treatment Advisory Committee as soon as practicable after January 1, 2009. The committee shall consist of six members currently licensed and in active practice in their professions in California, with the following qualifications:

(1) Two members shall be optometrists who were certified by the board to treat glaucoma pursuant to the provisions of subdivision (f) of Section 3041, as that provision read on January 1, 2001, and who are actively managing glaucoma patients in full-time practice.

(2) One member shall be a glaucoma-certified optometrist currently active in educating optometric students in glaucoma.

(3) One member shall be a physician and surgeon board-certified in ophthalmology with a specialty or subspecialty in glaucoma who is currently active in educating optometric students in glaucoma.

(4) Two members shall be physicians and surgeons board-certified in ophthalmology who treat glaucoma patients.

(c) The board shall appoint the members of the committee from a list provided by the following organizations:

(1) For the optometrists' appointments, the California Optometric Association.

(2) For the physician and surgeons' appointments, the California Medical Association and the California Academy of Eye Physicians and Surgeons.

(d) The committee shall establish requirements for glaucoma certification, as authorized by Section 3041, by recommending both of the following:

(1) An appropriate curriculum for case management of patients diagnosed with glaucoma for applicants for certification described in paragraph (4) of subdivision (f) of Section 3041.

(2) An appropriate combined curriculum of didactic instruction in the diagnostic, pharmacological, and other treatment and management of glaucoma, and case management of patients diagnosed with glaucoma, for certification described in paragraph (5) of subdivision (f) of Section 3041. In developing its findings, the committee shall presume that licensees who apply for glaucoma certification and who graduated from an accredited school of optometry on or after May 1, 2008, possess sufficient didactic and case management training in the treatment and management of patients diagnosed with glaucoma to be certified. After reviewing training programs for representative graduates, the committee in its discretion may recommend additional glaucoma training to the Office of Examination Resources pursuant to subdivision (f) to be completed before a license renewal application from any licensee described in this subdivision is approved.

(e) The committee shall meet at such times and places as determined by the board and shall not meet initially until all six members are appointed. Committee meetings shall be public and a quorum shall consist of four members in attendance at any properly noticed meeting.
(f) (1) The committee shall submit its final recommendations to the Office of Examination Resources of the department on or before April 1,2009. The office shall examine the committee's recommended curriculum requirements to determine whether they will do the following:

(A) Adequately protect glaucoma patients.

(B) Ensure that defined applicant optometrists will be certified to treat glaucoma on an appropriate and timely basis.

(C) Be consistent with the department's and board's examination validation for licensure and occupational analyses policies adopted pursuant to subdivision (b) of Section 139.

(2) The office shall present its findings and any modifications necessary to meet the requirements of paragraph (1) to the board on or before July 1, 2009. The board shall adopt the findings of the office and shall implement certification requirements pursuant to this section on or before January 1, 2010.

(g) This section shall remain in effect only until January 1, 2010, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2010, deletes or extends that date.

SEC. 3. Section 3152 of the Business and Professions Code is amended to read:
3152. The amount of fees and penalties prescribed by this chapter shall be established by the board in amounts not greater than those specified in the following schedule:
(a) The fee for applicants applying for a license shall not exceed two hundred seventy-five dollars ($275).
(b) The fee for renewal of an optometric license shall not exceed five hundred dollars ($500).
(c) The annual fee for the renewal of a branch office license shall not exceed seventy-five dollars ($75).
(d) The fee for a branch office license shall not exceed seventy-five dollars ($75).
(e) The penalty for failure to pay the annual fee for renewal of a branch office license shall not exceed twenty-five dollars ($25).
(f) The fee for issuance of a license or upon change of name authorized by law of a person holding a license under this chapter shall not exceed twenty-five dollars ($25).
(g) The delinquency fee for renewal of an optometric license shall not exceed fifty dollars ($50).
(h) The application fee for a certificate to treat lacrimal irrigation and dilation shall not exceed fifty dollars ($50).
(i) The application fee for a certificate to treat glaucoma shall not exceed fifty dollars ($50).
(j) The fee for approval of a continuing education course shall not exceed one hundred dollars ($100).
(k) The fee for issuance of a statement of licensure shall not exceed forty dollars ($40).
(*l*) The fee for biennial renewal of a statement of licensure shall not exceed forty dollars ($40).
(m) The delinquency fee for renewal of a statement of licensure shall not exceed twenty dollars ($20).

(n) The application fee for a fictitious name permit shall not exceed fifty dollars ($50).
(o) The renewal fee for a fictitious name permit shall not exceed fifty dollars ($50).
(p) The delinquency fee for renewal of a fictitious name permit shall not exceed twenty-five dollars ($25).

Tab 3
Letters from Senators Correa and Aanestad

CAPITOL OFFICE
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ROOM 4082
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SENATOR.CORREA@SENATE.CA.GOV

California State Senate

SENATOR
LOU CORREA
THIRTY-FOURTH SENATE DISTRICT

COMMITTEES
BANKING, FINANCE & INSURANCE
VETERANS AFFAIRS
CHAIR
SELECT COMMITTEE ON MANUFACTURED HOMES & COMMUNITIES
CHAIR
SELECT COMMITTEE ON OC INFRASTRUCTURE & TECHNOLOGY
MEMBER
SELECT COMMITTEE ON ASIAN PACIFIC ISLANDER AFFAIRS
MEMBER
SELECT COMMITTEE ON CALIFORNIA-MEXICO COOPERATION

March 31, 2009

Sonja Merold, Chief
Office of Professional Examination Services
2420 Del Paso Road, Suite 265
Sacramento, CA. 95834

Re: Glaucoma Diagnosis and Treatment Advisory Committee (GDATAC)

Dear Ms. Merold:

I am the author of Senate Bill 1406, which was approved by the Governor and chaptered by the Secretary of State on September 26, 2008. The legislation was coauthored by my Senate Republican colleague, Dr. Sam Aanestad.

It was the topic of intense discussion, both in committee hearings and in our respective caucuses and was ultimately negotiated among the stakeholders to such satisfaction that the final version, amended August 21, 2008, by members of the Legislature that it passed the Assembly, 74-0, and the Senate concurred in the Assembly amendments, 38-0..

Please make no mistake about it; SB 1406 was negotiated to fine detail. Included in that discussion was the creation of the Glaucoma Diagnosis and Treatment Advisory Committee (GDATAC). GDATAC was not created to rehash the legislation, but to specifically establish requirements for glaucoma certification. We were very specific that GDATAC shall presume that licensees who apply for glaucoma certification and who graduated from an accredited school of optometry on or after May 1, 2008, possess sufficient didactic and case management training and the treatment and management of patients diagnosed with glaucoma to be certified.

This was done because we wanted to give GDATAC a baseline to begin their discussion regarding possible additional training to enable those licensees who graduated prior to May 1, 2008 to become certified. The problem we were addressing was that the previous certification process authorized by SB 929 in 2000 had been too onerous and was ultimately ineffective. We wanted to guarantee that SB 1406 would make it possible for more optometrists to be treating vulnerable populations in the state of California. The May 1, 2008 standard is clear.

I am disappointed that the members of the committee were unable to come to agreement. I am especially disappointed that anyone would become so intransigent as to suggest that this committee was put into place in order to make certification more difficult. That is ridiculous. This legislation is clear that the committee was to follow the provisions in SB 1406 to make recommendations that both protect the public and promote effective, efficient glaucoma certification.

I would refer you to the final analysis written for the Senate Business & Professions Committee, in which it states very clearly on page 8 that SB 1406 is an expansion of the optometric scope of practice. At a time when health care is expensive to the point of being prohibitive, this will allow more people at risk for vision loss to receive much needed attention.

Let me dare to repeat that all of the stakeholders were in agreement that the glaucoma treatment allowed under SB 1406 would be made available to the widest population possible. The charge of the GDATAC was to measure the glaucoma education provided in our schools and use that as a gauge for future didactic and case management instruction for experienced doctors willing and able to take on the challenge of handling the glaucoma needs of California patients.

In your review of the responsibilities of GDATAC I hope that you will see clearly, and understand completely, that we believe that the Legislature, the medical doctors, the ophthalmologists, and optometrists expressed confidence in the glaucoma treatment that optometry can provide. Please do not allow the glaucoma portion of this bill, which is the only responsibility of GDATAC, to be contaminated. We have people who need glaucoma care in California. This bill says clearly that optometrists need to be providing that care.

Best regards,

Lou Correa

Lou Correa
State Senator

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California State Senate

SENATOR
SAM AANESTAD
FOURTH SENATORIAL DISTRICT

COMMITTEES
APPROPRIATIONS
BUSINESS AND PROFESSIONS
VICE-CHAIR
ENVIRONMENTAL QUALITY
HEALTH
VICE-CHAIR
JOINT COMMITTEE
EMERGENCY SERVICES & HOMELAND SECURITY
TASK FORCE
CA TASK FORCE ON YOUTH & WORKPLACE WELLNESS

March 31, 2009

Sonja Merold, Chief
Office of Professional Examination Services
2420 Del Paso Road, Suite 265
Sacramento, CA 95834

Re: Glaucoma Diagnosis and Treatment Advisory Committee (GDATAC)

Dear Ms. Merold:

Senate Bill 1406, the advancement of scope legislation for optometry in California, was a complex piece of legislation that was negotiated in great detail, both with the stakeholders and members of the Legislature.

SB 1406 mandates that the GDATC will submit its final recommendations for the certification of the limited glaucoma treatment allowable in the bill.

The legislation says very clearly that those who graduate on or after May 1, 2008, shall be considered capable of treating glaucoma. For those who graduate before May 1, 2008, the legislation allows the GDATC some discretion for continuing education credits and other requirements for certification.

If the final report is not submitted to the Office of Examination Resources by April 1, 2009, please contact my office explaining the cause of the delay, and an indication of when the report is expected to be released.

I look forward to your prompt reply.

Sincerely,

Sam Aanestad
Senator, Fourth District

SA:lfh

Tab 4

Out-of-State Optometry School Glaucoma Curriculum Survey

Name of College/School:_____Date_____
Name of Contact Person:_____
Contact Information: email_____ Tel_____

1. List courses, glaucoma related topics covered in each course, and hours spent on each topic for each of the academic years.
2. How many total hours in didactic curriculum devoted to glaucoma?
3. How many hours of clinical experience devoted to glaucoma diagnosis, treatment and management?
4. How much of didactic and clinical experience is devoted to primary open angle glaucoma, pigmentary glaucoma, pseudoexfoliation glaucoma, and narrow angle glaucoma?
5. How many glaucoma encounters do clinicians experience prior to graduation?
6. List types and severity of glaucoma encounters:
7. What is the student experience in developing treatment plans?
8. How is glaucoma training conducted (e.g. one-on-one with staff doctor or in group settings)?
9. Are ophthalmologists involved in the training of optometry students?
10. How much student-ophthalmology contact time is involved?
11. List where students receive most of clinical experiences in glaucoma-at school or on rotation (which sites?):
12. How many students are enrolled in your school? From what states or what countries?
13. How many students graduate from your school? How many practice out-of-state? What states?
14. Since laws were passed in your state granting ODs permission to treat eye medical conditions, what kinds of changes have you made to your curriculum?
15. When was your didactic and clinical program last accredited by ACOE? By a regional accrediting body? (if possible, please provide copies of pertinent standards about curriculum and clinical care).
16. How do you define entry-level knowledge and skills for optometry?
17. Does your state permit the treatment of glaucoma? Since when?
18. Are there any restrictions in the treatment of glaucoma?
19. Are there any certification requirements for ODs to treat glaucoma?
20. What are the certification requirements: didactic, case management, co-management, examinations, numbers of patients/encounters, etc?
21. Are you aware of any public health safety issues involving ODs treating glaucoma? State Board complaints, disciplinary actions, malpractice lawsuits/judgments, increases in liability insurance, etc?
22. Do you have any other pertinent information regarding curriculum or clinical training not covered above?

Tab 5

Glaucoma Curriculum at University of The Incarnate Word School of Optometry

Name of College/School: University of The Incarnate Word School of Optometry
Date: 04/30/2009
Name of Contact Person: Dr. Russell W. Hart, Associate Dean for Academic Affairs
Contact Information: Email: rwhart@uiwtx.edu Tel: (210) 832-2192

1. List courses, glaucoma related topics covered in each course, and hours spent on each topic for each of the academic years.....
   - A. Clinical Ocular Anatomy (1st year)
     - a. Clinical integrative lectures — 2 hrs
       - i. Glaucoma-related anatomical structures
         1. Primary and Secondary Glaucoma
         2. Iris, angle, cornea, optic nerve head & vascular supply, lamina/sclera
         3. Cavernous sinus anatomy & fistula
         4. Venous drainage
     - b. Structure and function of optic nerve/retina — 1 hr
   - B. Ocular Biochemistry and Molecular Genetics (1st year)
     - a. Genetics of Glaucoma — 1 hr
     - b. Hereditary Diseases associated with Glaucoma — 1 hr
   - C. Intermediate Optometry (1st year)
     - a. Diagnostic techniques used for diagnosis of glaucoma
       - i. 3 and 4 mirror gonioscopy — 3 hrs
       - ii. Goldmann and other tonometry methods — 2 hrs
       - iii. Pachymetry — 1 hr
   - D. Visual and Applied Optics (1st year)
     - a. Clinically applied optics of pachymetry, OCT, GDx, HRT — 1 hr
   - E. Basic Optometry (1st year)
     - a. Diagnostic techniques used for diagnosis of glaucoma
       - i. Pupil & color vision testing — 1 hr
       - ii. Confrontation & automated visual field testing — 1 hr
   - F. Ocular Physiology (2nd year)
     - a. Physical dimensions — ½ hr
     - b. Ciliary Body structure/function/blood supply/innervations — ½ hr
     - c. Aqueous Humor formation including pharmacological control — 1 hr
     - d. Aqueous Humor function & composition — ½ hr
     - e. Aqueous Outflow pathways/pharmacological control/glaucoma — 1 hr
     - f. Intraocular Pressure/function/regulation/measurement — 1 hr
     - g. IOP and its relationship to glaucoma and other eye disease — 1 hr

h. Optic nerve blood supply and control of blood supply 1 hr
i. Blood supply and glaucoma/systemic disease associations 1 hr
j. Auto-regulation and glaucomatous damage 1 hr
k. Venous drainage and fistula physiology ½ hr
l. Apoptosis and No-go receptors 1 hr
m. Types of tonometers & sources of error 1 hr

G. Pharmacological Sciences I (2nd year)
a. Autonomic Nervous System drugs affecting IOP/Glaucoma 3 hrs
b. Anti-inflammatory agents affecting IOP/Glaucoma ½ hr

H. Advanced Optometry (2nd year)
a. Diagnostic techniques used for diagnosis of glaucoma
i. Binocular indirect ophthalmoscopy 2 hrs
ii. Biomicroscopy of anterior segment 2 hrs
iii. Biomicroscopy evaluation of ONH & peripapillary retina (78/90/etc.) 2 hrs

I. Clinical Optometry (2nd year)
a. Case analysis: basic glaucoma cases 4 hrs

J. Integrative Problem-Based Learning (2nd year) 6 hrs
a. Two weeks of glaucoma-related cases
b. Case-based review of presenting visual and ocular signs consistent with a diagnosis of glaucoma
c. Discussion of the pathophysiology of glaucoma
d. Mechanism of action
e. Apoptosis & neuroprotection
f. Review of ocular pharmacology related to glaucoma management
i. Beta blocker/alpha agonists/prostaglandin analogs/combos
g. Discussion of appropriate testing used to confirm diagnosis
h. Discussion of current and new technologies for diagnosis/management
i. VFs, SLGT, GDx, OCT, HRT, Fundus Photos, Optos, serial tonometry
ii. Pachymetry and importance of CCT in Dx/Management
i. Discussion of recent clinical trials and outcomes for glaucoma
j. Discussion of genetic testing in glaucoma
k. Generating a treatment plan/target pressure/follow-up
l. Issues of compliance/examination content
m. Revising treatment plans and devising management strategies
n. Long-term follow-up strategies
o. Complications/Adverse reactions/Prognoses of glaucoma management
p. Implementation of evidence-based treatment plans

K. Anterior Segment Pathology (2nd year)

a. Iridocorneal dysgenesis 1 hr
   i. Posterior embryotoxon/Axenfeld-Rieger/Algille's/Peter's anomaly
   ii. Aniridia
b. ICE
   i. Essential iris atrophy/Chandler's/Cogan-Reese 1 hr
c. Posterior polymorphous dystrophy ½ hr
d. Inflammatory disease 3 hrs
   i. Idiopathic orbital inflammation
   ii. Iridoeyelitis
   iii. Orbital myositis
   iv. Tolosa – Hunt syndrome
   v. Wegener granulomatosis
   vi. Juvenile rheumatoid arthritis
   vii. Ankylosing Spondylitis
e. Lens dislocation/subluxation-related syndrome 2 hrs
f. Vascular malformations 2 hrs
   i. varices
   ii. lymphangioma
   iii. direct carotid-cavernous fistula
   iv. indirect carotid-cavernous fistula
g. Granulomatous conditions 2 hrs
   i. Sarcoid
   ii. VKH
   iii. Sympathetic ophthalmia
   iv. Wegener's granulomatosis
   v. Uveitis (chronic)
   vi. phakoanaphylactic endophthalmitis
h. Glaucoma associated with cataract 1 hr
i. Gonioscopic training 6 hrs
   i. Indirect Gonioscopy
   ii. Techniques and examination
   iii. Normal anatomy
   iv. Grading and documentation

L. Ocular Pharmacology (2nd year)
a. Pharmacokinetics ½ hr
b. Autonomic nervous system ½ hr
c. Drug administration & pro-drugs ½ hr
d. Glaucoma medications (mode of action, dosing, side effects, drug interactions, complications, compliance & cost) 8 hrs
   i. Miotics

ii. Adrenergic Antagonists
iii. Adrenergic Agonist
iv. Adrenergic Agonist alpha and beta blockers
v. Prostaglandin Analogs & lipids
vi. Carbonic Anhydrase Inhibitors – topical & oral

e. Drugs used in emergent glaucoma
i. Oral
ii. Topical

f. Drug preparations and combination medications

M. Pharmacological Sciences II (2nd year)
a. Drugs affecting glaucoma diagnosis/management 2 hrs
b. Drug interactions relevant to glaucoma 1 hr

N. Pathology of the Posterior Segment I & II (2nd and 3rd year)
a. Disease state of the retina in glaucoma 4 hrs
i. Diabetic retinopathy, venous and arterial occlusion
ii. Carotid disease & carotid-cavernous fistula
iii. Giant cell arteritis
iv. Retinopathy of prematurity, sickle cell retinopathy
v. Coat's, Eales' & Stickler's
b. Disease state of the ONH in glaucoma 2 hrs
c. Diagnosis of glaucoma
i. Visual field testing 2 hrs
ii. OCT, GDx, HRT and other technologies 2 hrs
iii. Pachymetry 1 hr
iv. IOP ½ hr
v. Relationship to anterior segment finding 2 hrs

O. Pediatric Optometry (3rd year)
a. Congenital & developmental glaucoma 3 hrs
i. Genetics, demographics, diagnosis, management, follow-up
ii. Primary congenital (infantile) glaucoma
iii. Review of anterior segment syndrome & glaucoma
iv. Nanophthalmos
v. Phacomatoses & glaucoma
b. Juvenile open angle glaucoma (diagnosis, treatment, follow-up) 1 hr
c. Other glaucoma syndromes 1 hr

P. Glaucoma Diagnosis and Management course (3rd year) 45 hrs
a. Course dedicated to demographics, studies in glaucoma, standard of care, and the diagnosis and treatment of the glaucomas
i. Introduction demographics and glaucoma screening

ii. Optic nerve & peripapillery retina in glaucoma
iii. Principles of diagnosis in glaucoma
iv. Co-morbidities & systemic disease
v. Evidence-based studies in glaucoma
vi. Primary open angle glaucoma
vii. Primary closed angle glaucoma
viii. Congenital developmental glaucoma
ix. Juvenile open angle glaucoma
x. Secondary glaucoma
xi. Glaucoma syndromes
xii. Glaucoma following ocular surgery
xiii. Mixed mechanism glaucoma
xiv. Automated perimetry
xv. Technologies used in glaucoma diagnosis
xvi. Management of glaucoma
xvii. Referral criteria
xviii. Ocular treatment/pharmacology
xix. Oral treatment
xx. Laser treatment
xxi. Surgical treatment
xxii. Advanced glaucoma
xxiii. Evidence-based treatment
xxiv. Glaucoma & cataract management
xxv. Coding & billing
xxvi. Preferred practice patterns (AAO)
xxvii. Clinical practice guidelines (AOA)

Q. Neuro-Ophthalmic Disorders (3rd year)
   a. Glaucoma as an optic neuropathy — 2 hrs

R. Legal and Ethical Aspects of Optometry (3rd year)
   a. Clinical legal issues related to glaucoma management — 1 hr
   b. Ethical decisions in glaucoma management — 1 hr

S. Public Health, Epidemiology, and Geriatrics (3rd year)
   a. Survey of clinical trials in Ophthalmology/Optometry — 2 hrs
   b. Epidemiology of glaucoma — 1 hr
   c. Surgical outcomes studies — 1 hr
   d. Glaucoma as it relates to the older population — 1 hr
   e. Screening in glaucoma — 1 hr

T. Peri-operative Management and Techniques (3rd year) — 6 hrs
   a. Glaucoma co-management
   b. Indications for surgical intervention

c. Communications in the co-management relationship
d. Indications for lasers in glaucoma management
    i. Trabeculoplasty
        1. Compliance/legal issues
        2. ALT and SLT
        3. Protocols/prognosis
    ii. Peripheral Iridotomy
        1. Compliance/legal issues
        2. Acute angle closure glaucoma
        3. Protocols/prognosis/long-term expectations
e. Post-operative protocols/expected outcomes
f. Complications and management
    i. Iris hemorrhages/anterior uveitis/non-patent PI
    ii. Mixed-mechanism glaucoma
g. Iridoplasty
h. Combination surgeries
i. Dynamic ultrasound & UBM
j. Trabeculectomy/Filtering/valve/shunt surgeries
    i. Indications and legal issues
    ii. With or without anti-metabolites
    iii. Post-op protocols
    iv. Prognoses
    v. Complications and post-op management
k. Viscoanalostomy
l. Coding and billing issues

U. Advanced Topics Seminar (3^{rd} year) 6 hrs
a. Visual field testing
b. Tonometry
c. GDx
d. OCT
e. HRT
f. Gonioscopy
g. New advances in glaucoma diagnosis and management

TOTAL HOURS IN DIDACTIC CURRICULUM DEVOTED TO GLAUCOMA: 155 hours
(Integrated program is about 110 hours plus a glaucoma course of 45 hours)
HOURS OF CLINICAL EXPERIENCE DEVOTED TO GLAUCOMA DIAGNOSIS, TREATMENT AND MANAGEMENT: 200 HOURS OF CLINICAL TIME

Tab 6

Glaucoma Didactic Curriculum at Southern California College of Optometry

FIRST PROFESSIONAL YEAR

- # 5111 Biomedical Science - the study of the structure and function of the biological macromolecules intermediary metabolism and regulation. Reference is made to unique aspects of biochemistry as it relates to normal and abnormal vision function laboratory isolation, culturing, and identification of the infectious agents.
- # 5210 Anatomy and Physiology II - The anatomy and physiology of the major organ systems of the human body are presented in a correlative fashion. Topics include the renal, gastrointestinal, muscular, and nervous systems. Laboratory instruction includes gross anatomy, histology and physiological study of each organ system. Emphasis is placed on the relationship of physiological function at the cellular, tissue and organ levels to health and disease.
- # 5211 Ocular Anatomy - A detailed study of the human visual apparatus and related structures is presented. Topics are approached from gross anatomical, histological and embryological perspectives. The laboratory is devoted to the demonstration of basic ocular anatomy concepts. Laboratories include dissection of the mammalian eye and examination of the human eye.
- # 5310 Neurophysiology - This course presents the study of the central nervous system, including cellular neurophysiology, organization of sensory pathways, voluntary control of movement, and the physiology of central visual pathways. Laboratory instruction includes the gross and microscopic anatomy of the nervous system, the study of the major sensory and motor pathways of the brain, and discussion of the clinical correlations of neuro-anatomical structure.
- # 5320 Clinical Medicine I - This course provides the fundamental principles of general pathology. Topics of discussion include cell injury and death, cellular repair, inflammation, infection, blood and circulatory disorders, neoplasia,

SECOND PROFESSIONAL YEAR

- # 6160 Clinical Methods II – Introduction to tonometry and its use in glaucoma diagnosis
- # 6162 Ocular Health Procedures – Continued discussion of tonometry (from # 6160) and its use in diagnosis; various forms of tonometry; accuracy issues and new concepts in corneal biomechanical issues affecting tonometry (corneal hysteresis); update on new tonometric techniques – i.e., Pascal DCT, Reichert ORA, etc.
- # 6261 Ocular Health Procedures
- # 6310 Ocular Pharmacology II
- # 6361 Ocular Disease Diagnosis and Management I

THIRD PROFESSIONAL YEAR

- # 7161 Ocular Disease Diagnosis and Management II
- # 7162 Ocular Health Assessment – Includes threshold perimetry; gonioscopy; serial tonometry and pachymetry for glaucoma diagnosis and management
- # 7360 Ocular Disease Case Management
- # 7361 Ocular Health Procedures III
- # 6361 Ocular Disease Diagnosis and Management - Newer types of perimetry (FDT, Matrix, HEP) and imaging modalities (OCT, GDx, HRT) for glaucoma diagnosis and management. Also included are procedures for glaucoma (SLT, ALT) and surgical management of glaucoma (trabeculectomy, tubes/shunts, canaloplasty, etc.)

TOTAL NUMBER OF DIDACTIC HOURS WITH GLAUCOMA: 100

Estimated average glaucoma patient experience: 250-500 encounters

Tab 7

Glaucoma Clinical Care at the Optometric Center of Los Angeles: A Personal Perspective

Allow me to describe the glaucoma clinical experience at the Optometric Center of Los Angeles, an affiliate teaching clinic of the Southern California College of Optometry. About 60% of all senior Interns from SCCO rotate through our facility and work under the supervision of 13 outstanding part-time clinical faculty members who are full time in private practice with other optometrists, ophthalmologists, hospital-based, etc.

Our Center is located in the South Los Angeles area, populated by 70% Hispanics, 25% African-Americans, and 5% of other ethnicities. It is also the third most densely populated area of the County and the one of the poorest with over 1/3 of its population below the federal poverty level. As is well documented African Americans have over 4-5 times greater incidence of glaucoma and the Hispanics over 3 times the prevalence of Caucasians. Not only are there great numbers of patients with great need; but the resources in this area are extremely limited. Our Clinic is one of the few in the area that is available to provide for the visual welfare of this segment of the population.

OCLA is a comprehensive eye and vision care facility. The services provided are Primary Care throughout the week with specialty services such as Low Vision Rehabilitation, Vision Therapy, Contact Lenses, and Ocular Disease superimposed on Primary Care. Ocular Disease Clinic is scheduled on a grand-rounds format and is conducted by a fellowship-trained ophthalmologist in comprehensive ophthalmology and glaucoma.

With regards to glaucoma, the clinic sees all different kinds and all degrees of severity...In addition to POAG, Pseudoexfoliation, Pigmentary, and Narrow Angle Glaucoma as authorized under SB 1406, other types are seen as well: normal tension glaucoma, ocular hypertension, neovascular glaucoma, uveitic glaucoma, traumatic glaucoma, congenital glaucoma, steroid-induced glaucoma, postlaser IOP spikes, etc. We are prepared to diagnose and treat most of these glaucomas, including performing laser procedures such as laser trabeculoplasties (SLT, Argon), laser iridotomies, iridectomies, and iridoplasties. Surgical procedures and neovascular glaucomas requiring anti-VEGF treatment are referred out to local ophthalmologists specializing in glaucoma or retina.

Types of Glaucoma patients seen: new patients who do not know they have glaucoma, new patients who have glaucoma and want to transfer to our clinic for further care; and established patients who are being followed as glaucoma suspects, or who eventually develop glaucoma. We also see patients who are referred by local doctors specifically for glaucoma work up, for co-management with our ophthalmologist, or for laser procedures; and those with end-stage glaucoma are referred to our Low Vision Clinic for visual rehabilitation. Approximately 5 to 7 new cases of glaucoma are seen per clinician and about 50 cases in grand-rounds for 8 clinicians per rotation. All examinations and services are provided first by Interns in consultation with Attending Staff Doctors. Most of our faculty is not glaucoma-certified,

therefore all of the glaucoma patients are referred to Ocular Disease Clinic for co-management with ophthalmology as required by SB 929.

The protocol for glaucoma patients is as follows:
Each patient is generally given a comprehensive primary care exam by an Intern-with an initial assessment made and a treatment plan recommended by that Intern. If there is an indication for glaucoma or any suspicion of glaucoma, the type of glaucoma and the risk factors are considered in the proposed treatment plan with recommendations for medical/laser/surgical treatment or for further work up which may include-OCT/HRT, Pachymetry, Gonioscopy, Serial Tonometry, Threshold Visual Fields, Stereo Optic Disc Imaging, etc. After all testing is completed by the Intern a final treatment plan is developed by the Intern and coordinated with the Attending Staff-the plan includes recommended target IOPs, medications to be used, and frequency of follow-up visits. If the patient has POAG and the Attending Staff is glaucoma certified, treatment is initiated and the patient followed in Primary Care. If the Attending Staff is not glaucoma certified, the patient is scheduled with the Ophthalmologist in Ocular Disease Clinic for a consultation; the patient is presented in a grand-rounds format. After the EyeMD exams the patient and the EyeMD approves treatment plan, the initial prescription is written, and the patient later followed in Primary Care Clinic by the Intern and Attending Staff Doctor. If the patient also has diabetes, the patient's PCP is consulted as well. The grand-rounds program is supplemented with frequent lectures and discussions on glaucoma related topics.

In Primary Care Clinic, the patient is followed very closely-usually every 3 to 4 months or even more frequently during the first year of diagnosis. (However, during any rotation, an Intern would see the patient for the initial examination and work-up for perhaps 1-3 visits; subsequent visits would usually involve another clinician during the following rotation.) The patient is returned to Ocular Disease Clinic if any of the following occurs: the patient develops a secondary form of glaucoma; the patient needs a third medication; the patient requests treatment by an ophthalmologist; the optic nerve damage and visual field loss progress despite IOP control; or the patient needs a laser procedure. If the patient needs any surgical procedure, or any treatment beyond the scope of practice of optometry or beyond the clinic's capabilities, the patient is referred to an appropriate EyeMD for further care.

Tab 8

Glaucoma Didactic Curriculum at UCB School of Optometry

FIRST PROFESSIONAL YEAR (32 hours)

- Vision Science 206A-Aqueous production; Aqueous drainage and glaucoma (4)
- Vision Science 206B-optic nerve blood supply (2)
- Vision Science 206C-PBL: Open angle glaucoma case (3)
- Vision Science 206D-Visual fields: structure and function; optic nerve anatomy and blood supply (4)
- Optometry 200B- Goldman tonometry lecture and lab; optic nerve evaluation lecture and lab (19)

SECOND PROFESSIONAL YEAR (38 hours)

- Optometry 226A-glaucoma pharmacology (6)
- Optometry 236-congenital ocular disorders-glaucoma (2)
- Optometry 200C-gonioscopy-lecture/lab;visual fields-lecture; tonometry-lab (10)
- Optometry 200D-optic nerve drawing-lecture; optic nerve evaluation-lab;visual fiels-lecture/lab; tonometry techniques; pachymetry-lab;gonioscopy-lab (20)

THIRD PROFESSIONAL YEAR (20 hours)

- Optometry 246-ocular emergency-iris/lens (2)
- Optometry 256-perimetry-glaucoma-lecture/lab (10)
- Optometry 435-angle evaluation; gonioscopy-lab ((6)

Optometry 430-glaucoma seminars (2)

TOTAL NUMBER OF DIDACTIC HOURS WITH GLAUCOMA: 90

Estimated average glaucoma patient experience: 450-600 encounters

Course Optometry 430/431----------166 patients

Tab 9
Curriculum Review at Southern California College of Optometry

Purpose: to continually review the professional curriculum for content, depth, sequencing of topic areas and consistency with the scope of optometric practice in all 50 states.

The key participants in reviewing the didactic program are members of the Curriculum Committee-faculty members and student representatives, Associate Dean for Academic Affairs, and the Course Instructors

The key participants in reviewing the clinical program are the Curriculum Committee, Dean for Clinical Education, Chiefs-of-Service, and Clinic Course Instructors.

These are some of the Major Activities with which the Curriculum Committee has been involved since 2002:

2002: Complete revision of didactic curriculum based upon updated definition of entry-level competencies; revisions in scope of practice; surveys of students, faculty and alumni. Results from two occupational analyses of the profession of optometry and an audit of the NBEO examinations were also used by SCCO to assist in the comprehensive curriculum review undertaken during 2002 to help define specific core competencies and learning objectives.
2007-2008: Comprehensive review and substantial changes in curriculum resulting from major restructure of NBEO exams; revised admission prerequisites in the basic sciences; expansion of academic and clinical program; and introduction of pre-clinical course earlier in the curriculum.
2009: Review and revise the basic science preparatory course and related materials for the national board exam.
2009-2010: conduct a comprehensive review of didactic curriculum with respect to content and sequencing of courses; conduct a comprehensive review of the basic science curriculum for clinical integration; review and revise the clinical curriculum and student performance expectations in each professional year; develop "direct" patient care experiences for students in the first and second professional year.

Tab 10
Association of Schools and Colleges of Optometry:
Attributes of OD Graduate

Attributes Report
SPECIAL REPORTS

ATTRIBUTES OF STUDENTS GRADUATING FROM SCHOOLS AND COLLEGES OF OPTOMETRY

An Association of Schools and Colleges of Optometry Report

Accepted by the Board of Directors:
20 June 2000

Committee on Attributes Membership:

David A. Heath, O.D., Ed.M. (Chair)
Vice President & Dean for Academic Affairs
The New England College of Optometry
Boston, MA

Kent M. Daum, O.D., Ph.D.
Associate Professor of Optometry
University of Alabama at Birmingham,
School of Optometry
Birmingham, AL

Anthony F. DiStefano, O.D., M.P.H.
Vice President & Dean for Academic Affairs
The Pennsylvania College of Optometry
Elkins Park, PA

Charles L. Haine, O.D., M.S.
Vice President & Dean for Academic Affairs
Southern College of Optometry
Memphis, TN

Steven H. Schwartz, O.D., Ph.D.
Vice President & Dean for Academic Affairs
State University of New York,
College of Optometry
New York, NY

Doctors of Optometry
(American Optometric Association definition)

Doctors of optometry are independent primary health care providers who examine, diagnose, treat and manage diseases and disorders of the visual system, the eye and associated structures as well as diagnose related systemic conditions.

Optometry - A Responsible Profession

Summit on Optometric Education
Scope of Optometric Practice (1992)

Endorsed by the
American Optometric Association (1996)
and
The Association of Schools and Colleges of Optometry (1996)

The profession of optometry fulfills the vision and eye care needs of the public through clinical care, research and education, all of which enhance the quality of life.

The scope of optometric knowledge and practice includes the prevention, examination and evaluation, diagnosis, rehabilitation, treatment and management of disorders, dysfunctions and diseases of the visual system, the eye and associated structures; and the evaluation and diagnosis of related systemic conditions.

Optometric practice is dynamic, with the emphasis on patient care services at the general practice level. Responding to the changing needs of society, the profession must have access to all methods and modalities of contemporary practice.

Entry-level competencies include the professional attitudes, skills and knowledge to ensure safe and effective patient care outcomes and to support life-long learning. The maintenance of continuing competencies and professional growth must be ensured by continuing learning and assessment and thereby it sustains the integrity of professional licensure. Additional education and training provide advanced practice skills and knowledge in specialized areas beyond those requisite at entry.

Attributes of the Graduating Student from Schools and Colleges of Optometry

Over the past decade the profession has moved towards a better delineation of the scope and role of optometry within the broader health care system. A key element of this process has been the elucidation of entry-level competency, or in the case of Doctor of Optometry degree programs - the exit competencies needed for a new optometrist beginning in general practice.

This report, "Attributes of Students Graduating from Schools and Colleges of Optometry," provides, as a national resource, a series of competency statements that broadly define the attributes expected of students graduating from any one of the schools or colleges of optometry in the United States. The Faculty of each institution holds the responsibility to

develop curriculum, and to assess and verify that each graduate has demonstrated the attributes described.

Background

Over the past several years, the Association of Schools and Colleges of Optometry (ASCO), with the support and participation of the American Optometric Association (AOA), has worked to develop a clearer understanding of entry-level competency and/or the competencies expected of students graduating from optometry degree programs in the United States. The purpose of the effort has been to provide a nationally accepted statement of common goals for Doctor of Optometry degree programs. With the development of a common set of competency statements, the curricula of optometry's schools and colleges will be more clearly understood in terms of purpose, content and outcomes expectations.

The impetus behind this effort may be traced to an increasing need to effectively communicate the goals and nature of optometric education to the public, the health care industry and government agencies, as well as changing expectations in the accreditation process. Similarly, there has been a need for schools and colleges of optometry to better understand the changing nature of the health care environment and to adapt their curricula to the changing realities of optometric practice.

In October 1998, the Association of Schools and Colleges of Optometry formed a Committee on Attributes to define the attributes of graduating students. The creation of this Committee followed the acceptance of the ASCO white-paper, " A Model for Entry-Level Determination (MELD)." The model drew from several conferences and the efforts of a number of organizations to establish a process, which would guide the development of professional competency statements, particularly as they related to entry-level practice. With the acceptance of the white paper, the process for determining the broad attributes of students graduating from the nation's schools and colleges of optometry was established.

The Committee on Attributes was composed of five chief academic officers of schools or colleges of optometry. After an assessment of efforts among other health care professions, the committee chose to organize the attributes within three categories: Knowledge, Skills and Professionalism. Each of the five Committee members worked independently with their faculty to develop draft statements. These were then merged, reviewed as a first draft and subsequently shared with the chief academic officers of the schools and colleges of optometry. The resulting document was then referred to all Schools and Colleges of Optometry for review and comment, and subsequently to other optometric organizations for external review and comment. The final report was presented to the ASCO Board of Directors on 20 June 2000.

Assumptions:

The attributes expected of the new graduate reflect a body of knowledge, skills and professional attitudes at one point in a professional career. The knowledge, skills and attitudes that are appropriate at the point of entry into the practice of optometry are not defined in isolation; rather they are affected by many variables including state laws, the nature of the educational process, the structure of the profession, health care policies, the economy, and technology, to name but a few. In addition to applying the decision

rules developed in the MELD report, it is important to define the environmental assumptions used at the time the attributes were defined.

What follows are the planning assumptions upon which the report "Attributes of Students Graduating from Schools and Colleges of Optometry" has been based. These may be classified into two broad categories: 1) the nature of the Doctor of Optometry as a health care provider, and 2) the nature of the educational and professional environments.

The Nature of the Doctor of Optometry as a Health Care Provider

Doctors of Optometry are:

- expected to manage every relevant condition in a manner that assures safe and effective care for the patient. However, the level at which the condition is managed is expected to differ from entry-level following practice experience or supplemental education.
- aware of their individual competencies and conduct themselves accordingly ("as taught").
- responsible for ongoing self-learning and for remaining current and competent in their knowledge and skills.
- expected to utilize all resources, including ancillary personnel, intra- and inter-professional consultation, co-management and referral in securing the best possible care for their patients.
- expected to commit themselves to the profession as expressed in the Optometric Oath and AOA Code of Ethics.
- expected to manage their practices in a manner that is appropriate within the health care delivery system and that promotes patient access to eye and vision care.

The Nature of the Educational and Professional Environments

- The central goal of Doctor of Optometry degree programs is to prepare students to enter into the general practice of optometry.
- The Doctor of Optometry will continue to be a post-baccalaureate degree program, which is four years in duration.
- Additional post-graduate education and training opportunities provide advanced practice skills and knowledge in specialized areas beyond those required for the general practice of optometry.
- The practice of optometry is regulated by State Boards of Optometry and requires an independent assessment of competencies prior to licensure.

THE NEW DOCTOR OF OPTOMETRY MUST BE PROFESSIONAL & ETHICAL

To serve the public and the profession well, new graduates must embrace and demonstrate the ethical and professional standards appropriate to being recognized as a health care provider. The new graduate must also recognize that the completion of the Doctor of Optometry degree program is only the first step in a life-long commitment to self-directed learning and continual professional improvement.

The School or College of Optometry shall ensure that before graduation each student will have demonstrated critical professional and personal attributes, including:

Personal attributes

- A commitment to life-long learning and providing the highest standard of care.
- The ability to incorporate ethical principles into decisions affecting patient care and the practice of optometry.
- The ability to acquire, analyze and apply new information while making reasonable and informed decisions that are consistent with the interests and needs of the patient and broader community.
- Problem-solving and critical thinking skills that integrate current knowledge, scientific advances, and the human/social dimensions of patient care to assure the highest quality of care for each patient.
- The ability to recognize personal limitations regarding optimal patient care and to work with the broader health care community in providing the best care possible.

Professional attributes

- An understanding and application of professional ethics and standards in the practice of optometry, always keeping patient's welfare foremost.
- Professionalism, by demonstrating honesty and integrity in all interactions with patients and their families, colleagues, and others with whom the optometrist must engage in his/her professional life.
- A respect for the dignity of every patient and a commitment to empathetic and confidential care.
- Professionalism in understanding the challenges to the optometric profession posed by potential conflicts of interest inherent in health care delivery.
- A commitment to be actively involved in organized optometry and the community.

THE NEW OPTOMETRIST MUST BE KNOWLEDGEABLE

To provide quality eye and vision care to their patients, graduating Doctors of Optometry must have an established knowledge of the basic and clinical sciences. The foundation must be broad and include the biological, medical, vision and optical sciences, as well as a basic understanding of the health care delivery system. The Doctor of Optometry must recognize the dynamic nature of knowledge, and possess the commitment and skills needed to responsibly assess and apply new information and treatment strategies throughout his/her career.

The School or College of Optometry shall ensure that before graduation each student will have demonstrated knowledge of:

- Basic body systems, with special emphasis on the ocular and visual system and their interrelationships to the body as a whole.
- The various processes and causes that lead to dysfunction and disease, and the effect that these processes can have on the body and its major organ systems, with special emphasis on the ocular and visual systems.

- Mechanisms of actions of the various classes of pharmaceutical agents. Their interactions and their safe and effective use for the treatment of disease and conditions affecting the eye and visual system.
- The structures and processes contributing to the development of refractive error and other optical and perceptual abnormalities of the visual system.
- The optics of the eye and ophthalmic lens systems (including spectacles, contact lenses and low vision devices) used to correct refractive, oculomotor and other vision disorders.
- Visual development and vision function with respect to deviation and enhancement such as, but not limited to, strabismus, amblyopia, oculomotor, accommodation, and visual perception.
- Vision therapy and other rehabilitative methods used for the management of common visual disorders.
- The psychosocial dynamics of the doctor/patient relationship and an understanding of the social, psychological, and economic forces affecting diverse patient populations.
- Practice management structures and strategies as they pertain to the various practice settings.
- The critical elements of verbal and written communications and, clear and appropriate documentation of patient encounters.

THE NEW OPTOMETRIST MUST BE SKILLFUL

To provide the highest quality of care to their patients, Doctors of Optometry must possess appropriate cognitive and motor skills needed to prevent, diagnose, treat and manage clinical conditions which are within the scope of their professional responsibilities.

The School or College of Optometry shall ensure that before graduation each student will have demonstrated:

- All the skills required for the diagnosis, triage, management and/or treatment of common visual conditions and ocular diseases, including or resulting from:
    - refractive anomalies
    - abnormalities of accommodation
    - abnormalities of monocular or binocular vision skills
    - oculomotor and sensory/perceptual dysfunctions
    - ocular disease and trauma
    - prior ocular surgery and/or laser intervention
    - systemic disease
    - environmental or occupational conditions
- The ability to order and interpret frequently needed laboratory and diagnostic procedures.
- The critical thinking skills needed to assess the patient's visual and physical status and to interpret and synthesize the data to formulate and execute effective management plans.
- The ability to prescribe and/or use ophthalmic materials, contact lenses, vision therapy, low vision systems, pharmaceuticals, and certain surgical procedures, to treat and otherwise manage common vision disorders and disease.

- The ability to recognize and initiate the coordination of care for patients requiring advanced medical or specialty care.
- The ability to recognize life threatening conditions and to initiate intervention.
- Effective communication skills, both orally and in writing, as appropriate for maximizing successful patient care outcomes.
- The ability to realistically assess personal competencies and limitations.
- The ability to appropriately use all resources including the use of ancillary personnel, intra- and inter-professional consultation, co-management and referral in ensuring the best quality patient care.
- The ability to access knowledge, (including through the use of information technology), and manage information, and to apply that information in making decisions about patient care and health care delivery.

TAB 10A

The following are some examples of Entry-Level Definitions adopted by schools of optometry:

Ohio Entry-Level Definition-An entry level practitioner is able to manage all patients who present with a vision problem, vision performance-related problem or a systemic condition that manifests ocular signs and symptoms. The entry-level practitioner is competent to differentially diagnose and manage any condition that is within the scope of practice as established by state laws regulating the practice of optometry. The entry level practitioner is competent to detect and assess the health risk of all other abnormalities manifest by the visual system, so as to make an appropriate referral.

SCCO Entry-Level Clinical Competency: Definition: Entry-level clinical competency is the set of cognitive, psychomotor and affective skills required to effectively evaluate, diagnose and manage the most commonly presenting conditions, and critical uncommon conditions that may cause loss of vision, less than optimal visual function or negatively effect systemic health and quality of life.

With respect to "cognitive skills"-this refers to a knowledge base, critical thinking and clinical decision making.
With respect to "manage"-this refers to treatment, referral, co-management, monitoring, patient education, and palliative care.

UCB:
Consistent with our mission, our primary goal is to educate and train primary care optometrists who at entry into the profession have the following skills and knowledge (in line with ASCO attributes for entry level practice). The optometric graduate will have:

• A well-established knowledge of the basic and clinical sciences including the biological, medical, vision and optical sciences.
• All the skills required for the diagnosis, triage, management (either independent or co-management) and/or treatment of common visual conditions and ocular diseases, including or resulting from:
• refractive anomalies
• abnormalities of monocular or binocular visual skills
• oculomotor and sensory/perceptual dysfunctions
• ocular disease and trauma
• systemic disease
• environmental or occupational conditions
• The critical thinking skills needed to assess the patient's status and to interpret and synthesize the data to formulate and execute effective patient management plans.
• The ability to prescribe or use ophthalmic materials, contact lenses, low vision aids, pharmaceuticals, and vision therapy, to treat and otherwise manage common visual disorders and disease.
• The ability to recognize personal limitations with regards to optimal patient care and to work with the broader health care community in providing the best care possible.

• Effective communication skills as appropriate for maximizing successful patient care outcomes.
• Commitment to and practice of professional ethics and always keeping the patient's welfare foremost.
• Professionalism, by demonstrating honesty and integrity in all interactions.
• The ability to access knowledge, use information technology, and manage information, and to apply that information in making decisions about patient care and health care delivery.
• A commitment to life-long learning and providing the highest standard of care.

Tab 11

Accreditation Council on Optometric Education
Accredited Professional Optometric Degree Programs
27 February 2009

The Accreditation Council on Optometric Education has awarded the professional optometric degree programs below one of the following classifications:

Preliminary Approval: a pre-accreditation classification granted to a program that has clearly demonstrated it is developing in accordance with Council standards. The program has approval to begin student recruitment, selection and admissions, and to begin offering the program.

Accredited: a classification granted to a program that generally meets the standards for accreditation.

Accredited with Conditions: A classification granted to a program with major deficiencies or weaknesses with reference to the standards of accreditation. This classification indicates that the educational effectiveness of the program is in jeopardy. *Currently, no programs are Accredited with Conditions.*

For additional information about ACOE, visit our website at www.theacoe.org.

Ferris State University Michigan College of Optometry 1310 Cramer Circle Big Rapids, MI 49307-2738 Nancy Peterson-Klein, O.D., Interim Dean	Telephone: **231-591-3700** Web address: **www.ferris.edu/mco** Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2013**
Illinois College of Optometry 3241 South Michigan Avenue Chicago, IL 60616 Arol Augsburger, O.D., M.S., President	Telephone: **312-949-7400** Web address: **www.ico.edu** Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2009**
Indiana University, School of Optometry 800 East Atwater Bloomington, IN 47405-3680 P. Sarita Soni, O.D., M.S., Interim Dean	Telephone: **812-855-4447** Web address: **www.opt.indiana.edu** Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2013**
Inter American University of Puerto Rico, School of Optometry 500 Carretera Dr John Will Harris Bayamon, PR 00957 Andres Pagan, O.D., MPH, Dean	Telephone: **787-765-1915** Web address: **www.optonet.inter.edu** Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2013**
Midwestern University Arizona College of Optometry 19555 N 59th Ave Glendale, AZ 85308 Hector Santiago, OD, Ph.D., Dean	Telephone: **623-572-3400** Web address: **http://www.midwestern.edu/** Accreditation Status: **Preliminary Approval** Year of Next Scheduled Site Visit: **2010**
New England College of Optometry 424 Beacon St. Boston, MA 02115 Elizabeth Chen, M.B.A., President	Telephone: **617-266-2030** Web address: **www.neco.edu** Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2011**
Northeastern State University Oklahoma College of Optometry 1001 N. Grand Avenue Tahlequah, OK 74464 Lynn Cyert, O.D., Ph.D., Interim Dean	Telephone: **918-456-5511 X 4000** Web address: **http://arapaho.nsuok.edu/~optometry** Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2012**
Nova Southeastern University, College of Optometry 3200 S. University Drive Ft. Lauderdale, FL 33328 David Loshin, O.D., Ph.D., Dean	Telephone: **954-262-1402** Web address: www.nova.edu Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2012**
Pacific University, College of Optometry	Telephone: **503-352-2208**

2043 College Way Forest Grove, OR 97116 Jennifer Smythe, O.D., MS, Dean	Web address: www.opt.pacificu.edu Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2015**
Pennsylvania College of Optometry at Salus University Elkins Park Campus 8360 Old York Road Elkins Park, PA 19027 Thomas L. Lewis, O.D., Ph.D., President	Telephone: **215-780-1400** Web address: www.pco.edu Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2016**
Southern California College of Optometry 2575 Yorba Linda Blvd. Fullerton, CA 92831 Kevin Alexander, O.D., Ph.D., President	Telephone: **714-870-7226** Web address: www.scco.edu Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2014**
Southern College of Optometry 1245 Madison Ave Memphis, TN 38104 Richard W. Phillips, O.D., FAAO, President	Telephone: **901-722-3200** Web address: www.sco.edu Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2012**
State University of New York, State College of Optometry 33 West 42nd Street New York, NY 10036-8003 David Heath, O.D., Ed.M., President	Telephone: **212-938-4900** Web address: www.sunyopt.edu Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2010**
The Ohio State University, College of Optometry 338 W. 10th Avenue Columbus, OH 43210-1280 Melvin Shipp, O.D., Dr.PH, Dean	Telephone: **614-292-2647** Web address: www.optometry.osu.edu Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2011**
University of Alabama at Birmingham School of Optometry 1716 University Boulevard Birmingham, AL 35294-0010 John Amos, O.D., M.S., Dean	Telephone: **205-934-3036** Web address: www.uab.edu Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2009**
University of California, Berkeley, School of Optometry 350 Minor Hall MC 2020 University of California Berkeley, CA 94720-2020 Dennis M. Levi, O.D., Ph.D., Dean	Telephone: **510-642-9537** Web address: http://spectacle.berkeley.edu Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2015**
University of Houston, College of Optometry 505 J. Davis Armistead Bldg. Houston, TX 77204-2020 Earl L. Smith, III, O.D., Ph.D., Dean	Telephone: **713-743-1899** Web address: www.opt.uh.edu Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2014**
University of Missouri, St. Louis, College of Optometry One University Blvd. 331 Marillac Hall St. Louis, MO 63121-4400 Larry J. Davis, O.D., Dean	Telephone: **314-516-5606** Web address: www.umsl.edu/divisions/optometry Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2016**
University of Montreal, Ecole dOptometrie 3744 Jean-Brillant, Suite 260-7 Montreal, QC, Canada H3T 1P1 Jacques Gresset, O.D., Ph.D., Director	Telephone: **514-343-6325** Web address: www.opto.umontreal.ca Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2016**
University of the Incarnate Word School of Optometry 4301 Broadway, Box 373	Telephone: **210-883-1190** Web address: http://optometry.uiw.edu/ Accreditation Status: **Preliminary Approval**

San Antonio, TX 78209-6397 Hani S. Ghazi-Birry, MS, MD, OD, PhD, OCS, Founding Dean	Year of Next Scheduled Site Visit: **2010**
University of Waterloo, School of Optometry Waterloo, ON, Canada N2L 3G1 Thomas Freddo, O.D., Ph.D., Director	Telephone: **519 888 4567 x 33178** Web address: **www.optometry.uwaterloo.ca** Accreditation Status: **Accredited** Year of Next Scheduled Site Visit: **2009**
Western University of Health Sciences College of Optometry 309 E. Second St. Pomona, CA 91766-1854 Elizabeth Hoppe, OD, MPH, DrPH, Dean	Telephone: **909-706-3506** Web address: **www.westernu.edu** Accreditation Status: **Preliminary Approval** Year of Next Scheduled Site Visit: **2010**

Tab 12

Glaucoma Survey of State Boards of Optometry

As you may know, California recently enacted a law (SB 1406) which significantly expanded therapeutic privileges for ODs. This law became effective on January 1, 2009. In addition this law mandated a process for achieving glaucoma certification. As Special Consultant to the Office of Professional Examination Services in the State Department of Consumer Affairs my job will be to assist OPES in developing credentialing requirements that are reasonable, credible, and workable that above all will ensure public safety, doctor competency, and a reasonable time period for achieving certification.

In order for me to do my job properly I need your help. I would like to gather some information regarding your state's criteria for licensure and/or certification to treat glaucoma, but more specifically primary open angle glaucoma, pigmentary glaucoma, pseudoexfoliation glaucoma, and acute narrow angle glaucoma. Please provide the following information:

State:_____Population:_____

Contact Person:_____

Contact email:_____Tel_____Fax_____

How many total ODs in your state:

How many active ODs in your state:

How many ODs are TPA certified:

How many ODs are glaucoma certified:

How many ODs are graduates of optometry schools/colleges from out-of-state:

When was your TPA law passed?

When was your glaucoma law passed?

What type of glaucomas are you allowed to treat?

Are there any restrictions in treating glaucoma?

Do you have a separate glaucoma certification requirement? What is it?

Do you have specific didactic course requirement for certification? What is it?

Do you have specific case management/patient number requirement for certification? What is it?

Do you have examination requirement for certification? What is it?

Do you require co-management with an ophthalmologist? What are the specifics?

What other requirements do you have for certification to treat glaucoma?

What specific time frame do you have by which certification requirements must be met?

Do you have ongoing requirements (didactic and patient management) to maintain certification?

Have there been any complaints or disciplinary actions relative to glaucoma certified ODs? How many?

Have there been any malpractice judgments relative to glaucoma diagnosis, treatment and management? How many?

Have there been any increases in malpractice/liability insurance rates since the passage of your TPA/Glaucoma law?

Any other pertinent information regarding doctor competency and public safety not covered above:

Tab 13

SUMMARY—TREATMENT OF GLAUCOMA BY OPTOMETRISTS

STATE:	All Topical Medications To Treat Glaucoma	All Oral Medications To Treat Glaucoma	Emergency Orals	Consult Required	Co-management Requirement 1	Special Conditions as Required by State Law
Alabama	Y	Y	Y			None
Alaska	Y	Y	Y			None
Arizona	Y					None
Arkansas	Y	Y	Y			None
California	Y		Y 4	**certain Dx**	Limited 1,2,6	**refer certain types**
Colorado	Y	Y	Y			None
Connecticut	Y		Y			**refer certain types**
Delaware	Y	Y	Y			None
D.C.	Y		Y	Y		None
Florida	Y			Y		**refer certain types**
Georgia	Y	Y	Y			**refer certain types**
Hawaii	Y	Y	Y			None
Idaho	Y	Y	Y			None
Illinois	Y	Y	Y			oral carbonic anhydrase inhibitors for no more than 72 hrs
Indiana	Y	Y	Y			None
Iowa	Y	Y	Y			None
Kansas	Y	Y	Y		Limited 2	None
Kentucky	Y	Y	Y			None
Louisiana	Y	Y	Y			None
Maine	Y	Y 8	Y 8		Limited 8	None
Maryland	Y				Y	None
Massachusetts						
Michigan	Y	Y	Y			None
Minnesota	Y	Y	Y			oral carbonic anhydrase inhibitors for no more than 7 days
Mississippi	Y	Y	Y			None
Missouri	Y	Y	Y			None
Montana	Y	Y	Y			None
Nebraska	Y					**refer certain types**
Nevada	Y		Y	Y	Limited 2	**refer certain types**
New Hampshire	Y 5		Y	Y	Limited 2	**refer certain types**
New Jersey	Y	Y	Y			None
New Mexico	Y	Y	Y			no osmotics
New York	Y				Limited 2	None
North Carolina	Y	Y	Y			None
North Dakota	Y	Y	Y			None
Ohio	Y	Y	Y			None
Oklahoma	Y	Y	Y			None
Oregon	Y	Y	Y	certain Dx		None
Pennsylvania	Y					**refer certain types**

Rhode Island	Y	Y	Y	Y	Limited 2,7	**refer certain types**
South Carolina	Y	Y	Y			None
South Dakota	Y	Y	Y			None
Tennessee	Y	Y	Y			None
Texas	Y		Y	Y 3		**refer certain types**
Utah	Y	Y	Y			None
Vermont	Y	Y	Y	only when oral Rx'd	Limited 2	**refer certain types**
Virginia	Y	Y	Y			**refer certain types**
Washington	Y	Y	Y			None
West Virginia	Y	Y	Y			None
Wisconsin	Y	Y	Y			**refer certain types**
Wyoming	Y		Y			None

Last Revised June20, 2009

Footnotes:

1 Co-management includes periodic face-to-face visits with an ophthalmologist.
2 Optometrists in these states co-manage either a specific number of patients with glaucoma or patients with glaucoma for a specific period of time prior to obtaining authorization to independently treat glaucoma in the future.
3 The Texas optometry law requires consultation with an ophthalmologist to include confirmation of diagnosis and co-management, however the parameters, including any requirement for face-to-face visits, are at the discretion of the co-managing ophthalmologist.
4 May use any topical glaucoma drug but may use oral medications only for emergency stabilization of acute angle closure.
5 May use those topical glaucoma drugs as determined by the Joint Pharmaceutical Formulary and Credentialing Committee. May treat with no more than two concurrent topical legend drugs. The Committee will determine which combination legend drugs shall be considered one medication for this purpose.
6 Graduates after May 1, 2008 will be automatically certified upon licensure to immediately independently treat glaucoma.
7 Graduates after January 1, 2007 will be automatically certified upon licensure to immediately independently treat glaucoma-no cases must be managed first.
8 Law signed May 22, 2009, to permit use of topical and oral medications for treating glaucoma; eliminates co-management requirements for ODs graduating after 1996; others need 30-patients to co-manage; co-management may be waived or reduced based on education, training, experience, licensure in other jurisdictions.

SGRC/G:Charts/GlaucomaTxSummaryChart

Tab 14

SUMMARY CHART – CONTINUING EDUCATION REQUIREMENTS

This chart provides a **summary** of the continuing education hours required for license renewal in each state. Some states require additional continuing education hours for optometrists holding prescriptive authority. Each state licensing board may limit the number of hours of continuing education credit that may be used by a licensee for license renewal purposes for courses taken in practice management, home study, Internet, etc. Some states may specify that a certain number of the required hours be in particular areas of optometric education such as pharmacology, diagnosis, or treatment of ocular disease. For further information, please contact Sherry Cooper at the AOA St. Louis Office (314-991-4100/800-365-2219, Ext. 4266 or SLCooper@AOA.org) or the appropriate state licensing board.

Last Revised May 8, 2008

STATE:	Year Law First Enacted:	CE Requirements for All Licensees:	Additional Req.'s for ODs With Prescriptive Authority:	Year Law Last Amended:
ALABAMA	1975	14 hrs/yr	6 hrs/yr[1]	1995
ALASKA	1969	24 hrs/2 yrs	12 hrs/2 yrs[2]	1993
ARIZONA	1980	32 hrs/2 yrs		1991
ARKANSAS	1961	12 hrs/yr	[33]	1997
CALIFORNIA	1988	40 hrs/2 yrs	50 hrs/2 yrs[27]	2000
COLORADO	1992	24 hrs/2 yrs		
CONNECTICUT	1976	20 hrs/yr	[3]	2007
DELAWARE	1974	12 hrs/2 yrs	12 hrs/2 yrs[2]	1994
D.C.	1988	24 hrs/2 yrs	6 hrs/2 yrs	1999
FLORIDA	1979	30 hrs/2 yrs	[4]	
GEORGIA	1971	28 hrs/2 yrs		
HAWAII	1972	32 hrs/2 yrs	36 hrs/2 yrs [32]	1997
IDAHO	1968	12 hrs/yr	6 hrs/yr[2]	1992
ILLINOIS	1975	24 hrs/2 yrs[5]	6 hrs/2 yrs[28]	1996
INDIANA	1973	30 hrs/2 yrs	30 hrs/2 yrs[26]	1992
IOWA	1938	30 hrs/2 yrs	20 hrs/2 yrs	1985
KANSAS	1940	24 hrs/yr[35]		1999
KENTUCKY	1974	8 hrs/yr[6]	7 hrs/yr[2]	1991
LOUISIANA	1969	12 hrs/yr	4 hrs/yr[7]	1993
MAINE	1971	22 hrs/yr	25 hrs/yr[8]	1996
MARYLAND	1973	36 hrs/2 yrs[9]	50 hrs/2 yrs[31]	1996
MASSACHUSETTS	1974	18 hrs/yr[10]		1994
MICHIGAN	1978	24 hrs/2 yrs	12 hrs/2 yrs	1998
MINNESOTA	1973	40 hrs/2 yrs		2000
MISSISSIPPI	1965	20 hrs/yr[37]		1994
MISSOURI	1963	32 hrs/2 yrs		2007
MONTANA	1971	36 hrs/2 yrs		1999
NEBRASKA	1966	16 hrs/yr		
NEVADA	1973	18 hrs/yr	12 hrs/yr [25]	1996
NEW HAMPSHIRE	1973	15 hrs/yr	150 hrs/3 yrs[11]	2002
NEW JERSEY	1975	50 hrs/2 yrs [39]		2006
NEW MEXICO	1960	16 hrs/yr	[12]	1995
NEW YORK	1995	none	36 hrs/3 yrs	

NORTH CAROLINA	1969	20 hrs/yr[13]		1993
NORTH DAKOTA	1971	50 hrs/3 yrs	[14]	1997
OHIO	1974	15 hrs/yr	5 hrs/yr[2]	1995[24]
OKLAHOMA	1956	18 hrs/yr	[15]	1994
OREGON	1973	15 hrs/yr	[16]	2001
PENNSYLVANIA	1980	30 hrs/2 yrs	[30]	2004
PUERTO RICO		36 hrs/3 yrs		
RHODE ISLAND	1976	48 hrs/3 yrs	12 hrs/3 yrs [17]	199_
SOUTH CAROLINA	1972	20 hrs/yr	[18]	1993
SOUTH DAKOTA	1973	36 hrs/3 yrs		
TENNESSEE	1974	15 hrs/yr	[19]	1993
TEXAS	1975	16 hrs/yr[20]		1993
UTAH	1975	30 hrs/2 yrs		1991
VERMONT	1980	20 hrs/2 yrs	20[2][38]	2004
VIRGINIA	1976	16 hrs/yr	[36]	2003
WASHINGTON	1976	50 hrs/2 yrs		
WEST VIRGINIA	1969	40 hrs/2 yrs	[34]	2002
WISCONSIN	1989	30 hrs/2 yrs	[21]	2006
WYOMING	1975	40 hrs/2 yrs	[22]	2005

KEY:

[1] Of the 20 hours required for TPA-certified OD license renewal (14 for regular license renewal plus 6 additional hours for TPA-certified ODs), one half must be in subjects relating to the diagnosis, treatment, and management of disease of the eye as approved by the Board.

[2] These additional hours must be in therapeutics and management of ocular disease.

[3] [Rule adopted before required hrs increased to 20 – slc] Those optometrist engaged in the use of ocular agents-t are required to complete, within the 14 clock hours, a minimum of 4 hours in pathology detection and a minimum of 4 hours in treatment as it applies to the use of ocular agents-t.

[4] Six hours of the 30 hour requirement must be "transcript quality" courses in ocular pharmacology for certified ODs.

[5] Six hours of the 24 hours/2 years requirement must be transcript quality.

[6] One hour must be in AIDS/HIV for all licensees.

[7] Eight hours of the 16 hour total requirement for TPA-certified ODs must be ocular and systemic pharmacology and current diagnosis and treatment of ocular disease. These eight hours may only be obtained from specific sources listed in the rule.

[8] Fifteen hours of the 25 hour requirement (all 25 hours must be "Category 1" CE) must be in the diagnosis and treatment of ocular disease for TPA-certified ODs.

[9] Six hours of the 36 hour requirement must be in diagnostic pharmaceutical agents for DPA-certified ODs.

[10] Three hours of the 18 hour requirement must be in one or more specific areas.

[11] The 150 hour requirement for TPA-certified ODs includes the basic 15 hour requirement. For glaucoma certified optometrists, a minimum of ten of the required 50 hours per year (for a total 150) must be in glaucoma specific education.

[12] Six hours of the 16 hour requirement must be in ocular therapeutic pharmacology for TPA-certified ODs.

[13] Nine hours of the 20 hour requirement must be in general pharmacology, diagnosis, and therapeutics.

[14] One-half of the requirement must be in the treatment and management of ocular disease for TPA-certified ODs.

[15] Five hours of the 18 hour requirement must be in therapeutics and one hour must be in the judicious prescribing of dangerous drugs and controlled dangerous drugs for TPA-certified ODs.
[16] Five hours of the 15 hour requirement must be in the diagnosis, treatment and management of ocular disease for all licensees.
[17] Thirty hours of the 60 hour requirement must be in pharmacology for the treatment and management of ocular conditions of the eye.
[18] Eight hours of the 20 hour requirement must be in pharmacology for DPA/TPA-certified ODs.
[19] Ten hours of the 15 hour requirement must be in diagnosis, treatment, and use of pharmaceutical agents for TPA-certified ODs.
[20] Six hours of the 16 hour requirement must be in the diagnosis or treatment of ocular disease.
[21] Seven hours of the 30 hour requirement must be in glaucoma.
[22] Licensees authorized to prescribe therapeutic pharmaceuticals shall obtain fifteen (15) hours of the required forty (40) hours of continuing education in topics addressing ocular systemic therapeusis.
[23] Reserved.
[24] Rule change in 1995 became effective for license renewals in 1997.
[25] Fifteen hours of the total 30 hour requirement must be TPA-related for TPA-certified ODs.
[26] TPA-certified ODs may apply 10 hours of the CE obtained to meet the 30 hour "additional" requirement to the 30 hours needed for "all licensees", which makes the total requirement for TPA-certified ODs 50 hours/2 years.
[27] Thirty five hours of the 50 hour requirement must be in the diagnosis, treatment, and management of ocular, disease.
[28] The additional six hour requirement for courses in the treatment of ocular disease for TPA-certified ODs is effective with the 2-year license renewal period ending March 31, 1998. Two of the six hours for the renewal period ending March 31, 1998 must be in the study of glaucoma.
[29] Reserved.
[30] At least six hours of the 30 hour requirement must concern the prescription and administration of TPAs. At least four hours of the 30 hour requirement must concern the prescription of drugs to treat glaucoma. The four glaucoma drug hours may apply toward the six hour prescription drug requirement.
[31] The 50 hours every two years requirement is the <u>total</u> requirement for TPA-certified ODs (it is <u>not</u> in addition to the 36 hours every two years requirement for non-TPA-certified ODs). Thirty hours of the 50 hour requirement for TPA-certified ODs must be in the use and management of TPAs.
[32] The 36 hours every two years requirement is the <u>total</u> requirement for TPA-certified ODs (it is <u>not</u> in addition to the 32 hours every two years requirement for non-TPA-certified ODs). All 36 hours of the 36 hour requirement for TPA-certified ODs must be in the diagnosis, treatment, and management of ocular and systemic diseases.
[33] ODs with DPA certification only must complete 12 hours/year plus 6 hours/3 years in pharmacology (these 6 hours may count toward completion of the 12 hours/year requirement). ODs with TPA certification only must complete 12 hours/year plus 12 hours/3 years in pharmacology (these 12 hours may count toward completion of the 12 hours/year requirement). ODs certified as optometric physicians must complete 20 hours/year in ocular therapy and pharmacology. (Note: only the requirements for the highest level of certification attained apply.
[34] Six hours of the 15 hour requirement must be in ocular pathology or therapeutic pharmacological agents for TPA-certified ODs.

[35] Five hours of the 24 hour requirement shall relate to ocular pharmacology, therapeutics or related topics of study.
[36] Fourteen of the 16 hour requirement shall pertain directly to the care of the patient. Licensees with TPA-certification shall complete at least two hours annually in the prescribing and administration of drugs.
[37] Half of the twenty hours/year requirement must be in therapeutic subject matter.
[38] Not less than 50% of the required CE must be in the use of pharmaceuticals, including treating possible complications arising from their use, and the treatment of glaucoma.
[39] At least 30 hours of the 50 hour requirement every two years must be in therapeutic pharmaceutical agents, of which 10 must be in orals.

SGRC/G:Charts/CERequirements

Tab 15

MALPRACTICE & DISCIPLINARY COMPLAINTS: MEDICAL DOCTORS, DOCTORS OF DENTAL SURGERY & DOCTORS OF OPTOMETRY
SELECTED JURISDICTIONS: CALIFORNIA, OKLAHOMA & UNITED STATES
September 1, 1990 - March 17, 2008

TYPE OF COMPLAINT	MEDICAL DOCTORS (M.D.)[1]			DENTISTS (D.D.S.)			OPTOMETRISTS (O.D.)		
	CA	OK	US	CA	OK	US	CA	OK	US
National Practitioner Data Bank Reports:									
Medical Malpractice Reports	24,561	1,672	232,727	8,250	396	40,261	36	21	580
Licensure/Clinical Privileges	8,143	808	62,394	625	126	13,016	6	0	16
Medicare-Medicaid Exclusion	974	70	6,184	328	26	2,246	26	5	197
Healthcare Integrity & Protection Data Bank Reports:									
State Agencies/Health Plans									
Adverse Actions	5,091	393	39,642	544	81	11,940	106	1	1,342
Judgments or Convictions	33	4	310	29	0	204	1	0	16
Federal Agencies (Combined):[2]									
Adverse Actions	1,000	72	6,674	329	26	2,278	26	5	198
Judgments or Convictions	12	0	91	1	0	27	0	0	0
Organizations:[3]									
Adverse Actions	9	0	247	3	2	61	0	0	18
Judgments or Convictions	2	0	2	1	0	19	0	0	3
TOTAL COMPLAINTS/ACTIONS	39,825	3,019	348,271	10,110	657	70,052	201	32	2,370
TOTAL Licensees in Active Practice	84,907[4]	5,667[3]	723,118[3]	28,584[5]	1,589[4]	161,127[4]	5,739[6]	610[5]	32,740[5]

[1] All subspecialties; excludes Interns/Residents; Osteopathic Physicians; Podiatrists. (Complaint data not compiled by subspecialty.) Source: Health Resources & Svcs. Admin., U.S. Dep't. Health & Human Svcs., NPDB/HIPDB Public Reports (Apr. 2008).

[2] All Federal agencies' and facilities' report totals are combined.

[3] Ambulatory surgery centers and group practices only; acute care/inpatient facilities excluded.

[4] Totals are M.D.s only designated as providing patient care through 2006. Total specializing in Ophthalmology by category are: CA, 2,120 (Primary Specialty + PS & Board-Certified; OK, 142; US, 17,480. Source: Physician Survey Data File, Med. Bd. CA; Amer. Medical Assn., Physician Characteristics and Distribution in the US (2008 Ed.)

[5] Sources: BHPR/HRSA/DHHS (2004)/Dental Bd. of CA (2008); OK Bd. Dentistry (2008); Bur. Labor Statistics, U.S. Dep't. Labor (2006).

[6] Sources: CA State Bd. Optometry (Active in CA - 2008); OK Bd. Examiners in Optometry (Active in OK - 2008); Amer. Optometric Assn. (2008).