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Comparison of Optometric and Dental Curricula
J. Kyle Smith, O.D.
Michael Dinh, B.A.
Michael G. Harris, O.D., J.D., M.S., F.A.A.O.
A study comparing the medically relevant educational requirements of the University of California, Berkeley, School of Optometry (UCB) to that of the University of California, San Francisco School of Dentistry (UCSF) finds that the curriculums are generally equivalent.

Analysis of an Optometry School's Patient Population
Martha E. McKay, O.D., F.A.A.O.
Christopher E. Woodruff, O.D.
Jay M. Rumsey, O.D., F.A.A.O.
A survey of patient encounters at the Nova Southeastern University College of Optometry Primary Care Clinic confirms that optometry continues to engage primarily in the correction of refractive and binocular vision disorders.

Eyeing Abuse: Preparing Optometry Students for their Role in Domestic Violence
Elizabeth Hoppe, O.D., M.P.H., Dr.P.H., F.A.A.O.
C. Denise Pensyl, O.D., M.S., F.A.A.O.
A videotaped curriculum and instructor's manual are effective in increasing optometry students' knowledge related to domestic violence.

Assessing Clinical Reasoning: Design and Performance Characteristics of the NBEO PAM Examination
Leon J. Gross, Ph.D., F.A.A.O
David W. Davidson, O.D., M.S., F.A.A.O.
The authors describe the structure of the Patient Assessment and Management (PAM) test and provide a performance analysis of the first test administration.

DEPARTMENTS

Editorial: Students' Rights — Do They Have Any?
Roger Wilson, O.D.

School News

Industry News

ASCO Meetings Calendar

Resource Reviews
Ellen Richter Ettinger, O.D., editor

Cover art is from ASCO's new career promotion exhibit funded through a grant from Vistakon, a Division of Johnson & Johnson Vision Care, Inc. (see page 69 for more information).
Students’ Rights — Do They Have Any?
Roger Wilson, O.D.

I am fairly confident that we talk a great deal about students’ responsibilities, but when was the last time you thought about your students’ rights? As consumers of our professional optometric education programs, students receive numerous communiqués describing professional responsibilities, policies and procedures. They are expected to read and comply with them all. Yet somewhere, buried in the back of a school’s catalog, orientation materials, and/or clinic manuals there might exist a single document about their “rights.” Many of us are quick to criticize student performance, behavior, attitude, and their lack of responsibility. But, as we are imposing our collective institutional wills upon them, I’ll bet that we violate some of their rights.* So get out your score cards — let’s take a glance at some of the basic rights that students have and examine how well we are meeting our responsibilities as educators. (This is by no means an exhaustive list or discussion of students’ rights, but at least it’s a start.)

Orientation

Students have a right to an appropriate orientation to any new situation, including their new professional program, their classrooms and clinical settings. Orientation should include a statement of dates, responsibilities, goals, objectives, assessment instruments, and outcomes. As part of that orientation students are entitled to receive proper training with respect to any activities they may be required to perform, including risk management procedures, and how to respond to emergencies.

Educational Support

Every student ought to have access to educational services, counseling and other forms of support. As stakeholders in the results of a professional degree program, students should know with confidence that they are entitled to a thorough understanding of the resources available to help them reach their goals. Furthermore, optometry schools should ensure that there are sufficient institutional resources dedicated to helping students achieve success.

Assessment

Performance standards and other professional expectations should be reviewed and discussed with students on a periodic and timely basis. Written and/or verbal feedback should be a normal and regular aspect in a professional learning environment. Discussion alone, especially of something that is deemed substantive, is not a sufficient fulfillment of a student’s right to assessment. If it isn’t written, it didn’t happen.

Respect

Students have a right to be respected by peers, instructors and administrators. An awareness of individual differences, differences in communication skills, the need to accept and support students with unique learning styles, and an understanding of cultural norms is considered a part of respecting students. Students should also expect equal and fair treatment relative to their peer group. Every student should feel safe and assured that they will learn in an environment that is free from discrimination, intimidation, inappropriate judgement, harassment, and unsafe environments.

Privacy

While a school or college has a responsibility to assess students and to discuss student progress, students also have a right to privacy. Students should be able to trust a school’s administration, instructors, and student support services. Confidential and/or private information about a student should only be shared with individuals who need to know that information. Students should be advised of their privacy rights, and what constitutes a situation whereby someone at their school might be entitled to have access to their private information.

Conflict Resolution

The schools and colleges also have an obligation to advise and

inform students of grievance policies and procedures, and how to handle any conflicts. Students should feel confident that the institution is supportive of their right to acknowledge conflicts, and be assured that conflict resolution policies are designed to resolve problems with a high degree of integrity and confidentiality, and in a professional and non-judgmental manner.

So let’s look at our score card for compliance with students’ rights. Having dealt with students and student issues for a number of years, I can tell you with reasonable certainty that many students complain that their rights are continually violated. Even after we go ‘the extra mile’ in explaining policies both verbally and in writing, there are some students who feel that something unfair has happened to them. I am wondering if, when students say that their rights are being overlooked or violated, it is more likely attributed to communication void. Perhaps information was not effectively or completely delivered. Perhaps the information was not perceived or interpreted as intended. Maybe we just plain forgot to tell our students something that we viewed as very important. Sometimes, since we are human and prone to error, we just slip up and say or do something that is simply not right. These actions, gone unresolved, are fuel for rights’ violations, not to mention bad feelings. Memories of rights not respected tend to simmer and seem to take on a life of their own. While an old adage states “it takes two to tango,” let us be ever mindful that if one leads by example, the dance can still be fun.

Vistakon Grant Supports ASCO’s Career Promotion Campaign

ASCO’s career promotion campaign - “The Eyes Have It!” - which is aimed directly at students, alumni and health professions career counselors, has been launched through a grant from Vistakon, a Division of Johnson & Johnson Vision Care, Inc.

The grant, the first installment of a three-year commitment by Vistakon, will fund a number of specific program activities including the development of new “underrepresented minority group” marketing materials, publication of a new “Career Guide,” development of a web-based career promotion video clip for use on ASCO’s website, communication through alumni offices and an expanded communication with prehealth advisors on campuses nationwide.

ASCO, through its career promotion efforts, hopes to reverse the decline in the number of students applying to optometry schools over the last few years. The number of applications to the schools and colleges of optometry has dropped 37.14% over the last three years and the number of students taking the Optometry Admission Test over the last three years has dropped 35%. The decline, part of a trend that all the health professions are experiencing, threatens the ability of optometry schools to be selective in the admissions process or even fill their classes.

In announcing the new grant, ASCO’s president, Dr. David Loshin, said, “We greatly appreciate Vistakon’s very generous support of ASCO’s career promotion campaign and we look forward to working with Vistakon to reverse the downward trend in applicants. Vistakon, its vice president for professional affairs, Dr. Stan Yamane, and its director of academic affairs, Dr. George Mertz, have long supported ASCO’s efforts.”

In the 1990s, Vistakon supported the Georgetown Summit Series on Optometric Education. It also funded numerous past ASCO projects including career videos and brochures.

Vistakon, a Division of Johnson & Johnson Vision Care, Inc., is headquartered in Jacksonville, Florida.
The Ohio State University (TOSU) announced the funding of an NEI grant to Dr. Jason J. Nichols, senior research associate at the College of Optometry and College of Medicine and Public Health. Dr. Nichols received a five-year, Mentored Patient-Oriented Research Career Award from the National Eye Institute, a division of the National Institutes of Health. The project is entitled the “Contact Lens and Dry Eye Study” and is funded at a cost of nearly $600,000. Contact Dr. Nichols at (614) 292-4979 or at Nichols.142@osu.edu.

TOSU was also awarded an NEI post-doctoral training grant to provide financial support for two advanced graduate students in the Ph.D. program in Vision Science. "The training grant was awarded through a competitive application process and marks the first time the College of Optometry has received such an award," explained Dr. Ron Jones, chairman of the graduate studies program in vision science and the training program director. The initial award is for a period of five years in the amount of approximately $500,000.

Dr. George Foster, dean of the Northeastern State University College of Optometry (NSUCO), received the Vision Service Award from the Heart of America Contact Lens Society during their annual congress in Kansas City. It is the highest award given by the society. The mission of the Heart of America Contact Lens Society is to provide education in primary care optometry and contact lenses.

Southern College of Optometry (SCO) announced the appointment of Joe Hauser as Dean of Students/Director of Records and Admissions, following the retirement of longtime Dean of Students, Scott Andrews. Mr. Hauser will oversee three activities: financial aid, dean of students and records and admissions. Mr. Hauser has served ASCO as a member of the Student Affairs Committee, the Recruitment Materials Task Force and the Debt Management Task Force. Currently, he is chair for the June National Association of Health Professions Advisors’ conference.

Dr. Anthony F. DiStefano, vice president and dean of academic affairs at the Pennsylvania College of Optometry (PCO), was the guest speaker at The Third Annual Aiden N. Haffner Lecture in Public Health at The State College of Optometry, State University of New York (SUNY). Dr. DiStefano’s presentation was on the “Optometric Workforce: Challenges and Opportunities for the 21st Century.”

Dr. Anastas F. Pass, an associate professor at the University of Houston College of Optometry (UHCO), has been named Chief Privacy Officer, Director of HIPAA Compliance and Oversight at UHCO. The Health Insurance Portability and Accountability Act of 1996 (Public Law 104-191) or HIPAA, is a federal regulation that will drastically change the business and practice of health care in the United States, according to Dr. Pass. Health care providers, such as the colleges of optometry, must be compliant with HIPAA electronic transaction standards by October 16, 2003 (provided an extension has been applied for through HHS), and also must be compliant with HIPAA privacy standards by April 14, 2003. Dr. Pass will coordinate and oversee the implementation of the HIPAA regulations as they affect direct patient care, billing, staffing issues, security (electronic and physical), interaction with business associates and clinical research.

Dr. Tony Carnevali was named Distinguished Alumni of the Year by the Alumni Association of the Southern California College of Optometry (SCCO). Dr. Carnevali is a 1975 alumnus of SCCO, and is an assistant professor and director of SCCO’s Optometric Center of Los Angeles. The award was presented for Dr. Carnevali’s years of service to the profession, community and to SCCO.

Dr. Dominick M. Maino, professor, Pediatric/ Binocular Vision Service, at the Illinois College of Optometry, presented six hours of continuing education lectures at the recent Heart of America meeting in Kansas City. Topics included the diagnosis and management of special populations, pre-school examinations, vision therapy and computer applications. More than 930 doctors and 300 para-optometrics attended the meeting from around the Midwest.

The Ohio State University College of Optometry (TOSU) Glenn A. Fry Medal in Physiological Optics was presented to Dr. Merton Flom by Dean John P. Schoessler, recognizing Flom’s achievements in vision science research. The medal was established by grants from Optometric Educators, Inc. The celebration included a gathering of friends and family for “Flomfest.”
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Navarro, product director. "Through this campaign, we want to raise awareness of the causes and effects of eye disease, and underscore the importance of regular eye exams."

As part of the campaign, a network of Hispanic Eye Care Professionals from across the country has been created to help deliver Spanish-language eye health information at the community level. Vistakon® is sponsoring three of the United States' most highly regarded Hispanic festivals in Miami, Los Angeles and New York. It is also launching a first-of-its-kind Spanish-language website, www.acuvue.com/espanol and establishing a toll-free number (866-538-1734) for Hispanic consumers.

CIBA Funds Research On Silicone Hydrogel Lenses

CIBA Vision will fund more than $100,000 worth of research on silicone hydrogel contact lenses through research grants. Grant winners will present their preliminary findings at CIBA Vision's educators meeting to be held April 18-21 in Carlsbad, California.

CIBA Vision called for proposals from all 19 schools and colleges of optometry in the United States, Puerto Rico and Canada as part of the launch of its Focus® NIGHT & DAY silicone hydrogel lens. Twenty-five applications were received and nine research projects were selected for funding.

"We were delighted with the response from researchers," said Dr. Richard E. Weisbarth, CIBA Vision's executive director of professional services for North America. "The enthusiasm confirms that our NIGHT & DAY lens is a true breakthrough. These research projects will add to the building body of knowledge on silicone hydrogel materials and NIGHT & DAY lenses."

CIBA Vision is the eye care unit of Novartis AG. With headquarters in Atlanta, CIBA Vision is a global leader in research, development and manufacturing of optical and ophthalmic products and services, including contact lenses, lens care products and ophthalmic surgical products. CIBA Vision products are available in more than 70 countries. For more information, visit the CIBA Vision website at www.cibavision.com.

Transitions Introduces New Tools for Eyecare Professionals

New point-of-sale tools available from Transitions Optical, Inc. are designed to help eyecare professionals educate patients about Transitions® lenses and demonstrate how the lenses perform. Eyecare professionals can use the new tools to help explain to patients how Transitions will help them see better — more comfortably and with UV protection — in varying light conditions. The tools use UV light and comparative photos to demonstrate the benefits of Transitions lenses over regular, clear lenses.

"These interactive tools allow the patient to see firsthand why Next Generation Transitions are the smart choice for everyday lenses," said Vanessa Johns, marketing director, North America, Transitions Optical. Point-of-sale tools from Transitions include: patient brochure with photocromic film, dispensing mat, two-sided poster, demonstration wheel, display wheel/brochure holder, light demonstration kit and use and care guide. For a free copy of Transitions' 2002 Point-of-Sale Catalog, contact Transitions Customer Service at (800) 848-1506 (United States) or (877) 254-2590 (Canada).

Paragon Receives Recommendation For Approval of Contact Lens Corneal Refractive Therapy

At a recent meeting of the Ophthalmic Devices Panel, a public advisory committee of the Food and
Drug Administration (FDA), in Washington, DC, Paragon Vision Sciences received a recommendation for approval for its Corneal Refractive Therapy contact lenses, Paragon CRT, for overnight wear for the temporary reduction of myopia and myopia with astigmatism. The FDA is expected to issue its final clearance after Paragon completes a few appropriate revisions to product labeling and supplies some additional requested information. This is the first and only recommendation for approval for the corneal reshaping overnight wear indication and the only one granted thus far.

“This is an incredibly exciting time for Paragon and the entire ophthalmic community,” declared Joe Sicari, president and CEO of Paragon Vision Sciences. “We are pleased with the outcome and unanimous vote and appreciate the thorough and thoughtful review by the panel. Paragon will quickly comply with their requests and supply any other information the FDA may require.” Tim Koch, Paragon’s director of professional services, added that “Paragon CRT is a complete approach to contact lens corneal reshaping including a diagnostic prescribing system, which can be integrated with corneal topography for even greater efficiency, state-of-the-art manufacturing resulting in micron level accuracy, professional education and consultation utilizing the latest interactive multimedia, and soon a complete package to assist the practitioner in effectively presenting the option of corneal refractive therapy to patients.”

For more information on Paragon products, contact them at 1-800-528-8279 (United States) or 1-480-892-7602 from other countries. Information can also be obtained on the company’s website at www.paragonvision.com

Vistakon CD Will Educate Eye Care Professionals on ACUVUE® 2 COLOURS

Vistakon®, Division of Johnson & Johnson Vision Care, Inc., recently unveiled a new CD-ROM to help educate eye care professionals on prescribing, fitting and treating patients with new ACUVUE® 2 COLOURS Brand Contact Lenses.

“The best way for our company to help eye care professionals make sure patients are comfortable with their contact lenses is to provide them with comprehensive tools like the ‘Peer to Peer’ Review CD-ROMs so they can provide their patients with accurate, detailed information,” said Phil Keefer, president, VISTAKON® Americas.

Howard Purcell, O.D., F.A.A.O., director, professional affairs, serves as the CD-ROM’s interactive question and answer spokesperson. Some of the topics addressed for eye care professionals via the CD-ROM include: identifying the best candidates for ACUVUE® 2 COLOURS, differentiating the various ACUVUE® Brand Family of Products; responding to clinical issues that could arise when diagnosing patients; recommending lens care and cleaning methods; and how to optimize color selection but minimize chair time.

New Zeiss Polarized Lens Available Soon

Carl Zeiss Optical, Inc. announced that it is again expanding its lens product line with Gradiel® Top 1.59 Poly Polarized, a new premium sun-wear progressive lens with superior outdoor vision and outstanding safety advantages, according to Grady Culbreth, Zeiss’ director of public and professional relations. The comfortable polarization effect is achieved by placing a thin sheet of a 85% gray polarized film in the polycarbonate material. The result for the wearer is a reduction in annoying and sometimes dangerous glare from streets, cars, windshields, snow and water as well as increased depth and color perception.

Headquartered in Oberkochen, Germany, Carl Zeiss is a leading international group of companies operating in the optical and optoelectronic industry. The company is directly represented in more than 30 countries and runs production centers on four continents. Further information is available at www.zeisslenses.com

AO.SOLA Hires New Marketing VP

AO.SOLA announced that it has named Darrell Zoromski as vice president of marketing for North America. In this role Zoromski will oversee the development and implementation of a marketing strategy to drive demand for premium AO.SOLA products at the dispenser level. Zoromski has an extensive background in consumer product marketing, most recently as director of the Breakfast Foods Division at Pillsbury.

Mark Ashcroft, AO.SOLA’s president of the Americas, said that a dispenser-focused strategy is vital for the company at this time. “With our AO and SOLA product lines, we have innovative and highly reliable lenses and lens treatments to meet virtually every patient need and dispenser situation,” he said. “The key is to communicate the full value of our product lines to the eye care professional.” AO.SOLA is a division of SOLA International. A leading spectacle lens manufacturer, SOLA places special emphasis on premium lenses that provide a close fit with the usage and lifestyle requirements of individual wearers.

Transitions Academy ’02 Celebrates Partnerships

Twenty-nine countries were represented by the 603 industry partners from North America and Latin America who joined together at Transitions Academy in Walt Disney World, Orlando, Florida. The sixth annual event, the largest ever, focused on Transitions Optical, Inc.’s commitment to education, partnerships and support to grow the optical market profitably.

“Our industry partners have demonstrated time and again their dedication to Transitions and building the photochromic category,” said Dave Cole, general manager of the Americas for Transitions Optical, Inc. It’s the motivation of all our partners combined with the education and tools they receive at Transitions Academy and on an ongoing basis that will enable us to lead substantial change in the industry in 2002 with Next Generation Transitions.”
Comparison of Optometric and Dental Curricula

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Abstract

Optometry was once a profession devoted exclusively to prescribing glasses and contact lenses, but it has expanded its scope of practice to include the diagnosis, management, and treatment of ocular disease. In California, a bill was signed into law that grants optometrists the legal right to perform additional diagnostic and treatment procedures with regard to ocular disease, including expanding their right to use and prescribe diagnostic and therapeutic agents. The heart of the debate over the bill was the question of whether California optometrists are adequately educated and trained to justify granting the expanded scope of practice that they seek.

Dentistry is a health care profession that has seemingly similar educational requirements to optometry yet seems to enjoy a much broader scope of practice within its specialty. Our study compared the medically relevant educational requirements of the University of California, Berkeley School of Optometry (UCB) to that of the University of California, San Francisco School of Dentistry (UCSF). Specifically, we compared the basic medical categories and profession-specific medical categories in the two schools. UCB and UCSF were nearly identical in the total number of classroom hours (TCH) devoted to basic Medical Courses. 500 TCH for UCB compared to 495 TCH for UCSF. In profession-specific Medical Courses, UCSF taught 290 TCH to UCB with 269.5 TCH. The optometry curriculum was found to be generally equivalent to dentistry. We believe this supports the argument for an expanded scope of optometric practice.

Keywords: curriculum, optometry, dentistry, total classroom hours (TCH), scope of practice, California.

Introduction

Optometry, once a profession devoted exclusively to prescribing glasses and contact lenses, has increased its scope of practice and now includes the diagnosis, management, and treatment of ocular disease. Currently, all fifty states allow optometrists to use drugs to diagnose or treat various eye conditions. By expanding their legal scope of practice, optometrists can better meet the needs of their patients and establish their role as primary eye care providers in the same way that dentists are recognized as being primary oral health providers.

An expansion of scope of practice has many benefits for society. As optometrists gain the right to prescribe medications and perform procedures that were once exclusively reserved for medicine, patient fees will be reduced. Numerous studies show that patients pay less when an optometrist rather than an ophthalmologist provides the same service. Optometrists licensed to treat ocular disease are also more evenly distributed throughout the country than ophthalmologists, making eye care more accessible to patient populations. Finally, many ophthalmologists devote much of their time to performing surgical procedures or subspecialize in a specific area of the eye, instead of providing comprehensive general eye care. Therefore, optometrists with an expanded scope of practice are well suited to fill the void in comprehensive general eye care.

Recently, California Senate Bill #929 (SB929) was enacted. This bill calls for a major expansion of optometrists' scope of practice in California. Optometrists will be able to use all topical and many oral drugs needed for eyecare procedures (Schedule I and II controlled substances would be excluded). The new bill also allows optometrists to order laboratory tests, perform punctal occlusion, remove imbedded foreign bodies, perform epilation procedures, and lacrimal irrigation. Additionally, therapeutic treatment of preseptal cellulitis, primary open angle glaucoma, allergies, trichiasis, infectious diseases, inflammations and disorders of the eye and appendages will be allowed by the bill.

The concern of some policy makers is whether California optometrists have adequate knowledge and training to safely prescribe the medications and perform the procedures outlined in SB929. Opponents of an expanded scope of practice have argued that California optometrists are inadequately trained in their didactic and clinical education to institute such reforms. Michael Brennan, M.D., secretariat for state affairs for the American Academy of Ophthalmology (AAO), has gone so far as accusing optometry of trying to blur in the public mind "the vast educational differences between physicians and non-physicians."

While the American Academy of Ophthalmology (AAO) is correct in stating that other medical-related professions such as optometry have less overall medical education than medical doctors do, it seems to overlook dentistry. In fact, the law does not deny medical, diagnostic, or surgical procedures to dentistry. The American Medical Association (AMA) does not challenge dentistry's right to use all necessary procedures to maintain periodontal health. This may be due to the fact that dentistry has very little
overlap with clinical medicine, while optometry has significant overlap with clinical medicine.

Nonetheless, if dentistry enjoys the same legal standing as medicine in treating diseases of the mouth, should optometry have the same legal standing as medicine in treating diseases of the eye? The answer to this question may be found by comparing the educational requirements and scope of practice of optometry with that of dentistry.

An overview of the course catalogs of the University of California, Berkeley School of Optometry (UCB), and the University of California, San Francisco School of Dentistry (UCSF) seems to indicate that the two schools have similar educational requirements. In fact, all optometry and dental schools in the United States require entering students to have Bachelor’s degrees and/or extensive basic science prerequisites. Both schools are four years in length with the first two years being primarily academic, the third year being a transition year into clinic, and the fourth year being primarily clinical.5,6 Despite seemingly similar educational requirements and programs, the scope of practice of dentistry in California appears unhindered by law while optometrists are told in very exacting detail what they can and cannot do legally. Indeed, the California scope of practice laws for dentistry clearly establish dentistry as a medical profession with a broad range of medical privileges: “Dentistry is the diagnosis or treatment, by surgery or other method, of diseases and lesions and the correction of malpositions of the human teeth, alveolar process, gums, jaws, or associated structures; and such diagnosis or treatment may include all necessary related procedures as well as the use of drugs, anesthetic agents, and physical evaluation.”

By contrast, the scope of practice laws for California optometrists are much more restrictive, even after the enactment of the new bill. The basic provisions of the California Business and Professions Code hold that the practice of optometry 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 and spectacle lenses for, or the fitting or adaptation of contact and spectacle lenses to, the human eye, including lenses which may be classified as drugs by any law of the United States or of this state, (5) the use of topical pharmaceutical agents for the sole purpose of the examination of the human eye or eyes for any disease or pathological condition. The topical pharmaceutical agents shall include mydriatics, cycloplegics, anaesthetics, and agents for the reversal of mydriasis.7

Further, optometrists in California can gain the right to diagnose and use certain therapeutic agents if they pass an exam for therapeutic certification pursuant to Section 3041.3 of the Business and Professions Code. Under the newly enacted bill, optometrists who are certified to use therapeutic pharmaceutical agents pursuant to Section 3041.3 are legally allowed to use the following: topical lubricants, antiallergy agents, anti-inflammatories (including steroids), antibiotic agents, hyperosmotics, antigastric agents, and antiviral agents. They are also allowed to use these oral medications: antihistamines, nonsteroidal anti-inflammatories, acyclovir, analgesics, codeine, hydrocondone, and selected antibiotics under certain circumstances.8

These optometrists are certified to use the above mentioned therapeutic agents for the following conditions: infections of the anterior segment and adnexa, excluding the lacrimal system, the sclera or anyone with AIDS, ocular allergies of the anterior segment and adnexa, ocular inflammation, (nonsurgical in cause, limited to inflammation resulting from traumatic iritis, peripheral corneal inflammatory keratitis, episcleritis, and unilateral nonrecurrent nongranulomatous idiopathic iritis in patients over the age of 18), traumatic or recurrent conjunctival or corneal abrasions and erosions, corneal surface disease, dry eyes, ocular pain (not related to surgery), and primary open angle glaucoma in patients over the age of 18. The newly enacted bill requires that an ophthalmologist be consulted if the condition fails to improve rapidly.

“An optometrist who is certified to use therapeutic pharmaceutical agents pursuant to Section 3041.3 may also perform all of the following: mechanical epilation, ordering of smears, cultures, sensitivities, complete blood count, mycobacterial culture, acid fast stain, and urinalysis, punctal plugs insertion and removal, therapeutic contact lenses, removal of nonperforating foreign bodies of the cornea, eyelid, and conjunctiva and lacrimal irrigation and dilation for patients over 12.” Unlike dentists, however, optometrists in California are not allowed to perform surgery, which is defined as “any procedure in which human tissue is cut, altered, or otherwise infiltrated by mechanical or laser means.”

We evaluated the biomedical curriculum of UCB and UCSF to determine if the required “medical” education for optometry is comparable to that of dentistry in California. We chose to study UCB and UCSF because both schools are part of the same University of California system. Both schools are also recognized as premier institutions in their respective disciplines according to rankings designated by The Gourman Reports.9 Because of their similarities, we believe UCB and UCSF represent a fair comparison between optometric and dental education in California. If the study finds that the biomedical education at UCB is comparable to that of UCSF, this will lend support to the argument that optometrists in California are entitled to a wider scope of practice. If UCB’s biomedical curriculum is found lacking compared to UCSF, this may shed light into how UCB and perhaps other optometry schools can improve their medical education.

Methods

Collecting the Data

UCSF was contacted and asked to supply documentation detailing the curriculum for its DDS program. A copy of the 1998 Accreditation Self-Study of the School, compiled by Hilary K. Pritchard (Principal Analyst, Academic Affairs, UCSF School of Dentistry), was sent. This document contained a syllabus and detailed description for each course in the dental curriculum. In addition, the UCSF general catalog for 1998-99 was obtained which contained the
### Table 1
Comparison of General Medical Courses

<table>
<thead>
<tr>
<th>Category</th>
<th>UCSF Courses</th>
<th>UCSF QHU</th>
<th>UCSF TCH</th>
<th>UCSF TCH Adjusted</th>
<th>UCB Courses</th>
<th>UCB SHU</th>
<th>UCB TCH</th>
<th>UCB TCH Adjusted</th>
<th>Difference in TCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Anatomy</td>
<td>Gross &amp; Head and Neck (2 courses)</td>
<td>8</td>
<td>80</td>
<td>80</td>
<td>Prerequisite IB 131 &amp; 131L</td>
<td>5</td>
<td>75</td>
<td>75</td>
<td>-5</td>
</tr>
<tr>
<td>Histology</td>
<td>General Histology</td>
<td>4.5</td>
<td>45</td>
<td>45</td>
<td>None</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-45</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>Biochemistry (2 courses)</td>
<td>8</td>
<td>80</td>
<td>60</td>
<td>Prerequisite MCB 102</td>
<td>4</td>
<td>60</td>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>Microbiology</td>
<td>½ of Micro / Immunology course</td>
<td>3</td>
<td>30</td>
<td>30</td>
<td>Prerequisite MCB 112</td>
<td>4</td>
<td>60</td>
<td>60</td>
<td>+30</td>
</tr>
<tr>
<td>Immunology</td>
<td>½ of Micro / Immunology course</td>
<td>3</td>
<td>30</td>
<td>30</td>
<td>Part of VS 106 Specific Anot / Phys</td>
<td>0</td>
<td>0</td>
<td>45</td>
<td>+15</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>Neuroscience</td>
<td>4</td>
<td>40</td>
<td>40</td>
<td>VS 117 Neurology</td>
<td>2</td>
<td>30</td>
<td>30</td>
<td>-10</td>
</tr>
<tr>
<td>General Physiology</td>
<td>Physiology / Nutrition</td>
<td>6</td>
<td>60</td>
<td>60</td>
<td>Prerequisite IB 132 &amp; 132L</td>
<td>5</td>
<td>75</td>
<td>75</td>
<td>+15</td>
</tr>
<tr>
<td>Pharmacology and Systemic Disease</td>
<td>General Pathology &amp; Pharmacology (4 courses)</td>
<td>14</td>
<td>140</td>
<td>140</td>
<td>Basic Pharm and Systemic Disease (2 courses)</td>
<td>10</td>
<td>150</td>
<td>150</td>
<td>+10</td>
</tr>
<tr>
<td>Basic Medical Emergencies</td>
<td>CPR &amp; Medical Emergencies</td>
<td>1</td>
<td>10</td>
<td>10</td>
<td>CPR &amp; BME</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>-5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>51.5</td>
<td>515</td>
<td>495</td>
<td>30</td>
<td>450</td>
<td>500</td>
<td>+5</td>
<td></td>
</tr>
</tbody>
</table>

IB = Integrative Biology  
MCB = Molecular and Cell Biology  
QHU = Quarter hour units  
SHU = Semester hour units  
TCH = Total classroom hours

quarter-hour units for each course. Likewise, a copy of the UCB general catalog for 1998-99 was obtained as well as individual course syllabi for each course required for its OD degree.

**Compiling the Data**  
The prerequisites for admission and courses taught for the two schools were compared. Only medically relevant prerequisites and courses were evaluated in the study. A prerequisite or course was considered medically relevant to the study if it contained a discrete and quantifiable amount of material that related to one of the following categories: General Anatomy, Histology, Biochemistry, Microbiology, Immunology, Neurology, Physiology, General Pharmacology / Systemic Disease, Profession-specific Anatomy/Physiology, Profession-specific Embryology, Profession-specific Pharmacology/Disease, Profession-specific Surgical Techniques, Radiology, Injections, and Basic Medical Emergencies. These were evaluated further and separated into the major categories of General Medical Courses (Table 1) and Profession-specific Medical Courses (Table 2). We chose these categories for comparison because they represent the medical foundation necessary for practice in both optometry and dentistry.

Because courses at UCSF are listed in quarter hour units (QHU) and courses at UCB are listed in semester hour units (SHU), credit hours for the two schools were standardized into Total Classroom Hours (TCH) by using the following standard definitions. A one SHU course is considered to be a course meeting for one hour per week for the entire 15-week semester or 15 TCH. A course that is credited with one QHU is a course meeting for one hour per week for the entire 10-week quarter or 10 TCH.

**Data Analysis**  
A course from the UCB or UCSF curriculum was placed in a medical category if it contained at least 5 TCH of material that pertained to that category. When one school had such a course, any comparable course-work from the other school was included regardless of amount. For the majority of the courses, the course descriptions found in its syllabus allowed us to easily determine their general med-
Table 2  
Comparison of Profession-specific Medical Courses

<table>
<thead>
<tr>
<th>Category</th>
<th>UCSF Courses</th>
<th>UCSF QHU</th>
<th>UCSF TCH</th>
<th>UCSF TCH Adjusted</th>
<th>UCB Courses</th>
<th>UCB SHU</th>
<th>UCB TCH</th>
<th>UCB TCH Adjusted</th>
<th>Difference in TCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Anatomy and Physiology</td>
<td>Oral Biology / Physiology (5 courses)</td>
<td>6</td>
<td>60</td>
<td>60</td>
<td>VS 106 Ocular Anatomy and Physiology (2 courses)</td>
<td>8.5</td>
<td>112.5</td>
<td>112.5</td>
<td>+52</td>
</tr>
<tr>
<td>Specific Embryology</td>
<td>Craniofacial development &amp; Function (2 courses)</td>
<td>2</td>
<td>20</td>
<td>20</td>
<td>Visual development</td>
<td>2</td>
<td>30</td>
<td>30</td>
<td>+10</td>
</tr>
<tr>
<td>Specific Pathology and Pharmacology</td>
<td>Oral Pharmacology and Pathology (6 courses)</td>
<td>11</td>
<td>110</td>
<td>110</td>
<td>Ocular disease and Pharmacology (2 courses)</td>
<td>8</td>
<td>120</td>
<td>120</td>
<td>+10</td>
</tr>
<tr>
<td>Surgery Techniques</td>
<td>Surgical dentistry</td>
<td>6.5</td>
<td>65</td>
<td>65</td>
<td>Opt 499 two 2 hour labs</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>-61</td>
</tr>
<tr>
<td>(7 courses)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiology</td>
<td>Oral X-rays</td>
<td>2</td>
<td>20</td>
<td>10</td>
<td>Ocular imaging taught in 106/136</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-30</td>
</tr>
<tr>
<td>Other Imaging</td>
<td></td>
<td>1</td>
<td>10</td>
<td>20</td>
<td></td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Injections</td>
<td>Local Anesthesia</td>
<td>0.5</td>
<td>5</td>
<td>5</td>
<td>Opt 499 1 lecture and 2 hour lab</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Profession-Specific TCH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Medically Relevant TCH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General Anatomy, UCB was credited as having 75 TCH of General Anatomy in its curriculum. During analysis of the information, if a course was found to contain less or more material than indicated by the SHU or QHU noted in the course catalogs of UCB or UCSF, the number of TCH credited to that program for that course was adjusted accordingly. Adjustments were made in six of the fifteen categories: Biochemistry, Immunology, Basic Medical Emergencies, Specific Anatomy/Physiology, Surgical Techniques, and Injections. Twenty TCH were deducted from UCSF in the category of Biochemistry because their Biochemistry courses set aside 20 classroom hours strictly for review of previous material. UCB gained 45 TCH in Immunology due to the use of a problem-based learning (PBL) sequence within its specific Anatomy and Physiology course. While this sequence only totaled one SHU (15 TCH), it was designed to be equivalent to a normal 3 SHU (45 TCH) course, and the 45 TCH were therefore ascribed to UCB. Because the PBL sequence took the place of lecture hours in UCB’s Specific Anatomy/Physiology course, the third adjustment was a loss of 15 TCH in that area.

While not making Basic Medical Emergencies a formal part of its curriculum, UCB also gained 5 TCH in this area by requiring all its students to be CPR certified and by sponsoring a CPR/Basic Medical Emergencies course from an outside vendor. The final two adjustments are found in Surgical Techniques and Injections. While UCB did not have courses in these areas, the program did require students to take an Advanced Clinical Procedures course. This course included 4 TCH of Surgical Techniques and 3 TCH of local injection instruction, which were allotted to UCB in the appropriate categories. The TCH of the two programs were compared for each individual category, the two major categories of Basic Medical Courses and Profession-spe-
cific Medical Courses, and overall for the two programs. Any differences in individual categories indicated or in the program as a whole were analyzed. If UCB had more TCH than UCSF, the difference was positive, while the difference was negative if UCSF had more TCH.

Results

The results are found in Table 1 and Table 2. Table 1 shows the comparison of Basic Medical Courses taught at UCB and UCSF. After adjustments, UCB had a total of 500 TCH in its General Medical Courses while UCSF totaled 495 TCH. The two schools were fairly similar in the number of TCH devoted to General Anatomy, Biochemistry, Neurology, General Pharmacology/Systemic Disease, and Basic Medical Emergencies. UCB and UCSF each have 60 TCH in Biochemistry. UCSF taught 40 TCH of Neurology compared to 30 TCH at UCB. General Pharmacology/Systemic Disease differed by 10 TCH, with UCB having 150 TCH compared to UCSF with 140 TCH. Finally, UCB taught 5 TCH of Basic Medical Emergencies material while UCSF taught 10 TCH.

The greatest difference occurred in the categories of Histology, Microbiology, Immunology, and General Physiology. UCSF devoted 45 TCH to Histology while UCB did not spend any classroom hours teaching the subject. UCB required 60 TCH of Microbiology compared to UCSF with 30 TCH. UCB required 45 TCH in Immunology (when taking into account its PBL sequence) while UCSF required 30 TCH. UCB required 75 TCH of General Physiology and UCSF required 60 TCH.

Table 2 is a comparison of the courses taught at two schools that are specific to each profession. After adjustments, UCSF devoted 290 TCH to Profession-specific Medical Courses while UCB required 269.5 TCH. UCB and UCSF were similar in the number of classroom hours spent on the categories of Specific Embryology and Specific Pathology/Pharmacology with UCB teaching 10 TCH more than UCSF. Both schools spent few classroom hours on Injections; UCSF devoting 5 TCH while UCB spent 3 TCH.

Two schools differed more in Profession-specific Anatomy/Physiology, Profession-specific Surgical Techniques, and Radiology. In Profession-specific Anatomy/Physiology, UCB taught 112.5 TCH compared to UCSF's 60 TCH. In Profession-specific Surgical Techniques and Radiology, UCSF devoted 67.5 and 30 TCH respectively, while UCB devoted only 4 TCH to the former and no quantifiable hours to Radiology.

Discussion

The results of the study indicate that of the individual categories studied, the two schools were similar in eight of the fifteen: General Anatomy, Biochemistry, Neurology, General Pharmacology/Systemic Disease, Basic Medical Emergencies, Profession-specific Embryology, Profession-specific Pathology/Pharmacology, and Injections. Each of these categories had differences of no more than 10 TCH. The two schools varied substantially in the amount of time allotted to the remaining seven categories.

The variation in hours between the two programs is explained in one of three ways. Some categories contained few TCH for either school. These categories were included in the study because UCSF teaches them as independent courses in their curriculum and they could not be lumped together with any other category. Local injections, totaling 5 TCH for UCSF and 3 TCH for UCB, and Basic Medical Emergencies, with 10 TCH at UCSF and 5 TCH at UCB, fall into this group.

Alternatively, the variation noted in some categories is a direct reflection of what is legally within the scope of practice of the profession. General Histology, Surgical Techniques, and Radiology fall into this group. Because radiographic imaging is performed daily in dentistry but almost never in optometry, there is a large disparity between the two educational programs in this category. UCSF requires 30 TCH while UCB does not offer an independent course. Likewise, dentistry, which is allowed to perform surgical excision of teeth among other things, needs to have more Histology and surgical technique in its education. If optometry were allowed surgical privileges, more TCH would have to be spent in this area.

The final explanation for the large variation of TCH within individual categories is that while both programs feel the area is important, there is a finite amount of TCH within the program and this must be prioritized to ensure that students are competent within their scope of practice. This requires sacrificing the thoroughness of some course-work to make room for other courses. Profession-specific Anatomy/Physiology, Profession-specific Embryology, Microbiology, Immunology, and General Physiology all fall into this group. Substantially more TCH are taught at UCB in each of these areas because UCB students do not need much in Radiology, Surgical Techniques, and Histology. UCSF reduces its students' basic medical education in order to better educate them in specific medical skills of the profession.

Although the difference between the two programs is variable in each category, the overall amount of time spent on basic medically relevant material in the two programs is almost the same. Analyzing the results of the study indicates that UCB teaches a total of 500 TCH in this group while UCSF teaches 495 TCH. This is a 5 TCH difference between the two curricula in Basic Medical Course-work. In Profession-specific Medical Courses, a 20.5 TCH difference was found with UCSF devoting slightly more classroom time; 290 TCH as compared to 269.5 TCH at UCB. When the entire didactic medical education is compared, 785 TCH were spent on medically relevant didactic material at UCSF while 769.5 TCH were spent in the same areas at UCB (Table 2). This 15.5 TCH represents a 2% difference in total didactic medical education at the two institutions.

Since this study addressed the curricula at UCB and UCSF in an effort to support an expanded scope of practice for optometry, special importance should be placed on how the two institutions train their students in 1) General Pharmacology/Systemic Disease and 2) Profession-specific Disease and Pharmacology. While similar in TCH, UCB has 10 TCH more in each of the two categories; 150 TCH and 120 TCH respectively at UCB as compared to 140 TCH and 110 TCH at UCSF.

In summary, of the fifteen general and specific medical categories compared, UCSF and UCB are similar in eight categories: General Anatomy, Biochemistry, Neurology, General Pharmacology/Systemic Disease, Basic Medical Emergencies, Profession-spe-
specific Embryology, Profession-specific Pharmacology/Disease, and Injections. Of the remaining seven categories, Histology, Profession-specific Surgical Techniques, and Radiology may represent areas that are necessary for the dental profession while not currently necessary for optometry. Dentistry does enjoy a much greater scope of practice than optometry and these three categories reflect areas currently unavailable to optometry. These categories may also represent areas that need to be incorporated into the optometric curriculum and areas where the scope of practice of optometry needs to be expanded to facilitate their addition. Other areas where UCB should incorporate specific requirements are Local Injections and Immunology, which were found within other courses, and Basic Medical Emergencies, required as an extracurricular course. In the remaining course work categories, UCB has more TCH than UCSF, which indicates that the training in these areas is comparable.

Are the advancements in the didactic and clinical education of optometrists in California enough to justify an expanded scope of practice? Although optometry and dentistry are professions with different specific requirements needed to deliver quality patient care, their basic medical tenants are the same. The results of this study indicate that the UCB curriculum is comparable to the UCSF curriculum in medically relevant didactic training.

With optometry being granted the right to prescribe diagnostic and therapeutic agents in the last two decades, optometry schools have significantly increased the number of hours spent on pharmacology and pathology. It can be expected that optometry schools will continue to enhance their curricula to meet the demands of optometry’s expanding scope of practice. It is clear that although the curricula of UCB and UCSF are generally equivalent in the basic medical subjects, dentists in California enjoy a much greater scope of practice than optometrists in the state. We believe our findings support the argument for an expanded scope of optometric training.

Acknowledgments

The authors would like to thank Phillip Shui, DDS (graduate of UCSF, class of 1998) for his help in analyzing the course content of the UCSF dental curriculum. His help was invaluable in determining which basic and specific medical categories to include in the study, and in determining the appropriate category for each course. We would also like to thank Hilary K. Pritchard (Principal Analyst, Academic Affairs, WUCF School of Dentistry) for her contribution. The Self-Study for Accreditation from UCSF that she provided for our use was invariably linked to the successful completion of this thesis.

References
4. California Business and Professions Code, Section 3041.3.
6. UCSF Publication # 4254: Dental School Announcement, Vol. 38, Number 2 May, 1998
7. California Business and Professions Code, Section 1625-1636.6.

ASCO Meetings Calendar

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCO Chief Academic Officers Meeting</td>
<td>June 24-25, 2002</td>
<td>New Orleans, Louisiana</td>
</tr>
<tr>
<td>ASCO Executive Committee Meeting</td>
<td>June 25, 2002</td>
<td>New Orleans, Louisiana</td>
</tr>
<tr>
<td>ASCO Annual Meeting</td>
<td>June 25-26, 2002</td>
<td>New Orleans, Louisiana</td>
</tr>
<tr>
<td>ASCO Annual Luncheon</td>
<td>June 26, 2002</td>
<td>New Orleans, Louisiana</td>
</tr>
<tr>
<td>ASCO Corporate Advisory Board Breakfast</td>
<td>June 28, 2002</td>
<td>New Orleans, Louisiana</td>
</tr>
</tbody>
</table>

For the most up-to-date information on ASCO meetings, contact ASCO's website at http://www.opted.org
"A man has made at least a start on discovering the meaning of human life when he plants shade trees under which he knows full well he will never sit."

- Anonymous-
Table of Contents

- President's Message

- Partnership Questions & Answers

- Contributing Partners 2001
  — Schools and Colleges of Optometry
  — National Organizations
  — Industry

- Financial Report 12/31/01

- Partnership Board of Directors
  — Officers
  — Directors
President’s Message

In 1996, the leadership of the AOA and ASCO joined as partners in a new and creative venture to ensure the future viability of optometric education. Conceived from the historic 1992-1994 “Georgetown Summit: A Critical Assessment of Optometric Education,” the Partnership Foundation for Optometric Education was established to provide the necessary long-term financial support for professional optometry programs (O.D.) and the related special needs of the profession.

Agreements with schools/colleges and state, regional and national entities providing continuing education are our key funding mechanisms. These Contributing Partners agree to add $1.00 per registrant for each credit hour of continuing education provided and contribute the sum to the Partnership. At the same time, the Partnership began accepting corporate contributions, including sizable contributions from CIBA and an on-going generous investment from Biocompatibles that we are extremely grateful to receive.

In 2001, we were pleased to welcome the College of Optometrists in Vision Development (COVD) as a Contributing Partner. We also saw our first regional association and state society become Partners, thus, reaching a major milestone in our development and taking a major step in becoming a true partnership. I’m proud that the Southwest Council of Optometry and the Louisiana State Association of Optometrists demonstrated their commitment to the future of the profession during my term as President. I’m confident that these ground-breaking precedents will open the door to more regional and state associations joining in the years ahead.

With all seventeen schools and colleges now Contributing Partners and thanks to the AOA, the Academy, and virtually all other major national optometric organizations (see “Contributing Partners 2001”), the Partnership surpassed the $1 million dollar threshold in the year 2001 despite the economic downturn.

We are proud of our early success but have a long road to travel before reaching our ultimate goal of $1 billion by the year 2020. However, we have only just begun to forge the alliances with organizations and corporations that will result in a strong future for the optometric educational enterprise and the profession.

Thanks to all of our Contributing Partners from the profession, education and industry for investing in the future of optometry.

Sincerely,

John A. McCall, O.D., President
February 2002
Partnership Questions & Answers

What is the Partnership Foundation?

The Partnership Foundation for Optometric Education is a not-for-profit 501(c)(3) organization estab­lished in 1996 by the Association of Schools and Colleges of Optometry (ASCO) and the American Optometric Association (AOA). It is separately incorporated to control its own activities, including finances.

The Partnership was conceived as a direct result of the 1992-1994 Georgetown Summit: A Critical Assessment of Optometric Education, which concluded that with government funding virtually nonex­istent and capital needs then estimated to be $1.6 billion, a new funding vehicle was critical to ensure the future viability of the optometric education enterprise and recommended that:

"All state, regional and national entities, along with the schools and colleges of optom­etry, should be strongly urged to contribute an add-on sum of $1 per registrant to an educational trust for each credit hour of continuing education provided."

What is the Partnership’s purpose?

The Partnership’s purpose is to provide financial support for the advancement of optometric education and related special needs of the profession. The underlying financial objective is to grow the Partnership to $1 billion by the year 2020, while distributing some funds annually. Distributions may begin once the fund reaches $25 million.

Who will be the primary beneficiaries of the Partnership?

The next generation of practitioners will be the primary beneficiaries through financial support of the professional optometry degree programs (O.D.) and related special needs of the profession.

How will Partnership funds be used?

Funds will be distributed to the schools/colleges and other organizations ("Contributing Partners") through a fair share capitation approach. Funds will be distributed according to the following three cat­egories: Capitation (i.e., 20-30% of funds available for distribution to assist all institutions); Index of Participation (i.e., 50% of funds available for distribution to reward large contributing institutions); and Special Projects (i.e., 20-30% of funds available for distribution to meet related special needs of the pro­fession).

Contributing institutions will determine the specific uses of their fair share distribution. Examples are rehabilitation and modernization of physical plants, including teaching laboratories; equipment to enhance the learning environment and enhance patient care; acquisition and integration of advanced technologies into clinical teaching programs; and development of teaching materials for both student and practitioner lifelong learning.
How will Partnership funds be invested?

At least seventy-five percent of the earned income will be reinvested in the Partnership until the $1 billion goal is met, and at least twenty-five percent will be reinvested afterwards in order to grow the Partnership. The Board of Directors has adopted a long-term investment policy designed to maximize returns without exposure to undo risk. A professional investment advisor chosen by the Board of Directors is managing the Partnership's long-term investments.

What organizations are eligible to become “Contributing Partners”?

Participation is open to all institutions and organizations providing continuing optometric education and to organizations that support the mission and purposes of the Partnership. This includes the schools and colleges of optometry (all seventeen are “Contributing Partners”), the AOA and its state affiliates and regional councils, and other optometric organizations and corporations. “Contributing Partners” agree to add $1 per hour per registrant for each hour of paid continuing education provided. “Contributing Partners” are eligible for positions on the Board of Directors, which will determine specific policies governing the future disbursement of funds.

What organizations and corporations are already “Contributing Partners”?

In addition to the AOA, Co-Founding Partner with ASCO, national, regional and state organizational “Contributing Partners” include the: American Academy of Optometry, American Optometric Student Association, Association of Regulatory Boards in Optometry, College of Optometrists in Vision Development, National Board of Examiners in Optometry, the Optometric Admissions Testing Program (OAT), Southwest Council of Optometry and the Louisiana State Association of Optometrists.

“Corporate Contributing Partners” include Biocompatibles, which contributes two percent of AOA members' purchases of Biocompatibles Proclear lenses and CIBA Vision Corporation.

How can other entities become “Contributing Partners”?

The Partnership is exploring other mechanisms that will allow entities that do not provide continuing education but have a strong commitment to the future of optometric education to become “Contributing Partners.” The Partnership welcomes and encourages industry support.

What is the governance structure of the Partnership?

A Board of Directors governs the Partnership. The officers and directors for 2001 appear on the back cover of this report. Additional directors will be elected as new partners are added. The Executive Director is Martin A. Wall.
Contributing Partners 2001

Schools and Colleges of Optometry

Illinois College of Optometry
Indiana University, School of Optometry
Inter American University of Puerto Rico
Michigan College of Optometry at Ferris State University
New England College of Optometry
Northeastern State University, College of Optometry
Nova Southeastern University, College of Optometry
Pacific University, College of Optometry
Pennsylvania College of Optometry
Southern California College of Optometry
Southern College of Optometry
State University of New York, State College of Optometry
The Ohio State University, College of Optometry
University of Alabama at Birmingham, School of Optometry
University of California at Berkeley, School of Optometry
University of Houston, College of Optometry
University of Missouri at St. Louis, School of Optometry

National Organizations

American Optometric Association (Co-Founding Partner)
American Academy of Optometry
American Optometric Student Association
Association of Regulatory Boards in Optometry
Association of Schools and Colleges of Optometry (Co-Founding Partner)
College of Optometrists in Vision Development
National Board of Examiners in Optometry
Optometric Admissions Testing Program (OAT)

Regional Organizations

Southwest Council of Optometry

State Associations

Louisiana State Association of Optometrists

Industry

Biocompatibles
CIBA Vision Corporation
## Financial Report 12/31/01

### SCHOOLS AND COLLEGES

<table>
<thead>
<tr>
<th>College/University</th>
<th>Contributions</th>
<th>Interest and Appreciation</th>
<th>Balance</th>
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<td>Inter American University of Puerto Rico</td>
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<tr>
<td>Michigan College of Optometry</td>
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<td>New England College of Optometry</td>
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<tr>
<td>Nova Southeastern University, College of Opt.</td>
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<tr>
<td>Pacific University, College of Optometry</td>
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<td>Southern California College of Optometry</td>
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<td>University of Alabama/Birmingham, Sch. of Opt.</td>
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<td>University of Missouri/St. Louis, Sch. of Opt.</td>
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### OTHER ORGANIZATIONS

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<th>Organization</th>
<th>Contributions</th>
<th>Interest and Appreciation</th>
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<td>COVD</td>
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<td>ARBO</td>
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**Balance to date**

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<th>Interest and Appreciation</th>
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<tr>
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<td>University of Houston, College Of Optometry</td>
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<td><strong>Total</strong></td>
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<td><strong>$93,854.41</strong></td>
<td><strong>$1,162,781.46</strong></td>
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### IN-KIND CONTRIBUTIONS

- ASCO: $92,913.00
- University of Houston, College Of Optometry: $2,876.00

### SIGNED AGREEMENT/NOT YET CONTRIBUTING

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2001 Partnership Board of Directors

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Analysis of an Optometry School’s Patient Population

Martha E. McKay, O.D., F.A.A.O
Christopher E. Woodruff, O.D.
Jay M. Rumsey, O.D., F.A.A.O.

Abstract
To assess whether changes to the scope of optometric practice have changed the patient population examined, a survey was conducted using 158 patient encounters at the Nova Southeastern University College of Optometry Primary Care Clinic. Patient encounters were classified into various categories. These data were compared to the traditional optometric patient population and the prevalence of vision disorders. Our patient population mirrors a traditional optometric practice except for a higher prevalence of accommodative dysfunction and a lower prevalence of strabismus. This analysis confirms that optometry continues to engage primarily in the correction of refractive and binocular vision disorders.

Key Words: scope of practice, vision disorders.

Introduction
Optometry has experienced substantial changes in the past 30 years. As with any change, both supporters and detractors will find ways to advance their viewpoint. The rapid changes wrought by technological, legislative, political, professional and economic forces have caused a growing number of practitioners to examine the impact of these changes on our survival as a profession. The Association of Schools and Colleges of Optometry (ASCO) initiated a strategic/long range planning process in 1985 that continues today. This process was devised to adequately prepare optometry students to meet expected changes in optometry. The optometric curriculum has been scrutinized to evaluate the impact of these changes on preparing the optometrists to utilize diagnostic pharmaceutical agents. Thirty years would appear to be adequate time to evaluate the ways in which these profound changes have affected the everyday practice of optometry. In order to explore this change, a study was undertaken to analyze the types of patients seen in a suburban clinic that is part of Nova Southeastern University College of Optometry. It was assumed that the patient population would mirror a typical optometric practice, and at most, a specialized optometric practice in that patients would be drawn to a university clinical setting with the expectation of more advanced care. These data were compared to the available data on the incidence and prevalence of visual conditions. The purpose of this study was twofold: (1) to ascertain whether a university clinic would attract a greater number of patients with other than routine refractive problems traditionally managed by optometry; and (2) to explore whether the reasons patients seek optometric care is different from that in published reports.

Methods
Three experienced instructors classified 158 random records of patients examined from May 1999 to August 1999 in the Primary Care Clinic. An estimated 1300 patients were seen in the Primary Care Clinic during this period. One hundred fifty eight represents the total number of patients examined by the three investigators during the study period. Only patients examined by the three investigators were included to ensure uniformity of the patient classifications.

The NSU College of Optometry also has three other on-site clinics: the Pediatric/Binocular Vision Clinic in which all patients younger than 10 years are examined and adults with binocular vision problems are referred from the Primary Care Clinic and the community; the Cornea and Contact Lens Clinic to which patients are referred after being examined in the Primary Care Clinic; and the Vision Rehabilitation and Geriatric Clinic that accepts referrals for low vision services from the University-based clinics and the community. The Primary Care Clinic was founded in 1996 and serves a suburban popula-
tion. Eyecare services are provided by third-year students under the supervision of licensed optometric faculty.

The three instructors participated and supervised these patient examinations and also completed the patient records including diagnosis and treatment. The categories used for classification were age, chief complaint, refractive status, binocular and accommodative status, ocular and systemic health and treatment plan. The conditions under refractive status were defined as any spherical minus, plus and cylindrical corrections found on manifest refraction for myopia, hyperopia and astigmatism, respectively. Emmetropia was defined as plano manifest refraction. Presbyopia was defined as a requirement for a plus prescription at near due to age-related changes in accommodation. The conditions under binocular status of convergence/divergence excess/insufficiency were defined as an inability to meet Sheard's criterion (the fusional vergence reserve should be at least twice the demand). High heterophoria was defined as an inability to meet Morgan's norms. Strabismus was defined as any manifest deviation. The conditions under accommodative status were defined as infacility if there was an inability to clear (binocularly) +/- 2.00D lenses for a period of 10 cycles per minute, and insufficiency if the accommodative amplitude was below the lower limits of the expected age levels.

Children younger than 10 years are scheduled for the Pediatric/Binocular Vision Clinic and, consequently, excluded from this study. All other patients are scheduled for examination in the Primary Care Clinic, thus ensuring representation of all other age and patient types. The data collected were compared to available data on the types of patients traditionally seen by optometrists, as well as the prevalence data of visual disorders. The research protocol was submitted and approved by the Institutional Review Board of Nova Southeastern University.

Results

One hundred fifty-eight (158) patient records were reviewed. An estimated 1300 patients were seen in the Primary Care Clinic during this period. The mean age for the group was 36 years. Table 1 presents the age distribution data. Table 2 represents the presenting reason for the patient seeking an eye examination. Approximately 26% of the patients expressed difficulty with distance vision while 31% complained of near blur. This latter value can be explained on the basis that 63% of the patients were 40 years of age or older and presbyopic.

Table 3 shows the patients' refractive status with 40% hyperopes, 46% myopes, 62% astigmats, 12% emmetropes. Table 4 indicates the percent of presbyopes to be 63%, which is identical to those patients age 40 or older.
Table 4
Frequency Distribution of Refractive Status (Presbyopia)

<table>
<thead>
<tr>
<th>Refractive Status</th>
<th>Number per 158 Patients</th>
<th>Percent per 158 Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Presbyopic</td>
<td>58</td>
<td>36.7%</td>
</tr>
<tr>
<td>Presbyopic</td>
<td>100</td>
<td>63.3%</td>
</tr>
</tbody>
</table>

Table 5
Frequency Distribution of Binocular Status (excludes amblyopia)

<table>
<thead>
<tr>
<th>Binocular Status</th>
<th>Number per 153 Patients</th>
<th>Percent per 153 Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convergence/Divergence</td>
<td>12</td>
<td>7.8%</td>
</tr>
<tr>
<td>Excess/Insufficiency</td>
<td>21</td>
<td>13.7%</td>
</tr>
<tr>
<td>High Heterophoria</td>
<td>1</td>
<td>0.7%</td>
</tr>
<tr>
<td>Strabismus</td>
<td>119</td>
<td>77.8%</td>
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</tbody>
</table>

Table 6
Frequency Distribution of Accommodative Status

<table>
<thead>
<tr>
<th>Accommodative Status</th>
<th>Number per 58 Patients</th>
<th>Percent per 58 Patients</th>
</tr>
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<tbody>
<tr>
<td>Normal</td>
<td>44</td>
<td>75.9%</td>
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<tr>
<td>Infacility</td>
<td>5</td>
<td>8.6%</td>
</tr>
<tr>
<td>Insufficiency</td>
<td>9</td>
<td>15.5%</td>
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</table>

Table 7
Frequency Distribution of Ocular Health

<table>
<thead>
<tr>
<th>Condition or Ocular Structure Affected</th>
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<th>Percent per 158 Patients</th>
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<tbody>
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<td>Adnexa</td>
<td>13</td>
<td>8.3%</td>
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<tr>
<td>Anterior Chamber</td>
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<td>5.1%</td>
</tr>
<tr>
<td>Conjunctiva/Sclera</td>
<td>20</td>
<td>12.7%</td>
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<tr>
<td>Cornea</td>
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<tr>
<td>Glaucoma Suspect</td>
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<td>2.5%</td>
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<tr>
<td>Glaucoma</td>
<td>4</td>
<td>2.5%</td>
</tr>
<tr>
<td>Good Ocular Health</td>
<td>100</td>
<td>63.3%</td>
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<tr>
<td>Lens</td>
<td>9</td>
<td>5.7%</td>
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<tr>
<td>Macula</td>
<td>2</td>
<td>1.3%</td>
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<tr>
<td>Optic Nerve Head</td>
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<td>4.4%</td>
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<tr>
<td>Retina</td>
<td>21</td>
<td>13.3%</td>
</tr>
<tr>
<td>Vitreous</td>
<td>9</td>
<td>5.7%</td>
</tr>
</tbody>
</table>

Table 5 indicates that 78% of the patients were deemed to have normal binocular vision; 22% of the patients were diagnosed with some type of binocular dysfunction (high eso-, exophoria, convergence/divergence insufficiency/excess) and less than 1% were strabismic. Amblyopia was diagnosed in 5 patients, which represents 3% of the patient population. Table 6 shows that, with the exclusion of the presbyopic patients, 76% of the patients had normal accommodative function, while 24% had a certain degree of accommodative dysfunction (insufficiency/infacility).

Table 7 enumerates the ocular conditions found in these patients; 100 of these 158 patients were assessed to have good ocular health, which represents 63% of the patient population. The next two largest sub-categories were conjunctiva/sclera (e.g. pinguecula, pterygia) with 13% prevalence and retina (e.g. macular degeneration, pavingstone degeneration, lattice degeneration, RPE hypertrophy) with 13% prevalence. The prevalence of patients with glaucoma was found to be 2.5%.

Table 8 details the patients' general health as elicited during the case history. Thus, self-reported general health status showed 78% with good overall health, 5% diagnosed as diabetics, 15% hypertensives, 2% suffering from asthma and 16% with other health conditions (e.g. allergies, anemia, arthritis, high cholesterol, thyroid conditions, vertigo).

Table 9 identifies the treatment prescribed for these patients. Twelve percent (12%) of the patients required no change in their eyeglass prescription while 57% did necessitate a change; 9% of the patients were asked to return for a visual field evaluation, 4% were referred for a binocular vision evaluation and 11% were referred for a contact lens evaluation. Four percent (4%) were prescribed medication and 3% were referred for a medical consultation.

**Discussion**

The population sample reviewed in this study showed similar trends to those found in evaluating the typical optometric patient population. The majority of patients seen in the Primary Care Clinic sought eye care due to an inability to see well or a desire for new vision correction (glasses or contact lenses). The per-
The prevalence of refractive conditions shows variation with age such that school-aged children and young adults are myopic in greater numbers than presbyopes who demonstrate more hyperopia. Our sample, which included ages 10 and over, would be expected to show approximately the same number of hyperopes and myopes since the data for all ages was included. Even though our study shows only 12% of the sample was emmetropic, this is consistent with published reports when a strict definition of emmetropia is used, i.e., plano refraction. Published reports that show emmetropia comprising a larger percentage (15% to 55%) of the population have used a definition of emmetropia that includes small degrees of myopia and hyperopia (e.g., -0.25D to +0.75D). As published, our sample showed that astigmatism was the single most prevalent refractive anomaly (62%), and is similar to reported rates of 53% to 71%. The number of presbyopes paralleled the number of patients examined who were over 40 years of age.

The population sample included in this study showed an overall general binocular dysfunction prevalence rate of 22%, similar to previously published estimates that 21% of optometric patients suffer from binocular vision problems. However, the vergence dysfunction prevalence rate of 0.7% strabismus was lower than the previously reported population prevalence of 6%. A corresponding higher prevalence of other vergence dysfunction (convergence insufficiency/excess of 7.8% and high eso/exophoria of 13.7%) was also found. The prevalence rate of amblyopia was found to be consistent with previously reported prevalence rates of 2.5% to 3%. Among non-presbyopes, accommodative dysfunction was the most prevalent condition with a 24% occurrence rate. This is higher than the previously reported prevalence rate of 15%.

The ocular health status of the sample indicated that the majority (100 out of 158), that is 63%, were determined to have good ocular health. This finding reflects an absence of any abnormal ocular health findings, without differentiation for the severity of abnormality. In other words, patients who had an innocuous condition such as pinguecula would have been counted as having "abnormal" conjunctiva. Therefore, the number of patients with good ocular health is likely higher than reflected by this percentage. The percent of glaucoma patients was found to be 2.5% and is consistent with previously published studies.

The population sample showed that the majority (123 out of 158), that is 78%, were in good general health, as elicited during the case history. The next two largest categories were patients who had been diagnosed with diabetes (5%) and hypertension (15%). The prevalence of these two conditions in the sample parallels those found in the general population. This suggests that the sample is broadly representative of the general population.

For 84% of the sample, the treatment prescribed involved refractive, binocular vision assessment or contact lenses; 9% needed a visual field assessment; 4% were given medicat-

<table>
<thead>
<tr>
<th>Health Status</th>
<th>Number per 158 Patients</th>
<th>Percent per 158 Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Health</td>
<td>123</td>
<td>77.8%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>8</td>
<td>5.1%</td>
</tr>
<tr>
<td>High Blood Pressure</td>
<td>23</td>
<td>14.6%</td>
</tr>
<tr>
<td>Asthma</td>
<td>3</td>
<td>1.9%</td>
</tr>
<tr>
<td>Other (e.g. allergies, anemia, arthritis, high cholesterol, thyroid conditions, vertigo)</td>
<td>25</td>
<td>15.8%</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Number</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Change in Rx</td>
<td>26</td>
<td>12.3%</td>
</tr>
<tr>
<td>Change Rx</td>
<td>120</td>
<td>56.9%</td>
</tr>
<tr>
<td>Visual Fields</td>
<td>18</td>
<td>8.5%</td>
</tr>
<tr>
<td>Binocular Vision Evaluation</td>
<td>8</td>
<td>3.8%</td>
</tr>
<tr>
<td>Medical Therapy</td>
<td>8</td>
<td>3.8%</td>
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<tr>
<td>MD Referral</td>
<td>7</td>
<td>3.3%</td>
</tr>
<tr>
<td>Contact Lens Referral</td>
<td>24</td>
<td>11.4%</td>
</tr>
<tr>
<td>Total</td>
<td>211</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 8: Frequency Distribution of General Health Status

Table 9: Frequency Distribution of Treatment

Analysis of published data regarding the prevalence and distribution of refractive conditions shows variation with age such that school-aged children and young adults are myopic in greater numbers than presbyopes who demonstrate more hyperopia. Our sample, which included ages 10 and over, would be expected to show approximately the same number of hyperopes and myopes since the data for all ages was included. Even though our study shows only 12% of the sample was emmetropic, this is consistent with published reports when a strict definition of emmetropia is used, i.e., plano refraction. Published reports that show emmetropia comprising a larger percentage (15% to 55%) of the population have used a definition of emmetropia that includes small degrees of myopia and hyperopia (e.g., -0.25D to +0.75D). As published, our sample showed that astigmatism was the single most prevalent refractive anomaly (62%), and is similar to reported rates of 53% to 71%. The number of presbyopes paralleled the number of patients examined who were over 40 years of age.

The population sample included in this study showed an overall general binocular dysfunction prevalence rate of 22%, similar to previously published estimates that 21% of optometric patients suffer from binocular vision problems. However, the vergence dysfunction prevalence rate of 0.7% strabismus was lower than the previously reported population prevalence of 6%. A corresponding higher prevalence of other vergence dysfunction (convergence insufficiency/excess of 7.8% and high eso/exophoria of 13.7%) was also found. The prevalence rate of amblyopia was found to be consistent with previously reported prevalence rates of 2.5% to 3%. Among non-presbyopes, accommodative dysfunction was the most prevalent condition with a 24% occurrence rate. This is higher than the previously reported prevalence rate of 15%.

The ocular health status of the sample indicated that the majority (100 out of 158), that is 63%, were determined to have good ocular health. This finding reflects an absence of any abnormal ocular health findings, without differentiation for the severity of abnormality. In other words, patients who had an innocuous condition such as pinguecula would have been counted as having "abnormal" conjunctiva. Therefore, the number of patients with good ocular health is likely higher than reflected by this percentage. The percent of glaucoma patients was found to be 2.5% and is consistent with previously published studies.

The population sample showed that the majority (123 out of 158), that is 78%, were in good general health, as elicited during the case history. The next two largest categories were patients who had been diagnosed with diabetes (5%) and hypertension (15%). The prevalence of these two conditions in the sample parallels those found in the general population. This suggests that the sample is broadly representative of the general population.

For 84% of the sample, the treatment prescribed involved refractive, binocular vision assessment or contact lenses; 9% needed a visual field assessment; 4% were given medica-
tion and 3% were referred for medical intervention. This outcome shows rates similar to other studies that indicate that patients seen in optometric practice seek eye care for non-refractive reasons in less than 10% of the cases.\textsuperscript{3,13,15} It is estimated that only 5% to 10% of the total population need annual ophthalmological services, including surgery and treatment,\textsuperscript{17,20} and reflects estimates that ophthalmologists devote the majority of their time to primary eye care.\textsuperscript{31}

However, the American Optometric Association has shown an interesting change in its report, "Caring for the Eyes of America," which has detailed the percent of patients who seek optometric care for "eye infection, disease or injury." The 1998 report indicated that 4.3% of patients indicated this as their primary reason for seeking care; the 2000 report, however, indicated that 8.6% of the sample gave this as their primary reason. Even though the AOA reports for the years 1991 and 1992 do not specifically detail the response to this question, the percentages that state refractive reasons for seeking eye care increased with each report except for the 2000 report (80% in 1991, 92% in 1992, 97% in 1998, 90% in 2000).\textsuperscript{30}

Despite the fact that the change in those seeking care for disease or injury represents a significant increase, it is nevertheless a minority of patients who seek optometric care for other than refractive reasons. It is also evident that only a minority of patients need ophthalmological services, which has resulted in an oversupply of ophthalmologists. In light of this and the declining reimbursement for its services, ophthalmology is undergoing a process of reexamination as to its role in the current and future health care environment. As such, ophthalmology has responded by decreasing the number of medical residencies by 15.6% between 1993 and 1998,\textsuperscript{3} proposing separate training for "medical (non-surgical) ophthalmology" and "surgical ophthalmology"\textsuperscript{15} and the inclusion of the dispensing of eyewear in its practices.\textsuperscript{13,16,17}

The goal of clinical care, which it shares with public health, is to protect, conserve and restore the health status of patients. In order to do this specifically in the area of vision care, efforts can range from providing optimal visual function to the treatment and rehabilitation of blindness or total loss of visual function. This is an important health concern due to the significant costs that are incurred in the United States by blindness and visual impairment,\textsuperscript{11} that is, 3.4% prevalence and estimated economic costs of $4 billion annually.\textsuperscript{34} Not only is this a public health concern, but it is also a concern of individuals who as health consumers are better educated and have assumed a more proactive role in making informed decisions about their own health care. Consumer satisfaction monitoring in total quality management (TQM) programs has revealed that patients perceive their eye care needs to be refractive and eyewear-based. Some view this as an undesirable outcome for optometry because it defines the profession within narrow terms.\textsuperscript{36} It is possible to view this development less as a narrow definition of the profession than as the public's desire to have a basic need met and their perception of the profession best educated to do it.\textsuperscript{38}

Nevertheless, studies conducted to determine patients' perceptions about eyecare providers in settings that include all three (ophthalmologists, optometrists and opticians) demonstrate that the vast majority of patients require correction of refractive error and that there is a general inability to differentiate the services provided by each professional.\textsuperscript{17,20} As is demonstrated by current and past studies, there is a far greater need in the population for routine and preventative care, and a far greater impact to individuals and society from providing these, than for specialized care. In order to best and most broadly serve the public, clinical eye care must address the totality of vision impairment, which includes not only visual acuity and diseases of the eye, but also functional impairment (binocularity, accommodative disorders, computer-related difficulties). Despite the fact that uncorrected refractive error is the most common cause of vision impairment in the United States, its importance is underestimated and undervalued. However, the benefits to patients and the general public are indisputable.\textsuperscript{39} Optometry's role in treating visual anomalies and rehabilitation provides a service to a greater number of the public than our role in treating eye disease processes. For optometry, the rush to embrace the more recently legislatively acquired and non-traditional aspects of the profession appears to neglect the importance of this service to individuals' quality of life and productivity, as well as the attendant benefit to society at large. Dissenting opinions to this trend have focused on the economic impact to optometrists' livelihood that traditional optometric aspects of the profession make versus the newer therapeutic aspects of optometry.\textsuperscript{3,36,38,40} This emphasis ignores the far more important public health service provided by traditional optometry in improving individuals' lives in their functional performance at work and home.\textsuperscript{3,4} Even those who purport to speak to optometry's role in helping the nation meet its public health needs focus mostly (and narrowly) on the disease aspects of public health,\textsuperscript{3} even though it has been shown that most of the improvement in the public's health has been due to preventive measures (hygiene, nutrition, reproductive behavior) rather than medical care.\textsuperscript{42}

The results of this study indicate that even within a university clinical site that might be perceived as more specialized, the vast majority of patients present with routine refractive problems that have been traditionally managed by optometry. The study also demonstrates that there appears to be little difference in patient types or proportion (refractive versus non-refractive) as a result of the changes that have occurred in optometry over the past 30 years. Whether this is a result of faulty public perception of the expanded scope of optometric practice or the public's desire to seek out those who can best meet one of their basic needs is a worthwhile focus for further study.

Acknowledgements

We wish to acknowledge the assistance of Patrick Hardigan, Ph.D., and Lewis Reich, O.D., Ph.D., for their advice and guidance.

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Dr. Janoff Chosen as Journal Editor

Lester E. Janoff, O.D., M.S.Ed., F.A.A.O., professor of optometry at Nova Southeastern University College of Optometry, was chosen by ASCO's Board to be the new editor of Optometric Education, effective July 1, 2002, following the completion of Dr. Roger Wilson's term as editor. Dr. Janoff will serve as editor from July 1, 2002 – June 30, 2005.

Dr. Janoff has served for many years as a member of Optometric Education's review board. He has written for numerous optometric publications and is well connected in the optometric education community.

Before coming to Nova Southeastern, Dr. Janoff was on the faculty at the New England College of Optometry (1983 – 1990), and the Pennsylvania College of Optometry (1964 – 1978).
Eyeing Abuse: Preparing Optometry Students for their Role in Domestic Violence Intervention

Elizabeth Hoppe, O.D., M.P.H., Dr.P.H., F.A.A.O.
C. Denise Pensyl, O.D., M.S., F.A.A.O.

Abstract

Introduction: Domestic violence is a serious concern in the United States. Physicians, nurses and dentists have developed curricula on the topic for their students, but the profession of optometry has not.

Methods: Current literature and examples of successful domestic violence education programs were reviewed. The types of situations and injuries that an optometrist is likely to observe were evaluated. A videotaped curriculum and instructor's manual were developed.

Results: The videotape was shown to 179 optometry students. Scores on the pre-test ranged from 2 to 9 correct answers with a mean of 5.7. Scores on the post-test ranged from 6 to 10 correct answers with a mean of 9.3. A paired t-test showed a significant difference (p<0.0001).

Conclusion: This curriculum is effective in increasing optometry students' knowledge related to domestic violence.

Key Words: curriculum, public health, domestic violence, ocular injuries

Introduction

Domestic violence is a serious medical and public health concern in the United States with over 4 million cases estimated each year. Among these cases, it is estimated that annually 1.5 million women in the U.S. experience physical assault by an intimate partner. Forty-three percent of battered women seek medical services as their primary source of help, indicating that entry into the health care system is an important avenue for victim identification and assistance. Many health professionals, including physicians, nurses and dentists, have developed educational campaigns for their members and students in training.

One profession that has yet to establish a standardized educational program about domestic violence is optometry. Domestic violence victims not only present to emergency departments, but also seek attention from primary care providers in disproportionate numbers; ten to thirty percent of women routinely seeking primary care report a history of domestic abuse. Because many of the types of injuries in domestic violence occur to the eyes, face, skull, and neck, with 5% causing permanent disfigurement, hearing loss or visual impairment, optometrists are ideally suited to play a crucial role in victim identification and directing suspected victims towards appropriate assistance.

Support for the involvement of doctors of optometry can be found in resolutions adopted by both the American Optometric Association (AOA) and the American Public Health Association (APHA). In 1996 the AOA House of Delegates passed a resolution on “Abuse Against Individuals Unable to Protect Themselves,” which maintains that optometrists have an ethical and societal responsibility to be advocates for those suffering abuse. The resolution also calls for state optometric associations to educate their members on abuse issues and for practitioners to report abuse cases as required by state law. Similarly, in 1999 the American Public Health Association passed a resolution that included a call for optometric educators to expand eye health curricula to include domestic violence prevention and intervention strategies.

The American Medical Association guidelines state that domestic violence and its medical sequelae are sufficiently prevalent to justify routine screenings of patients in various health care settings, including primary care settings. As primary care providers, optometrists have an obligation to screen for, and provide options to, domestic abuse victims. Optometric institutions therefore have an obligation to provide education and training on identification and intervention.

The purpose of this paper is to describe a curriculum that has been developed to provide standardized education and a training tool for domestic violence intervention appropriate to the optometric educational setting. This project builds on past and current efforts of other health care professionals to increase awareness of domestic violence. By developing a videotape seminar specifically for optometrists with appropriate guidelines for intervention, a previously untapped segment of the health care professions can be activated to assist in the identification and resolution of cases of domestic abuse.
care delivery team will be enrolled in domestic violence prevention.

Curriculum Development Process

In order to manage domestic violence situations and resulting injuries, optometrists need to know more about how to diagnose and treat problems associated with domestic violence. Currently, the training tools for increasing awareness are limited and not specific to optometry or eye care. As primary care providers, optometrists need to know how to communicate with empathy and compassion, while carrying out the appropriate intervention steps. Because domestic violence is a complex issue involving social, cultural, and personal beliefs, a standardized educational intervention is the best means of increasing optometrists’ awareness and ability to care for victims.

This curriculum strove to meet these goals by designing, creating, disseminating and evaluating a videotape seminar targeted towards optometrists and optometry students. The videotape format was selected to ensure the presentation of a standardized curriculum and to allow for flexibility in the mode of delivering the information. For example, the videotape could be shown in a public health class, patient communications course, systemic pathology course, or an ocular pathology course. The videotape could also be used as a homework assignment or reserve library material. The videotape format was also preferred to ensure that the material was presented with the highest quality possible.

A successful educational intervention will improve optometrists’ public health practices and ultimately impact victims of domestic violence and populations at high risk for violence. Five specific goals were articulated at the start of the curriculum development. The goals of this project were to:

1. Raise optometry students’ awareness of domestic violence as a public health problem
2. Enroll optometry students to practice routine screening, support and advocacy for abuse victims
3. Develop skills for clinical practice necessary to routinely screen, support, document, and assess the safety of suspected victims
4. Inform optometry students how to refer victims to sources of assistance
5. Improve care of the total patient including emotional and psychological ramifications

In developing the videotape seminar, the current literature and examples of successful domestic violence education programs such as Philadelphia Physicians for Social Responsibility’s RADAR Domestic Violence Intervention Training Project, “TrustTalk - Ohio Physicians’ Domestic Violence Project” from the Ohio State Medical Association and Department of Human Services, and the Massachusetts Medical Society Seminar Series on Domestic Violence were reviewed. The project director and co-director evaluated examples specific to the types of situations and the types of injuries that an optometrist is likely to observe, as well as information on the background and dynamics of domestic violence. Pre- and post-test assessment tools were developed to evaluate the effectiveness of the educational intervention on the students’ knowledge base.

Curriculum

The curriculum developed consists of a 45-minute videotape program and an accompanying instructor’s manual. The major topical areas covered in the videotape are listed in Table 1. The format for the videotape presentation includes dissemination of information by a narrator, victim testimonials, role-playing scenarios, examples of documentation, color photographs of injuries resulting from violence, bullet points, graphics, and clinical scenario vignettes.

The instructor’s manual consists of an introduction, learning objectives, bibliography resources, course outline, sample safety plan, consent to photograph form, sample body map, internet resources, pre-test assessment quiz, post-test assessment quiz, answers to the assessment quizzes, discussion questions, class exercises, and out-of-class activities. Examples from the different sections are shown in Tables 2 - 5.

Results

The expected short-term benefits of this program are: 1) better preparation of students to handle patients who are victims of domestic violence and 2) an optometric educational curriculum that includes training to meet the diverse requirements of today’s primary eye care professionals. Long-term benefits include improved patient care with a reduction in the mortality and morbidity of domestic violence from early intervention.

A standardized evaluation of the videotape seminar and resulting changes in the knowledge base was completed by optometry students participating in the assessment phase of this project. Pre- and post-intervention assessment tools were administered to measure changes in knowledge about: 1) the magnitude of the problem of domestic violence, 2) signs and symptoms of domestic violence, 3) elements of intervention, 4) barriers to identifying abuse, 5) interviewing and documentation techniques, 6) reporting requirements, and 7) referral resources. The pre-test was administered just prior to viewing the videotape, with the subsequent post-test immediately following the videotape and class discussion.

The videotape was shown to a total of 179 students at the Southern California College of Optometry. The program was administered to 84 first year students in the fall quarter public health class and 95 third year students in the spring quarter public health class. Pre- and post-tests consisting of ten questions (see Figure 1) were administered and the data was analyzed for mean scores and statistically significant differences in test performance before and after the material was presented.

Table 1

<table>
<thead>
<tr>
<th>Major Topical Areas Covered in Videotape</th>
</tr>
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<tbody>
<tr>
<td>Introduction with definition of violence</td>
</tr>
<tr>
<td>Tactics of Abuse</td>
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<tr>
<td>The Facts: Victims and Effects</td>
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<tr>
<td>Cycle of Violence</td>
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<tr>
<td>Barriers Against Leaving</td>
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<td>Health Care Role</td>
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<td>Screening and Identification</td>
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<tr>
<td>Ocular Injuries</td>
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<td>Other Physical Injuries</td>
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<td>Related Medical Findings</td>
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<td>Behavioral Symptoms</td>
</tr>
<tr>
<td>Documentation</td>
</tr>
<tr>
<td>Intervention</td>
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<tr>
<td>Summary</td>
</tr>
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</table>
Scores on the pre-test ranged from 2 questions to 9 questions answered correctly. The mean score on the pre-test was 5.7, with a standard deviation of 1.4. Scores on the post-test ranged from 6 questions to 10 questions answered correctly. The mean score on the post-test was 9.3, with a standard deviation of 0.86. The distribution of scores is shown in Figure 2. The mean difference in scores was 3.6 (95% confidence interval 3.4, 3.9). A paired t-test showed a statistically significant difference in the test scores (p< 0.0001).

Students participating in the program were also encouraged to further explore the issues raised by completing optional out-of-class assignments. Several students researched published literature for more information on the topic or reviewed and critiqued Internet web sites. One student took the opportunity to present information learned in class, and through additional articles, to a group of young women in an informal discussion setting. This demonstrates that students who participated in the course were motivated enough by the course to share the information they had learned, a positive unexpected outcome of the curriculum.

Discussion

The long-term benefits of the educational curriculum developed remain unknown. Researchers evaluating the long-term effectiveness and retention of domestic violence education in a medical school class found that some improvement in domestic violence awareness was still present two years after the instruction took place. However, some information was not retained. The authors of this research suggest that domestic violence instruction should be reemphasized throughout the entire medical school curriculum22.

Issues related to domestic violence play an important role in the delivery of health care and in the practice of public health prevention and intervention. Marshall12 emphasizes that the discipline of public health provides the framework for making rational decisions about the complexities of health care. As such, optometric educators have a responsibility to educate students in the principles, concepts, and practice of public health.

The curriculum developed in this project has demonstrated its effectiveness in increasing optometry students' awareness and in increasing the knowledge of issues related to domestic violence. The curriculum has also served as a starting point for students to pursue additional information on the topic or to participate in related activities.

Marshall offers the sage advice that advancement of the public health philosophy within the venue of optomet-

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**Table 2**

Learning Objectives

After viewing this videotape, students should be able to:

1. Discuss the eye care provider’s role in screening, diagnosing, managing, documenting, reporting and referring adult domestic violence.
2. Describe the prevalence of and risk factors for domestic violence in the general population.
3. List and explain the barriers to identification of domestic violence.
4. Identify common “myths” regarding domestic violence and the facts that refute them.
5. List examples of screening questions for all female patients, and for patients who present with possible signs of domestic violence.
6. Be able to describe the appropriate steps for documentation in the patient’s medical record and for photography of injuries.
7. Discuss the acronym “RADAR” and give specific examples for each step.

**Table 3**

Discussion Questions

1. How does domestic violence differ from child abuse or elder abuse?
2. What are the reporting requirements for domestic violence in this state? What about the state where you plan to practice?
3. What are the barriers that you think might potentially keep you from asking a patient about domestic violence?
4. Have you ever seen a patient whom you suspected might be a victim of a domestic violence situation? What were the indicators of the problem?
5. Are you aware of any community resources in our area where you might refer a patient?
6. What do you think are the reasons that a victim of domestic violence might not leave the relationship?
7. What are some systemic effects of domestic violence that might be reported to you in your case history systems review?

**Table 4**

Class Exercises

1. Role Playing: one student assumes the role of eye care provider; the other is a patient coming in for routine care. Role model the appropriate screening history questions about domestic violence that you might ask of any patient.
2. Role Playing: one student assumes the role of eye care provider, the other is a patient who has signs of trauma that lead you to suspect a domestic violence situation. Role model the appropriate questions you would ask of a patient whom you suspect may be the victim of abuse.
3. Role Playing: one student assumes the role of eye care provider; the other is a patient who has just confessed to being in an abusive relationship. Role model the appropriate steps for an intervention.
Table 5
Out-of-Class Activities

1. Evaluate a web site: Find a web site that deals with the topic of domestic violence. Critique the site's content, design, and format. Is the content accurate, easy to understand, written in appropriate language? Is the site easy to navigate? What do you like / dislike about the site? What do you think could be done to improve the site? How could you use this site in your future practice?

2. Read more about it: Find an article that deals with the topic of domestic violence. The article may be in a scientific journal, a professional journal, or the popular press. What did you learn from the article? Critique the content. Is the information presented accurate, easy to understand, written in appropriate language? Does it come from a reliable source? If it is a research article, was the methodology and sampling carried out according to valid scientific methods? How could you use this information in your future practice?

3. Tell someone else: Share the information you have learned about domestic violence with someone else who was not in the class. The person you choose to talk with might be another health care professional or a health professions student. What role does his/her profession play in the detection of domestic violence? What are some signs and symptoms that he or she would be likely to notice in that health profession? The person you choose to talk with might be someone in another profession who might be aware of domestic violence situations, such as a teacher, clergy member, day care worker, hair stylist. What are some signs and symptoms that he or she would be likely to notice in that type of profession? The person you choose to talk with might be at risk for being involved personally in a domestic violence situation. What would you say to him or her?

Figure 1
Pre-test and Post-test Assessment Quiz Questions

<table>
<thead>
<tr>
<th>Pre-Assessment Quiz</th>
<th>Post-Assessment Quiz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Women who are married are at greatest risk of domestic violence (F).</td>
<td>1. Women who are single, separated, or divorced are at greatest risk of domestic violence (T).</td>
</tr>
<tr>
<td>2. Women who are of lower income or minority groups are more likely to be abused (F).</td>
<td>2. Domestic violence cuts across all racial, ethnic, social, and economic backgrounds (T).</td>
</tr>
<tr>
<td>3. A woman who leaves her home may be more likely to die as a result of abuse (T).</td>
<td>3. Women who stay in the relationship and don't leave are more likely to be killed than those who leave (F).</td>
</tr>
<tr>
<td>4. Domestic violence between intimate partners rarely involves children (F).</td>
<td>4. Children who live in violent homes are often victims of physical or emotional abuse (T).</td>
</tr>
<tr>
<td>5. While all states require reporting of child abuse, only some require reporting of domestic violence (T).</td>
<td>5. All 50 states have reporting laws requiring the reporting of domestic violence (F).</td>
</tr>
<tr>
<td>6. In your role as a primary care provider, you should only ask about domestic violence if there are visible injuries to the head, face or neck (F).</td>
<td>6. It is best to ask all female patients about their risk of domestic violence as a part of the normal case history (T).</td>
</tr>
<tr>
<td>7. There are many types of abuse, some of which do not leave physical marks (T).</td>
<td>7. Once you are aware, you can always tell who is a victim of abuse by her symptoms (F).</td>
</tr>
<tr>
<td>8. It is best to discuss the accusations with the alleged abuser, to get his side of the story (F).</td>
<td>8. It is best to question the victim of domestic abuse alone, away from her partner and children (T).</td>
</tr>
<tr>
<td>9. You should make sure your patients at risk take home plenty of brochures about domestic violence (F).</td>
<td>9. Patients may be placed at greater risk of an abusive episode if an intimate partner finds brochures about domestic violence or phone numbers for hot lines or shelters (T).</td>
</tr>
<tr>
<td>10. Good record keeping minimizes the likelihood that you would ever have to testify in a domestic violence court case (T).</td>
<td>10. A simple notation in the patient's chart describing your clinical findings is all that is required when caring for a victim of domestic violence (F).</td>
</tr>
</tbody>
</table>

Acknowledgements

Funding in support of this project was provided by CIBA Vision; Vistakon, Division of Johnson & Johnson Vision Care, Inc.; American Public Health Association; Association of Schools and Colleges of Optometry; Southern California College of Optometry; University of Alabama at Birmingham School of Optometry; and Nova Southeastern University. Diane Reich Productions staff is gratefully acknowledged for the development of the videotaped program. Those who wish to view a copy of this videotape may obtain it through any of the schools and colleges of optometry, or from the International Library, Archives, & Museum of Optometry.
Figure 2
Number of Correct Responses by Pre-and Post-Tests

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21 American Public Health Association Joint Policy Resolution number 9925: Domestic Violence Screening, Identification, and Referral by Dental Health and Eye Care Professionals


Assessing Clinical Reasoning: Design and Performance Characteristics of the NBEO PAM Examination

Leon J. Gross, Ph.D., F.A.A.O.
David W. Davidson, O.D., M.S., F.A.A.O.

Abstract

The National Board has implemented a new Patient Assessment and Management (PAM) test to replace the VRICS and PMP written tests of the Part III (Patient Care) exam. The intent was to have one test that retained all of the important attributes of the two tests it was replacing, but that could be administered in a shorter period of time, and be more amenable to computer-based delivery. The test needed to be rich in visuals, and assess clinical problem solving skills, as well as knowledge of relevant subject matter.

PAM was administered for the first time in April 2000. This paper describes the structure of this test and provides a performance analysis of the first test administration.

Key Words: PAM, clinical assessment, National Board examinations

In 2000, the National Board of Examiners in Optometry (NBEO) changed its Part III - Patient Care examination significantly. The two written sections, Visual Recognition and Interpretation of Clinical Signs (VRICS) and Patient Management (consisting of Patient Management Problems or PMPs), were replaced by a single written section, Patient Assessment and Management (PAM). This consolidation was intended to provide a more efficient assessment, while more broadly sampling clinical conditions, and thus, elevating content validity. In addition, the consolidation increased the quantity and clinical relevance of the visual assessment component.

In essence, PAM was designed to retain and extend the most compelling features of its predecessors: more photographs than VRICS, and more patient encounters than PMPs. PAM also rendered the written component of Part III more amenable to computerization by simplifying the format and reducing the assessment from two sessions lasting 6 1/4 hours, to a single 4-hour session. This paper describes the format and characteristics of the PAM examination, as well as its initial performance analysis.

Format and Characteristics

In order to optimize its length and ease of conversion to computerized administration, PAM was designed as a single 4-hour assessment session. A single session is preferred for computerization, given current and probable future usage patterns and limitations among computerized testing services providers. Four hours is the maximum session length that candidates can be expected to work at optimal levels on a challenging credentialing examination.

Consistent with the case-oriented format of its PMP predecessor, PAM was structured around patient presentations. Unlike the complexity and length of PMPs that limited the sampling of clinical conditions that could be tested, the PAM case presentations were considerably shorter, which allowed for more cases (40 vs. 5 for PMPs) and conditions to be assessed, which elevates content validity.

PAM items are organized as abbreviated patient encounters, and presented in the form of item clusters. Each cluster consists of three multiple-choice items that are linked to a patient scenario. This structure of several questions referencing a common array of clinical data in an abridged problem-solving format has several variations in credentialing tests in medicine. However, the objective that these novel formats share with PAM is to measure clinical thinking and decision making with broad content sampling and psychometric efficiency.

Each PAM scenario contains demographic data, and personal, family, oculomotor, and overall health data — the critical mass of a typical case history — plus relevant clinical findings. For most scenarios, two or more of the clinical findings are presented in visual form, simulating their appearance in a live patient encounter; for some clusters, visuals are presented within the response options. For example, an item might ask which clinical presentation of a resolving bacterial corneal ulcer would be most probable following one week of appropriate antibiotic treatment. The use of visuals was an enhancement over the PMP structure in which all findings were presented as textual descriptions, and an enhancement over the VRICS structure that usually limited each presentation to one visual, with no follow-up questions that would add depth to the assessment.
The PAM items are in multiple-choice format. However, the items can be considered to be in an extended multiple-choice format due to two characteristics. First, each item can contain as many as ten options, rather than being limited to five, as is typical of most multiple-choice tests, including the other National Board written examinations. Second, the items within a cluster are interrelated, rather than being independent.

The items within a cluster focus on either a diagnosis or treatment issue. The first item in a cluster is the most critical, querying the candidate regarding either the correct diagnosis or the correct treatment. The two subsequent items measure any of a number of related or follow-up clinical issues. Although the items are related, the scoring protocol allows a candidate who selects an incorrect response for the first item to select the correct response to either or both of the follow-up items.

The PAM items are differentially weighted for scoring (i.e., one or two points), rather than having the same scoring weight (i.e., one point only), as traditional multiple-choice items. The first item in each cluster, as the most critical, is worth two points if answered correctly. Each of the two follow-up items is worth one point.

Each item cluster has a performance standard. The standard is based on allowing only one error per cluster, so long as the error is on one of the follow-up items. As each cluster contains four points, the allowance of one non-critical error yields a performance standard of 75% (three of four points) for each cluster. However, unlike in the prior PMP scoring in which missing the most critical item would result in no points being received for any related items for the patient’s condition, PAM scoring allows candidates to receive credit for correct follow-up responses despite selecting a wrong answer to the initial items.

The pass-fail cutoff score for PAM is determined in a manner similar to that of other National Board written examinations. For each written test, a pass-fail cutoff score is the average of a test’s item performance standards. Since the item performance standard for each cluster is 75%, the pass-fail cutoff score on PAM is 75%. However, by National Board criteria, candidates do not pass or fail individual sections; passing is based exclusively on the overall Part III performance. Therefore, the PAM cutoff score of 75% is added to the cut-off score for the Clinical Skills Examination (CSE) and then weighted such that the PAM cutoff accounts for 35% of the overall Part III pass-fail cutoff score. Candidates at or above this overall cutoff score pass Part III, regardless of their profile of section scores or subscores.

Results of First Administration

The first PAM administration was on April 3, 2000. The test was administered at 26 sites to 1368 candidates.

Scoring was conducted as it is for other National Board written tests. An initial test and item analysis was reviewed and annotated by the staff psychometrician for potentially flawed and/or miskeyed items. This analysis was accompanied by a print-out of all transcribed item critiques written by candidates on a designated form during the test, and a copy of the test booklet.

These materials were sent to each member of the Board’s Part III Examination Council for review via telephone conference call. The Council identified items that were miskeyed to be rekeyed; items that were identified as otherwise flawed (e.g., ambiguous) were to be deleted from scoring. Subsequent to this conference call, the final section scoring was conducted based on the Council’s directives.

This process resulted in 13 items totaling 14 points being deleted from the final scoring. The final statistics were therefore based on 107 items totaling 146 points. The 146 points were converted to a reporting scale with a maximum of 471 points. This 471-point weighting, when combined with the maximum value of 875 points on CSE, produced a section weight for PAM of 35% of the overall Part III score.

A histogram displaying the distribution of PAM scores is presented in Figure 1. As this figure indicates, the vast majority (nearly 90%) of the candidates scored above the section cutoff score of 75%. Table 1 displays the PAM summary statistics. The PAM scores ranged from 49% to 98%, with a mean score of 82.9%. This level of performance was more similar to that of prior VRICS examinations than prior PMP examinations, as shown in Figure 2.

PAM was expected to be more similar in performance to VRICS because of the multiple-choice format, and the independence of individual items in scoring, unlike the PMP test with a highly complex format and item linkages within scoring. The anticipated similarity in performance between PAM and VRICS is reflected by the similarity in their respective recommended minimum passing scores. The historic range for VRICS cutoff scores was 75-80%; in contrast, the historic cutoff score range for PMPs was 52-65%.

The replacement of VRICS and PMPs by PAM had little effect on the overall Part III candidate performance, based on comparisons with prior “targeted” administrations (i.e., the administration that hosts the full student cohort). The Part mean score of 87.6% with rounding, was equal to
Future Directions

Significant changes are planned for the 2002 administration and beyond. For 2002, the test will be lengthened by five items. An analysis of candidate utilization of testing time in the 2000 administration indicated that candidates had more than sufficient time to complete the test. These data afforded the Board the option of shortening the time limit for the same number of items, or retaining the same time limit for a larger number of items.

The Board elected to increase the number of items, as increased test length enhances the sampling of optometric content that comprises the test, and therefore elevates content validity. Additional items also enhance the reliability of the assessment. Although the number of item clusters will remain at 40, five of the clusters will contain a fourth item. The 4-item clusters will allow further probing of candidate knowledge in patient assessment, and will likely contain both a diagnosis and a treatment item, each worth two points. The computation of the PAM cutoff score will remain based on limiting the amount of tolerable error per cluster. A second significant change, one more gradual and ongoing, will be to increase the number of visuals per cluster. Finally, it is inevitable that the examination will be administered on computer, although it remains difficult to project a specific date for this conversion.

Summary

In 2002, the National Board replaced the VRICS and PMP sections of Part III with the PAM section. This new section was designed to retain the most important content characteristics of its predecessors. Candidate performance data suggest that the Board was successful in attaining this objective, and that psychometrically, PAM was the equivalent of the two sections that it replaced. Furthermore, PAM provides a shorter, less complex, more efficient assessment of clinical decision making, and is amenable to computerized administration. The latter forms a long-term objective that the Board is pursuing.

Footnotes

* An abbreviated version of this paper was presented within the Section on Optometric Education at the Annual Meeting of the American Academy of Optometry, Orlando, December 2000.

References

IN REVIEW


This new glaucoma text provides a good basic clinical reference with easy-to-read coverage of the topic. The material is presented in 18 chapters including the introduction. There are 14 contributing optometrist authors who provide chapters in their areas of expertise. The authors generally reference lots of current literature when appropriate. There are numerous enriching clinical “pearls” offered throughout the book, though sometimes not prominently displayed.

This is intended to be a clinical reference and “not intended to replace the classic academic textbooks of glaucoma; it is designed to give practical clinical information and guidelines.” While I think that the text holds true to this objective in the most traditional clinical context, I would like to have seen more exploration into the wealth of contemporary information on non-traditional clinical testing. Though many new instruments and tests are unproven in diagnostic value, they hold promise and insight for the future management of the disease. At the pace of research and discovery for glaucoma, that future may come quickly. Holding true to the intent of the book, the reader will not find much discussion on current theory in the pathophysiology of the disease.

The areas that I think this book covers particularly well relative to other available texts are epidemiology, risk factors, clinical examination, visual retinal nerve fiber layer analysis and visual field evaluation. The subject of clinical chairside examination is exhaustive and includes pupil testing, contrast sensitivity, color vision, and corneal thickness measurement. I would like to have seen some coverage on pachometry instrumentation and technique. I believe that this is a valuable instrument in glaucoma management today. There is a very comprehensive section on nerve fiber layer analysis, which leaves little mention of scanning laser polarimetry, optical coherence, tomography and other new technology.

Probably the best section is the automated perimetry chapter, which provides many examples and gives an appropriately detailed guide to visual field testing and interpretation. Here, also, it would have been nice to see some discussion on cutting edge techniques that currently enjoy primarily research application, such as motion automated perimetry and high pass resolution perimetry.

The text provides numerous figures, tables, black and white photos and, particularly, lots of visual fields correlating with specific optic nerve damage. There is a short color plate section. I think it would be helpful in the next edition to include more coverage on glaucomatous optic nerve changes and color photos since the optic nerve and ganglion fiber layer are the primary objective guides to glaucoma diagnosis and management.

One of the best sections is the final chapter. The author presents an analysis of eight case studies. They are all interesting and well selected for their informative value. The student of glaucoma (that would include each of us) will find this section a useful aid in helping to put all the thinking that goes into glaucoma management together.

Guest Reviewer: Dr. David Cale
Assistant Professor
Southern College of Optometry


This is a one-of-a-kind business text that is designed to assist the eye care practitioner in developing the knowledge and skill set needed to succeed in today’s marketplace. By utilizing tried and true marketing principles and applying them to the specifics of eye care services and products, the authors have created a one-stop resource for the eye care practitioner. The topics covered in the 11 chapters include creating your practice identity, marketing goals and objectives, analyzing market opportunities, identifying and targeting patients, building long-term relationships, managing the marketing mix, understanding patient satisfaction, formulating your marketing and business strategy, implementing and controlling your plan, new marketing technology and marketing and valuing the eye care practice for sale.

Each chapter takes the reader through a business strategy and the how-to’s of applying the strategy to the eye care practice. This is done through the use of self-assessment exams, applicable case studies, and clinical examples. The most useful aspect is the Action Plan for Eye Care Practitioners at the end of the chapter. The authors provide a step-by-step approach to apply the principles involved and help effect positive change for the practice.

I found this text to be a valuable reference for the practitioner and I believe the student will find the information and format to be quite useful.

Guest Reviewer: Dr. Greg Luce
Murrayhill Eye Care
Pacific University College of Optometry
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