Minimum requirements and recommendations for a complete vision examination: A survey of requirements and recommendations from state boards of optometry

John R. Harrington
Pacific University

Jonathon C. Thomas
Pacific University

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Abstract
A definition of a complete vision exam has never been universally acknowledged. Guidelines have been developed by many individual state Boards of Optometry and by the American Optometric Association listing specific requirements or recommendations for a complete vision examination. This study is a compilation of individual state Boards of Optometry’s requirements and recommendations for “complete vision examinations.” Letters were sent to all fifty state Boards of Optometry requesting information regarding their requirements and/or recommendations for complete vision examinations. Thirty-three Boards of Optometry responded with information. Of those, twelve have no requirements, three refer directly to the American Optometric Association's guidelines, and eighteen have a range of requirements and/or recommendations. Inconsistencies between state boards are more abundant than areas of agreement in terms of required/recommended procedures. Optometry would benefit from standard guidelines. This would give optometry more professional and legal leverage by virtue of decreasing inconsistencies that exist, increasing overall quality assurance of complete vision examinations, and providing a template for patient care.

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MINIMUM REQUIREMENTS AND RECOMMENDATIONS FOR A COMPLETE VISION EXAMINATION: A SURVEY OF REQUIREMENTS AND RECOMMENDATIONS FROM STATE BOARDS OF OPTOMETRY

By

JOHN R. HARRINGTON
JONATHON C. THOMAS

A thesis submitted to the faculty of the
College of Optometry
Pacific University
Forest Grove, Oregon
For the degree of
Doctor of Optometry
May, 1997

Advisor:
Scott Cooper, O.D., M.Ed.
John Harrington

Jonathon Thomas

Scott Cooper, O.D., M.Ed.
Advisor
BIOGRAPHICAL SKETCHES OF THE AUTHORS

John Harrington

Graduate of the University of Wyoming in 1993 with a Bachelor of Science in Biology. Honored at the Dean's Honors Convocation in 1992 while attending the University of Wyoming. Graduate of Pacific University College of Optometry Class of 1997. Entering post-graduate residency in hospital based optometry at Portland Veterans Administration Medical Center, Portland Oregon, 1997-1998.

Jonathon Thomas

Accepted Alexander Rutherford Scholarship and Wally Green Memorial Scholarship upon entering the University of Calgary, Canada. Graduate of the University of Calgary in 1992 with Bachelor of Science in Zoology. Graduate of Pacific University College of Optometry Class of 1997. Entering post-graduate residency in comanagement of surgical and medical eye care at the Eye Care Associates in Nevada, Reno and Las Vegas, 1997-1998.
ABSTRACT

A definition of a complete vision exam has never been universally acknowledged. Guidelines have been developed by many individual state Boards of Optometry and by the American Optometric Association listing specific requirements or recommendations for a complete vision examination. This study is a compilation of individual state Boards of Optometry’s requirements and recommendations for “complete vision examinations.”

Letters were sent to all fifty state Boards of Optometry requesting information regarding their requirements and/or recommendations for complete vision examinations. Thirty-three Boards of Optometry responded with information. Of those, twelve have no requirements, three refer directly to the American Optometric Association’s guidelines, and eighteen have a range of requirements and/or recommendations. Inconsistencies between state boards are more abundant than areas of agreement in terms of required/recommended procedures.

Optometry would benefit from standard guidelines. This would give optometry more professional and legal leverage by virtue of decreasing inconsistencies that exist, increasing overall quality assurance of complete vision examinations, and providing a template for patient care.
INTRODUCTION

While many of the Boards of Optometry (or their equivalent) have developed practice guidelines that include recommended or required testing for complete vision examinations, others have no specific recommendations. Still others do not have specific practice guidelines of their own, but follow the clinical practice guidelines developed by the American Optometric Association. These guidelines are recommendations for patient care that have been developed by a process involving a combined effort of research and clinical experience in patient care.

The purpose of this study is to collect data from all United States Optometric regulatory bodies as to what constitutes a complete vision examination, and to organize the data categorically. This categorization leads to an analysis of these practice guidelines and begins to identify consistencies. Discussion considers inclusion and exclusion of particular tests in complete vision examinations and further discusses the advantages and disadvantages of clinical practice guidelines. The collection and comparison of requirements in this study will serve as a basis for discussing examination requirements of health maintenance organizations and other practice types, as well as the true composition of examinations in various practice situations.

METHODS

A letter was sent to each of the fifty State Boards of Optometry and the fifty State Optometric Associations requesting any information they may have on recommended or required testing for complete vision examinations (Appendix A). A follow-up letter was sent to those State Boards not responding to the first letter (Appendix B). No follow-up phone calls were made (Appendix C is a complete list of the State Boards who were sent written requests for information). Indiana Optometric Association, who was the only State Optometric Association to reply, is also included in appendix C.

The responses were analyzed and the specific requirements of each state were organized in table form. The specific tests were then organized into the following categories: accommodation, vergence, motilities/motor fields, color vision, neurological testing, tonometry, structure observations, recording requirements, other testing, and refraction subcategories.

RESULTS

Thirty-three organizations responded to our request for information. Of those, twelve have no requirements for what should be included in a complete vision examination and three refer directly to the AOA guidelines. The remaining eighteen states have various requirements that optometrists must meet in their examinations. This data is presented in the table entitled “Examination Requirements or Recommendations by General Category.”

REFRACTION

All of the eighteen organizations with requirements specify that a refraction must be performed. Three of the eighteen were nonspecific about this, stating simply that the optometrist must perform a refraction. Ten require a “subjective refraction,” but were not specific regarding testing distance. On the other hand, five include a requirement that a distance subjective be performed and four organizations require a near subjective refraction. Six require static
retinoscopy, while six others require a nonspecific objective refraction. Five of the responding parties require keratometry and one requires that either an autorefraction or static retinoscopy be performed. See table titled “Refraction Requirements or Recommendations by Subcategory.”

ACCOMMODATION
Accommodation testing is referred to by eleven of the eighteen who have requirements. Two stated that “binocular testing” must be performed. The interpretation of the authors is that accommodation testing is a part of binocular testing. Three require a nonspecific “test of accommodation at distance and near” while two others clearly indicate that accommodative amplitude must be tested. The remaining four are even more nonspecific. They simply state that the optometrist “test accommodative ability.”

VERGENCE
Vergence testing is specified in one fashion or another by thirteen of the eighteen organizations with requirements. (The two organizations mentioned above that require “binocular testing” are included in this category). Four organizations require vergence testing at distance and near. Three out of those four also state that “binocular coordination at distance and near” be tested. Three are nonspecific in their requirement to test vergence and one of those requires that “extraocular measurements” should be taken. This response is included in the vergence category, as eye movements are generally graded, but not always quantified. Four of the organizations are more specific, stating that amplitude of vergence and/or divergence is tested.

MOTILITIES/MOTOR FIELDS
Motilities/Motor fields are required in some form by fourteen of those responding to our survey. Motilities are specified by six organizations as a testing requirement and one of these six also defines this as “extraocular measurement.” “Coordination testing” is required by one while “coordination at distance and near” is required by two more. The others require “ocular muscle balance” testing.

COLOR VISION
Four state organizations require some form of color vision testing. One states that a color vision screening must be performed, another requires this testing be conducted “at time of original examination.” The remaining two are nonspecific in stating simply that “color vision” be tested.

NEUROLOGICAL TESTING
Five of the respondents require neurological testing. Two require the testing of “neurological integrity,” one requires the testing of “pupil reactivity,” and one requires both. The fifth state requires “neurological and systemic evaluation.”

IOP MEASUREMENT
All but two state organizations with written requirements specify that optometrists perform tonometry at each complete vision examination. One state of the remaining two requires that tonometry be performed on those patients twenty-five years old and over, while the other did not mention tonometry as a requirement.
RECORDING REQUIREMENTS

Four state organizations have specific recording requirements for each examination. Two simply state that the examination record is all-inclusive regarding each patient visit. Two require that the record reflects the prescription and one requires that visual acuity be recorded. This category reflects only those organizations that specifically list a requirement for recording.

HEALTH EXAM

All states that replied with requirements indicate that a health exam which includes “adnexa” or “surrounding structures,” anterior segment, and posterior segment evaluations must be included in a complete vision examination.

MISCELLANEOUS

Stereopsis and fusion are included in the “other” section of the table titled “Examination Requirements or Recommendations.” There were five state organizations that listed these, in one form or another, as a requirement. One requires fusion testing at distance and near. Three require the testing of stereopsis, but list no specific procedure or distance. The last one requires the testing of “fusional ability” but makes no other reference to either stereopsis or vergence.

Sixteen of these organizations require that the optometrist complete a case history and visual acuities. Three require confrontation field testing and four simply require that visual fields be performed. Visual fields are to be completed “when indicated” by two of the responders and one requires central visual field testing after the age of forty.

Phorias are required by four of the state organizations. Three require that the patient be given recommendations and directions for educational purposes. One requires that the patient receive a referral to another doctor as needed. Four require that the new prescription by given to the patient and two require that additional tests be performed “as indicated.”

DISCUSSION

Presently, there is no national standard of requirements for a comprehensive vision examination. There are, however, identifiable areas of agreement and disagreement between state organizations that responded. All of those that had state requirements recommended, in one fashion or another, a refraction. As evidenced in the results, it is plain that some state organizations are more vague regarding the refraction than others, but it is recommended. There is also a unanimously agreed upon recommendation of an ocular health examination. Besides these few resounding areas of agreement, the remainder is much less consistent. For example, most states agree that tonometry must be performed, however, Virginia has no written requirement for monitoring intraocular pressure. While each optometrist in Virginia most likely includes this in a complete vision examination, it is an example of the inconsistencies in the literature from state to state.

Guidelines, requirements, or suggestions for a complete vision examination are either put forth on the state or national level by a state board or association, or by the AOA. Some state boards have specific requirements; others only make recommendations, a few follow the guidelines put forth by the AOA, while some have no policy. Such guidelines have been explored in this project and many differences have been found from state to state in what testing is required, if any, in a complete vision examination.

There are several advantages and disadvantages to having requirements of specific optometric activities for a complete vision examination. One very significant advantage of
having a national standard would be increased consistency within the profession of optometry. This would result in easier cross-referral and guarantee quality of examinations for the public. This cohesiveness between optometrists would command greater respect from other professionals and legislators by virtue of consistencies created within the profession. On occasion, ophthalmology has pointed to the lack of practice uniformity within optometry to discount optometry’s qualifications. Practice guidelines or requirements may aid in gaining professional respect and legislative leverage via the consistencies they promote.

Another advantage to using a national standard is the added liability protection it may offer. For those in compliance with such guidelines, incidence of professional liability may decrease. This may be due to improved patient management or by clarifying standards of care and thereby offering more protection.

Guidelines help insure good patient care. This occurs by providing suggestions and/or requirements to all optometrists on how the profession as a whole believes a situation should be handled. With regard to complete vision examinations, guidelines should reflect the broad scope of optometry including its unique background in visual performance and in preventative vision care. Guidelines should also consider the epidemiology and severity of ocular and visual problems.

Better patient care may also stem from optometrists recognizing areas for personal improvement while upholding the guidelines and seeking continuing education to remedy a relative weakness. In short, guidelines may help optometrists stay current. This is addressed in continuing education requirements, but guidelines to patient care allow the optometrist to specifically target lectures for his/her individual benefit.

Any kind of accepted guideline, especially if it were considered standard of care, would need to be met by all. Such requirements may improve relationships between optometrists in commercial settings and those doctors who are not. It may also bring into question time constraints imposed on an optometrist by management in commercial settings and in health maintenance organizations. This would level the economic playing field by virtue of establishing the minimal quality of a complete examination and reduce “mass production” mentality, economic advantages, and the potential existence of incomplete testing in time-poor environments.

A guideline for a complete vision examination may also create complications in time constraints when severe problems are identified during an examination. Additional testing or special procedures may create a situation where the requirements for a comprehensive vision examination may not be completed during a given appointment time. However, “standard of care” varies in different situations and the optometrist exercising good judgment in patient care will most likely not suffer from straying from any “complete vision examination” guideline when outstanding circumstances arise. On the other hand, an optometrist not performing additionally indicated tests once the requirements for a complete vision examination are met would not be complying with standard of care for that particular situation. Therefore, an increase in required testing should not be considered a disadvantage in putting forth guidelines for a complete vision examination.

One guideline for a complete vision examination is not practical for all populations, especially with respect to age. Creating guides for several different populations may prove to be expensive and time consuming. Fortunately, the American Optometric Association has put forth such guidelines for pediatrics, geriatrics, and others. Three of the organizations that responded to our request for information already promote these guidelines.

The AOA guideline package has many benefits associated with its use. One is that it provides a low cost solution to generating guidelines or other requirements. This may prove especially beneficial to the twelve responding boards of optometry who currently have no
recommendations of what constitutes a complete vision examination. These guidelines are already available, are very easy to obtain, and many optometrists across the nation use them, whether or not there is an official policy in their governing body promoting their use.

By collecting, compiling, and comparing the recommendations of the Boards of Optometry, it is evident that inconsistencies exist. There are definite reasons why each state should adopt its own requirements and potentially an even better argument for all of optometry to accept one set of guidelines. The disadvantages may take time to get use to, but in the end, patients and optometry as a whole will benefit.

This study has been designed to be the first in a series of studies that will try to determine the standard of care as it relates to complete vision examinations. It is the idea of the authors that this study should provide a starting point for the United States regulatory bodies to begin setting forth guidelines to define a complete vision examination. The end goal is to increase patient benefit and eliminate discrepancies that exist in “complete vision examination” requirements. The direct result of these accomplishments will be increased interprofessional relationships, better legislative leverage, and improved consistency and quality of care.
## Examination Requirements or Recommendations by General Categories

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A = Anterior Segment Evaluation; P = Posterior Segment Evaluation; Adj. = Adjacent Structures

Note: Due to varied terminology, these subcategories may not be the exact description used by each state.
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A = Anterior Segment Evaluation; P = Posterior Segment Evaluation; Adj = Adjacent Structures

Note: Due to varied terminology, these subcategories may not be the exact description used by each state.
### Refraction Requirements or Recommendations by Subcategories

<table>
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<tr>
<th>Non-Specific Subjective</th>
<th>Non-Specific Objective</th>
<th>Distance Subjective</th>
<th>Near Subjective</th>
<th>Keratometry</th>
<th>Static Retinoscopy</th>
<th>Auto Refractor</th>
<th>No Specifications</th>
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<td>AK, CT, IL, IN, KS, NJ, PA, RI, SD, TN</td>
<td>IN, KS, MA, NJ, SD, TN</td>
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<td>CT, IL, KY, PA, RI, WI</td>
<td>KY*</td>
<td>AL, DE, VA</td>
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</tbody>
</table>

Note: Due to varied terminology, this subcategory may not be the exact description used by each state. Recommendations in bold type, requirements in plain type.

* Kentucky requires that either retinoscopy or autorefraction be done.
May 15, 1996

We are writing to request information from your organization on the matter of complete vision exams (CVE). We are involved in a research project which is aimed at determining what is considered to constitute a CVE. We would like you to submit any requirements or recommendations that your organization provides to the optometric community in which it serves. It is, in part, our desire to help define standard of care, and minimally acceptable care, for a CVE. We are making this same request of state board and associations from all fifty states.

It is our hope that by doing this we can inform optometric practitioners of what is expected in other communities across the country when it comes to a CVE. This will provide optometrists with a benchmark they can use to evaluate their own practice standards. This may also have legal ramifications, especially in the managed care arena where optometrists are restricted in the time they can spend with each patient and minimal testing may not be possible.

Please send us all information that relates to your organization’s expectations of a CVE by June 1. Results of this study will be submitted for publication, thereby making this information available to all optometrists.

Please send all information to:
Dr. Scott Cooper
Pacific University College of Optometry
2043 College Way
Forest Grove, OR 97116
(503) 359-2771
Coopers@pacificu.edu

Please contact either Dr. Cooper (above) or one of the following if you have any questions concerning any part of this project. Thank you in advance for your participation.

John Harrington               Jon Thomas
2043 College Way              2043 College Way
UC Box 1997                   UC Box 1997
Forest Grove, OR 97116        Forest Grove, OR 97116
(H) (503) 359-0356            (H) (503) 357-0657
harringj@pacificu.edu         thomasj@pacificu.edu
We are writing in regards to a letter sent to you requesting information from your organization on the matter of complete vision exams (CVE). The letter sent to you included the following information:

We are involved in a research project which is aimed at determining what is considered to constitute a CVE. We would like you to submit any requirements or recommendations that your organization provides to the optometric community in which it serves. It is, in part, our desire to help define standard of care, and minimally acceptable care, for a CVE. We are making this same request of state board and associations from all fifty states.

It is our hope that by doing this we can inform optometric practitioners of what is expected in other communities across the country when it comes to a CVE. This will provide optometrists with a benchmark they can use to evaluate their own practice standards. This may also have legal ramifications, especially in the managed care arena where optometrists are restricted in the time they can spend with each patient and minimal testing may not be possible.

Please send us all information that relates to your organization's expectations of a CVE by April 24. Results of this study will be submitted for publication, thereby making this information available to all optometrists.

Although the original date has passed we are still collecting and compiling the data. We are still very interested in receiving any information your organization can supply. We greatly appreciate your participation. Please send us a reply by June 9.

Please send all information to: Dr. Scott Cooper
Pacific University College of Optometry
2043 College Way
Forest Grove, OR 97116
(503) 359-2771 Fax (503) 359-2261
Coopers@pacificu.edu

Please contact either Dr. Cooper or one of the following if you have any questions concerning any part of this project.

John Harrington
UC Box 1997
Forest Grove, OR 97116
(H) (503) 359-0356
harringj@pacificu.edu

Jon Thomas
UC Box 1997
Forest Grove, OR 97116
(H) (503) 357-0657
thomasj@pacificu.edu
APPENDIX C

Alabama Board of Optometry
512 5th St NW PO Box 448
Attalla, AL 35954

Alaska Board of Examiners in Optometry
418 N. Main
Wasilla, AK 99687

Arizona Board of Optometry
5334 W Northern, Ste 106
Glendale, AZ 85301

Arkansas Board of Optometry
PO Box 512
Searcy, AR 72143

California Board of Optometry
400 R St, Ste 3130
Sacramento, CA 95814-6200

Colorado Board of Optometric Examiners
3900 E Mexico Av #10
Denver, CO 80210

Connecticut Board of Examiners in Optometry
1156 Boston Post Rd
Old Saybrook, CT 06475

Delaware Board of Examiners in Optometry
1100 Atlanta Rd
Seaford, DE 19973

District of Columbia Optometric Society
8 Sheffield Manor Ct
Silver Springs, MD 20904

Florida Board of Optometry
5062 Mobile Hwy
Pensacola, FL 32506

Georgia Board of Optometry
PO Box 8726
Savannah, GA 31412-8726

Hawaii Board of Examiners in Optometry
PO Box 3469
Honolulu, HI 96801

Idaho Board of Optometry
380 S third W
Soda Springs, ID 83276

Illinois Optometric Licensing and Disciplinary Committee
14 Lincolnshire Dr
Danville, IL 61832

Indiana Optometric Association
PO Box 3007
Kokomo, IN 48901

Indiana Optometry Board
4321 Fir St
East Chicago, IN 46312

Iowa Board of Optometry Examiners
Box 249, 4 W 5th St.
Atlantic, IA 50022

Kansas Board of Optometry
1001 SW Mulvane
Topeka, KS 66604

Kentucky Board of Optometry
PO Box 283
Hodgenville, KY 42724

Louisiana Board of Optometry
PO Box 644
Oakdale, LA 71464

Maine Board of Optometry
State House Station #113
Augusta, ME 04333

Maryland Board of Examiners in Optometry
3510 Rosedale Rd
Baltimore, MD 21215

Massachusetts Board of Optometry
Arsenal Mall, 485 Arsenal St
Watertown, MA 02172

Michigan Board of Optometry
46909 Greenridge
Northville, MI 48167
Minnesota Board of Optometry  
167 N McKnight Rd  
Maplewood, MN 55119

Mississippi Board of Optometry  
PO Box 737  
Louisville, MS 39339

Missouri Board of Optometry  
Humana Health Care, 373 W 101st Terr  
Kansas City, MO 64114

Montana Board of Optometry  
610 Carter  
Deer Lodge, MT 59722

Nebraska Board of Optometry  
1501 M St  
Ord, NE 68862

Nevada Board of Optometry  
PO Box 15645  
Las Vegas, NV 89114-5645

New Hampshire Board of Optometry  
RFD 1, Box 329  
Andover, NH 03216

New Jersey State Board of Optometrists  
PO Box 45012  
Newark, NJ 07101

New Mexico Board of Examiners in Optometry  
851 W Castillo  
Belen, NM 87002

New York Board of Optometry  
8 Church St  
Saranac Lake, NY 12983

North Carolina Board of Optometry  
131 Creekside Dr  
Forest City, NC 28043

North Dakota Board of Optometry  
45 W Eighth St  
Dickinson, ND 58601

Ohio Board of Optometry  
416 W Union St  
Athens, OH 45701

Oklahoma Board of Examiners in Optometry  
PO Box 719  
Bristow, OK 74010

Oregon Board of Optometry  
PO Box 220  
Ontario, OR 97914

Pennsylvania Board of Optometry  
PO Box 2649  
Harrisburg, PA 17105

Rhode Island Board of Optometry  
Plaza Ctr, 68 Cumberland St.  
Woonsocket, RI 02895

South Carolina Board of Optometry  
7499 Parklane Rd. #160  
Columbia, SC 29223-7650

South Dakota Board of Optometry  
PO Box 370  
Sturgis, SD 57785

Tennessee Board of Optometry  
PO Box 520  
McKenzie, TN 38201

Texas Board of Optometry  
4410 Goat Creek Rd  
Kerrville, TX 78028

Utah Optometrist Licensing Board  
8210 Top of the World Dr  
Salt Lake City, UT 84121-6060

Vermont Board of Optometry  
25 Park St  
Morrisville, VT 05661

Virginia Board of Optometry  
PO Box 667  
Mechanicsville, VA 23111-0667

Washington Optometry Board  
1300 SE Quince St  
Olympia, WA 98504-7868
West Virginia Board of Optometry
PO Box 34
Parkersburg, WV 26102

Wisconsin Optometry Examining Board
425 W Washington Av
Madison, WI 53713

Wyoming Board of Optometry
Barrett Bldg, 4th Floor, 2301 Central Av
Cheyenne, WY 82002