

**Utilization of Pharmaceutical
Agents in the Optometric
Practice**

**Submitted as a senior project
to
Walter Betts, O.D.**

**Tad Kosanovich
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Introduction

This paper is the result of professional as well as personal research and observation. Journal articles, editorials, interviews, American Optometric Association and state association publications provide the visceral context. Included is a survey of optometric pharmaceutical agent usage as specified in state laws and board rules. Hopefully, many aspects of this volatile issue will be covered. Considerations have been given to four separate yet complexly entwined areas. The intent is to provoke thought and challenge the reader's own professional philosophy(s).

History

Optometry is a very unique profession. Unlike many other health care professions it is not a spin-off or specialty of medicine. Instead, optometry has evolved as its own entity. It started with jewelers, brewers, and other businessmen who were "hanging glass" as a side-line. In the early years this knowledge perpetuated via apprenticeships.⁴

The foundation of optometry as a profession, and not a side-line, was built on its ability to treat visual disorders optically. Once established, the profession's independence from medicine was maintained on the basis it did not need or use pharmaceutical agents.

Since the introduction of pharmaceuticals to optometry--in 1971 Rhode Island passed the first diagnostic pharmaceutical agent bill--it has been disputed by the medical community.¹

At present there are 48 states that have diagnostic pharmaceutical agent legislation. Nine of these states also have some form of therapeutic pharmaceuticals at their disposal. The latest therapeutic state being Kentucky.

Professional

Regardless of which definition of optometry you use, as an ethical professional there is a responsibility to provide the most comprehensive, continuous, and efficient care possible for all patients.² The utilization of pharmaceutical agents has offered a positive impact on two fronts. First and foremost, the care provided for the patient is much more complete and comprehensive. For the optometrist, he has a greater anatomical and physiological understanding of the eye. Professionally, this allows him to interact more fully with the medical community and consequently be more useful and readily accepted into the health care system. Should a national health care system be in the future of this country, a more inherent position is insured for optometry.

Educational

All of the schools and colleges of optometry across the country play a dual role in integrating pharmaceuticals into the optometric practice. They provide continuing education in pharmacology for the present practitioners in both the classroom and clinical settings. In addition, those practitioners that did not have pharmaceutical agent usage as part of their degree at graduation obtain licensure by passing these continuing education courses. To insure a certain competency level and help protect the public from outdated or uninformed modes of practice, all states require a minimum number of hours in continuing education for optometrist.

The other role of education probably has a more important and lasting impact on the future of the profession. The foundation of a new graduate's philosophies, and resultantly how he'll practice, is built on his formal educational experience. So, since the state of the profession is concurrent with how a practitioner utilizes his knowledge in practice, it's easy to see how large a role education plays.

Legal

The optometrist has always been morally and legally obligated to send a patient to the appropriate health care provider when treatment for the condition diagnosed is beyond the scope and practice of optometry.⁵ Recently, the diagnostic pharmaceutical agent laws have expanded the diagnostic capabilities of optometrists by virtue of such procedures as binocular indirect ophthalmoscopy and gonioscopy.⁸ Consequently, the responsibility to detect, tentatively diagnose, and refer has similarly expanded.

In today's litigation-conscious society, the practitioner should seize every opportunity to diminish this risk of liability. This has become difficult as more states allow optometrists to use diagnostic and therapeutic drugs, practitioners increasingly will be held responsible for failure to detect and appropriately refer. Failure which can result in a malpractice suit.

Malpractice can be described as conduct that fails to measure up to the standard of care provided by the prudent practitioner.⁵ Prudent practicing requires practicing within your knowledge base and proper documentation and recordkeeping, both which serve to protect the professional as well as help keep the patient satisfied. A happy, well informed patient is less likely to sue, and a prepared optometrist can prevent a suit from progressing very far. This means recording all procedures performed regardless if the findings were normal or abnormal.^{7,11}

Political

The political aspects of pharmaceutical agent usage are the optometrist's means to the end. Without the pomp and ambiguity of politics, optometrists would never achieve the legislation required to make drug usage legal.

The multitude of man hours necessary for passage of legislation requires years of dedication by many individuals. For example, Massachusetts's diagnostic bill was first introduced in 1973 and was not enacted into law until the end of 1985.1

In order to help speed the political machine it is sometimes helpful to practice "grassroots" politics. Invite your state legislator(s) to attend a free Saturday session so he may acquaint himself with the profession and how pharmaceuticals help you do a more thorough job. Another approach might be to take your screening equipment and offer a free screening to your legislator's staff.

These techniques promote a professional introduction to your legislators. This, in conjunction with frequent contact, keeps optometry at the forefront of that politician's thoughts and hopefully his voting actions.

Conclusions

As a summary, I'd like to highlight the pharmaceutical agent classes that help expand a practice to a complete primary care level. The scope of such an optometric practice involves those ambulatory eye/vision care services that would meet most of the peoples' needs most of the time. Complete primary care includes "routine eye/vision examinations and analyses, contact lense therapy, binocular vision therapy and diagnosis and treatment of minor ocular injuries and diseases."6 The following generic drug classes, in order of usage frequency, afford an optometrist the ability to practice at this complete level: topical anesthetic, mydriatic, cycloplegic, and miotic.

Topical anesthetics allow the performance of applanation tonometry, gonioscopy, fundus contact lens biomicroscopy, electroretinography, corneal abrasion and dry eye evaluation. "In a study of six schools and colleges of optometry a 0% side effect rate was reported."3

Pupillary dilation is necessary for thorough examination of the crystalline lens, vitreous, retina, and optic nerve. "The most common detrimental side dffect of mydriasis is acute angle-closure glaucoma in 1 in 183,000 cases."3 With anterior chamber angle evaluation on an anesthitized cornea angle-closure is becoming even less common.

Cycloplegics are a reliable method for obtaining significant data on difficult refractive patients. These drugs have, in comparison with the previous two drug classes, a larger number

of adverse reactions.⁹ Most of which are the anticholinergic effects on the central nervous system.¹⁰ As with all drugs though, knowledge of the particular pharmaceutical agent's physiological effects along with proper instillation, dosage frequency, and patient history, such adverse reaction can be eluded.

The miotics play the smallest role in an optometric practice. Outside of .125% pilocarpine for Adie's pupil evaluation and 2% for reversing acute angle-closure the remaining uses are infrequent. Those optometrist who are treating glaucoma; however, will find themselves prescribing miotics frequently.

It should be stressed at this time that the toughest part of pharmaceutical agent usage is not learning the drugs themselves. Rather, the challenge lies in utilizing them to make accurate diagnosis from a differential spectra. The drugs are the tools which allow accuracy in diagnosis feasible.

In closing, I'd like to infatically state that neither legislation nor fear of malpractice should be the limiting factors of a professional. A professional is one that constantly challenges himself as well as those institutions that serve to limit the professional practice. If a prudent professional is one who practices within their knowledge base, then as long as they continuously expand that knowledge base they simultaneously expand the scope of their practice.

LIST OF PHARMACEUTICAL AGENTS BY GENERIC NAMES
THAT ARE SPECIFIED IN STATE LAWS AND BOARD RULES

	A	C	Mi	My
AZ	L	L		L
AR*	R	R		R
CA	L/R	L/R		L/R
CO	L	L		L
DE	L/R	L/R	L/R	L/R
HI	L	L		L
ID	R	R		
IL	L	L		L
*** IA	L	L		L
KS	L	L		L
KY	L	L	L	L
ME	L/R			L/R
MI	L	L		L
MN	L	L	L	L
MS* **	L	L		L
MO	L	L		L
MT*	L/R	L/R	L/R	L/R
NE	L/R	L/R		L/R
NV	L	L	L	L
NH*	L	L		L
OH	L	L	L	L
OR*	L/R	L/R	L/R	L/R
PA	L	L	L	L
*** RI	L	L	L	L
SC* **	L	L	L	L
TN	L	L	L	L
UT	L			
VT	L	L		L
VA	L	L	L	L
WA*	L	L	L	L
WI*	R	R		R
WY*	L	L	L	L

Key to Generic Names:

A = topical anesthetic
C = cycloplegic
Mi = miotic
My = mydriatic

* Includes specific reference to dyes
** Includes specific reference to over-the-counter drugs

L = Law
R = Board Rule

BIBLIOGRAPHY

1. "Seven States Approve Drug Bill in 1985." AOA News, January 15, 1986, p.1.
2. Barresi, Barry. Ocular Assessment: The Manual of Diagnosis for Office Practice, Butterworth Publishers, 1984.
3. Bartlett and Jaanus. Clinical Ocular Pharmacology. Butterworth Publishers, 1984.
4. Bennett, Jack. Lecture: OPT 331 Intro to Optometry. 1982.
5. Eichorst, et al. "Malpractice." Optometry Times, February 1986, p.1.
6. Greenberg, Robert. "Behavioral Optometry and Primary Care-- Are the Concepts Compatible?" Journal of the American Optometric Association, September 1983, pp.771-73.
7. Miller, Joyce. "Documentation and record keeping in clinical practice." Journal of the American Optometric Association, February 1986, pp.144-45.
8. Patorgis, Charles. "Macular Disease: Diagnostic Evaluation" Contemporary Optometry, January 1986, pp.23-32.
9. Pharm and Lyle. "Potential systemic side effects of six common ophthalmic drugs." Journal of the American Optometric Association, October 1977, pp.1241-45.
10. Rengstorff and Doughty. "Mydriatic and Cycloplegic Drugs: A Review of Ocular and Systemic Complications," American Journal of Optometry and Physiological Optics, February 1982, pp.162-77.
11. Scholles, James. "Documentation and record keeping in clinical practice," Journal of the American Optometric Association, February 1986, pp.141-43.