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Quality control practices for postoperative eye care in rural Arizona

Robert Mark Rummel

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Walden University, 1994

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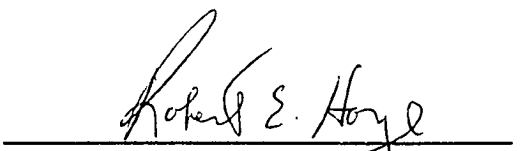
M.D., University of Arizona, 1980



Robert E. Hoye, Ph.D., Advisor

Professor of Health Systems

Dissertation Submitted in Partial Fulfillment

of the Requirement for the

Degree of Doctor of Philosophy

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ABSTRACT

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Abstract

Health care services in the United States are regulated and monitored by federal and state agencies in order to protect the American public. The primary function of these regulating agencies is to assure that any medical procedure or service meets or exceeds the established minimum standards of care. The purpose of this study is to evaluate one aspect of medical care along with its corresponding quality control system.

In the area of eye surgery and postoperative eye care, this investigator encountered several clinical situations in which the quality of medical care has been compromised, increasing the patient's risk of postoperative complications. This study was designed to evaluate how effective the current quality control mechanisms were in recognizing and dealing with a possible breech in the medical quality of care in the postoperative co-management of eye surgery patients in the State of Arizona. General Systems Theory was used as the theoretical base for the study.

The case-study methodology was deemed most appropriate for evaluating the topic of eye surgery co-management.

Statistical verification was accomplished by analyzing the standardized data from the case-study checklist.

The results of the study demonstrate that the medical quality control system in Arizona is not enforcing the established minimum standards of quality for eye surgery co-management.

The primary cause of the regulatory agencies suboptimal performance is that the regulatory mechanism is not functioning as a true system. The current disjointed approach to medical quality in Arizona has resulted in (1) inefficient and ineffective mechanisms which enforce minimum standards of care, (2) more than one standard of care for the same medical service, (3) Medicare reimbursement for medical services by unlicensed health care providers, and (4) substandard medical care causing actual harm and increased risk to the patient.

The recommendations offered to rectify the problems identified by this study are based upon applied systems theory. The American health care system seems destined to undergo changes. The recommendations of this study are attempting to mold one aspect of the current methods of providing health care into a true "system of health care."

Dedication

To Carol, Kristina, Jennifer

and

to the One who gives my life purpose

ACKNOWLEDGMENTS

First and foremost, I want to acknowledge my wife, Carol. She has served as primary editor and sounding board for all of my work leading up to and including this dissertation. Her daily encouragement and support has made this study possible.

I would like to thank Dr. Robert Hoye, my faculty advisor. Dr. Hoye's systematic approach and high academic standards along with his impressive expertise in systems theory motivated me to produce a document worthy of a doctoral degree. I would like to thank Dr. Bernard Loft and Dr. Fred Wiegman, members of my dissertation committee for sharing their experience, knowledge and direction.

Since I am not as comfortable with the finer points of statistics, the analysis of the data would have been more difficult without the help of Dr. Doloris Williams. Her gracious consent to assist me in the mathematical portion of the study is greatly appreciated. I would like to thank my good friend as well as my College English teacher, Dorothy Galde, for editing my papers and helping me keep it all in

perspective. Thanks also goes to Dr. Scott Ekdahl for his support and recommendations at the inception of this study.

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Chapter 1

INTRODUCTION

Advances in technology have made the medical system in the United States one of the best in the world but the number of people dissatisfied with the current medical system is growing. As a result, the practice of medicine is undergoing rapid and radical changes. In the midst of this change, the forces which advocate "choice" argue that a significant change in the system will reduce the choices and ultimately the quality of the medical care. Others argue that continuation of the current medical system, with its escalating costs, is resulting in the elimination of large groups of people from access to choice as well as basic health care. Municipal, State, and National governments are wrestling with the health care issue, and President Clinton has given health care reform high priority in his administration. The process of health care reform is critical because it is economically and socially vital that the reform is done correctly the first time. To accomplish health care reform many of the best minds are corroborating to formulate a "system" that will meet the needs of all the people in America and the wants of most.

Before one can analyze the complex medical system, one must understand what a "system" is. A system is a "collection of processes that work in concert to produce a desired outcome; comprised of input, throughput, output, and feedback" (Meisenheimer 1992, 20). An essential aspect to the formation or reformation of any complex system is the study of previous systems, as well as the input, output, throughput, and feedback mechanisms of each system. One must also look at the overall effectiveness of the system by an evaluation of the system's outcome or yield.

In the United States, there are numerous systems in place for the delivery of health care, but the processes are not linked to produce a consistent outcome. There is no single medical care system but a series of systems which do not work towards the same desired and coordinated outcome, according to Robert Hoye,

> The health care system in the United States is a paradox of both excess and deprivation. While we boast of leading the world in advancement of medical technology, some thirty-one million people are reported to be without health insurance. In many cases they lack the ability to access the current system. Half of the poor are also ineligible for the Medicaid program and one third of the uninsured are children. We are expending 11.5% of the gross national product (GNP) on health care. Among the world's advanced nations, we have built one of the worst systems that has tied the federal government in fiscal and political knots on health policy. Some observers believe we are totally lacking in a national health policy, but instead, we have developed and

> maintained a national health budgeting policy. Lacking is a clearly defined mission statement that reflects our implied value system that provides access to quality and affordable health care for all citizens of the United States (Hoye 1991, 61).

An example of the disjointed medical care system at a local level is the group of quality control mechanisms overseeing medical care in the state of Arizona. There are in existence multiple systems for assuring that certain aspects of quality medical care are maintained. Some of these organizations are licensing boards, medical credentialling processes, third-party payor reviews, and standards of care statements. These individual systems function to achieve their specific purpose, but they do not function under a unifying "mission statement." All of the individual systems are assuring a standard of care in specific areas, leaving gaps in some places and redundancy in other areas resulting in a potentially inferior level of quality which may not exist under a coordinated quality control system.

This investigator has encountered clinical situations which have fallen through the current safety net of quality control mechanisms in Arizona. These clinical situations are in the area of surgical co-management after eye surgery. As a result of the "defect" in the quality control system in

Arizona, not only is the quality of medical care affected but more importantly, there is no mechanism by which the medical quality control system may be improved.

Surgical co-management is a term that has been applied to a practice pattern in which the operating surgeon does not provide the postoperative medical care. Such care is delegated to another surgeon, physician, or health care provider. Surgical co-management occurs with nearly all surgical specialties and has increased with the advent of surgical specialists. In ophthalmology, co-management is associated most often with cataract surgery but may also occur following other ocular surgery such as glaucoma, corneal, and retinal surgeries.

A cataract is a clouding of the naturally clear lens of the eye. Any amount of lens clouding is considered to be a cataract, but when the clouding causes visual impairment, cataract surgery, a common ocular surgical procedure, is recommended to improve vision. Nearly all ophthalmologists are proficient in cataract surgery. Generally, people believe their doctor has the patient's best interest at heart. Unfortunately, this is not always the case. For financial reasons some ocular surgeons may be doing unnecessary surgery and placing valuable referral patterns ahead of the patient's welfare. This is occurring in the

case of cataract surgery. Many surgically based ophthalmology practices appear desperate to find additional surgery patients to make up for the financial losses due to decreased Medicare reimbursement for surgery. An example of this is the systematic "screening" of nursing homes in this investigator's community for patients with cataracts. Additionally, a high-volume cataract surgery "institute" is sending a mobile screening unit to rural communities which already have adequate eye care. These eye care RV's park in grocery store parking lots and offer free eye health exams "as a public service." Unfortunately the elderly person may not realize that these roving eye units are primarily searching for lucrative surgeries. When this investigator sent a test patient, the screening personnel seemed much more interested in the fact that the elderly gentleman had Medicare insurance along with a secondary insurance than the actual results of the vision screening. Before the results of the vision tests were shared with the patient, a business office representative described in detail the process of having cataract surgery in Phoenix (one hundred miles away). Screening personnel stated that five to six people a week are "bussed" to Phoenix for surgery and the day after surgery the patients return to their rural community to be followed, postoperatively, by an optometrist.

The competition for patients is intense as evidenced by the increasing amount of advertising claiming some unique expertise or special procedure to entice the patient to that particular doctor. Many ophthalmologists are networking with other eye care providers to enhance surgical referrals. Some ophthalmologists are asking patients to travel extended distances for a surgical procedure which may be safely and effectively performed in the patient's own community. This exposes the patient to unnecessary risks which will be presented in the next section.

Due to the confidential nature of medical information, it is impossible to determine how often questionable surgical practices are occurring, but an indicator may be noting how often optometrists are billing Medicare for providing the postoperative care after cataract surgery. In Arizona, between 1987 and 1992, optometrists have billed for the postoperative care an average of eight hundred times per year (Personal Communication, 1993).

This study does not address the issue of whether optometrists should or should not be involved in surgical co-management, nor does this study analyze the ethics or motivations of certain ophthalmological practices. This study investigates the medical quality control mechanisms for eye care which are currently functioning in the State of

Arizona. Such an analysis provides valuable information to assist the health care reform process by demonstrating a flawed system and making recommendations to improve the health care delivery system.

Problem Statement

In the outpatient or ambulatory surgical setting, one of the major goals for a quality assurance system is to ensure that a surgical patient has proper postoperative care. This postoperative care usually requires the patient to be monitored overnight by another competent individual, to have appropriate follow up appointments with the surgeon, and to offer the patient education in order to maximize the beneficial results of the surgery while minimizing the risks. Additionally, postoperative care also requires proper planning on the part of the surgeon if he or she will not be personally providing the postoperative care. The principles of the American College of Surgeons makes the statement that

> The responsibility of a surgeon includes preoperative diagnostic work-up and care, the selection and performance of the operation, and postoperative surgical care. An ethical surgeon will not perform elective surgery at a distance from his usual location without personal determination of the diagnosis and the adequacy of preoperative preparation. He will personally render the postoperative care unless it is delegated to another physician as well qualified

> to continue this essential aspect of total surgical care (ACS 1985, 4).

Case Presentation

There is a clinical practice which is occurring after cataract surgery that is putting the patients at greater risk if postoperative complications should occur. The following case presentation represents an example of this clinical practice. A significant problem is that this case would not be detected in the current quality control mechanisms established to monitor this area of medical and surgical practice. The actual case occurred in the late spring of 1993 in Arizona. The participants in the case are the patient (Mr.P), two ophthalmologists (Dr.1 and Dr.3), an optometrist (Dr.2), and a vitreoretinal surgeon (Dr.4). The specific identifiers of the case have been eliminated to protect the identities of individuals involved in the case.

Mr.P is an elderly gentleman of seventy-five years who has lived in his rural community for the last 10 years. About one year ago, Mr.P noticed some blurring of his vision, and he visited one of the two ophthalmologists who live and practice in his community. The ophthalmologist, named Dr.1, evaluated Mr.P and found that the cause of his visual problem was a cataract. Shortly thereafter, Mr.P had cataract surgery. The surgery and the postoperative course

was uneventful and Mr.P had his final pair of glasses made about six weeks after surgery.

About one year later, Mr.P noticed increasing blurred vision in his other eye. This time, however, Mr.P saw an optometrist for his visual exam. He did not return to Dr.1 because he felt the glasses he purchased at Dr.1's office were too expensive and he did not like the lady who sold him the glasses.

Dr.2, the optometrist, evaluated Mr.P and found the cause of his blurred vision to be a cataract in Mr.P's other eye. The optometrist recommended that the patient have surgery. This time, however, a surgeon in Phoenix was recommended. Dr.2 explained that Dr.3, the ophthalmic surgeon in Phoenix would perform the surgery and Dr.2 would provide the postoperative care. Mr.P agreed and shortly thereafter had cataract surgery in Phoenix. This time, however, there was a complication with the surgery and a piece of the cataract fell into the back portion of the eyeball. Despite this complication, Dr.3 completed the surgery and sent the patient back to Dr.2 for the postoperative care.

About two months after surgery, Dr.2 sent Mr.P to Dr.4, a vitreoretinal specialist for further evaluation. Dr.4, upon examination of Mr.P's eye, found the retained piece of

cataract and recommended that it be surgically removed. The patient agreed and within several days, Dr.4 performed a successful surgical removal of the retained cataract material and then placed a "gas" bubble into the middle portion of the eye to allow the retina, or the back portion of the eye to remain in its normal position and not become detached.

Several days after surgery, the patient returned to his home community and was to be followed by the referring optometrist, Dr.2. On the first postoperative visit with the patient, Dr.2 noticed the pressure in the eye was too high. This is a common potential problem after surgery where gas has been placed in an eye because as the person travels from a lower altitude to a higher altitude, the gas expands and the pressure in the eye becomes too high. If the pressure remains high the main artery in the eye could close off and the patient will permanently lose vision within hours. Usually, the referring ophthalmologist or operating surgeon will remove a portion of the gas by inserting a needle into the eye and withdrawing the gas. This can be done in the doctor's office by the average ophthalmic surgeon.

Because Dr.2 was an optometrist, he could not perform this necessary surgical procedure. As a result, the patient

returned to Phoenix and Dr. 4 removed a portion of the gas. The patient returned home and the next day he was evaluated by Dr.2. Again, the intraocular pressure was high and more gas needed to be removed. This time the patient refused to return to Phoenix since he was having trouble making the two hour drive. Dr.2 called the two local ophthalmologists in the patient's community and after the situation was explained to them the ophthalmologists felt this postsurgical complication was a problem that should be handled by either the original surgeon (Dr.3) or the retinal specialist (Dr.4). Three other ophthalmic surgeons within twenty minutes of the patient's community were contacted and they agreed that the patient needed to return to the original surgeon or the retinal specialist. Ultimately, the patient made the trip to Phoenix. The patient was caught in a situation which has forced him to make multiple trips to Phoenix for further eye care and more surgery.

This case presents several problems for review. First, there appears to be a potential problem with the referral system. Why was a patient referred to a general ophthalmologist two hours away rather than to one of the general ophthalmologists within a half hour of the patient's home for a routine cataract surgery? Ultimately, the patient makes the final choice for his/her treatment, but in

this case, it is unclear whether the patient was fully informed as to the choices of ophthalmologists available in the surrounding area, the consequences of choosing a surgeon at a distance from the patient's community and the risks inherent in a surgical co-management arrangement. Second, Medical care is being delivered in a setting which is not available for review by the current quality control mechanisms. If the review mechanisms do extend into this area of health care delivery, then the medical review process appears to be ineffective. If medical quality cannot be assessed and regulated then the potential for more problems with devastating consequences exists. But most importantly, the system designed to assure quality medical care is not improving and cannot improve medical care in some surgical co-management situations and the patient is the one who suffers the most.

Background of the Problem

The practice of medical or surgical co-management is well known to the medical community. It is basically dividing and "sharing" the patient's medical care in a coordinated fashion between two or more health care providers. For optometrists and ophthalmologists, the concept of co-management began in the 1980s. Two Federal

laws were enacted that expanded the definition of "physician" in the Social Security Act to extend the range of services so that optometrists are able to receive reimbursement by Medicare for postoperative care. Section 937 of the Omnibus Budget Reconciliation Act of 1980 (OBRA-80, Public Law 96-499) changed the definition of physician to allow optometrists to be reimbursed by Medicare for any Medicare-covered service related to the condition of aphakia (an eye without its natural lens, usually as the result of cataract surgery) provided that the performance of that service by an optometrist is authorized by the State in which the optometrist practices (Aetna Medicare 1987, 1).

Traditionally, the ophthalmologist who performs cataract surgery on a patient is responsible not only for the surgery, itself but for a preoperative assessment to evaluate surgical necessity and the patient's fitness for surgery and for postoperative care during the healing process. Most ophthalmologists believe that all postoperative medical eye care should be performed only by an ophthalmologist because of his/her unique competence to diagnose and treat postoperative ocular pathologic conditions (AAO-PS-87 1987, 1).

The tradition that a surgeon is responsible for the preoperative and postoperative care of a surgical patient

has a long history in medicine. In November 1974, the American College of Surgeons Regents found it necessary to adopt and publish resolutions regarding certain aspects of surgical practice. The purpose was to "assure the improvement of patient care and to maintain the ethical practice of medicine" (ACS 1985, 1). The American College of Surgeons feels strongly enough about these issues to indicate that "applicants have been refused Fellowship because of unacceptable financial practices or other unethical behavior" (ACS 1985, 1).

In the past several years, the traditional model of perioperative care (both preoperative and postoperative care) for cataract surgery patients has been challenged by changes in technology and legal definitions as well as other changes in Medicare coverage and reimbursement. The expansion of optometry's scope-of-practice in many states is complicating the referral patterns between the ophthalmologists and optometrists. Some of these referral patterns are blatant deviations from standard referral practices. There are established guidelines for employment and referral relationships between ophthalmologists and other health care providers and the American Academy of Ophthalmology has provided an advisory opinion regarding relationships between ophthalmologists and optometrists.

The purpose of this statement is to point out the obligations the ophthalmologist has for his/her patients and to ensure an ethical relationship exists between health care providers that share in the same patient's care. The guidelines consist of nine rules which are listed as follows:

> Rule 1: First and foremost, in arranging his/her commercial business relationships, the ophthalmologist must take reasonable precautions to assure that his/her clinical judgments concerning the best interests of patients are not affected by the physician's own commercial interests.
> Rule 2: In the provision of all services, the ophthalmologist assumes a responsibility to be competent by virtue of his/her specific training and experience.
> Rule 3: Ophthalmologists must take steps to ensure that they, and others acting under their direction, provide patients with only those laboratory procedures, optical devices, pharmacological agents, and medical and surgical services, which are in the patient's best interest.
> Rule 4: The provision of all medical and surgical procedures should be preceded by appropriate informed consent.
> Rule 5: The fee charged by the ophthalmologist for services or the services of those operating under his direction must not be excessive or deceptively complicated, and must not exploit patients or others who pay for the services.
> Rule 6: An ophthalmologist must not delegate to other health professionals, however well trained, those aspects of care which are within the unique competence of the ophthalmologist (which do not include those aspects of postoperative care permitted by law to be performed by auxiliaries).
> Rule 7: The Code of Ethics makes clear that until the patient has recovered from the immediate effects of the surgery, the provision of those aspects of postoperative care which are within the

> unique competence of the ophthalmologist ordinarily must be provided by the operating ophthalmologist or by another ophthalmologist, but may be delegated in emergency-type situations, or where the patient's best interests clearly are appropriately served. In addition, the arrangements for postoperative care must be made before surgery, and with the advance approval of the patient.
> Rule 8: It must always be made clear to patients who is responsible for each element of their care.
> Rule 9: Advertisements and other communications to the public about ophthalmological care practice must be accurate, not misleading, and not designed to elicit from prospective patients decisions to undertake treatments based on mistaken grounds. (AAO-85-4 1985,1-4)

The competence of a health care practitioner who is providing surgical care is summarized by the American Academy of Ophthalmology and is comprised of two separate components: moral competence and technical competence (AAO-KB-ISO8 1991, 1).

Moral competence follows from understanding the purpose of medical care and calls upon the physician to practice moral discernment, moral agency, and caring in relationships. Moral discernment is the ability to confront, discuss, and resolve ethical considerations in a clinical encounter. Moral agency is the ability to act on behalf of the patient; to act with respect for social, religious, and cultural differences which may exist between physician and patient. Caring, in a medical relationship,

recognizes that a patient has a right to self-determination in the process of participating in his or her own medical care and providing the patient with complete, accurate, and timely information about treatment options in the spirit of informed consent (AAO-KB-ISO8 1991, 1-2).

Technical competence consists of the knowledge and skills necessary to diagnose and treat disease and disability according to the precepts of medical science and especially of ophthalmology, and to assist in the maintenance of health. In particular, technical competence consists of the ability to

1. apply principles of ophthalmic care;
2. differentiate normal and pathologic anatomy and physiology of the eyes and visual system;
3. understand the relationships between ophthalmic and systemic health and disease;
4. perform skills intrinsic to medicine in general and to ophthalmology in particular;
5. provide necessary and sufficient medical care;
6. develop, critique, and present appropriate therapeutic options; and
7. acknowledge one's limitations in skill and knowledge (AAO-KB-ISO8 1991, 2).

Predictable and consistent surgical results are not the only factors to consider. With more surgeons competing for the same surgical volume, unnecessary surgery is unfortunately being performed. Patients who are told they must have surgery or who are being scheduled for surgery

without any obvious visual complaints may not be in the best hands no matter how skillful the surgeon.

The optometric literature also encourages quality standards which are designed to place the interests of the patient foremost in any referral relationship.

> Doctors of optometry are in a unique position to make objective decisions that are in the best interests of their patients. Before sending a patient for cataract surgery, consider:
> -Who is the most skilled surgeon available to perform the procedure?
> -Does the surgeon do a fairly high volume of cases or just several per month?
> -Is the surgeon's philosophy on selecting surgical candidates consistent with my own?
> -Is the surgeon ethical in every respect?
> -Is the surgeon cooperative, communicative, and available to me and my patients?
> -Is the surgeon willing to co-manage surgical patients and actively involve me in postoperative care? (Ajamian 1993, 36-37)

There has been, and still is, considerable debate about who is and who is not qualified to provide the postoperative care for a patient. In recent years, the issue has become even more divisive. The position of the American College of Surgeons, the American Medical Association, the American College of Physicians, and the American Academy of Ophthalmology is that the operating surgeon is obligated, by moral and ethical standards, to provide the postoperative care (AAO-PS-87 1987, 1). The optometric societies have not taken a definitive stand on the issue, but they are openly

in favor of expanding the optometric scope-of-practice. The Federal government, through Medicare, has favored the position of the optometric association through the payment schedule of postoperative care after eye surgery. Both optometrists and ophthalmologists receive equal payment for postoperative care (Federal Register 1991, 516).

Regardless of the specific issues raised by co-management after eye surgery, there is a definite place in the health care delivery system for surgical co-management. In other fields of surgery, co-management of the surgery patient is a common and beneficial relationship. An example is a patient with diabetes who requires a cholecystectomy. The surgeon and the primary care physician work together to deliver the best care available to the patient. In this relationship, the surgeon will perform and monitor the patient after surgery. If the surgeon is not able to do so, he or she will arrange for another surgeon of equivalent expertise to follow and manage the postoperative care. The primary care physician monitors the medical condition of the patient and when he/she is unable to do so, arrangements are made for an equivalently trained individual to monitor the medical care. In this situation, the quality control system monitors the care of the patient by use of the hospital quality control programs. In the

case of a Medicare recipient, the state peer review organization evaluates the care in attempt to assure, and where possible, improve the quality of medical and surgical care.

The process of quality assurance for eye surgery is different. Nearly all eye surgery cases are performed at outpatient facilities where there are mechanisms to monitor the quality of the surgery as well as the surgeon. But when the surgical patient returns to his/her home, the scope of the quality control mechanisms ends. Periodically, the postoperative care by the surgeon is monitored by the surgical facility and/or the Medicare peer review organization. When the patient is managed by an optometrist in a surgical co-management relationship, the care is no longer under any system of evaluation for quality improvement. This may be due in part to the fact that optometrists are not usually credentialled or on "staff" at medical facilities where the standard quality control systems are functioning.

As the health care system is reworked for the future, quality control systems will be necessary in all aspects of patient care to assure "quality" is present in every circumstance and to provide an environment where quality improvement occurs.

Purpose of the Study

The purpose of this study was to evaluate how well the current quality control system monitors co-management in eye surgery. This investigator found optometrists, ophthalmologists, and the medical director of the federal peer review organization for Arizona, receptive to the study.

The study involves a review of the current literature regarding existing quality standards and quality control systems which exist in Arizona. It encompasses a review of the procedures involved with (a) licensing, (b) education, (c) peer review, (d) third party payors, and (e) current standards of practice. Each of these areas represent a step where "quality control" intervention may occur. Once the literature was reviewed, summary statements or propositions, were formed that summarize the position of the five categories in relation to the co-management of the eye surgery patient.

Clinical cases were chosen which represented a variety of different clinical settings for eye surgery co-management. These cases were analyzed according to the established minimal "standards" for quality and the strengths and weakness of the existing quality control mechanisms will be identified and discussed. Once the

strengths and weaknesses were identified and understood, recommendations were made that would help unify these different quality control mechanisms into a "system" which monitors all aspects of eye care delivery to assure minimum standards are met and care continually improves.

Significance of the Study

It is unfortunate when a person loses vision after eye surgery. It is a travesty when this visual loss could have been prevented. The purpose of a quality control system is to assure a minimum standard of quality within the health care system and also to create an environment where that care is continuously improving. James Houghton, the Chairman and CEO of Corning states the following:

> At Corning, our definition of quality is very simple. The definition is: meet customers' requirements 100 percent of the time.
> And if you think about it, really, 99 percent is not good enough. You know what 99 percent is? It means in this country 20,000 lost pieces of mail every hour -- 99 percent good -- it means three or four short or long landings on every runway in the United States everyday -- 99 percent good. It means 5,000 improper surgical procedures a month; it means 200,000 wrong prescriptions a year, and it means your heart beats every minute of every day except for 87 hours a year. That's 99 percent good (Houghton 1992, 11).

This study attempted to demonstrate areas in the current medical and surgical quality control mechanism in

the State of Arizona which are in need of improvement in order to reduce the risk of unnecessary vision loss.

Assumptions

1. Peer review organizations are interested in all areas of quality control.
2. Peer review organizations are continually working to improve the effectiveness of their job.
3. Ophthalmologists and optometrists are committed to the welfare of their patients ahead of their own professional interests.
4. Ophthalmologists and optometrists are open to new and innovative methods for improving care to their patients.
5. The case-study methodology is a valid instrument for evaluating the quality control system in Arizona as it relates to the co-management of the eye surgery patient.

Scope of the Study

The study focused on the quality control mechanisms involved in the evaluation of eye surgery co-management in Arizona. This included an evaluation of peer review systems, licensing systems, standards-of-practice, financial reimbursements, and provider education that pertains to the co-management of eye surgery patients.

Limitations of the Study

The study evaluated only the quality control mechanisms relating to the co-management of eye surgery patients. The results of the study were not intended to be directly applied to other health care professional relationships such as those that occur with physicians, surgeons, nurse practitioners, and physician assistants.

Definition of Terms

For the purposes of this study, the following terms will have the following definitions:

AMBULATORY SURGERY: The type of surgery where the surgical patient enters and leaves the surgical facility on the same day.

ANESTHESIA: The process of medicating a person to prevent or relieve pain.

APHAKIA: The absence of the lens of the eye.

AQUEOUS: The clear, watery fluid that fills the anterior and posterior chambers within the front part of the eye.

ARGON LASER: A machine which uses light to cut or burn tissue.

BLINDNESS: The central visual acuity of 20/200 or less in the eye after correction.

CATARACT: The loss of transparency of the lens of the eye, or of its capsule.

CATARACT SURGERY: The surgical removal of an opaque lens.

CO-MANAGEMENT: A process whereby the care of a person is divided between two or more health care providers.

CORNEA: The clear, transparent portion of the outer coat of the eyeball, forming the covering of the aqueous chamber.

CORNEAL EDEMA: A clouding of the normally clear cornea of the eye as a result of trauma, infection, or high pressure in the eye. This results in blurring of vision.

ENDOPHTHALMITIS: The inflammation or infection of the internal tissues and/or fluids of the eyeball.

FLOATERS: Small particles consisting of cells, pigment, or fibrin that move in the vitreous.

GLAUCOMA: A disease of the eye characterized by a sustained increase in intraocular pressure that the eye cannot withstand without damage to its structure or impairment of its function.

INTRAOCULAR: Within the eyeball.

INTRAOCULAR LENS (IOL): The artificial lens which is placed into the eye at the time of cataract surgery to replace the natural lens which has become cloudy.

MACULA: The part of the retina in the back portion of the eye which is responsible for central or sharp vision.

MEDICAL THERAPY: Procedures or treatments for diseases of the eye that do not involve surgery.

OD: An abbreviation for the right eye.

OPHTHALMOLOGIST: A medical physician who is a specialist in the diseases and defects of the eye and its appendages and in medical and surgical treatment of these diseases.

OPHTHALMOLOGY: The branch of medical science that has to do with the eye, its diseases and refractive errors.

OPTOMETRIST: A nonmedical eye care provider who specializes in the diseases and defects of the eye and in limited medical treatment of these diseases.

OS: An abbreviation for the left eye.

PEER REVIEW: Evaluation by practicing health care professionals of the quality and the efficiency of services ordered or performed by other practicing peers.

PEER REVIEW ORGANIZATION (PRO): An organization having contract to monitor quality of reasonable and medically necessary services; reviews validity of diagnosis, procedures, and appropriateness of admission and discharge. There is one authorized PRO per state.

PHYSICIAN: A doctor of medicine or osteopathy who is authorized under state or federal law to practice medicine and surgery or osteopathy.

QUALITY ASSURANCE: Activities performed to determine the extent to which a phenomenon fulfills certain values. Activities performed to assure changes in practice that will fulfill the highest, or at least a predetermined, level of value.

RETINA: The innermost coat of the eye, formed of sensitive nerve elements and connected with the optic nerve.

RETINAL DETACHMENT: The separation of the inner layer of the retina from the outer layer.

RETINOPEXY: Surgical reattachment of a detached retina by using a laser or a freezing treatment.

RETROBULBAR: Behind the eyeball.

STANDARD-OF-CARE: Professionally developed expression of the range of acceptable performance or outcome.

TOPICAL MEDICATIONS: Medications to treat diseases of the eye that are applied to the outside of the eye and are usually in the form of eye drops or eye salve.

VITREOUS: The transparent, colorless mass of soft, gelatinous material filling the eyeball behind the lens.

VITRECTOMY: The surgical removal of the vitreous if the eyeball.

YAG LASER: A machine which uses invisible energy to cut clear membranes within the eye.

Summary

The health care delivery system is changing in ways that will affect every American. In a system as large and complex as the American health care delivery system, "quality control and improvement" is essential. All areas of health care delivery are under some type of quality assurance mechanism that at least is designed to assure that minimum standards of care are met in order to protect the American public. One such area of the health care delivery system which is monitored for quality is eye surgery co-management. In Arizona, there exist minimum standards the eye care providers must meet in order to be involved in a eye surgery co-management relationship.

This investigator encountered several clinical situations where this quality of health care delivery has been substandard and this has occurred in the setting eye surgery co-management. This study was designed to further understand what the specific design of the quality control system is that monitors eye surgery co-management.

Additionally, the study was designed to determine what problems exist, if any, in the current system, and to recommend possible solutions for those problems.

The ultimate goal of this study was to improve the quality of health care delivered to the American public and this can be accomplished in part by improving the quality control system which is designed to monitor that care.

Chapter 2

REVIEW OF THE LITERATURE

Chapter Two is a review of current literature regarding the quality control system for eye surgery co-management in Arizona. The review is presented in the following three sections; (1) systems review, (2) medical quality, and (3) quality in eye care delivery. This investigator feels there are three particularly important points applicable to this study which the literature review helps clarify. The first is a description of a basic requirement of any controlling system, the second is a definition of quality, and the third is the recognition of specific minimum standards for medical and surgical eye care. The following are the specific points:

1. A controlling system must have the capacity to address at least as many variables as the system being controlled (Waelchi 1992, 7),
2. Basic quality is "meeting the requirements" (Cartin 1993, 8), and
3. All health care providers must meet the established minimum requirements for practicing medicine.

As various, pertinent topics in the current literature are reviewed, the reader will gain a better understanding of the need for this study.

Systems Theory

The "systems" approach for evaluating social systems represents an important addition to the "traditional reductionist method of evaluation frequently seen in the traditional scientific method." The systems approach of analysis may be divided into the following five categories:

1. General systems theory,
2. Social systems,
3. Political systems,
4. Interrelational systems, and
5. Psychological systems (Mattessich 1992, 386).

General systems theory (GST) is a thought process which tries to combine the essential aspects of most of the traditional sciences into a unified whole. Ludwig von Bertalanffy, a pioneer in this area, makes an interesting statement:

> General systems theory, therefore, is a general science of "wholeness" which up till now was considered a vague, hazy, and semi-metaphysical concept. In elaborate form it would be a logico-mathematicaal discipline, in itself purely formal but applicable to various empirical sciences. For sciences concerned with "original wholes," it probably would have similar

> significance to that which probability theory has for sciences concerned with "chance events" (Mattessich 1992, 386).

General systems theory is a collection of a variety of concepts under a common theme. The following is Waelchli's eleven theses which summarize the concepts contained in general systems theory:

> Thesis 1: Nature (or Creation) is a unified whole, with uniform and enduring laws; laws, which are (at least to some extent) comprehensible to the human mind.
> Thesis 2: We find it useful to define a conceptual and epistemological device called "system," as a revealing way of modeling Nature, particularly its "wholeness" aspect.
> Thesis 3: Human academic and scientific disciplines are varied ways of looking at (i.e., modeling) Nature.
> Thesis 4: Regardless of human division of knowledge, the unity of nature persists.
> Thesis 5: We model Nature in languages, which may be either formal (mathematics or formal logic) or social (the spoken or written artifacts of human communication).
> Thesis 6: While the problem of the incompleteness of the logical structures (languages) cannot be removed, we can manage it through a device called "metalanguage."
> Thesis 7: The General System Theorist conceives of a "system" as a metaconcept or meta-discipline in which the formalisms and processes of all other scientific and social disciplines, and most particularly, of the so-called "Scientific Method" itself, can be successfully discussed.
> Thesis 8: The ideas that a system is bounded, that it has an identity and coherence over time, and that it is defined by a human observer, all point to the fact that a system is separable (at least conceptually) from its environment.

> Thesis 9: A fundamental reality of nature is complexity.
> Thesis 10: "Control" in systems is defined as the maintenance of the values of specified variables of the controlled system within ranges dictated by the "controller."
> Thesis 11: The system philosophy argues that we must deal with real situations as wholes; that we cannot understand or control systems by understanding or controlling their parts. (Waelchli 1992, 4-7)

Thesis "10" helped form the theoretical foundation for this study. The control system for assuring quality in the eye surgery co-management relationship needs to be evaluated based on the concepts discussed under Thesis "10". Waelchli states

> One of the laws of control in complex systems is Ashby's Law of Requisite Variety. Ashby's Law states that to control a complex system, the controlling system must generate at least as much variety as the system being controlled: "Only variety in the control mechanism can deal successfully with variety in the system controlled" (Waelchli 1992, 7).

Another method of organizing "systems" is categorizing the systems according to their "goal-oriented behavior." Ackoff states that systems may be divided into the following five groups:

> 1. State-maintaining: This system simply "reacts" as exemplified by a thermostat in an automobile engine.
> 2. Goal-seeking: This system "responds" according to existing options and exercises those options, such as seen in an airplane on autopilot.

> It does not choose between possible goals, but is designed to be oriented towards a single goal.
> 3. Purposive: This system will "pursue different goals, without, however, selecting the goal to be pursued (e.g., a computer programmed to play checkers)."
> 4. Purposeful system: This system will select its own purpose. An example of this is an organization which determines its own purpose or goals and then directs its activities to accomplishing that purpose.
> 5. Ideal-seeking system: This system, after achieving its goal, will select another goal even closer to its standard of perfection. (Mattessich 1992, 387)

This investigator feels the current medical quality control system is most consistent with the third type of system in which "standards" are established or passed down to the controlling system, whose purpose is to achieve the predetermined goals. This study attempted to evaluate how well the purposive type of system is able to accomplish the quality assurance goals for eye surgery co-management. If the system was found to be lacking in one or more areas, then further evaluation as to why it is lacking was pursued.

The goal of every quality control system should be actively improving quality rather than maintaining the status quo of minimum requirements. The following discussion represents a method for producing a system which may conform to the "Ideal-seeking" system.

Gerald Nadler (1967) describes a method for designing systems which meets the classification of the "ideal-seeking" system. This concept is described as the "IDEALS (Ideal Design of Effective And Logical Systems)." This concept grew out of the "Work Design" theory of the 1950's and 1960's which was concerned primarily with activities related to metal-work manufacturing. The basic principles were expanded for application to "any type of organization in any country of the world" (Nadler 1967, v).

The IDEALS concept revolves around three fundamental points:

> 1. a universal definition of systems that fit hardware or software situations, products or services, materials or information, repetitive or nonrepetitive work, mechanical or manual work;
> 2. a design strategy that produces better results than any other approach; and
> 3. a program for involving people at all levels in systems design and for bringing the total implementation of the concepts to the whole organization (Nadler 1967, v).

The IDEALS model differs from other quality assurance models such as Total Quality Management (TQM) in that the IDEALS concept is more flexible in its ultimate goal whereas TQM places primary emphasis on "quality" as the central theme. TQM will be discussed later under the section dealing with "quality."

A work system in an organization may be of any size and it may also consist of one or more sub-systems of various sizes. The work systems, or units, all have the same requirements which are (1) a purpose, (2) resources, and (3) a system (Nadler 1967, 2). The purpose of the unit in an organization will agree with the overall mission statement of the organization. The goals of the unit may differ in order to achieve the purpose assigned to the unit by the organization. The resources of the unit are usually in the form of human resources, physical facilities and goods, and financial resources. Work systems integrate the resources in a manner to achieve the goals and ultimately the purpose.

Within an organization, there may be systems operating at different levels, with each level subject to its own purpose yet sharing some characteristics and similar goals with other systems or levels. The systems need to communicate (inputs and outputs) with systems at the same level and with systems at different levels (higher or lower) for optimal effectiveness.

Other characteristics of a system's unit or component are the following:

1. Function: The mission, aim, or primary concern of the system.
2. Inputs: Any physical item, information, humans, and/or feedback of any of the three into the system and on which processing is going to be done to arrive at an output.

3. Outputs: The physical items or services which result from the processing of input and express how the function is achieved. Function tells what is to be accomplished, output tells how the function is achieved.
4. Sequence: The process, transformation, or order of steps, including feedback and control, required to change the inputs into the outputs.
5. Environment: The physical and sociological factors within which all other system characteristics take place.
6. Equipment: Physical resources that serve as catalysts or agents in each step of the sequence for changing the inputs into outputs. Physical items arriving at a system can therefore be either inputs, which become part of the outputs, or equipment, which does not.
7. Human agents: Human resources that serve as agents or catalysts in operating the equipment within the environment and the sequence of changing the inputs into outputs to achieve a function. Humans arriving at a system can therefore be either input, as patients into a hospital, or human agents, as nurses in a hospital. Humans are often the basis of activating the decision sequence. (Nadler 1967, 6)

A system should also have a design strategy which incorporates the following characteristics:

1. Physical dimension: This is the size, shape, composition, overt format, mode or modality of existence, strength, property, or other definitions of the system characteristic.
2. Rate dimension: This pertains to a measurement unit of the system characteristic on a per time unit basis. Rate refers to frequency and intensity of the physical dimensions. Rate is the division by a time unit of some measurement of one or more of the physical dimensions of the system characteristic by a time unit.
3. State dimension: This pertains to a chronologically or time-based scale, learning stage, growth, or decay of the system characteristic. The state dimension concerns anticipated system characteristic changes in

> discrete (i.e., 1 year, or in 18 months), or continuous (i.e., very small, incremental) time units. State dimension does not tell how the system is to operate or be embodied, but concerns the designed-in changes desired in time. (Nadler 1967, 16-17)

In applying the IDEALS concept in system design, an "ideal model" is constructed and is used as a model or guide for constructing the "recommended system." Nadler feels this method will consistently produce system designs far superior to that which would be produced by using "conventional" systems as a model.

The IDEALS concept incorporates systems ranging from the highly theoretical to the doable.

> Theoretical ideal system: This is the highest or perfect system. It cannot be realistically constructed.
>
> Ultimate ideal system: This system is used in long-range planning as it represents a system which cannot be installed today, even though it is a definite design; some research and development needs to be done to make it feasible.
>
> Technologically Workable Ideal System Target (TWIST): This is the system that could be installed today using present knowledge and components if no real-life restrictions needed to be considered. This system serves as the guide in developing the "recommended system."
>
> Recommended system: This system will mirror the TWIST except that target or goal adjustments will be made to allow the system to be implemented in a real-life situation. (Nadler 1967, 26-27)

Quality in Health Care

In the analysis of quality assurance systems, it is important to understand the term "quality". In the book Zen and the Art of Motorcycle Maintenance, Persig states the following:

> Quality ... you know what it is, yet you don't know what it is. But that's self-contradictory. But some things are better than others, that is, they have more quality. But when you try to say what quality is, apart from the things that have it, it all goes poof! There's nothing to talk about. But if you can't say what it is, how do you know what it is or how do you know it even exists (Persig 1974, 342)?

The following list contains several definitions from an industrial perspective:

Quality is

1. The totality of features and characteristics of a product or service that bear on its ability to satisfy given needs.
2. Fitness for use.
3. Conformance to requirements.
4. The degree to which product characteristics conform to the requirements placed upon that product, including reliability, maintainability, and safety.
5. The degree to which a product or service is fit for the specific use.

Quality Control

1. A planned and systematic pattern of all means and actions designed to provide adequate confidence that items or services meet contractual and jurisdictional requirements and will perform satisfactorily in service.

Quality Assurance includes Quality Control.

2. All those planned or systematic actions necessary to provide adequate confidence that a product or service will satisfy given needs.
3. Meet expectation of the customer. (Cartin 1993, 8)

Another author and physician, LeMaitre (1979), presents a discussion regarding quality in health care. He states the following:

> Unfortunately, quality is an extremely difficult concept to define, measure or recognize. It means so many different things to different people. It implies that we have all agreed on the goals or purposes of medical care and only have to see how our present system measures up to the goals.
>
> I do not believe the concept "quality of medical care" is ever going to be concrete enough to yield a good meaningful measure by which you can choose a good doctor. It is like asking, "Which is the higher-quality car, a Cadillac or Corvette?" It all depends on what you want to get out of a car in the first place. (LeMaitre 1979, 20)

One brief definition of quality is probably the most encompassing of definitions offered by Philip Crosby. He states that quality is the "conformance to requirement" (Cartin 1993, 8). The requirement can be as straight forward as the definition offered by James Houghton, the Chairman and CEO of Corning:

> At Corning, our definition of quality is very simple. The definition is: meet customers' requirements 100 percent of the time.

> And if you think about it, really 99 percent is not good enough. You know what 99 percent is? It means in this country 20,000 lost pieces of mail every hour -- 99 percent good -- it means three or four short or long landings on every runway in the United States everyday -- 99 percent good. It means 5,000 improper surgical procedures a month; it means 200,000 wrong prescriptions a year, and it means your heart beats every minute of every day except for 87 hours a year. That's 99 percent good. (Houghton 1992, 14)

Medical Quality

The subject of medical quality can be traced back to the Code of Hammurabi in 1900 B.C., which established that "if a surgeon were to negligently blind another gentleman, then 'his (the surgeon's) hand should be cut off'" (Tobias and Ziegenenfuss 1987, 37). The Hippocratic oath of the 400's B.C. compelled the physician to "...do no harm." In the United States, medical quality was first promoted in 1914 by E.A. Codman who stated

> I am called eccentric for saying in public, that hospitals, if they wish to improve they
> 1. Must find out what their results are.
> 2. Must analyze these results, to find their strong and weak points.
> 3. Must compare their results with those of other hospitals.
> 4. Must care for what cases they can care for well, and avoid attempting to care for cases which they are not qualified to care for well.
> 5. Must assign the cases to members of the staff (for treatment) for better reasons than seniority, the calendar, or temporary convenience.
> 6. Must welcome publicity not only for their successes but their errors, so that the

public may give them their help when it is needed.

7. Must promote members of the staff on a basis which gives due consideration to what they can and do accomplish for their patients. (Tobias and Ziegenenfuss 1987, 40)

To assess the quality of an organization one must evaluate that organization. An evaluation of an organization's staff or structure must begin with the identification of goals or objectives followed by development of performance standards. There must be a protocol for periodic assessment to judge continued adherence to established standards and goals. Seth Goldsmith discusses this topic in the book Health Care Management.

> Health care organizations could learn some lessons from the airline industry. First, goals and objectives that are realistic and environmentally acceptable must be established. These goals are then translated into statements regarding the kind of people needed. Theoretically, these statements are turned into job descriptions and specifications, and then someone who can be evaluated on the basis of the job description and contributions toward the organization's goals is hired. (Goldsmith 1981, 12)

Unfortunately, this concept cannot be directly applied to the current health care delivery system mainly because physicians, who basically control health care delivery, are not employees of an organization.

An aspect of the health care system that may be similar to the airline industry is the hospital industry. In the United States, the primary attending physician does not transfer the patient to hospital staff physicians, but continues with the patient through his/her hospitalization. In Europe, the hospital staff assumes the care of the hospitalized patient and then returns the patient to the primary physician after discharge. The European method has demonstrated its ability to control hospital resources because hospital expenditures, including those of the physicians who are responsible for many of the expenditures, are under the control of the hospital administration.

Hospital facilities were a factor in the distribution of physicians. As hospitals continued to grow in size and sophistication, physicians located their practices near the facilities so that medical resources were more readily available to the doctors and their patients. As a result, urban areas began to experience an increase in the number of doctors while at the same time, rural areas noticed a decline (Starr 1984, 164). The ongoing problem of unequal physician distribution is a topic of concern. Within the medical educational system, action is being considered to help resolve this problem (Primary Care Task Force 1992, 31).

Unfortunately, the health care system in the United States is not serving many of the basic needs of its people (Bove 1992, 29; Brown 1992, 558) and because of this, many people feel that medical management and physicians do not have the public's welfare foremost in their activities. Some people feel it would be better to educate the patient to be a medical consumer so that (he or she may understand the medical care options. The patient might receive better care based on his/her ability to be knowledgeable consumers of health care services (Reiser 1992, 1515).

The concept of a "managed-competition" health care delivery system is being actively pursued by Congress as the foundation for a national health care system. The idea of physicians as employees in managed-care organizations is rapidly becoming a reality. At a recent meeting of the Arizona Medical Association Subcommittee for Medical Affairs, a proposal was presented by the Greater Phoenix Area Affordable Health Care Foundation as a model for the health care delivery system of the future. The proposed system was presented, not only for the Phoenix metropolitan area, but for the State of Arizona as well. In this system, goals would be established and the budgets set, before the organization would allow private sector physicians to compete for a contract to provide specific services. The

role of the physicians would change from one of autonomy to one of being subordinate. In addition, the physician would be left out of the planning stages because it is felt that physicians may not represent a financial advantage in the administrative decision making process. (Wilson and Schroeder 1992, 5)

Quality in Managed Health Care

Medical providers in the current health care system are uncertain about what the future holds for them in the proposed health care delivery system. One fact, with which there is little uncertainty, is that future health care will be dominated by management systems. Administrators will establish the goals and parameters within which the health care is delivered. In any system, including health care, performance evaluation is necessary (Burbach 1992, 19). In ophthalmology publications there are an increasing number of articles which support improvement in practice management styles and procedures so that the physician may be able to successfully adapt to the coming changes in health care (Noreika and Saluzzo 1992, 20; Greenlick 1992, 1648).

As the popularity of managed health care systems increases, greater emphasis will be placed upon "outcomes management." Russel Coile, in the book The New Medicine-

Reshaping Medical Practice and Health Care Management, discusses five "forces" he feels are "converging to propel quality to the fore." These forces are the following:

> 1. Managed care buyers (employers, HMO's, PPO's, and insurance plans) will select hospitals and physicians based on their quality and effectiveness.
> 2. Federal and state governments are increasing public disclosure of morbidity and mortality rates.
> 3. Major employers and employer health care coalitions are developing regional data bases, implementing comparative quality assessment systems like MediQual, hiring consultants to pick superior providers, and entering into exclusive provider arrangements with select hospitals and MDs for specialized services.
> 4. Consumers are asking for second opinions, reading books like The best Hospitals in America and The Best of Medicine, and shopping for quality and value.
> 5. Voluntary certifying bodies such as the Joint Commission are widening the range of facilities they review for quality, extending certification to HMOs, and pilot-testing the first sets of outcome criteria that will be added to hospital certification process in 1991-1993 (Coile 1990, 13-14).

For outcomes management to work, Coile suggests several systems need to be in place. These recommendations are built on the work of Paul Elwood who, in 1988, coined the term "outcomes management" (Coile 1990, 339). These systems will include the following:

> 1. a national data base that contains information about and analysis of clinical, financial, and health outcomes for specific diseases and diagnoses,

> 2. standards that accurately reflect the relationship between medical interventions and desired outcomes, and
> 3. widespread access to the data base for decision makers (Coile 1990, 340).

One of the goals of outcomes management is to present a "product" to the consumer. The consumer may then evaluate that product for quality, price, and other pertinent characteristics. There is a wide range of opinions regarding what should be prioritized when health care is marketed and purchased. Coile points out that although some believe price is the major factor behind health care purchase decisions, others believe quality is the keystone.

> Buyers accept having to pay more for health services from providers they believe are of the highest quality. The VHA research shows that 40 percent of the consumers are willing to pay extra for quality. A similar 42.1 percent of the health executives surveyed for Health-care Forum predicted that business and insurance companies would be willing to pay more for higher quality (Coile 1990, 341).

The previous discussion briefly presents health care management systems that "systematically" evaluate the health care which is delivered. Although this type of management style may be relatively recent to medicine, the concept is not new. In 1854, Florence Nightingale studied both the outcomes of patients' treatment and the process which produced those results (Meisenheimer 1992, 4). In 1908,

Emory Graves studied the mortality rates of various surgical procedures and suggested improvement in the diagnosis grading systems as a result of his outcomes studies (Meisenheimer 1992, 5). The Flexnor Report of 1910 studied the medical training in the United States and as a result of these outcome studies, medical education was significantly changed (Meisenheimer 1992, 6). Earnest Codman in 1914 promoted the evaluation of surgical patients one year after surgery to evaluate the effectiveness of surgical procedures. Dr. Codman, a surgeon, was instrumental in the inception of hospital accreditation. His efforts led to the formation of the American College of Surgeons' Hospital Standardization Program in 1918. An outgrowth of this organization currently represents multiple organizations such as the American Medical Association, the American Hospital Association, the American Dental Association, the American College of Physicians, and the American College of Surgeons. It is now called the Joint Commission for the Accreditation of Hospitals (JCAH) (Meisenheimer 1992, 6). Currently the JCAH evaluates hospitals as well as organizations involved with long-term care, ambulatory health care, hospices, psychiatric care, alcoholism and drug abuse, and facilities providing care for mentally retarded persons and developmentally disabled persons. In the 1950s,

several studies were published that evaluated the performance of physician and nursing activities and outcomes in patient care (Meisenheimer 1992, 8). In the 1960s Medicare and Medicaid were established. In 1966, the Regional Medical Program Act was passed to merge the following two goals: (1) "the promotion of scientific research" and (2) "the development of improved service in the application of knowledge" (Meisenheimer 1992, 9). Even after the establishment of Medicare in 1965 (Public Law 89-97), which reimbursed hospitals (Part A) at reasonable cost and physicians (Part B) on the basis of reasonable charges, there were relatively few mechanisms to evaluate the system that was providing health care as well as the care that was being delivered. Between 1965 and 1972, medical technology mushroomed and the cost of health care increased dramatically. In 1972, the Senate Finance Committee instructed the American Medical Association to develop some way to document the necessity of hospitalization while preserving the quality of care. This led to the passage of Public Law 92-603 in 1972 which established the Professional Standards Review Organizations (PSROs), the Prospective Payment Methodology as a demonstration project and set limits on reasonable cost. This legislation was to provide the structure and authority

from which local physician-controlled organizations would review the medical care delivered to Medicare patients, Medicaid patients, and Title V patients in provider institutions. In 1974 the National Health Planning and Resource Development Act (PL 93-64) was passed in order to correct the mal-distribution of manpower and health facilities (Meisneheimer 1992, 11). Escalating national debt, health care costs that were increasing two to three times the national rate of inflation, demand for greater accountability, and a need to initiate checks in a system lacking incentives to save, created the impetus to modify the existing system (AMPRA 1991, 1). Congress recognized the need for a method of assessing utilization and quality of care. Soon after the PSRO contract was awarded in 1974, there was intense political debate over whether the PSRO's principle objective was cost reduction or quality improvement. Variability in PSRO performance and the increasing negative political climate led to a proposal for their elimination in 1982. Congressional support saved the program temporarily through the passage of Public Law 97-248 (TEFRA). In October 1983, the Deficit Reduction Act (PL 98-369) mandated the establishment of the Prospective Payment System (PPS) which set a predetermined payment for the hospitalization of each Medicare recipient initially

based upon 486, and now 490, Diagnostic Related Groups (DRG's). This legislation also created the Utilization and Quality Control Peer Review Organization known as the PRO (AMPRA 1991, 1-2).

There are several characteristics which differentiate the PRO program from the PSRO program. The PRO may be a for-profit group, whereas the PSRO had to be a non-profit organization. The PRO can have an arrangement with as few as 25 physicians to do a review (a physician-access organization), whereas the PSRO had to be a physician-dominated organization. The PRO may also be a physician-controlled organization but it is not required to be so. The PRO may be located in any geographic location, whereas the PSRO had to be located in-state (AMPRA 1991, 1).

Total Quality Management

A significant turn in thinking occurred in the 1980s with the introduction of quality as a management style rather than an endpoint of management. Arguments were presented that cost containment resulted in an automatic decrease in quality. This was countered by the arguments of Crosby, Deming, and Juran. Each suggested that quality is a "process" which will result in monetary savings and a better product (Meisenheimer 1992, 15). They proposed a style of

management called Total Quality Management (TQM). It is founded on two basic tenets; (1) customer satisfaction and (2) the use of nontraditional sources (such as employees) for instituting quality programs. Deming's and Crosby's strategies for the improvement in quality is based primarily on the "system" which delivers the care rather than the people that deliver it (Meisenheimer 1992, 15).

This is a shift from the usual thinking of medical science. TQM promotes a "holistic" approach to health care delivery rather than the reductionist's method of delivery health care in parts. In the book, The Second Medical Revolution, Foss and Rothenberg (1988) review the historical and philosophical basis of modern medicine. When the scientific approach to medicine began, there was a logical and systematic search for the causes of disease and also the cures. In the Cartesian-Newtonian model, the body is considered separate from the mind. An understanding of the body can be achieved by understanding the individual body parts which make up the body. The authors mention that in actuality, medicine can trace its roots back to a different thought model, that is, the holistic concept described by Hippocrates. The holistic theory states that, "Health depends upon a state of equilibrium among the various internal factors which govern the operations of the body and

the mind; the equilibrium in turn is reached only when man lives in harmony with his external environment" (Foss and Rothenberg 1988, 43).

The philosophical definition of "viewing the whole rather than the part" can be translated into more concrete terms. James Houghton at Corning, states the following:

> We adopted six basic strategies as the core of our total quality effort, and since that time these strategies have really become a religion:
> 1. provide unquestioned leadership;
> 2. focus on customer results;
> 3. train all employees;
> 4. achieve and recognize employee participation;
> 5. communicate about quality internally and externally;
> 6. provide quality measures, processes and tools. (Houghton 1992, 11)

Even though TQM is making some inroads into the medical profession, as stated earlier, its origins were in the industrial aspect of our society. Industry approached a product by first having the engineers design and establish the tolerance parameters for each product. The manufacturer would then build the item to the established tolerances. The products were evaluated according to the design specifications and systems were put in place to check if the products met the criteria. If the products passed, then quality was present and if they did not pass, then quality was not present. This led to a significant fluctuation in

product performance and resulted in unhappy customers at times. American industry found that the quality of U.S. products was falling behind that of competitors such as the Japanese. The quality gap was very apparent in the automobile industry. Attention was directed to improving American quality standards. Study of Japanese industrial techniques demonstrated the use of a different "thought" process of what quality is and how to achieve it (Deming 1986, 2-3).

In the 1950s, Deming proposed a system of quality measurement and control which was based on the concept of customer satisfaction and stressed continual improvement in the process of achieving customer satisfaction. The Japanese incorporated this thinking into their industry and they have proven that the TQM management system is not only able to produce a high quality product, but also do so for less cost. The following are the fourteen points which summarize the Deming's method:

1. Create constancy of purpose for improvement of product and service,
2. Adopt the new philosophy,
3. Cease dependence on inspection to achieve quality,
4. End the practice of awarding business on the basis of price tag alone. Instead, minimize total cost by working with a single supplier,
5. Improve constantly and forever every process for planning, production, and service,

6. Institute training on the job,
7. Adopt and institute leadership,
8. Drive out fear,
9. Break down barriers between staff areas,
10. Eliminate slogans, exhortations, and targets for the work force,
11. Eliminate numerical quotas for the work force and numerical goals for the management,
12. Remove barriers that rob people of pride of workmanship. Eliminate the annual rating or merit system,
13. Institute a vigorous program of education and self-improvement for everyone, and
14. Put everyone in the company to work to accomplish the transformation. (Deming 1986, 23-24)

Cartin argues that one of the main factors which leads to the evolution of quality is the reduction of variation. He states the following:

> Broadly speaking, the evolution of quality has been from just meeting engineering requirements to variation reduction. The idea of variation reduction is reflected in a quality definition by Genichi Taguchi: Quality is the degree of variation from the target (nominal) (Cartin 1993, 12).

To reduce variation, the TQM system is utilized. Cartin has outlined a TQM model as follows:

Objective: Customer satisfaction
Philosophy: Continuous quality improvements reduce variation
System Elements:
1. Internal/external customer
   A. Every task is a process
   B. Next process is our customer
   C. Customer feedback

D. Measure of customer satisfaction

2. Internal/external supplier
   A. Align objectives and policies with suppliers
   B. Select suppliers using process management
   C. Systematic exchange between customers and suppliers
3. Management commitment
   A. All organizations
   B. Business quality plan
   C. Quality deployment
   D. Management audit
   E. Benchmarks
4. Total participation
   A. Company-wide involvement
   B. Improvement teams
   C. Suggestion box
   D. Supplier participation
5. Systematic analysis
   A. Common methods
   B. Analyze bad, good, and best
   C. Resources on prevention
   D. Minimize variation
   E. Statistical tools and techniques
   F. Decisions based on facts and data. (Cartin 1993, 15)

The medical profession is incorporating these concepts, not only into the management of hospitals, but also into the organization (JCAHO) which reviews health care facilities for quality. In 1990, the Joint Commission on Accreditation of Hospitals changed its name to the Joint Commission on Accreditation of Healthcare Organizations as part of its "Agenda for Change." The Joint Commission's standards are focusing on total quality management and systems which

incorporate the feedback from the consumer as a source of input for improving care. Dennis O'Leary, the president of the JCAHO, states the following:

> Now, you will see content that you recognize as Continuous Quality Improvement concepts in our standards. But these concepts are also, in my humble view, simple, basic, common sense management principles that are fundamental to any organization's ability to improve performance (O'Leary 1992, 22).

The federal Peer Review Organizations, in the "fourth scope-of-work," are also reorienting their efforts to come in line with TQM principles.

Currently, the Health Care Financing Administration (HCFA) has contractual arrangements with PROs to assure the following is occurring:

1. There is timely and economic delivery of appropriate quality of care to eligible beneficiaries.
2. There is beneficiary awareness of the services for which they are eligible.
3. There is efficiency and quality within the total health care delivery system. (AMPRA 1991, 2)

The "fourth scope-of-work," is changing its emphasis in the review process and the outcomes. The PROs in the past were requested to review the health care delivered to eligible beneficiaries for quality and utilization. This was accomplished by the establishment of minimum criteria by

which medical charts were reviewed. These criteria or "screens" could be either generic or focused, depending on what HCFA wished to evaluate over a certain period of time. The results were collected on an individual basis where points for improper care were assigned and sent to a central agency (The National Practitioner Data Bank) for storage. The new emphasis is based on "profiling" health care delivery "regions" such as a hospital with its medical staff rather than specific physicians or individual hospitals. This form of review allows the PROs to gain a "broader" perspective of the health care delivery system by placing the participants of the health care delivery system into context. Additionally, they will have data to determine what is working and what is not working.

Quality in the Outpatient Setting

Within the health care system, the growth of the outpatient sector is tremendous. Thomas Ault, deputy director in the Bureau of Policy within HCFA, states the following:

> No matter what we look at -- number of visits, spending, percent of personal health expenditures -- we see tremendous growth in payments and services in the outpatient setting. From 1980-1990, the proportion of personal health care expenditures for services performed in the outpatient settings increased from 4.8 percent to 8.7 percent. Medicare outpatient spending has

> been growing at 15 percent a year compared to the 12 percent growth in physician spending and 8 percent in inpatient spending. (Ault 1992, 36)

Paul Spilseth, a physician and quality director states the following:

> Until recently, health care quality assessment and improvement efforts were focused primarily on hospitals. Evaluation of the quality of patient care services began with the patient's entry into the hospital system and ended with discharge. Efforts to measure and improve quality in the outpatient setting were minimal because of lack of external quality control requirements and the diversity of ambulatory care providers. Yet outpatient care accounts for the largest share of patients' contact with physicians. For example, the average health maintenance organization member makes 4.7 ambulatory care visits each year, whereas fewer than 1 out of 10 members are hospitalized each year. The disparity in quality improvement emphasis has now become apparent, and efforts are already under way in many outpatient settings to develop and implement effective quality management programs. (Spilseth 1992, 3)

As health delivery continues to grow in the outpatient sector, the "system" by which it is delivered becomes increasingly important. The previous review demonstrates that TQM is being incorporated into large businesses and into major health care institutions such as hospitals. As mentioned earlier, this trend is being encouraged by regulating organizations such as the JCAHO and PROs as they urge hospitals, other health care facilities, and providers to come into compliance with the new principles within

several years. Several of the larger hospitals that have already incorporated these new management principles are Hospital Corporation of America (HCA), Delano Medical Corporation, Humana Inc., HealthTrust, Rush-Presbyterian-St. Luke's, and Quorum (Smith 1992, p.24).

Another relatively new concept in health care delivery is the "clinic without walls." In Sierra Vista, Arizona, primary care physicians have linked their offices in an effort to compete in the managed care environment. Tom Griffith, a physician in the group, has stated that this is a very useful concept. It allows the physician the ability to remain autonomous, but provides a mechanism that also allows him to interface with other managed care systems.

Alan Whiteman is an administrator for developing a "medical group without walls" in Florida. As a doctoral student, he completed a doctoral dissertation on the subject of the viability of this new concept. He states the following:

> The group practice without walls offers a new dimension to the organizational structure of multispecialty groups. The key element of the structure is centralized administration with decentralized delivery of health care services. In essence, the physicians who join this model of practice remain in their present practice site and maintain their individual style of practice to a significant extent (Whiteman 1993, 10).

Quality in Eye Care Delivery

Within the setting of the managed health care, new and innovative methods for assuring quality exist and appear to be functioning well. With TQM and related quality control systems, the quality of care will be continually improving.

In the outpatient setting involving eye surgery co-management, TQM concepts become more difficult to implement. This investigator was unable to find any published or nonpublished references that describes the use of TQM in linking multiple independent medical practices which are not bound under a system that controls referrals, fees, goals, standards, or quality control systems. This does not suggest that quality control systems are not in place, but it does suggest that the systems that are in place are not based on the new models for continual quality improvement, such as TQM. This study attempts to better understand how well the current system is functioning by evaluating the different aspects of the quality control system(s).

In Arizona, the quality of surgical co-management after eye surgery is evaluated through five basic systems which are the following:

1. Licensing
2. Education minimums

3. Medicare rules for reimbursement
4. Peer review activities, and
5. Established standards of care.

The following is a review of the current data regarding each of the five quality control systems.

Licensing

The definition of a license is the following: License (1) Official or legal permission to do or own a specific thing. (2) Proof of permission granted, usually in the form of a document, card, plate, or tag (American Heritage Dictionary 1978, 753). For the purposes of this study, two licensing organizations will be reviewed; the Board of Medical Examiners of the State of Arizona and the Arizona State Board of Optometry.

The Arizona Board of Medical Examiners

The Board of Medical Examiners for the State of Arizona is described under Chapter 16 of the Arizona Revised Statutes 32-1401 et seq. (Arizona Board of Medical Examiners 1992-93, 7-72). The primary duty of the Board is to "protect the public from unlawful, incompetent, impaired or unprofessional practitioners of allopathic medicine through licenser, regulation and rehabilitation of the profession in

this state" (Arizona State Medical Directory 1992-93, 15).

Some of the powers of the Board include the following:

> 1. Ordering and evaluating physical, psychological, psychiatric and competency testing of licensed physicians and candidates for licenser as may be determined necessary by the Board.
> 2. Initiating investigations and determining on its own motion if a doctor of medicine has engaged in unprofessional conduct or provided incompetent medical care or is mentally or physically unable to engage in the practice of medicine.
> 3. Developing and recommending standards governing the profession.
> 4. Disciplining and rehabilitating physicians.
> 5. Adopting rules regarding the regulation and the qualifications of doctors of medicine. (Arizona State Medical Directory 1992-93, 15)

The Board of Medical Examiners is responsible for the licenser and monitoring of all physicians of allopathic medicine and physician's assistants. The basic requirements for obtaining a license to practice medicine in Arizona include and state that one must

> 1. Graduate from an approved school of medicine or receive a medical education which the board deems to be of equivalent quality.
> 2. Successfully complete an approved twelve month hospital internship, residency, or clinical fellowship program.
> 3. Have the physical and mental capability to safely engage in the practice of medicine.
> 4. Have a professional record which indicates that the applicant has not committed any act or engaged in any conduct which would constitute grounds for disciplinary action against a licensee under this chapter.
> 5. Have a professional record which indicates that the applicant has not had a license to practice medicine refused, revoked, suspended or restricted in any way by any state, territory,

> district, or country for reasons which relate to his ability to competently and safely practice medicine.
> 6. Pay all fees required by the Board.
> 7. Complete the application as required by the Board. (Arizona State Medical Directory 1992-93, 18)

Many applicants for Arizona State licenser are able to meet the seven basic requirements but must also meet other criteria before being granted a license to practice medicine. For example, an applicant may need to be licensed by "examination" or "endorsement" (Arizona State Medical Directory 1992-93, 19).

The additional requirements for an individual graduating from an unapproved allopathic school of medicine state that s/he must

> 1. Be able to read, write, speak, understand and be understood in the English language.
> 2. Hold a standard certificate issued by the educational council for foreign medical graduates, complete a fifth pathway or complete thirty-six months as full-time assistant professor or in a higher position in an approved school of medicine.
> 3. Successfully complete an approved twenty-four month hospital internship, residency or clinical fellowship program (in addition to the twelve months required under the basic requirements number "2") for a total of thirty-six months of training, unless the applicant successfully completed a fifth pathway program or has served as a full-time assistant professor or in a higher position in an approved school of medicine for a total of thirty-six months. (Arizona State Medical Directory 1992-93, 18-19)

Licensing by the "fifth pathway program" involves the following steps:

> 1. Satisfactorily completing an approved fifth pathway program in one academic year of supervised clinical training under the direction of an approved school of medicine in the United States.
> 2. Successfully completes an approved twenty-four month internship, residency, or clinical fellowship upon completion of the fifth pathway program. (Arizona State Medical Directory 1992-93, 19)

Licenser by "examination" involves the following steps:

> 1. An applicant for licenser may take the examination only after completing nine months of a board approved hospital internship, residency or clinical fellowship or fifth pathway program or has served as a full-time assistant professor or in a higher position in a board approved school of medicine in this state.
> 2. An applicant must obtain a grade of seventy-five or more in each of the components in order to have successfullypassed the examination. The successful passage of the examination must be achieved at one sitting. (Arizona State Medical Directory 1992-93, 19)

Licenser by "endorsement" involves the completion of one of the following requirements:

> 1. The applicant is certified by the National Board of Medical Examiners as having successfully passed all three parts of the examination of the national board of medical examiners.
> 2. The applicant has successfully passed a written examination administered by any state, territory or district of the United States, a providence of Canada, or the medical council of Canada. (Arizona State Medical Directory 1992-93, 19-20)

The Board of Medical Examiners of the State of Arizona is responsible for monitoring physicians' activities and providing education or discipline as felt necessary. Certain actions or violations are clearly delineated. For example, "unprofessional conduct" includes, but not limited to, the following acts whether occurring in this state or elsewhere:

1. Charging for a fee not rendered or dividing a professional fee for patient referrals among health care providers or health care institutions or between these providers and institutions or a contractual arrangement which has the same effect.
2. Representing or holding oneself out as being a medical specialist when such is not the fact.
3. Obtaining a fee by fraud, deceit or misrepresentation.
4. Any conduct or practice which is or might be harmful or dangerous to the health of the patient or public. (Arizona State Medical Directory 1992-93, 12-14)

The Arizona State Board of Optometry

Optometrists and optometric activities are regulated in Arizona by the Arizona State Board of Optometry which consists of six members appointed by the governor. The responsibilities of the optometry board include, but are not limited to, the following:

1. The board shall promulgate, and may amend, rules and regulations which govern the practice of profession of optometry.
2. They shall examine and issue licenses to applicants to practice optometry in Arizona.

> 3. Appoint advisory committees.
> 4. Issue subpoenas for the attendance of witnesses and the production of books, records, documents and other evidence it deems relevant to an investigation or hearing.
> 5. May adopt and promulgate administrative rules providing for criteria for approving programs of continuing education for doctors of optometry.
> 6. May hire or contract with investigators to assist in the investigation of violations. (Arizona State Board of Optometry 1990, 7-8)

The license issued after successful completion of the application process means that the applicant is certified to practice the profession of optometry. The "practice" of optometry at the time the clinical cases occurred is described as follows:

> "Practice of the profession of optometry" means the examination or refraction of the human eye and its appendages, and the employment of an object or means or methods other than medicine or surgery, or the use of drugs, except those diagnostic pharmaceutical agents known as topical anesthetics, cycloplegics and mydriatics, to be administered only at the time and place of examination, for the purpose of determining any visual, muscular, neurologic, or anatomical anomalies of the eye, the use of any instrument or devise to train the visual system or correct any abnormal condition or relief of or aid to the visual function. Optometrists may use such diagnostic pharmaceutical agents for diagnostic purposes only after first completing a course in clinical pharmacology. (Arizona State Board of Optometry 1990, 3)

As of April 1993, the forty-first legislature changed the practice of optometry to the following:

> "Practice of the profession of optometry" means the examination or refraction of the human eye and its appendages, and the employment of an object or means or methods other than surgery for the purpose of diagnosing or treating with pharmaceutical agents any visual, muscular, neurologic, or anatomical anomalies of the eye, the use of any instrument or devise to train the visual system or correct any abnormal condition of the eye or eyes and prescribing, fitting or employment of any lens, prism, frame or mountings for the correction or relief of or aid to the visual function, provided that superficial foreign bodies may be removed from the eye and its appendages. Optometrists may use topical pharmaceutical agents only after first satisfactorily completing a course in clinical pharmacology as required in section 32-1722. (H.B. 2014 1993, 1)

The part of section 32-1722 mentioned above states the following:

> Satisfactory completion of a course of study approved by the board in didactic education, pharmacology and clinical training in the examination, diagnosis and treatment of conditions of the human eye and its adnexa that total at least one hundred twenty hours in addition to the successful passage of a written examination as prescribed by the board. (H.B. 2014 1993, 2)

The amendments enacted above allow certified optometrists to practice medicine for all ocular diseases that may be treated with topical pharmaceuticals and to remove foreign bodies from the surface of the eye. Optometrists may not perform surgery or prescribe systemic or parenteral antibiotics as of the time of this writing.

An important condition is the completion of the educational requirements and passing the subsequent examination, both of which are under the direction of the optometric board. The earliest expected time for implementation of this amendment is ninety days after this current session (1993) of the Arizona congress ends. In conversations with optometrists who are interested in pursuing this pharmaceutical and therapeutic option, they do not expect to be able to expand their scope-of-practice until 1994 due to the time necessary to obtain the required additional education which entitles them to sit for the examination. For this research study, this point is important since all cases presented in this research study will not include optometrists functioning under the newly expanded scope-of-practice in Arizona.

According to the Arizona State Board of Optometry, the qualifications of applicants to obtain a license to practice the profession of optometry includes the following:

> 1. Graduate from a university or college teaching the profession of optometry accredited by a nationally accepted accrediting body on optometric education.
> 2. A satisfactory completion of a course of study in clinical pharmacology approved by a committee composed of the president of the board, the chairman of the pharmacology department of the University of Arizona College of Medicine and the chairman of the department of ophthalmology at the University of Arizona College of Medicine with particular emphasis on clinical application of diagnostic pharmaceutical agents for the purpose

> of examination of the human eye and the analysis of ocular functions.
> 3. Background information on a form prescribed by the attorney general for the purpose of conducting an investigation into the existence of prior arrests and convictions. (Arizona State Board of Optometry 1990, 9-12)

The optometric board is responsible to assure that a person does not practice the profession of optometry without a license. A significant issue is whether this also means to assure that an optometrist practices within his/her licensed scope-of-practice. Also, the board is charged with educating, and if necessary, censuring, placing on probation, suspending or revoking the license of its members in Arizona for any, but limited to, the following reasons:

> 1. Conviction of a felony or any offense involving moral turpitude.
> 2. Obtaining or renewing a license by fraud or deceit.
> 3. Conduct likely to deceive or defraud the public.
> 4. Unprofessional conduct.
> 5. Obtaining a fee or compensation by fraud or misrepresentation.
> 6. Any violation of any statutes, laws or rules regulating the practice of optometry in this state or any other state. (Arizona State Board of Optometry 1990, 17-18)

According to the Arizona Revised Statutes §32-1761, optometrists are required to refer a patient to a licensed physician upon finding certain symptomatic conditions which are outside the optometric scope of practice.

> An optometrist, licensed pursuant to this chapter providing service to any person, shall refer such person to a physician, licensed pursuant to chapter 13 or 17 of this title, when an optometrist finds an indication of the presence of a disease or a condition of the eye requiring treatment outside the scope of practice as defined in § 32-1701, paragraph 7. (Arizona State Board of Optometry 1990, 30)

The indication for referral has also been changed for those optometrists who are able to complete the requirements for therapeutics under the revised scope of practice.

Penalties for Practicing Without a License in Arizona

In the State of Arizona, the practice of one of the healing arts/sciences without a license may bring upon that person severe consequences. Offenses range from misdemeanors to felonies.

A felony is a crime punishable by imprisonment for one year or more or death. Felonies include murder, robbery, burglary, kidnapping, treason, and certain other serious crimes. A violation of law less serious is called a misdemeanor and is punishable by a fine or jail sentence.

The following acts are classified as class five felonies:

> 1. The practice of medicine by a person not licensed or exempt from licenser.
> 2. Securing a license to practice medicine by fraud or deceit.

3. Impersonating a member of the board in issuing a license to practice medicine to another. (Arizona State Medical Directory 1992-93, 28)

The following acts are classified as class two misdemeanors if they occur by persons not licensed to practice medicine or who have been exempted from licenser:

1. The use of the designation "M.D." in a way that would lead the public to believe that a person was licensed to practice medicine in the State of Arizona.
2. The use of the "doctor of medicine", "surgeon", "physician and surgeon", or any combination thereof unless such designation additionally contains the description of another branch of the healing arts.
3. The use of the designation "doctor" by member of another branch of the healing arts unless there is set forth with each such designation the other branch of the healing arts concerned.
4. The use of any other words, initials, symbols or combination thereof which would lead the public to believe such person is licensed to practice medicine in the state. (Arizona State Medical Directory 1992-93, 28)

Several cases have been tested in the courts of Arizona, and these are presented in the Arizona Revised Statutes (ARS). The ARS describes several cases in which a decision regarding the following has been presented:

1. Malum Prohibitum - The law states that a person who practices medicine without a license issued by the board of medical examiners is guilty of a felony. The malum prohibitum law states that a crime exists even in the absence of criminal intent (Fitzpatric v. Board of Medical Examiners. 1965. Arizona Revised Statutes. 96, 309, 394, P.2d 423. AZ.).

2. Practice of Surgery without a license - A licensed naturopath was found guilty of practicing medicine without a license by performing a surgical operation. He was found to have "intentionally" and "purposely" applied "electricity by means of a diathermy machine used by surgeons to burn out a lump on a patient's foot after diagnosing it as cancer" (Nethken v. State. 1940. Arizona Revise Statutes. 56, 15, 104 P.2d 159. AZ.) (Arizona Revised Statutes 1992, 16-21)

The following summaries site opinions and references to decisions regarding the practice without a license.

An unlicensed physician is not entitled to serve as an assistant or otherwise practice medicine and surgery merely because he or she is employed and under supervision of a licensed Arizona physician. Op.Atty.Gen. No. 62-51-L.

Provisions of former § 32-1401 stating that practice of medicine, which included practice of medicine alone, practice of surgery alone, or both, meant diagnosis, treatment or correction of or the attempt to or holding of oneself out to be able to diagnose, treat, or correct any diseases, injuries, ailments or infirmities, whether physical or mental, organic or emotional, were in the disjunctive, and the offense of practicing medicine without a license was therefore committed by one who performed any one or more of the acts. State v. Horn (1966) 4 Ariz.App. 541, 422 P.2d 172. (Arizona Revised Statutes 1992, 16-21)

Generally, where a person without a license performs an act amounting to the practice of medicine, he is not relieved of liability by fact that he performs the act under supervision of a licensed practitioner. Sanfilippo v. State Farm Auto. Ins. Co. (1975) 24 Ariz.App. 10, 535 P.2d 38. (Arizona Revised Statutes 1992, 16-21)

Summary

1. The primary duty of the Board of Medical Examiners is to protect the public from unlawful, incompetent, impaired or unprofessional practitioners of allopathic medicine through licenser, regulation and rehabilitation of the profession in this state.

2. It is illegal to practice the profession of medicine or surgery without a license from the Arizona State Board of Medical Examiners.

3. It is illegal to practice the profession of optometry without a license from the Arizona State Board of Optometry.

4. It is illegal to delegate services which are controlled by Arizona State Board licensure to non-licensed personnel regardless of the environment in which they are delivered and the past training of that person.

Education

Ophthalmologists

Ophthalmology is a surgical specialty of medicine that is regulated by state laws that govern medical practice. Ophthalmologists are licensed as medical doctors by the State Boards of Medical Examiners. There is no specific licenser of ophthalmologists. Ophthalmologists are individuals who have done the following:

> 1. successfully completed specified medical, postgraduate clinical, and ophthalmologic residency training,
> 2. have received a valid and unrestricted license to practice medicine in the United States, and
> 3. completed undergraduate schooling which usually includes a bachelor's degree. The undergraduate education is required to include certain premedical courses which prepare students for medical school. A student is usually expected to complete a four-year undergraduate degree, including specific courses in chemistry and other sciences, and must meet high scholastic and medical school entrance examination standards. About fifteen percent of medical schools allow students to enter after the third year of college (Health Program of the Office of Technology Assessment of the US. Congress 1988, 4-12).

Medical school training usually lasts for four years. During the first two years of medical training, the basic sciences are learned. This prepares the medical student for the latter two years of medical school where the basic clinical skills are learned. Conventionally, the first two years of medical school emphasize course work (lectures and laboratories) in sciences basic to medicine.

> During this time, the medical student typically gets between 1,500 and 2000 hours of course work. About 1,250 hours of this is course work in basic medical sciences such as anatomy, pathology, physiology, microbiology, biochemistry, pharmacology, neuroscience, behavioral science, preventive medicine, and genetics. The rest of the course work is in various topics related to medical practice (Health Program of the Office of Technology Assessment of the US. Congress 1988, 4-12).

The last two years of medical school emphasize clinical rotations in hospitals and other settings.

> During clinical rotations, a medical student gets an opportunity, under the direct supervision of faculty and resident physicians, to develop skills in examining and evaluating patients; during clinical rotations, a medical student has limited opportunities to assume responsibility for patient care and generally do(es) not participate in the care of individual patients for an extended period of time. On average, a medical student spends about 80 weeks or, assuming a 40-hour week, 3,200 hours doing clinical rotations. On average, at least 50 of the weeks, or 2,000 hours, are spent doing rotations in basic medical specialties such as internal medicine, surgery, pediatrics, family/community medicine, and psychiatry; the remaining 30 or so weeks (1,200 hours) are spent doing rotations in various electives (Health Program of the Office of Technology Assessment of the US. Congress 1988, 4-12).

In preparation for becoming a licensed physician, a medical school graduate completes a one year internship at a hospital in a field such as internal medicine, pediatrics, surgery, family practice, or emergency medicine.

> Traditionally, an intern is the first person on call to examine and admit patients to the hospital and is on call every third or fourth night to cover various activities in the hospital. In many cases, therefore, an intern may work as many as 80 to 100 regular and on call hours a week. An intern who works an 80-hour week (e.g., 45 regular hours and 35 on-call hours) for 50 weeks would get a total of 4,000 hours caring for patients with a variety of medical problems. The certification requirements of the American Board of Ophthalmology specify that at least six months of an ophthalmologist's first year internship must be broad experience in direct patient care. An intern who works 40 regular hours a week for

> twenty weeks (six months) gets 1,040 hours of clinical experience in the evaluation and treatment of patients with a variety of medical conditions (Health Program of the Office of Technology Assessment of the U.S. Congress 1988, 4-12).

To receive specialized hospital-based training in ophthalmology, a physician must enter a three-year ophthalmology residency program.

> In order to be accredited, an ophthalmology residency program must include 360 hours of didactic instruction in basic and clinical sciences relevant to ophthalmology; 288 hours of clinical conferences attended by faculty and other resident physicians; and lectures, conferences, and a minimum of 50 hours in ocular pathology.
>
> The core of an ophthalmology residency program, more important in some respects than didactic instruction, is clinical experience in managing patients with eye problems and in performing eye surgery. An accredited residency program offers a resident:
>
> 1. at least 3,000 outpatient visits distributed through a range of ophthalmic disease, with major management responsibility under faculty supervision in at least 2,000 visits,
> 2. surgical experience in performing and assisting at ophthalmic surgery of various types, including a minimum of 25 cataract procedures and 10 strabismus procedures,
> 3. consultation experience involving a minimum of 150 patients and covering a wide spectrum of ophthalmic diseases and ophthalmic manifestations of systemic disease (Health Program of the Office of Technology Assessment of the U.S. Congress 1988, 4-12).

Board certification provides a critical hallmark of professional self-regulation. Certification is intended to

assure the public that the individual professional has mastered a defined body of knowledge and has acquired skills within a specific specialty area. In 1917, the American Board of Ophthalmology was established. Once the physician has completed an approved ophthalmology residency program, he/she may complete the certification examinations for board certification.

Optometrists

A Doctor of Optometry (O.D.) is a health professional who performs eye examinations to determine the presence of visual, muscular, or neurological abnormalities, and prescribe lenses, other optical aids, or therapy such as eye exercises to maximize vision. Optometrists are trained to recognize disease conditions of the eye and ocular manifestations of other diseases, and to refer patients with these conditions to the appropriate health professional (Health Program of the Office of Technology Assessment of the U.S. Congress 1988, 4-12).

As a condition for licenser, all states require optometric training as well as passage of the exam offered by the National Board of Examiners in Optometry and/or the exam offered by the State optometric board.

Optometrists undergo a professional training program that is usually four years in length. An individual seeking admission to a professional optometric degree program must have a minimum of two years of college, although most of the applicants (77.7 percent) have a baccalaureate degree. (Health Program of the Office of Technology Assessment of the U.S. Congress 1988, 4-12).

During the four-year training period, optometry students get didactic instruction (lectures and laboratories) in basic medical sciences, in ocular science, and in optics and lens design and application. The specific hours vary from program to program.

> At the Pennsylvania College of Optometry, students get about 1,800 hours of didactic instruction, including about 700 hours of didactic instruction in basic medical sciences (e.g., gross anatomy, biochemistry, microanatomy, physiology, pharmacology, endocrinology), and about 400 hours of didactic instruction in optics (e.g., advanced contact lens).
> In the latter two years of their training, optometry students typically obtain supervised placements in various college-based clinical settings and in off-campus clinical settings ranging from private optometric practices to institutional settings such as optometric clinics, nursing homes, health maintenance organizations, and hospitals. Through these clinical placements, optometry students acquire an opportunity to provide eye examinations and fit patients for corrective lenses, with supervision from other optometrists. Optometry students also secure some exposure to a smaller number of patients with eye disease, in some cases working under the supervision of physicians who hold faculty appointments with the college. By the time they

> graduate, students from the Pennsylvania College of Optometry have seen a total of about 1,200 patients, some of whom have eye disease. Furthermore, they have followed some of the preoperative care and some of the postoperative care for about eight to sixty patients undergoing eye surgery. Following graduation from an optometry program, some optometry students participate in a one-year hospital based or other optometric residency program. (Pennsylvania College of Optometry 1990-1992, 27-29)

Summary

1. The training of ophthalmologists and optometrists are different.
2. Ophthalmologists receive extensive training in surgery and management of the surgical patient.
3. Optometrists do not receive extensive training in surgery and management of the surgical patient.

Medicare

Medicare is a United States Government health insurance program consisting of hospitalization insurance and supplementary medical insurance. Nearly all persons sixty-five years and older are eligible for Medicare. The program also provides health insurance for persons of all ages who have received Social Security disability benefits

for at least two years and for certain persons with kidney diseases. In 1965, Public Law 89-97 passed establishing Medicare as the federal health insurance program for people age 65 and older, and for persons with disabilities. Medicare is regulated by the Health Care Financing Administration (HCFA) (InSight Communications 1990, 1).

Medicare insurance is divided into two parts: Part A (the hospital insurance program), and Part B (the supplemental medical insurance program). Part B helps pay for medically necessary physician's services, care in ambulatory surgery centers, outpatient hospital services, and other medical services and supplies.

The primary mission of HCFA is to administer the Medicare program and certain related provisions of the Social Security Act in a manner which (1) promotes the timely and economic delivery of health care to eligible beneficiaries, (2) promotes beneficiary awareness of the services for which they are eligible, and (3) promotes efficiency and quality within the total health care system (AMPRA 1991, 2). The overall policy-making responsibility is centralized in HCFA's headquarters, where all aspects of the Medicare program, including management of the State Medicaid programs, are coordinated. The Health Standards and Quality Bureau (HSQB), is located in Baltimore, and is

responsible for (1) monitoring surveillance and overall administrative control of the Peer Review Organization (PRO) program including its contracting and financial aspects, (2) establishing operational policy for the PRO program, and (3) conveying operational instructions and official interpretations to the PRO's and HCFA Regional Offices (ROs) (AMPRA 1991, 1).

HCFA administers the Medicare program through its ten regional offices. Actual claims processing and payment is handled by private health insurance organizations who are under contract with the government. These organizations are referred to as "carriers." For Arizona, the carrier is AETNA Life and Casualty.

Medicare Coding

In the past, health insurance programs used some form of coding system for the identification of medical conditions, services and procedures. In an effort to create a uniform system, HCFA, with the support from the American Medical Association (AMA) and the Health Insurance Association of America, formulated HCPCS (hic-pics), or the HCFA Common Procedure Coding System. HCPCS was comprised of three categories of procedure codes plus a series of modifiers (Insight Communication 1990, 3-1).

The Current Procedure Terminology, or CPT, is copyrighted by the AMA. It is a listing of the five-digit codes which describe and report medical services and procedures, and is the system by which most medical/surgical services performed by physicians are reported on the insurance claim form. For example, services and procedures related to Ophthalmology are assigned codes 92002 through 92499; Eye and Ocular Adnexa surgery are coded 65091 through 68899 (Insight Communication 1990, 3-2).

HCFA has developed additional alpha-numeric codes (A-0000 through V-9999) to identify non-physician (supplier) as well as additional physician services and procedure codes not found in the CPT (Insight Communication 1990, 3-2).

Where there is no appropriate national code assignment in the above categories, the Medicare carrier has the option of assigning an alpha-numeric code within the range of W0000-Z9999. These codes allow the carrier the flexibility to code a particular service/item that may be unique to that service area or seen only at the local level at this time (Insight Communication 1990, 3-2).

CPT modifiers provide the means by which the reporting physician can indicate that a service or procedure has been altered by some specific circumstances but not changed in

its definition or code. The following represents the two-digit modifiers used in ophthalmology.

CPT	
-20	Microsurgery
-26	Professional component
-47	Anesthesia by surgeon
-50	Bilateral procedure
-51	Multiple procedures
-52	Reduced service
-54	**Surgical procedure only**
-55	**Follow-up care only**
-62	Two surgeons/different skills
-66	Surgical team
-75	Concurrent care
-76	Repeat procedure/same provider
-77	Repeat procedure/different provider
-80	Assistant surgeon
-81	Minimum assistant surgeon
-82	Asst. surgeon where resident N/A
-99	Multiple modifiers

(Insight Communication 1990, 3-2)

Medicare and Optometry

A doctor of optometry (O.D.) is included in the Medicare definition of "physician" and reimbursed for performing services which he or she is legally authorized to practice in the state of his or her licenser. Thus, if state licensed to do so, optometrists may bill Medicare for providing physician services, drugs and biologics, ambulatory surgical center and hospital outpatient services, diagnostic services, and prosthetic devices which replace an internal body organ (Insight Communication 1990, 12-1).

Refractive procedures are excluded from coverage and are consequently not paid for by Medicare for optometrists as well as ophthalmologists.

Prior to April 1987 regulations, optometrists were authorized to provide services for the condition of aphakia. When an ophthalmologist and an optometrist share the care of an aphakic patient and the optometrist provides the postoperative care, carriers direct that the ophthalmologist use modifier -54 to indicate that reduced services are being billed. Optometrists would then use the modifier -55 to indicate they have provided the postoperative care. According to HCFA, "effective April 1, 1987, a doctor of optometry is considered a physician with respect to all services that the optometrist is authorized to perform under State law or regulation" (HCFA 1987, 1).

Prior to the expansion of optometric services included in HB 2014 (HB 2014 1993, 1), optometrists were excluded from the practice of "medicine and surgery." When the new bill takes effect, they will be able to practice medicine but not surgery.

Most surgeons consider postoperative care an essential aspect of surgery and will classify this time of patient recovery as "surgical care." Others have considered it medical care after surgery. Either way, it is considered

medicine or surgery. Medical or surgical care delivered to a Medicare recipient must be rendered by a person who is licensed to deliver that care in the state in which it is delivered.

Medicare Sanction for Fraud and Abuse

Another part of the Medicare program is the fraud and abuse provisions. According to the Medicare Payment Prohibitions, published by the American Society of Cataract and Refractive Surgery (ASCRS) and the American Society of Ophthalmic Administrators (ASOA),

> Congress incorporated "fraud and abuse" provisions into Medicare law essentially to prevent false claims and kickbacks. Severe penalties, both criminal and civil, were established for violations. The fraud and abuse provisions have been modified and updated by Congress several times in the past twenty-two years, most recently in Medicare and Medicaid Patient and Program Protection Act of 1987. The provisions apply equally to the Medicare and the Medicaid programs (Jacobs and Foster1987, 15).

"Fraud" is an intentional deception or misrepresentation which an individual makes knowing that his deception could result in some unauthorized benefit to himself or some other person (Jacobs and Foster 1987, 42).

"Program abuse" includes incidents or practices which, although not considered fraudulent acts, may directly or

indirectly cause financial losses to the Medicare program or to its beneficiaries (Jacobs and Foster 1987, 42).

The most straightforward of the Medicare fraud and abuse provisions are those that deal with false claims. The major prohibitions in the statute include the following:

> 1. Knowingly and willfully making or causing to be made any false statement or representation of material fact in any application for benefits or payments.
> 2. Knowingly and willfully making or causing to be made any false statement or representation of a material fact for use in determining rights to benefits or payments.
> 3. Having knowledge of the occurrence of any event affecting initial or continued right to a benefit or payment (or the initial or continued right to the benefit or payment of any other individual on whose behalf a person has applied for or is receiving a benefit or payment), concealing or failing to disclose the event with an intent fraudulently to secure the benefit or payment either in a greater amount or quantity than is due when no benefit or payment is authorized.
> 4. Having made application to receive a benefit or payment for the use and benefit of another and having received it, knowingly and willfully converting the benefit to a use other than for the use and benefit of the other person.
> 5. Knowingly presenting or causing to be presented any claim for a physician service rendered by a person not licensed as a physician. (Jacobs and Foster 1987, 16)

The Medicare law provisions on kickbacks, bribes, and rebates are presented as follows:

> 1. Solicitation or receipt of any remuneration (including kickbacks, bribes, or rebates), directly or indirectly, overtly or covertly, in cash or in kind:

a. In return for referring an individual to a person for the furnishing or arranging for the furnishing of any item or service for which payment may be made in whole or in part under Medicare, or

b. In return for purchasing, leasing, ordering, or arranging for the recommending, purchasing, leasing, or ordering any goods, facility, service, or item for which payment may be made in whole or in part under Medicare.

2. Offering or paying any remuneration (including kickbacks, bribes, or rebates), directly or indirectly, overtly or covertly, in cash or kind:

a. To refer an individual to a person for the furnishing or arranging for the furnishing of any item or service for which payment may be made in whole or in part under Medicare, or

b. To purchase, lease, order, or arrange for or recommend purchasing, leasing, or ordering any goods, facility, service, or item, for which payment may be made in whole or in part under Medicare. (Jacobs and Foster 1987, 18)

If a health care provider is convicted of one of the above, the tools the government uses to curtail or rectify the inappropriate activities are the following

1. Recoupment of previously paid reimbursement monies.
2. Administrative imposition of civil monetary penalties and assessments.
3. Exclusion of a provider from the Program.
4. Judicial imposed civil fines and damages.
5. Criminal prosecution of alleged felonious conduct.(Jacobs and Foster 1987, 39-47)

The federal agency most involved in Medicare fraud and abuse is the HHS Office of the Inspector General (OIG). The Inspector General has broad rights which include the right

to supoena documents and witnesses and to obtain access to all records and documents held by or that is available to the HHS. Also, the OIG has the responsibility to initiate civil administrative actions which allow civil administrators the power to prosecute wrongdoers without the burdens of having to go to court to prove a case. Some of the penalties they may impose include the following:

1. $2,000.00-$15,000.00 per individual or item.
2. An assessment of twice the amount claimed. Note that the assessment is twice the amount claimed and not twice the amount paid by the Program.
3. Possible exclusion from the Program for up to five years. (Jacobs and Foster 1987, 44-45)

When a CMP (Civil Monetary Penalties) action is brought, there is no trial by jury in a federal court. Instead, the "defendant" physician (or other provider) may only have his case heard by an Administrative Law Judge (ALJ), employed by the United States Government. The OIG does not have to prove that the defendant intended to defraud the government; liability can be based on negligence or recklessness. The OIG need only to prove its case be a preponderance (majority) of the evidence; the stricter "beyond a reasonable doubt" standard applicable to criminal cases does not apply. Therefore, it is easier for the IOG

to win a CMP action than a criminal case. (Jacobs and Foster 1987, 55-57)

A Civil Monetary Penalties action may be sought for a variety of reasons. Several of them include the following:

> Submission of a claim for payment for services --
> 1. that the person submitting the claim knew or had reason to know was not provided as claimed;
> 2. that the person submitting the claim knew or had reason to know was false or fraudulent; and
> 3) when the person submitting the claim knew or had reason to know that the person furnishing the service was unlicensed, obtaining his license through misrepresentation, or was not certified by a medical specialty as claimed. (Jacobs and Foster 1987, 44)

"Knew" means conscious knowledge of a fact and "had reason to know" means what the reasonable health care provider submitting claims for reimbursement should have known through the exercise of ordinary care. (Jacobs and Foster 1987, 50)

The most serious of the potential enforcement tools available to the federal government is the initiation and prosecution of a criminal case against an alleged violator of federal regulations. The following summarizes this potential action.

> Medicare itself includes a criminal statute that makes it a felony to defraud the Program or to pay or receive remuneration as an inducement for referral as stated in Section 1128B(a) and (b) of the Social Security Act. Upon conviction, a

defendant may be fined as much as $25,000.00 per violation, imprisoned for up to five years or both. Activities which may lead to a conviction include the following:

1. False representations generally, 42 U.S.C. §1307(a).
   a. Knowingly making any false representation concerning the Social Security Act (which includes Medicare) and certain provisions of the Internal Revenue Code with an intent to defraud.
   b. Violation is a misdemeanor.
   c. Upon conviction, a defendant may be fined up to $1,000.00, imprisoned for as long as one year, or both.
2. False Claims, 18 U.S.C. §287.
   a. Knowingly making or submitting false, fictitious or fraudulent claims to the federal government.
   b. Violation is a felony.
   c. Upon conviction, a defendant may be fined up to $10,000.00, imprisoned as long as five years, or both.
3. Conspiracy to Defraud the government, 18 U.S.C. §371.
   a. Conspiracy with another to commit an offense against the United States.
   b. Violation is a felony.
   c. Upon conviction, a defendant may be fined up to $10,000.00, imprisoned for as long as five years, or both.
4. False Statements, 18 U.S.C. §1001.
   a. Knowingly and willingly falsifying, concealing or covering up a material fact or making or using false, fictitious or fraudulent statements in dealing with the federal government.
   b. Violation is a felony.
   c. Upon conviction, a defendant may be fined up to $10,000.00, imprisoned for as long as five years, or both. (Jacobs and Foster 1987, 56)

These matters are usually investigated by the Federal Bureau of Investigation (FBI) and the cases are tried in the federal district courts before federal judges and juries.

Summary

1. Physicians under the Medicare regulations must indicate a co-management relationship by the use of CPT modifiers -55 and -54.
2. An optometrist is classified as a physician under the Medicare reimbursement system.
3. It is illegal to deliver or receive "kickbacks" within the Medicare system.
4. It is illegal to bill Medicare for a service for which the provider is not licensed in that state to deliver.
5. It is illegal to bill Medicare for a service not rendered.

Peer Review

Federal Peer Review

Federal and local peer-review organizations will review the care rendered to Medicare patients to assure that the care met the minimum standards of quality and efficiency.

At the present time, the Health Care Financing Administration (HCFA) has contractual arrangements with PROs to assure the following is occurring.

1. There is timely and economic delivery of appropriate quality of care to eligible beneficiaries.
2. There is beneficiary awareness of the services for which they are eligible.
3. There is efficiency and quality within the total health care delivery system. (AMPRA 1991, 2)

The overall policy-making responsibility is centralized at HCFA headquarters, where all aspects of the Medicare program and the State Medicaid programs are coordinated. The Health Standards and Quality Bureau (HSQB), in Baltimore, is responsible for

1. Monitoring surveillance and overall administrative control of the PRO program including its contractual and financial aspects.
2. Establishing operational policy for the PRO program.
3. Conveying operational instructions and official interpretations to the PROs and the HCFA Regional Offices (ROs). (AMPRA 1991, 2)

Within each Regional Office, the Division of Health Standards and Quality (DHSQ) is responsible for assuring that PROs meet applicable federal requirements under the provisions of their contracts by the following:

1. Provides liaison, direction and technical assistance to PROs in the day-to-day management of the operations.

2. Interprets HCFA guidelines, policies and procedures applicable to PRO activities.
3. Analyzes PRO budgets and spending patterns to assure that funds are economically and appropriately utilized, and allocates funds for conducting additional activities.
4. Conducts surveillance and assessments of PRO operations, reviews PRO actions, and provides feedback to each PRO. (AMPRA 1991, 2)

The Peer Review Organization (PRO) for Arizona

In Arizona, the PRO contracted with HCFA is the Health Services Advisory Group (HSAG). The company is a private, for-profit corporation established by a group of medical professionals to address health care issues in terms of appropriate utilization, quality of care, and cost containment.

HSAG was established in September 1982, as an affiliate of the Northern Arizona Medical Evaluation System (N.A.M.E.S.), the PSRO contracted with HCFA to provide reviews for the northern half of the State of Arizona from 1979-1984.

In August 1984, HSAG was awarded the contract by HCFA to become the PRO for Medicare review activities for the entire State of Arizona. Currently, HSAG is implementing the "Fourth Scope of Work" which fundamentally changes the way peer-review activities are designed. Before describing the Fourth Scope of work, a review of the current and recent

past activities of the peer-review organization may be helpful for understanding the new changes being made.

The prime piece of information used to evaluate utilization, quality and costs is the medical record, which includes the patient's hospital or outpatient chart. The flow information for a chart review begins in the physician's office when a bill is submitted to Medicare for payment for services rendered. Since part A and Part B of Medicare are considered to be different departments, they are reviewed by separate management systems. The Fiscal Intermediary (FI) is responsible for payments involving Part A Medicare claims. The Carrier is responsible for claims submitted for Part B services. For Arizona, the FI is Blue Cross/Blue Shield and the Carrier is Aetna.

The government agency responsible for Medicare services, and specifically the quality and utilization review activities, is the Health Care Financing Administration. HCFA subcontracts with private companies, such as HSAG, to perform the actual QA/UR reviews. The PROs are given chart review criteria by HCFA so the review processes across the country are somewhat standardized (Kellie 1991, 1265). These criteria are organized into to two main categories, one being "generic screens" and the other is " general screens." The generic screens cover many

different categories of services such as inpatient care, outpatient services, home health care, etc.. These screens are not adaptable as HCFA requires the criteria for the reviews to be specifically enforced. With "general reviews," HCFA allows greater flexibility for local variations in patterns of health care delivery.

Each PRO receives a list of charts to review for a certain time period based on information HCFA receives from the FI and the Carriers. The PRO will then decide whether the information required from the chart can be obtained from a copy of the chart or whether a nurse-reviewer needs to visit a facility to review the chart first-hand.

Once the chart is available, a nurse-reviewer will review the chart based on pre-existing criteria. The nurse may then "approve" the chart or "not approve" the chart. A nurse is not allowed under the peer-review guidelines to "deny" services or to "confirm" an issue, whether it be a quality issue or a utilization concern. If the chart does not pass criteria screens, it then is classified under two main categories. One is a "coding" failure, the other is "medical" failure. Coding pertains to the use of numerical codes when submitting a bill for services rendered. A coding failure may be as simple as a typographical error or number transposition.

The medical screen failures fall into three main categories. They are listed below:

1. failed criteria - utilization
2. failed screens - quality
3. no criteria - usually surgery

The chart is then presented to the first physician reviewer (physician advisor or PA) for approval or denial. If approved, there is no issue and the review stops there. If the physician reviewer denies the chart, the PRO sends a letter of inquiry to the responsible party, usually the treating physician or hospital , and a predetermined amount of time is provided for the response. A second physician reviewer will then reevaluate the issue based on the additional information and make a judgment. If approved, the process does not continue any further. If the denial is sustained, The PRO notifies the responsible party of the decision. Further consideration is possible through the reconsideration or "recon" process.

All surgery billed to Medicare, whether it is provided in a hospital or in a free-standing ambulatory surgical facility, is reviewed by the Arizona PRO. For ophthalmologists, the care they deliver in the surgical facilities is reviewed. Care for patients in their medical office, such as postoperative care, is not reviewed unless

it relates to a potential problem which requires further clarification. Current PRO activities do not include any care provided by optometrists. The following is an example of a generic screen by which the PRO reviews a medical and/or surgical chart.

1. Medical record is reviewed.
2a. Personal and biographical data are recorded in the medical record.
2b. Medical history
2c. General physical examination recorded and areas of abnormality addressed within the action plan.
2d. Allergies to drug/food are recorded.
3a. Chief complaint or purpose of visit is recorded.
3b. Physical assessment, pertinent to the chief complaint, is documented.
3c. Working diagnoses are listed.
3d. Evidence of written treatment plan appropriate to the patient's working diagnoses with consideration of co-morbidities, history and physical assessment.
3e. Documentation of patient teaching of health care resource referral as indicated.
4a. Evidence of primary care physician's knowledge of the patient's course in the hospital, skilled nursing facility, home health care, or use of emergency room.
5a. No evidence of adverse outcome related to failure to refer appropriately and in a timely.
5b. Recommended treatment plan by consultant is noted with appropriate follow-up.
6a. Lab test results are recorded.
6b. Abnormal lab results are noted by the physician with intervention.
6c. A written interpretation of x-rays, by a radiologist or the treating physician, is documented in the record.
6d. Significant new or abnormal radiological findings are noted by the physician with intervention.

6e. Written EKG interpretation by a qualified physician, documented in the record.
6f. Significant new or abnormal EKG findings are noted by the physician with intervention.
7a. Therapeutic ancillary services are recorded.
7b. Results of therapeutic services are recorded.
8a. Medication regimen documented with appropriate monitoring.
8b. Care or lack of care resulting in serious or potentially serious complications. (AMPRA 1991, 7-31)

Prior to the Fourth Scope of Work, the PROs were required to assign a severity level to all confirmed issues. The possible severity levels are as follows:

Level I - Confirmed quality problem without the potential for significant adverse effects on the patient. This is currently being modified to include quality issues which have at least some minimal effect on the patient. Prior to this change, even a minor documentation error was assigned a severity level.
Level II - Confirmed quality problem with the potential for significant adverse effects on the patient.
Level III - Confirmed quality problem with significant adverse effects on the patient. (AMPRA 1991, 26)

Confirmed issues which involve disciplinary action against physicians, such as notification of licensing boards, educational requirements, etc., may become part of the National Practitioner Data Base (Stombler 1992, 22). Because of the potential problems inherent with any

sanctioning activity, great care is given to confirm quality issues against physicians.

It is important to understand the primary concept of peer review as that of a peer assessing a peer or a physician reviewing a physician. The PROs are required to match specialty specific reviewers in the Fourth Scope of Work (American College of Surgeons Bulletin 1992, 6). Physicians who function within the spirit and rules of peer review are protected and cannot be sued by the party being reviewed. This does not mean that peer review is a blanket of protection from liability if physicians make rulings which negatively impact other physicians. Physicians are liable when peer review activities are not conducted within the specific confines set forth by the government (Devlin 1992, 89).

Local Peer Review

Peer Review Activities in Hospitals and Outpatient Surgical Facilities

Peer review activities at the level of the hospital differ from those of the PRO. Fundamentally, the PRO acts in a manner to improve patient care, but, the PRO activity directives operate in a manner which are more in line with the federal government's desires for peer review. For

example, if the federal government desires that all YAG laser capsulotomies document follow-up care within twenty-four hours after the procedure, then the PRO will interact with the medical community in a manner which will produce those results.

The main force which directs a hospital peer review program is that of the hospital credentialling organization like the JCAHO. When hospitals, or surgical facilities apply for accreditation from a credentialling organization, they will usually have the guidelines by which the review will take place. For the JCAHO, they make available the Accreditation Manual for Hospitals. In this document, JCAHO provides guidelines for the peer review activities of the medical staff. The following represents a portion of the information the JCAHO requires of the medical staff to demonstrate an effort to continuously improve the quality of patient care.

I. The medical staff provides effective mechanisms to monitor and evaluate the quality of patient care and clinical performance of individuals with delineated clinical privileges, as a component of the organization's quality assessment and improvement process.
   A. Review of Surgical and Other Invasive Procedures.
      1. Review of surgical or other invasive procedures is conducted on an ongoing basis by those departments or services performing

such procedures or by a medical staff committee(s).

2. The purpose of such review is to continuously improve the selection (appropriateness) and performance (effectiveness) of surgical and other invasive procedures.
3. Categories of procedures are reviewed through the use of screening criteria to identify single cases or patterns of cases that require more intensive evaluation, and/or through intensive evaluation of a single case or groups of cases.
   a. In identifying categories of procedures for review, priority is given to those categories that are performed in high volume, and/or are of high risk to patients, and/or are suspected or known to be problem prone.
   b. Screening criteria are predetermined and may apply to either one specific category of procedure or to several categories of procedures.
      (1) When the review of specimens removed during a surgical or other invasive procedure identifies a major discrepancy, or a pattern of discrepancies, between preoperative and postoperative (including pathologic) diagnoses, intensive evaluation is performed.
   c. When screening or intensively evaluating any category of procedure, an adequate number of cases is included.
   d. The combined use of screening mechanisms and intensive evaluation encompasses most surgical categories of

surgical and other invasive procedures performed in the hospital.
(1) All categories of procedures that meet criteria are encompassed by the review.

e. Relevant results from the review of surgical and other invasive procedures are used primarily to study and improve processes involved in the selection and performance of these procedures.

f. When an individual has performance problems that he/she is unable or unwilling to improve, modifications are made in clinical privileges or job assignments as indicated or some other appropriate action(s) is taken.

g. Written reports of conclusions, recommendations, actions taken, and the results of actions taken are maintained and reported at specific intervals through channels established by the medical staff. (AMPRA 1991, 20-31)

These activities are monitored by medical staff committees responsible for peer review activities. In addition to these activities, a new member of the medical staff is monitored for a period of time after receiving medical staff privileges. For example, this researcher was monitored as follows during the initial appointment to the medical staff (POSC 1991, 65; YRMC 1991, 102).

> With exception of the Honorary Staff, all initial appointments to the Medical Staff shall be subject to a period of observation for at least one year prior to consideration for advancement to Active Medical Staff. Each initial appointee shall be assigned to a department where his performance shall be observed by the chairman of that department or such chairman's designee, to determine the eligibility for continued Medical Staff membership in the category to which he was initially appointed and for exercising the clinical privileges initially granted in that department. The appointee's exercise of clinical privileges in any other department shall also be subject to direct observation by that department's chairman or the chairman's designee. (POSC 1991,65)

After appointment to the Active Medical Staff, the physician is monitored and reviewed biannually. During this period, data is collected for the re-credentialling process. This data includes, but is not limited to, the following:

1. "review of surgical cases,
2. review of the medical records,
3. review of Medical Staff Committee performance,
4. review of any reported ethical issues that may affect patient care, and
5. review of medical facility utilization (medications, etc.)" (POSC 1991, 66).

Because an optometrist does not hold a license to practice medicine or surgery in the state of Arizona (prior to being certified under Bill 2014), he/she does not come

under the usual activities of the peer review programs that monitor medical and surgical activities.

Summary

1. Ophthalmologists are required to participate in peer review activities of the federal, state, and local peer review organizations.
2. Ophthalmic surgery is reviewed for quality under the federal, state, and local peer review organizations.
3. Optometrists are not required to be reviewed by federal, state, and local peer review organizations.
4. Optometric care under a co-management relationship is not reviewed for quality under the federal, sate, or local peer review agencies.

Standards of Practice

Clinical Practice

The clinical approach to the surgery patient may be divided into distinct phases of management which occur in the following sequence:

1. Preoperative care
    a. Diagnostic work-up
    b. Preoperative evaluation
    c. Preoperative preparation

2. Anesthesia and operation
3. Postoperative care
    a. Postanesthetic observation (may include intensive care)
    b. Intermediate care
    c. Convalescent care

Preoperative Care

The diagnostic work-up is concerned primarily with determining the cause and extent of the present illness. The preoperative evaluation consists of an overall assessment of the patient's general health in order to identify significant abnormalities which might increase operative risk or adversely influence recovery. Preoperative preparation includes treatments and procedures dictated by the findings on diagnostic work-up and preoperative evaluation and by the nature of the expected operation.

Postoperative care

The anesthetic observation phase of postoperative management comprises the time just prior to and immediately following the operation. Anesthetic observation may require only ten to fifteen minutes, as in the case of cataract

surgery, or several hours, as in the case of major abdominal surgery. During this time, any acute effects of the surgery or the anesthesia are noted and appropriately treated. A recovery room with special staff and equipment is usually provided for this purpose. Postoperative immediate care can be described as care normally available in a regular hospital nursing unit. In the recovery room, the patient is further stabilized prior to being discharged and allowed to go home or to some other convalescent environment.

The last part of the postoperative care occurs with the patient making periodic visits to the surgeon's office for exams.

The tradition that a surgeon is responsible for the preoperative and postoperative care of a surgical patient has a long history in medicine. According to the principles of the American College of Surgeons,

> The responsibility of a surgeon includes preoperative diagnostic work-up and care, the selection and performance of the operation, and postoperative surgical care.
>
> A surgeon may delegate part of the care of his patient to associates or residents under his direction, because modern surgery is often a team effort, but he must not delegate nor evade his responsibility. It is proper for the responsible surgeon to delegate the performance of part of a given operation to his assistants, provided the surgeon is an active participant throughout the essential part of the operation. If a resident is to operate upon and take care of the patient, under the general supervision of an attending

> surgeon who will not participate actively, the patient should be so informed and consent thereto. It is unethical to mislead a patient as to the identity of the doctor who performs the operation. It is unethical to turn over postoperative care of a patient completely to the referring physician. Visits by a referring physician during the postoperative period, in which he does not render a needed service, but for which he charges, constitute a breach of ethics which comes under the category of unnecessary treatment. (ACS 1985, 2)

The American College of Surgeons does not approve of the practice of itinerant surgery. In their statement of Principles, they state that

> An ethical surgeon will not perform elective surgery at a distance from his usual location without personal determination of the diagnosis and the adequacy of preoperative preparation. He will personally render the postoperative care unless it is delegated to another physician as well qualified to continue this essential aspect of total surgical care. (ACS 1985, 1)

The American College of Surgeons also opposes arrangements in which fees are split for the purpose of generating patient referrals.

> Fee splitting as an inducement to refer a patient to another physician is unethical. The premise for referral must be quality of care. Violation of this tenet disqualifies an applicant. If a Fellow, it is cause for expulsion from Fellowship.(ACS 1985, 1)
>
> Many of the states have laws which forbid any fee splitting, and there is no state which sanctions it. Additionally, federal law makes illegal any form of rebate, kickback, or splitting of fees which includes any federal money. (ACS 1985, 1)

The American Academy of Ophthalmology has established policy statements, information statements, and advisory opinions which summarize the standard of surgical care for the specialty of ophthalmology in the United States. In a policy statement concerning postoperative care, the Academy states the following:

> The surgeon's obligation to the patient is not discharged with the conclusion of a successful operation. Unless terminated by the parties, his relationship to the patient ...continues until ended by ...the cessation of the necessity which gave rise to the relation, and the surgeon must not only use reasonable and ordinary care and skill in performing the operation, but during the continuance of the relation of physician and patient exercise ordinary diligence in the subsequent treatment and give, or see that the patient is given, such attention as the necessity if the case demands. Where the doctor knows, or should know that a condition exists which requires continuous or frequent expert attention to prevent injurious consequences he must render that attention or see that some other competent person does so. (AAO-PS-87 1987, 1)

The American Academy of Ophthalmology also states that

> Most ophthalmologists believe that all postoperative medical eye care should be performed only by ophthalmologists because of their unique competence to diagnose and treat postoperative ocular pathologic conditions. Others believe that an ophthalmologist should not perform surgery on a patient unless he or she will provide the patient's postoperative care. (AAO-PS-87 1987, 1)

If an ophthalmologist does not provide, or intend to provide the postoperative care, he should follow certain

guidelines to assure that the patient's interests are placed first. The Academy states that

> If a physician does not intend to provide postoperative medical care, that fact would clearly appear to be one of the factors that a reasonable patient would consider to be material in deciding whether to undergo the proposed surgery by that physician. Also, a patient would clearly expect to be informed whether and in what ways the risks and benefits of the proposed surgery would be affected by the qualifications and competence of the person expected to provide postoperative medical care, particularly if that person does not have the ophthalmologist's specialized education, training, experience and ability to promptly recognize and effectively manage postoperative complications. Moreover, a patient would unquestionably need to understand the risks of post-surgical complications if competent postoperative medical care is not arranged for at all. (AAO-PS-87 1987, 2)

To summarize the Academy's position regarding an ophthalmologist's responsibilities for postoperative care, a policy statement includes the following statement:

> The American Academy of Ophthalmology believes that an operating ophthalmologist's duties to a patient with respect to postoperative medical care are satisfied only if the ophthalmologist:
> a. Performs the patient's postoperative medical care throughout the patient's episode of illness.
> b. Arranges for the aspects of the patient's postoperative medical care not performed by the operating ophthalmologist to be provided throughout the patient's episode of illness by someone who is competent and willing to provide that care, with the consent, in advance of surgery, of both the patient and the person to provide that care; or
> c. Obtains the patient's fully informed consent, in advance of surgery, to the ophthalmologist's

> failure to comply with at least one of the two alternatives described in (a) or (b). (AAO-PS-87 1987, 2)

The American Academy of Ophthalmology's position regarding an ophthalmologist's obligations during the postoperative period is fairly clear. In a policy statement published by the AAO, the act of an ophthalmologist not performing his/her own postoperative care may be considered patient abandonment. The policy states the following:

> In general, a physician's failure to provide postoperative medical care may be considered "abandonment" of the patient at the operating room door. This is the effect of the ophthalmologist's failure to provide, or make reasonable arrangements for the competent provision of, postoperative medical care throughout the patient's episode of illness.
> The law concerning patient abandonment is reasonably straightforward. Once a physician-patient relationship is established, and the patient is in need of medical treatment, the physician may cease treatment before termination of the patient's episode of illness only in special circumstances. See D. Louisell & H. Williams, *Medical Malpractice* ¶ 8.08 (1985); 70 C.J.S. *Physicians & Surgeons* § 48(f)(1951). (AAO-PS-87 1987, 2)
>
> The law also requires the successor to or substitute for the initial physician be qualified to provide the necessary care, *Rise v. United States*, 630 F.2d 1068, 1072 (5th Cir. 1980): *Bateman v. Rosenberg*, 525 S.W.2d 753, 756 (Mo. Ct. App. 1975), and that the initial physician exercise due care in the choice of his or her successor or substitute. *S.R. v. City of Fairmont*, 280 S.E.2d 712, 716 (W. Va. 1981); *Sturm v. Green*, 398 P.2d 799, 804 (Okla. 1965). (AAO-PS-87 1987, 2)

The Medicare program has also established criteria regarding ophthalmic postoperative care. This has been tested in court and is summarized as follows:

> The issue of postoperative care in the context of the Medicare program has been considered by a federal district court in Green v. Bowen, 639 F.Supp. 554 (E.D. Cal. 1986). The Department of Health and Human Services has determined that a surgeon should be excluded from the Medicare program for committing "gross and flagrant violations" of his duties to Medicare patients by failing to provide their postoperative care and by leaving that task to the local referring physician. On the basis of that determination, HHS notified the surgeon that pending an administrative hearing, he would be excluded from participating in the Medicare program, and notice of that exclusion would be published. The surgeon sought a court order to enjoin HHS from excluding him from the Medicare program and from publishing notice of his exclusion until the conclusion of that hearing. The court concluded "that an injunction could and should be framed in such a manner as to require the doctor to personally provide postoperative care to patients upon whom he had operated, and that, as framed, an injunction will limit any hardship to the government and serve the public interest." Accordingly, the court issued an order granting the injunction, "provided that the plaintiff shall not perform any surgery upon any patient under circumstances in which he cannot personally provide postoperative care." (AAO-PS-87 1987, 2)

In the state of Arizona, the standards under which physicians interact with patients have been clarified in some situations. A review of the Arizona Revised Statutes (ARS § 32-1401) provided the following summaries:

When a doctor undertakes to perform work of a specialist, he will be held to the standard of care applicable to that specialty. Gaston v. Hunter (App.1978)121 Ariz. 33, 588 P2d 326. (Arizona Revised Statutes 1992, 17)

Mere fact that two specialists may treat the same symptoms or perform the same operation does not imply that a physician's conduct will no longer be tested by the standards of his own school or his own specialty. (Arizona Revised Statutes 1992, 17)

Because of a physician's special skills and knowledge on which the public relies, he must act in accordance with the standards of his profession, and in malpractice action, physician incurs liability because of breach of standard of care applicable to such physicians on account of their special knowledge. Hales v. Pittman (1970) 118 Ariz. 305, 576 P.2d 493. (Arizona Revised Statutes 1992, 17)

Doctor is not liable in negligence for mere mistakes in judgment, but is liable where is treatment falls below recognized standards of good medical practice in community in which he practices. State v. Ulin (1976) 113 Ariz. 141, 548 P.2d 19. (Arizona Revised Statutes 1992, 17)

Surgeon owes same duty of care and skill in treatment of his patient after an operation as in performing it unless terms of his employment. otherwise limit his services or patient refuses them. Revels v. Pohle (1966) 101 Ariz. 208, 418 P.2d 364. (Arizona Revised Statutes 1992, 17)

If a physician who is a specialist in field of medicine fails to apply skill and learning which is required of similarly situated physicians in that community, he is guilty of malpractice; if he does something which recognized standard of good medical practice forbids, or fails to do something which such standard requires, he is likewise guilty of malpractice. Harris v. Campbell (1965) 2 Ariz.App. 351, 409 P.2d 67. (Arizona Revised Statutes 1992, 17)

Disclosure of risks, malpractice: To properly weigh advantages of elective surgery with its attributable disadvantages, a person needs information not only concerning the statistical probabilities of various adverse results which have been encountered by other physicians, but

> also one is entitled to information concerning the treating physician's experience with the particular procedure. (Arizona Revised Statutes 1992, 17)
>
> Relationship between a physician and his patient is one of trust and confidence which obligates physician to exercise utmost good faith. Hales v. Pittman (1978) 118 Ariz. 305, 576 P.2d 493. (Arizona Revised Statutes 1992, 17)
>
> When relationship of physician and patient exists, it is one of trust and confidence and the former must in all dealings with his patient use the utmost good faith or he is guilty of fraud. Batty v. Arizona State Dental Board (1941) 57 Ariz. 239, 112 P.2d 870. (Arizona Revised Statutes 1992, 17)

Informed Consent

The doctrine of informed consent has historical roots in English and American common law. Under this body of judicially established rules and principles, an unconsented touching, without justification, is a battery (or sometimes referred to as an assault (Jacobs and Portman 1992, 15). According to the 1914 case of *Schloendorff v. Society of New York Hospital*, the judge applied the following ruling to the physician-patient relationship:

> Every human being of adult years and sound mind has a right to determine what shall be done with his own body; and a surgeon who performs an operation without his patient's consent commits an assault, for which he is liable in damages (Jacobs and Portman 1992, 16).

In recent years, more emphasis has been placed on the term "informed" in the consent process. It is the

physician's responsibility to make sure that the patient not only hears but understands the procedure, risks, and alternatives involved in each particular case. "A claim for a lack of informed consent is usually treated as a negligent nondisclosure, rather than a battery" (Jacobs and Portman 1992, 16).

There are several basic aspects of the informed consent and are summarized as follows:

1. The informed consent should be in writing.
2. The consent should contain the following:
   a. An explanation of the nature and purpose of the surgery.
   b. An explanation of the foreseeable risks of the surgery in general, including, but not limited to, complications form anesthesia, reactions to medications, and infections.
   c. An explanation of the alternative treatments available to the patient. (Jacobs and Portman 1992, 16)

The American Academy of Ophthalmology states that the informed consent should reflect the following if the surgeon is not going to provide the postoperative care:

> The American Academy of Ophthalmology believes that an operating ophthalmologist's duties to a patient with respect to postoperative medical care are satisfied only if the ophthalmologist
>
> a. Performs the patient's postoperative medical care throughout the patient's episode of illness.
>
> b. Arranges for the aspects of the patient's postoperative medical care not performed by the operating ophthalmologist to be provided throughout the patient's episode of illness by someone who is competent and

> willing to provide that care, with the consent, in advance of surgery, of both the patient and the person to provide that care; or
> c. Obtains the patient's fully informed consent, in advance of surgery, to the ophthalmologist's failure to comply with at least one of the two alternatives described in (a) or (b). (AAO-PS-87 1987, 2)

An important aspect of the informed consent process is called "informed refusal." Informed refusal is described as follows:

> Before a patient can provide informed consent, he/she must be aware of and understand the nature of his/her condition and the purpose of the proposed treatment. The patient must also understand the foreseeable risks and expected consequences of undergoing the proposed treatment, including any likely side effects, pain, or discomfort that can be expected to result from the treatment. In addition, the patient should be informed of the foreseeable risks of not undergoing the treatment. (Jacobs and Portman 1993, 30)

In the state of Arizona, the physician has the duty to inform the patient of the nature of the procedure being performed, the availability of alternative procedures, and the probabilities of various consequences. In the case of *Hales v. Pittman,*

> The court ruled that if the physician fails to inform the patient of the nature of the procedure attempted, the availability of alternative procedures, and the probabilities of various consequences, the operation becomes a battery. The court reasoned that without such information, Hales' consent was not an informed one. Without

> an effective consent, the operation constituted an unauthorized touching. In addition, the court ruled that a patient is entitled to information concerning the treating physician's experience with the particular procedure. (Arizona Law Review 1978, 1112-1114)

Summary

1. An ophthalmic surgeon will personally render the postoperative care of his/her patient unless it is delegated to another physician as well qualified to continue this essential aspect of total surgical care.
2. If a co-management relationship is initiated for the management of a patient's postoperative care, then the patient's fully informed consent must be obtained prior to the surgery.

Summary

This chapter has been a review of systems theory, quality in health care delivery, and the existing quality control system for eye surgery co-management.

Thesis "10," under the review of Systems Theory, helps form the theoretical foundation for this study. This Thesis states the following that "control" in systems is defined as the "maintenance of the values of specified variables of the controlled system within ranges dictated by the controller" (Waelchli 1992, 7). Waelchli states that

> One of the laws of control in complex systems is Ashby's Law of Requisite Variety. Ashby's Law states that to control a complex system, the controlling system must generate at least as much variety as the system being controlled: 'Only variety in the control mechanism can deal successfully with variety in the system controlled' (Waelchli 1992, 7).

As stated above, a system will have specific variables which set the parameters in which the components of a system will operate. This is important in eye surgery co-management as there exists well established minimum requirements for health care providers that enter into a surgical co-management relationship.

There are several definitions of "quality" but for this study, the following definition will be used: "Conformance to requirements" (Cartin 1993, 8). The requirements, or minimum standards for Licensing, Education, Medicare, Peer review, and Standards of Practice have been reviewed and can be summarized as follows:

Licensing. (1) The primary duty of the Board of Medical Examiners is to "protect the public from unlawful, incompetent, impaired or unprofessional practitioners of allopathic medicine through licenser, regulation and rehabilitation of the profession in this state" (Arizona State Board of Medical Examiners 1992-93, 10). (2) It is illegal to practice the profession of medicine or surgery

without a license from the Arizona State Board of Medical Examiners. (3) It is illegal to practice the profession of optometry without a license from the Arizona State Board of Optometry. (4) It is illegal to delegate services which are controlled by Arizona State Board licensure to non-licensed personnel regardless of the environment in which he or she delivers the care and the past training of that person.

Education. (1) The training of ophthalmologists and optometrists are different. (2) Ophthalmologists receive extensive training in surgery and management of the surgical patient. (3) Optometrists do not receive extensive training in surgery and management of the surgical patient.

Medicare. (1) Physicians under the Medicare regulations must indicate a co-management relationship by the use of CPT modifiers -55 and -54. (2) An optometrist is classified as a physician under the Medicare reimbursement system. (3) It is illegal to deliver or receive "kickbacks" within the Medicare system. (4) It is illegal to bill Medicare for a service for which the provider is not licensed in that state to deliver. (5) It is illegal to bill Medicare for a service not rendered.

Peer Review. (1) Ophthalmologists are required to participate in peer review activities of the federal, state, and local peer review organizations. (2) Ophthalmic surgery

is reviewed for quality under the federal, state, and local peer review organizations.

Standards of Practice. (1) An ophthalmic surgeon will personally render the postoperative care of his/her patient unless it is delegated to another physician as well qualified to continue this essential aspect of total surgical care. (2) If a co-management relationship is initiated for the management of a patient's postoperative care, then the patient's fully informed consent must be obtained prior to the surgery.

From a review of the minimum requirements, several propositions have been developed and in the next chapter, further explanation of these will be presented. The propositions are the following:

Proposition 1 Licensure. All health care practitioners who enter into an eye surgery co-management relationship will be licensed to practice medicine and surgery by the Arizona State Board of Medical Examiners (BOMEX).

Proposition 2 Finance. All health care practitioners who enter into an eye surgery co-management relationship for a Medicare patient will be licensed in Arizona to provide that service.

Proposition 3 Peer Review. All health care practitioners who enter into an eye surgery co-management relationship will be subject to the Federal, State, and local peer review programs which are designed to monitor those activities.

Chapter 3

METHODOLOGY

Rationale for Case Study

"Methodology" is the philosophy of the research process. The methodology of a research project will include "assumptions and values that serve as a rationale for research and the standards or criteria the researcher uses for interpreting data and reaching conclusions" (Bailey 1987, 33). In the following table, Robert Yin (1989) has presented a comparison of the available research strategies and suggests situations in which each strategy is best utilized.

Table 1
Relevant Situations
for Different Research Strategies

Strategy	Form of Research Question	Requires Control Over Behavioral Events?	Focuses on Contemporary Events
Experiment	how, why	yes	yes
Survey	who, what, where, how many, how much	no	yes
Archival analysis	who, what, where, how many, how much	no	yes/no

History	how, why	no	no
Case study	how, why	no	yes

(Yin 1989, 17)

The basic questions in this study are asking how and why or under what circumstances. With this type of question being asked, the research strategies available from the above table are the following:

1. Experiment,
2. History, and
3. Case Study.

Control over "behavioral events" is critical to the design of any research study. In this study, behavioral events, such as referral patterns of health care providers, demographics of patients and health care providers, and the complex relationship between a health care provider and a patient, must be considered in order to understand "how" or "why" certain events are occurring. For example, studying how medical co-management affects the patient one must also examine how health care providers are using postoperative billing modifiers and other variables that cannot be controlled which is necessary for experimental research. There are two remaining research strategies which do not

require strict control of behavioral events. They are the following:

1. History
2. Case Study

Between these two research strategies, the factor which moves the researcher toward one design or the other is the question of whether the topic of the study is covering a historical or a current event. In this particular study, co-management of the eye surgery patient is a current event. Therefore, the case study research strategy is best suited for this research study.

Design of the Case Study

Research Design

Yin (1989, 35) presents five components of research design that are important when using case study methodology. The components are (1) the study's question, (2) the study's propositions, (3) the study's unit(s) of analysis, (4) the logic linking the data to the proposition(s), and (5) the criteria for interpreting the findings.

The Study's Question and Problem Statement

The Study's Question provides a starting point for understanding what needs to be studied, what will be

studied, and which research method will be utilized (Yin 1989, 29). For this investigation, the Study Question is the following:

How is the medical quality control system in Arizona functioning to assure a minimum standard of quality in the area of eye surgery co-management?

Rephrasing the study's question into the Problem Statement is as follows:

The system for evaluating co-management of the eye surgery patient in Arizona is not functioning in a manner that will assure that the minimum standards for quality are being met.

The Study Question and the Problem Statement are based upon two essential points which must be true in order for the question and statement to be valid. The first is that there is a quality control system in Arizona that evaluates eye surgery co-management and the second is that there are established minimum requirements which must be met by all health care practitioners prior to entering into an eye surgery co-management relationship. Regarding the first point, there is a system in place which is designed to monitor the activities of the eye surgery co-management relationship. The system is comprised of organizations

which control medical licensure, engage in peer review activities, and evaluate the financial arrangements between the providers in the co-management relationship. The second point is that there are established minimum requirements which must be met by all health care practitioners prior to their entering into an eye surgery co-management relationship. The minimum requirements have been reviewed in Chapter II under the section "Quality in Eye Care Delivery."

The Study's Theoretical Base

To assess the medical quality control system operating in Arizona, this investigator is using the "systems" approach. That is, for a system to function properly, it must have several basic properties described as inputs, throughputs, outputs, and feedback mechanisms. In a quality control system, a primary purpose is to assure that minimum standards of quality are maintained. In addition, the system is usually designed to improve quality over and above the minimum standards and currently, this is accomplished by organizations such as medical licensure boards which establish minimum standards and then enforce those standards.

According to Waelchli (1992, 3), there are eleven Theses which summarize the concepts involved in General Systems Theory (GST). The tenth Thesis is consistent with the theoretical basis for this study. He states the following:

> Thesis 10: "Control" in systems is defined as the maintenance of the values of specified variables of the controlled system within ranges dictated by the "controller." One of the laws of control in complex systems is Ashby's Law of Requisite Variety. Ashby's Law states that to control a complex system, the controlling system must generate at least as much variety as the system being controlled: "Only variety in the control mechanism can deal with variety in the system controlled" (Waelchli 1992, 7).

As Crosby stated, a definition of "quality" is "meeting the requirements" (Houghton 1992, 12). In Arizona, there are established minimum requirements that health care providers must meet before they perform surgery and/or provide surgical postoperative care. It is the responsibility of the quality assurance system to establish and enforce the minimum requirements.

In addition, a properly functioning control system must remain flexible, or contain as many variables as the system it is evaluating. Flexibility allows the control system to adapt to the ever changing health care environment. An example of the necessity of system adaptation may be the

licensing of health care providers that perform surgery and the surgical postoperative care through the medical licensing board of Arizona which is the State Board of Medical Examiners (BOMEX). All health care practitioners that perform surgery and surgical postoperative care are licensed by BOMEX. In this example, the variables of the licensing board match the variables in the system being licensed. What happens if the State legislature expands a group of health care practitioners' scope-of-practice to include postoperative care and surgery and this same group is not responsible to BOMEX for licensure? The control system which is designed to assure minimum standards of quality in surgery (BOMEX) is faced with a problem. There are now more variables in the system being controlled than there are in the controlling system. This situation demonstrates a quality control system that is inadequate to maintain the integrity of its original purpose. There are several ways to resolve this problem.

1. Maintain a single standard of surgical practice, under BOMEX's authority, and include the health care practitioners whose scope-of-practice has been expanded into the area which BOMEX is designed to cover.

2. Set up two different standards for surgical practice and allow different organizations to enforce those standards.

There may be more solutions, but, the point is that the number of variables in the controlling system needs to at least match the number of variables present in the system being controlled.

The Study's Propositions

Propositions are statements which attempt, at the beginning of a study, to explain certain interactions between the variables within the study. Propositions are an initial effort to explain cause and effect relationships which may later be supported, modified, or rejected by the study (Yin 1989, 30). The propositions are necessary for the identification of information that is not important and information that is important to the study. The propositions are also very necessary in the analysis stage of the project.

The propositions for this study have been based upon the concepts and data presented in the Literature Review. These are presented as follows:

Proposition 1 Licensure. All health care practitioners who enter into an eye surgery co-management

relationship will be licensed to practice medicine and surgery by the Arizona State Board of Medical Examiners (BOMEX).

Proposition 2 Finance. All health care practitioners who enter into an eye surgery co-management relationship for a Medicare patient will be licensed in Arizona to provide that service.

Proposition 3 Peer Review. All health care practitioners who enter into an eye surgery co-management relationship will be subject to the Federal, State, and local peer review programs which are designed to monitor those activities.

The Study's Unit of Analysis

"As a general rule, the definition of the unit of analysis (and therefore of the case) is related to the way the initial research questions have been defined" (Yin 1989, 31). The "study's question" pertains to quality control mechanisms and their effectiveness in evaluating co-management of eye surgery relationships in Arizona. Therefore, the "primary" unit (case) of analysis is the quality control system governing the eye care delivery system in Arizona. Further refinement of the unit (case) of analysis is the following:

1. Educational minimums and regulations will be those which were in place between 1987 and 1993 in the State of Arizona;

2. Licensing minimums and regulations will be those in place between 1987 and 1993 in the State of Arizona;

3. Financial regulations will be those which were functioning between 1987 and 1993 in the State of Arizona.

4. Peer review regulations will be those which were in place between 1987 and 1993 in the State of Arizona.

5. Analysis of each unit (case) will begin with an actual clinical case where the patient enters the health care delivery system in Arizona for the eye condition which subsequently resulted in a "co-management" arrangement. Each case will end when the eye condition which resulted in a "co-management" arrangement is resolved.

6. All recipients and providers of health care will be residents of the State of Arizona.

7. All clinical cases will have occurred between 1987 and 1993.

8. All clinical cases must be eligible for Medicare reimbursement.

9. The "identifiers" present within a clinical case will be removed or altered in a manner which allows the participants within the study to remain anonymous. This is

necessary because of the sensitive nature of the information as it relates to medical-legal issues.

10. The data for the clinical cases may be collected by the use of medical records. Consent will be obtained as necessary to comply with the requirements of the Human Subjects Committee of Walden University.

Linking Data to the Propositions

Case-study Checklist

The data collected from each case will represent pertinent information pertaining to the study's propositions. A checklist will be used to collect the data from each case. A checklist is a prepared list of items with multiple columns and is designed to organize the collection of specific information on a particular subject. In nursing research, checklists have been useful as a questionnaire or for observation of nurses' skilled activities (Treece and Treece 1982, 289). In a presentation of the "checklist" as a research instrument, Treece and Treece state the following:

> A checklist is somewhat like a questionnaire in that it requires paper and pencil. The advantages are that (1) it can be completed through the mail; (2) it is a useful way to obtain a large amount of data; and (3) the resulting data are in definite categories, because the subject either does or does not engage in some acts (Treece and Treece 1982, 289).

> The distinct disadvantages of checklists are (1) there is no opportunity for the respondent to classify his judgments; (2) it is a rigid method in both the question and the response; (3) the respondent is required to make a forced choice response, so each item must be carefully worded and be based on the purpose of the research; and (5) it is easy for certain important items to be omitted (Treece and Treece 1982, 289).

An example of a checklist used in nursing research may be seen in Appendix A. Another example of a checklist used as an instrument for data collection in federal peer review activities is also presented in Appendix A.

Checklists are commonly used to collect data in health care. For example, checklists are used by hospitals and other health care organizations in the credentialling process for physicians. The credentialling checklist contains questions designed to gather data to determine whether a physician has met the minimum requirements for obtaining hospital privileges. A checklist is also used as a data gathering instrument in the evaluation process for dissertations at Walden University. Once the Walden checklist has been completed, the data is organized, combined with other information, evaluated, and then a determination is made about the "quality" of the dissertation.

This investigator designed a checklist to gather pertinent information from each of the clinical cases that could be directly related to the study's propositions. After the data is collected, it is organized, combined with other relevant information, evaluated, and then a determination is made about the "quality control system" affecting a particular clinical case.

A significant advantage in using the checklist for this study is that it provides a method for collecting similar data from complex and diverse cases. This data is then used to directly relate the propositions to the individual cases. Additionally, the data is organized in a manner that facilitates cross-case analysis.

The checklist was completed by the investigator of this study. The advantages of this method of data collection are the following:

1. All cases are be reviewed by a single individual for maximum consistency.
2. All cases are be reviewed using the same questions despite the fact that the circumstances of each case may vary greatly from case to case. The checklist is applicable to all co-management eye care cases.
3. The investigator in this study has the necessary educational training and experience to collect and

understand the information gathered from each case and entered into the checklist. This is especially critical in the area of peer review.

4. The questions contained in the checklist are based on current rules and regulations pertaining to peer review, licensure, and financial arrangements, as presented in the Chapter II, in order to eliminate any "bias" which may be introduced by the investigator's individual interpretation.

A disadvantage inherent in any form of data collection is that the investigator may influence the data collection so that the results do not accurately reflect the actual situation. Great effort has been taken to decrease the bias potential by basing the questions of the checklist on current and verifiable information relating to the areas of finance, licensure, and peer review in the clinical setting of eye surgery co-management. Essentially, the cases are screened by the checklist based upon "conformance to requirements" which is a definition of quality offered by Crosby (Houghton 1992, 12).

The following discussion presents the rationale used in the formation of the checklist along with supporting literature.

This study reviews the quality-control system for eye surgery co-management in Arizona. The study is not designed

to evaluate who is or who is not qualified to be in a surgical co-management relationship. The study's intent is to determine the adequacy of the existing quality control system for eye surgery co-management in Arizona.

The data collected from each case is assigned a numerical value based upon the category into which the data falls. Each checklist question is answered by facts drawn from each case with the appropriate answer recorded in one of the five numerically weighted categories. The highest numerical value of "5" corresponds to clinical findings that clearly meet the minimum requirements for surgical co-management. The lowest numerical value of "1" corresponds to clinical findings that clearly do not meet the established minimum requirements. The value of "2" corresponds to clinical findings that probably did not meet the established minimum criteria. The value "4" corresponds to clinical findings that probably did meet the minimum criteria. If data is lacking or the investigator is unable to determine whether the clinical findings has not met the established minimum criteria, then a value of "3" is assigned.

The checklist is divided into four sections which present questions pertaining to licensing, peer review, finances, and systems review. Since eye surgery and the

postoperative care following surgery are medical and surgical services, the checklist questions are designed to determine whether the established minimum requirements to practice medicine and surgery in the State of Arizona have been met in each case. The criteria to practice medicine and surgery in the State of Arizona are those established by the Arizona State Board of Medical Examiners. In the review of finances, the Medicare criteria for surgical co-management in eye surgery is used. In the section which evaluates peer review activities, the standards-of-care for eye surgery and eye surgery postoperative care are those established by the American College of Surgeons, the American Board of Ophthalmology, and the American Academy of Ophthalmology. The section of the peer review uses state and local peer review systems whose criteria for surgical and medical services is established for Medicare by the Health Care Finance Administration (HCFA). The section which reviews the current quality control system's function focuses on the accessibility of the surgeon's and the postoperative care provider's chart(s) to the quality control system.

Interpreting the Study's Finding

The following is a summary of the method used to analyze the data:

1. A histogram shows the mean score for each question,

2. A matrix of frequencies shows the number of occurrences of each score on each question,

3. The mean, standard deviation, and the maximum error (using a 95% confidence interval) of the case scores for each section (License, Finance, and Systems Review) is determined.

4. For the Licensing section, case-by-case, the mean is computed for Questions "1" through "6" and the same on questions "7" through "12." The relationship is plotted on a scatter diagram, the appropriate form of regression analysis is applied, and the coefficient of correlation is determined. The relationship or lack of relationship between the licensing of the surgeon and that of the postoperative care provider is analyzed. The same process applies to the Peer Review section, with questions "17" through "20" being compared with questions "22" through "25", and with the Systems Review section with questions "26" through "28" compared with questions "29" through "31",

5. The mean and standard deviation is computed case-by-case for the entire set of data. As before, the degree of error is determined, and

6. For each two sections, paired observations (mean score by case) is studied to determine whether there are significant differences in the results of various sections. For each pair, the hypothesis (which states the means are the same) is tested.

Long-term Consequences

Regardless of the various opinions on the practice of co-management after eye surgery, there is a definite place in the health care delivery system for surgical co-management. The purpose of the co-management relationship is to have the surgeon and the primary eye care provider work together to deliver the best care available to the patient. The intent of this study is not to set the boundaries of co-management but to establish a foundation of quality assurance principles, in order to improve eye surgery co-management.

As the health care system is reworked for the future, the quality control systems must assure a minimum standard of quality within the health care system and also to create an environment where that care is continuously improving.

The quality assurance system must have the capacity to cover all aspects of patient care despite changing conditions. This study will suggest a flexible yet comprehensive system of medical quality control in Arizona so that an eye surgery patient cannot fall through an inadequate safety net.

A definition of quality is "meeting the requirements", and for the medical profession, this should be 100% of the time. As stated by Houghton, 99% is "5,000 improper surgical procedures a month" and "200,000 wrong prescriptions a year" (Houghton 1992, 12). This study will demonstrate that 99% may mean increased risk of vision loss due to improperly monitored eye care co-management.

Health care has been determined to be a right and to that end, the current Administration is working on a national health care system. The roles of many health care providers are expanding in order to create a team of health care workers to cover the vast numbers of people who will ultimately benefit from the national system. Yet, quality should never be sacrificed and an adequate quality control system is vital to the success of the National health care system and more importantly it is vital to the health and life of the patient. This study addresses a small segment of the current health care system but its principles may be

applied across the spectrum of medical disciplines for the benefit of patients now and in the future.

Summary of Chapter III

Chapter III presents the research design for this study which uses case-study methodology to answer the Study's Question which is the following:

How is the medical quality control system in Arizona functioning to assure a minimum standard of quality in the area of eye surgery co-management?

The study uses propositions which were developed from the review of the literature presented in Chapter II. The data collected is organized in a manner which allows for an individual case analysis as well as a cross-case analysis. The results of the case-study data analysis are used to answer the Study's question.

Chapter 4

RESULTS

Introduction

The purpose of Chapter Four is to report the results of data analysis and statistical computations and to apply the results to the study's question. The results of the analysis should provide insight into the actual practice of quality control as it relates to postoperative eye care in rural Arizona. This chapter contains the research design logic, an analysis of individual cases, a cross-case analysis with statistical comparison of the cases, and a discussion of the results.

Research Design

The impetus to undertake this research project evolved from the need to understand how well the quality control mechanisms monitoring surgical co-management were functioning.

This investigator encountered several clinical situations involving surgical co-management which appear to have fallen through the current safety net of quality control mechanisms in Arizona. These clinical situations

involve eye surgery co-management relationships in which the best interests and possibly the safety of the patient appears to have been compromised. If this study demonstrates the presence of a "defect" in the quality control system, then potential solutions will be proposed which may improve the quality control system that evaluates surgical co-management of the eye surgery patient.

This investigator found that there are established minimum standards for surgical co-management of the eye surgery patient but these standards are not supervised by a single quality control system. The current quality control mechanisms which may influence surgical co-management are medical licensing, medical and surgical training, the Medicare system, Federal and local peer review activities, and surgical standards of practice.

After an extensive review of the literature, it is apparent that there are clearly defined minimum standards which are designed to assure optimal health care delivery. It is also clear that the mechanisms for monitoring the minimum standards are not functioning in a coordinated manner, that is, as a system.

At this point, this investigator felt a study which evaluated the effectiveness of the quality control mechanisms monitoring surgical co-management of the eye

surgery patient might provide insight into how the case presented in Chapter I could fall through the current quality control system.

The case study methodology was chosen as the most appropriate means to address the problem. The Study's question was determined to be the following:

How is the medical quality control system in Arizona functioning to assure a minimum standard of quality in the area of eye surgery co-management?

Three propositions which directly related to the Study's question were identified from the literature review. These propositions were used to evaluate each case in a manner which could answer the Study's question. The three propositions are the following:

Proposition 1 Licensure. All health care practitioners who enter into an eye surgery co-management relationship will be licensed to practice medicine and surgery by the Arizona State Board of Medical Examiners (BOMEX).

Proposition 2 Finance. All health care practitioners who enter into an eye surgery co-management relationship for a Medicare patient will be licensed in Arizona to provide that service.

Proposition 3 Peer Review. All health care practitioners who enter into an eye surgery co-management relationship will be subject to the Federal, State, and local peer review programs which are designed to monitor those activities.

Additionally, each case was evaluated from the perspective of established standards of care for eye surgery co-management and from the perspective of how well each quality control mechanism was functioning as a system.

In order to evaluate each case, a case-study checklist was created. This checklist listed the established minimum requirements under the various sections of licensure, financing, peer review, and systems review. The checklist functioned as a "template" by which data was collected from each case to determine how well the minimum established minimum standards were met.

Each of the clinical cases represents a combination of complex variables which, for optimal data extraction and interpretation, requires a high degree of familiarity with the areas of ophthalmology, optometry, eye surgery, Federal and local peer review, Medicare, rural medical and surgical referral practices, medical licensing, and medical documentation. In order to minimize variability in data extraction, a single investigator was used. Additionally,

effort was made to decrease the bias potential by basing the questions of the checklist on current and verifiable information relating to the areas of finance, licensure, and peer review in the clinical setting of eye surgery co-management. Because of the medical training and clinical experience with the above areas, this investigator performed all of the data collection.

The clinical cases for review were collected from ophthalmic practices and optometric practices in rural Arizona. The cases include representation from ophthalmological surgical specialties involving the retina, glaucoma, and cataracts. In each of the clinical cases, the patient's and eye care provider's identification was removed from the clinical record to assure that the participants in the study remained anonymous. Because of the nature of the material presented in the clinical cases, no patient or provider identifiers have been included in this document. The data received by this investigator took the form of actual medical records, written summaries of clinical cases, and taped dictation summarizing clinical cases.

The data from each case was organized as follows:

1. A brief case summary
2. The case-study checklist
3. The case-study analysis

A standardized format was used to summarize each case. Where appropriate, significant information was included if it were relevant to the proper interpretation of the case. In the cases which are "routine," the clinical summaries appear similar.

Clinical Case Presentations

The pertinent data has been extracted from each case and summarized under the following headings: the Primary Eye Care Provider, the Surgeon, the Patient, the Diagnosis, and the Surgical Procedure. Each case's data summary is followed by a case narrative, a completed case checklist, and a brief systems analysis.

Case 1: Argon Laser Trabeculoplasty

Primary Eye Care Provider (Case 1)

Degree: Doctor of Medicine (M.D.)

Internship(s): General surgery and Internal Medicine

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 1)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: Glaucoma

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: Ophthalmology--glaucoma referral

Location of Practice: Urban Arizona, Phoenix, multiple hospitals and outpatient surgical centers, more than forty ophthalmologists, more than three glaucoma specialists

Laser availability: Argon Laser, YAG laser

Patient (Case 1)

Age: seventy-four years old

sex: female

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 1)

Chronic open angle glaucoma: progressive damage to the optic nerve in the back of the eye as a result of elevated intraocular pressure.

Primary treatment: topical medications

Treatment options: secondary treatment--argon laser trabeculoplasty, tertiary treatment; surgical trabeculectomy

Clinical summary: The patient had advanced glaucoma which was not controlled with medical therapy. The laser was the next level of medical intervention indicated to control the progressive glaucoma.

Surgical Procedure (Case 1)

Procedure: Argon laser trabeculoplasty (ALT)

Purpose: to lower the intraocular pressure of an eye with chronic open angle glaucoma

Surgical setting: usually in an ophthalmologist's office, hospital's outpatient setting, or ambulatory surgical facility

Anesthesia: topical

Complications: increase in the intraocular pressure requiring further therapeutic intervention

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy-four year old female who presented to a rural, general ophthalmologist in 1989 with the diagnosis of glaucoma. The patient had advanced glaucoma with near total damage to her optic nerves. Her intraocular pressures were in the high normal range of 18mmHg to 22mmHg with the use of topical eye medications. Her visual fields were consistent with advanced glaucoma in both eyes.

The rural ophthalmologist continued with the patient's established medical regimen until March of 1993 when further tests indicated additional loss of visual field, despite continued use of medications. The rural ophthalmologist referred the patient to a glaucoma specialist in Phoenix to determine if a surgical procedure would lower the intraocular pressure in the patient's eyes. The glaucoma specialist concurred that laser surgery would be in the patient's best interest and recommended that the rural ophthalmologist proceed with laser therapy.

When the patient returned to the rural ophthalmologist she stated that her son wanted the glaucoma specialist in Phoenix to perform the laser procedure. The patient also related her concern over her inability to make frequent trips to Phoenix for postoperative care and asked the rural ophthalmologist what other options were available to her. The rural ophthalmologist suggested that the glaucoma

specialist could perform the laser therapy and then the patient could return to her rural ophthalmologist for postoperative care. The patient agreed to this arrangement and on 4-28-93 the patient underwent the first of two planned laser treatments.

The chart indicates that the patient had multiple postoperative visits with the rural ophthalmologist who measured the intraocular pressures and adjusted the medical therapy in a manner consistent with normal postoperative care for argon laser trabeculoplasty. The patient's intraocular pressures were lowered to an acceptable level and the patient is currently on a routine schedule for glaucoma management with the rural ophthalmologist.

Case-Review Checklist					Case Number (___1___)	
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?	x				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	x				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	x				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	x				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	x				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	x				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	x				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?					x
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	x				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	x				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	x				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?					x
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	X				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	X				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	X				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		X			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					X
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					X

Analysis of Case 1

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case. The checklist indicates that the patient entered into a surgical co-management relationship when the service was readily available in the patient's community. The case narrative, however, indicates that it was in the patient's best interest to enter into this surgical co-management relationship.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care provider's medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient

surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

CASE 2: Pneumatic Retinopexy

Primary Eye Care Provider (Case 2)

Degree: Doctor of Medicine (M.D.)

Internship(s): General surgery and Internal Medicine

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 2)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: Vitreal-retinal surgery

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: Ophthalmology; vitreal-retinal referral

Location of Practice: Urban Arizona, Phoenix, multiple hospitals and outpatient surgical centers, more than forty ophthalmologists, more than six glaucoma specialists

Laser availability: Argon Laser, YAG laser, Dye laser, endo-laser capability

Patient (Case 2)

age: seventy-one years old

sex: male

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 2)

Retinal detachment: The patient had a retinal hole in the superior portion of his retina which allowed fluid to collect under the retina and resulted in the retina becoming detached from its underlying supportive base.

Primary treatment: surgical repair with the placement of a special gas in the eye to stabilize the retina, which helps it to become reattached to its proper base, and prevent permanent loss of vision.

Treatment options: secondary treatment; vitrectomy with encircling elastic band to further position the detached retina onto its supportive base.

Surgical Procedure

Procedure: Pneumatic retinopexy

Purpose: to inject a special gas bubble into the patient's eye. The gas bubble will "rise" and press on the retina, causing the retina to reposition itself onto its normal supportive base.

Surgical setting: this procedure is most frequently performed in the outpatient surgical setting of a hospital or an ambulatory surgical facility.

Anesthesia: frequently retrobulbar anesthesia but occasionally general anesthesia

Complications: (1) increase in the intraocular pressure which could cause retinal artery occlusion resulting in blindness, (2) a recurrent retinal detachment which may require additional surgery, (3) infection, and (4) bleeding.

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy-one year old male who presented to a rural, general ophthalmologist on 2-17-93 with sudden loss of vision in the right eye. Upon examination, the vision in the right eye was "count

fingers." The left eye had normal vision of 20/20. A retinal examination showed a retinal detachment in the superior portion of the retina of the right eye. The rural ophthalmologist contacted a retinal specialist in Phoenix and described the patient's condition. The retinal specialist concurred that the patient required surgical repair of the detached retina and the patient was scheduled to see the retinal specialist the next day.

The patient's medical records indicate that the retinal detachment was relatively mild and a pneumatic retinopexy was selected as the best surgical treatment for this patient. On 2-18-93, a pneumatic retinopexy was performed on the patient's right eye. The patient was examined on the first and second postoperative day by the surgeon and then scheduled to see the rural ophthalmologist for the remainder of the postoperative care. The chart also indicates the rural ophthalmologist treated the patient in a manner consistent with the normal care after a retinal pneumatopexy. By the end of March 1993, the vision in the patient's right eye had improved to 20/30. The patient is currently on a routine examination schedule for patients who have had a retinal detachment.

Case-Review Checklist				Case Number (__2__)		
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	X				
2	Has the surgeon completed a 12 month hospital internship?	X				
3	Has the surgeon completed an accredited ophthalmology residency?	X				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	X				
5	Does the surgeon have a license to practice medicine in AZ.?	X				
6	Does the surgeon have a license to perform surgery in AZ.?	X				
7	Has the postoperative eyecare provider graduated from an approved medical school?	X				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	X				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	X				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	X				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	X				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	X				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	X				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	X				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	x				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	x				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	x				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	x				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	x				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?	x				
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	X				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	X				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	X				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		X			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					X
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					X

Analysis of Case 2

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care provider's medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

CASE 3: Cataract Surgery

Postoperative Eye Care Provider (Case 3)

Degree: Doctor of Medicine (M.D.)

Internship(s): General surgery and Internal Medicine

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Surgeon (Case 3)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating internship

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Patient (Case 3)

age: sixty-six years old

sex: male

residence: rural Arizona, same location as the postoperative eye care provider

Medicare eligible: yes

Diagnosis (Case 3)

Cataract: A cataract is the clouding of the normally clear lens in the eye which may cause visual impairment.

Primary treatment: surgical removal of the cloudy lens and replacement of the cloudy lens with a clear artificial lens.

Clinical summary: The patient had a cataract which was visually significant and impairing the patient's vision in his left eye. Corrective lenses were unable to improve the patient's vision so cataract surgery was indicated.

Surgical Procedure (Case 3)

Procedure: Cataract extraction with intraocular lens

Purpose: to remove the cloudy lens in the eye and replace it with an artificial clear lens

Surgical setting: cataract surgery may be performed in a physician's office if the office is equipped with a surgical suite. Most often, it is perform in an outpatient surgical facility.

Anesthesia: Most often with retrobulbar anesthesia and occasionally with general anesthesia. A new technique is allowing some patients to have the cataract surgery with use of topical anesthesia only.

Complications: (1) infection, (2) bleeding, (3) glaucoma, (4) retinal detachment, and (5) problems with the artificial lens. A frequent postoperative occurrence (between 5-30% of cases) is the clouding of the posterior capsule, or membrane which supports the artificial lens. The YAG laser may be used to make a small opening in the membrane to clear the central portion of the capsule.

Medicare classification: surgery

Medicare covered: yes

The patient is a sixty-six year old male who presented to a rural, general ophthalmologist on 5-14-93 with the complaint of decreased vision in the left eye for several years. The rural ophthalmologist examined the patient and

found a cataract in the left eye consistent with the visual acuity of 20/200 or the level of legal blindness in Arizona. The vision in the right eye was 20/40. Cataract surgery was recommended. The patient requested that the postoperative care to be in his home community, which was located about thirty miles from the rural ophthalmologist who was going to perform the surgery. The surgeon discussed the postoperative care arrangement with another ophthalmologist who had an office closer to the patient's home. The patient was presented the option of having the surgeon perform the surgery and allowing the other ophthalmologist deliver the postoperative care. The patient consented and on 5-20-93, the patient underwent cataract surgery with an artificial lens placement in the left eye. The surgery was performed in an outpatient surgical facility. The chart indicates that there was evidence of vitreous loss and vitrectomy was performed. An anterior chamber artificial lens was placed. The patient was seen the next day in the office near his home by the second ophthalmologist. The vision was recorded as 20/30 uncorrected and the eye was "quite." The chart also indicates the patient was seen multiple times in a manner consistent with normal postoperative care after cataract surgery. The patient's final vision was 20/30 and at the present time, the patient is on a routine schedule

for postoperative care with the ophthalmologist practicing near his home community.

Case-Review Checklist				Case Number (___3___)		
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	X				
2	Has the surgeon completed a 12 month hospital internship?	X				
3	Has the surgeon completed an accredited ophthalmology residency?	X				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	X				
5	Does the surgeon have a license to practice medicine in AZ.?	X				
6	Does the surgeon have a license to perform surgery in AZ.?	X				
7	Has the postoperative eyecare provider graduated from an approved medical school?	X				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	X				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	X				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	X				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	X				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	X				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	X				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	X				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	x				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	x				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	x				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	x				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	x				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?	x				
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		x			
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	x				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	x				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		x			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					x
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					x

Analysis of Case 3

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case. The checklist also indicates that the patient entered into a surgical co-management relationship when the service was readily available in the patient's community. The case summary, however, indicates that it was in the patient's best interest to enter into this surgical co-management relationship.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care provider's medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient

surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

CASE 4: Argon Laser Retinopexy

Primary Eye care Provider Case 4)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating internship

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Surgeon (Case 4)

Degree: Doctor of Medicine (M.D.)

Internship(s): General surgery and Internal Medicine

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Patient (Case 4)

age: seventy years old

sex: male

residence: rural Arizona, same location as the postoperative eye care provider and surgeon

Medicare eligible: yes

Diagnosis (Case 4)

Retinal tear: The retina is a thin, film-like layer in the back of the eye which converts light energy into electrical impulses that are interpreted by the brain. A tear in the retina may allow fluid within the eye to enter into the space between the retina and its supporting base and lead to a retinal detachment and some degree of blindness.

Primary treatment: laser treatment of the retina around the torn area to cause scarring or adhesions so that the retina will not detach.

Clinical summary: The patient had symptoms of floaters and flashing lights. Upon examination, a retinal tear was found and argon laser retinopexy was recommended.

Surgical Procedure (Case 4)

Procedure: Argon laser retinopexy

Purpose: to cause scarring or adhesions of the retina surrounding the retinal tear so that the retina does not become detached.

Surgical setting: this procedure may be performed in a physician's office if the office is equipped with an argon laser or in an outpatient surgical facility.

Anesthesia: Most often topical anesthesia is used. More rarely, retrobulbar anesthesia is used.

Complications: The major complication is that the retina may become detached despite the use of laser therapy. If retinal detachment occurs, conventional surgery with air/fluid exchange or a buckling procedure may be indicated.

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy three year old male who presented to a rural, general ophthalmologist on 6-3-93 with

the complaint that his "whole vision" was blocked in his left eye by floaters. The visual disturbance began the week before and had not improved. The rural physician examined the patient and found a retinal tear, superiorly in the left eye. A vitreous hemorrhage was present. The right eye was normal. The ophthalmologist recommended an argon laser retinopexy for this patient.

The ophthalmologist did not routinely perform argon laser retinopexy so he consulted with another ophthalmologist in his group practice who was currently performing this procedure. The second ophthalmologist examined the patient and concurred with the diagnosis and recommended treatment plan. The first doctor would provide the postoperative care but the second doctor would perform the laser procedure. The patient consented to the surgery and the postoperative arrangement. The patient underwent an argon laser retinopexy to the left eye.

The chart indicates that the patient did well and that the first ophthalmologist provided the postoperative care in a manner consistent with normal post argon laser retinopexy protocol. The patient's retina did not become detached and he currently has 20/20 vision in both eyes. The patient is currently under normal follow-up protocol for patients who have had a retinal detachment.

Case-Review Checklist				Case Number (___4___)		
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?	x				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	x				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	x				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	x				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	x				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	x				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	x				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?				x	
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	x				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	x				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	x				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?				x	
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		x			
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?				x	
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?					x
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		x			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					x
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					x

Analysis of Case 4

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case. The checklist indicates that the patient entered into a surgical co-management relationship when the service was readily available in the patient's community. The case summary, however, indicates that it was in the patient's best interest to enter into this surgical co-management relationship.

Systems Review: The system which evaluates the surgeon does not appear to be adequate. The case review indicates that the surgeon's medical chart could be available to the licensing board in the case of a patient complaint or medical malpractice situation. It is possible that HSAG, the federal peer review organization for Arizona could have access to the chart. This, however, would be unlikely since the surgery was performed in the physician's office rather than in an ambulatory surgical setting. In the physician's

office, the usual "triggers" that would initiate a medical chart review would not be present. Additionally, the local peer review systems would not have access to the surgeon's medical record for review.

The system which evaluates the postoperative care provider does not appear to be adequate. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care providers medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with a hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

CASE 5: Vitrectomy and a Pneumatic Retinopexy

Primary Eye Care Provider (Case 5)

Degree: Doctor of Medicine (M.D.)

Internship(s): General surgery and Internal Medicine

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 5)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: Vitreal-retinal surgery

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: Ophthalmology; vitreal-retinal referral

Location of Practice: Urban Arizona, Phoenix, multiple hospitals and outpatient surgical centers, more than forty ophthalmologists, more than six glaucoma specialists

Laser availability: Argon Laser, YAG laser, Dye laser, endo-laser capability

Patient (Case 5)

age: seventy-four years old

sex: female

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 5)

Retinal detachment: the separation of the nerve fiber layer in the back of the eye from its supportive base. If not treated early, retinal detachments frequently result in permanent blindness.

Primary treatment: surgical repair with the placement of a special gas in the eye which stabilizes the retina so that it may become reattached to its proper base. Prior to placement of the gas, any hemorrhaged blood is removed from the inside eye by a surgical procedure called a vitrectomy.

Treatment options: secondary treatment; vitrectomy with an encircling elastic band to further position the detached retina onto its supportive base.

Clinical summary: The patient had a retinal hole in the superior portion of her retina which allowed fluid to collect under the retina and resulted in the retina becoming detached from its underlying supportive base. Additionally, at the time of the detachment, a blood vessel in the retina was torn, allowing blood to enter the vitreous cavity causing immediate loss of vision. The patient required surgical intervention to prevent permanent loss of vision.

Surgical Procedure (Case 5)

Procedure: Vitrectomy with Pneumatic retinopexy

Purpose: The vitrectomy is designed to remove the vitreous jelly from the inside of the eye and replace it with a clear fluid. Clearing the inside of the eye allows the surgeon to visualize the peripheral retina to diagnose and treat retinal tears or detachments. Once the retinal tear is recognized, the subretinal fluid is drained and a special gas bubble is injected into the patient's eye. This gas bubble will rise and press the retina into its normal position where final healing will occur.

Surgical setting: this procedure is rarely performed in a physician's office and most frequently performed in an outpatient surgical setting of a hospital or, less commonly, in an ambulatory surgical facility.

Anesthesia: frequently retrobulbar anesthesia but occasionally general anesthesia

Complications: (1) increase in the intraocular pressure which could cause the retinal artery to occlude resulting in blindness within one hour, (2) a recurrent retinal detachment which would require additional surgery, (3) infection, and (4) bleeding.

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy-four year old female who presented to a rural, general ophthalmologist on 4-14-93 with sudden loss of vision in the left eye. This patient was well aquainted with the rural ophthalmologist since he had performed an argon laser retinopexy for a retinal tear in her only seeing eye in 1986. The patient had lost her right eye in an auto accident thirty years ago.

When the patient presented on 4-14-93, the record states she was extremely anxious since "she couldn't see anything." Upon examination, the vision in the left eye was recorded to be "count fingers" and retinal examination was not possible due to a dense vitreous hemorrhage. The rural physician called a retinal specialist and explained the situation and the patient was immediately transported to Phoenix for further evaluation. The retinal surgeon suspected a retinal tear was present and recommended a vitrectomy followed by retinal repair if indicated. The patient consented to the planned operation. Additionally, the patient asked that the postoperative care be performed by the rural ophthalmologist, if possible. The rural ophthalmologist noted that postoperative follow-up would be arranged according to what was found at the time of surgery and according to what repairs were needed.

On 4-14-93, the patient underwent a surgical vitrectomy without complication. This was followed by the repair of a retinal tear in the superior retina. Within several hours after leaving the operating room, the patient began to experience eye pain. The eye was reexamined and found to be stable. The patient was admitted to an acute care facility for observation. The following day, the patient had a recurrent hemorrhage in the operative eye and more pain. The surgeon took the patient back to surgery to "wash" the blood out of the eye and to treat for a possible endophthalmitis. The patient did well until the following day. The patient complained of a sudden decrease in her vision and an examination showed diffuse corneal edema with an undetermined etiology. A corneal specialist was asked to evaluate the patient but he was unable to determine the cause of the corneal edema. The retinal exam showed that the retina was stable and the patient was observed in the hospital for several more days.

While still in the hospital in Phoenix, the patient called the rural ophthalmologist and asked him to review her case if possible. The rural ophthalmologist was in Phoenix for a meeting and was able to examine the patient. The rural ophthalmologist concurred with the retinal surgeon's diagnosis and treatment plans.

After discharge, the patient returned to her home community where the rural ophthalmologist provided the remainder of the postoperative care, at the patient's request. The chart indicates that the rural ophthalmologist communicated frequently with the retinal surgeon and the postoperative care appears to be consistent with normal retinal detachment protocol. The patient's vision improved over a six week period of time. At the present time, the patient is on a routine follow-up schedule for a patient who has had a retinal detachment.

Case-Review Checklist				Case Number (__5__)		
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	X				
2	Has the surgeon completed a 12 month hospital internship?	X				
3	Has the surgeon completed an accredited ophthalmology residency?	X				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	X				
5	Does the surgeon have a license to practice medicine in AZ.?	X				
6	Does the surgeon have a license to perform surgery in AZ.?	X				
7	Has the postoperative eyecare provider graduated from an approved medical school?	X				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	X				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	X				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	X				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	X				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	X				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	X				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	X				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	x				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	x				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	x				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	x				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	x				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?	x				
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	x				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	x				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	x				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		x			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					x
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					x

Analysis of Case 5

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care provider's medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

CASE 6: Vitrectomy, Subretinal Fluid Drainage, and a Pneumatic Retinopexy

Primary Eye Care Provider (Case 6)

Degree: Doctor of Medicine (M.D.)

Internship(s): General surgery and Internal Medicine

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 6)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: Vitreal-retinal surgery

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: Ophthalmology; vitreal-retinal referral

Location of Practice: Urban Arizona, Phoenix, multiple hospitals and outpatient surgical centers, more than forty ophthalmologists, more than six glaucoma specialists

Laser availability: Argon Laser, YAG laser, Dye laser, endo-laser capability

Patient (Case 6)

age: sixty-six years old

sex: male

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 6)

Retinal detachment: the separation of the nerve fiber layer in the back of the eye from its supportive base. If not treated early, retinal detachments frequently result in permanent blindness.

Primary treatment: surgical repair with the placement of a special gas in the eye which stabilizes the retina so that it may become reattached to its proper base. Prior to placement of the gas, any hemorrhage blood is removed from inside the eye by a surgical procedure called a vitrectomy. Fluid that has collected between the retina and its supportive base needs to be removed.

Treatment options: secondary treatment; vitrectomy with an encircling elastic band to further position the detached retina onto its supportive base.

Clinical summary: The patient had a retinal hole in the superior portion of his retina which allowed fluid to collect under the retina and resulted in the retina becoming detached from its underlying supportive base. The patient required surgical intervention to prevent permanent loss of vision.

Surgical Procedure (Case 6)

Procedure: Vitrectomy with subretinal fluid drainage and a pneumatic retinopexy

Purpose: The vitrectomy is designed to remove the vitreous jelly from the inside of the eye and replace it with a clear fluid. Clearing the inside of the eye allows the surgeon to visualize the peripheral retina in order to diagnose and treat retinal tears or detachments. Once the retinal tear is recognized, the subretinal fluid is drained and a special gas bubble is injected into the patient's eye. The gas bubble will rise and press the retina into its normal position where final healing will occur.

Surgical setting: this procedure is very rarely performed in a physician's office and most frequently

performed in an outpatient surgical setting of a hospital or, less commonly, in an ambulatory surgical facility.

Anesthesia: frequently retrobulbar anesthesia but occasionally general anesthesia

Complications: (1) increase in the intraocular pressure which could cause the retinal artery to occlude resulting in blindness within one hour, (2) a recurrent retinal detachment which would require additional surgery, (3) infection, and (4) bleeding.

Medicare classification: surgery

Medicare covered: yes

The patient is a sixty-six year old male who presented to a rural, general ophthalmologist on 9-4-92 with complaints of "blurred vision and difficulty reading with the left eye for two weeks." Upon examination, the patient was found to have a "shallow" retinal detachment which was extending into the macular region of the retina. The rural ophthalmologist contacted a retinal surgeon in Phoenix and explained the situation. The retinal surgeon recommended the patient to be seen the next day in Phoenix for a possible retinal detachment surgery. On 9-15-92, the retinal surgeon confirmed the diagnosis of a retinal detachment and recommended surgery to repair the problem. The patient consented and on the same day, the patient

underwent a vitrectomy with drainage of fluid from the subretinal space, followed by placement of a gas bubble. The patient was followed-up by the retinal surgeon for two days after surgery and then was allowed to return home. Since the patient's home is significantly higher in elevation than Phoenix, the patient was advised to plan a stop, half way home, to allow the gas bubble to adjust to the higher altitude. The patient complied with these directions, but upon arriving home, the patient experienced a sudden, painless loss of vision. The patient called the rural ophthalmologist and was told to come in for an immediate examination. Upon examination, the rural ophthalmologist found the pressure in the eye to be too high and the central retinal artery was occluded. The rural ophthalmologist called the retinal surgeon who recommended that the rural ophthalmologist remove a small portion of the gas from the eye with a small needle. The rural ophthalmologist concurred and removed a small amount of gas from the patient's eye while in the office. The pressure in the eye was immediately lowered to a safe level and within several minutes, the patient's vision began to improve. The chart indicates that the patient had multiple visits with the rural ophthalmologist for the remainder of the postoperative care. Approximately six weeks after surgery,

the patient's vision returned to near 20/20. The patient is now on a routine follow-up schedule for a patient who has had a retinal detachment repair.

Case-Review Checklist		Case Number (___6___)				
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	X				
2	Has the surgeon completed a 12 month hospital internship?	X				
3	Has the surgeon completed an accredited ophthalmology residency?	X				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	X				
5	Does the surgeon have a license to practice medicine in AZ.?	X				
6	Does the surgeon have a license to perform surgery in AZ.?	X				
7	Has the postoperative eyecare provider graduated from an approved medical school?	X				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	X				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	X				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	X				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	X				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	X				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	X				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	X				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	X				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	X				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	X				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	X				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	X				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	X				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	X				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	X				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	X				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?	X				
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	X				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	X				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	X				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	X				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		X			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					X
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					X

Analysis of Case 6

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care provider's medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

CASE 7: Cataract Surgery

Primary Eye Care Provider (Case 7)

Degree: Doctor of Optometry (O.D.)

Internship(s): none

Specialty training: Optometry school

Surgical subspecialty training: none

Board certification: none

Fellowships: none

Arizona license: Optometry (Optometric Board)

Meets Medicare criteria for surgical co-management billing (-54/-55): no

Subject to a hospital medical staff or surgical center peer review program: no

Subject to review by the Federal Peer Review Organization (HSAG): no

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): no

Type of Practice: General Optometry

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 7)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix, same location as the primary eye care provider

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Patient (Case 7)

age: sixty-eight years old

sex: male

residence: rural Arizona, same location as the primary eye care provider and surgeon

Medicare eligible: yes

Diagnosis (Case 7)

Cataract: A cataract is the clouding of the normally clear lens in the eye which may cause vision to be impaired.

Primary treatment: surgical removal of the cloudy lens and replacement of the cloudy lens with a clear artificial lens.

Clinical summary: The patient had a cataract which was visually significant and impairing the patient's vision in his right eye. Corrective lenses were unable to improve the patient's vision so cataract surgery was indicated.

Surgical Procedure (Case 7)

Procedure: Cataract extraction

Purpose: to remove the cloudy lens in the eye and replace it with an artificial clear lens

Surgical setting: this procedure may be performed in a physician's office if the office is equipped with a surgical suite. Most often, it is perform in an outpatient surgical facility or in the outpatient department of a hospital.

Anesthesia: Most often with retrobulbar anesthesia and, rarely, with general anesthesia. A new technique is allowing some patients to have the cataract surgery with use of topical anesthesia only.

Complications: (1) infection, (2) bleeding, (3) glaucoma, (4) retinal detachment, and (5) problems with the artificial lens. A frequent postoperative occurrence (between 5-30% of cases) is the clouding of the posterior capsule, or membrane which supports the artificial lens. In this case, the YAG laser may be used to make a small opening in the membrane to clear the central portion of the capsule.

Medicare classification: surgery

Medicare covered: yes

The patient is a sixty-eight year old male who presented to a rural, general optometrist in December 1991 with complaints of blurred vision in his right eye. Upon examination, the rural optometrist found a cataract in the right eye which was consistent with the patient's symptoms and vision. The rural optometrist explained that cataract surgery would be necessary in order to improve the vision in the right eye. The patient was referred to a rural ophthalmologist (surgeon) for further evaluation for cataract surgery. The patient was evaluated and the surgeon concurred with the diagnosis and proposed a plan for

cataract surgery. The chart indicates that the patient was informed by the surgeon that the postoperative care would be shared with the primary eye care provider.

On 12-15-91, the patient under went cataract surgery on the right eye in the surgeon's surgical facility located in his office. The surgeon saw the patient the next day and found the eye examination to be within normal parameters. The patient was then asked to return to the primary eye care provider for periodic examinations while continuing the routine post operative examinations with the surgeon. The chart indicates that the patient's only postoperative visits were with the surgeon. The optometrist in the co-management relationship had moved to another town in Arizona.

The patient had a successful surgical result with 20/20 vision in the operative eye. The chart indicates that the patient was being followed for possible cataract surgery in the fellow eye prior to the patient being lost to follow-up.

Case-Review Checklist						Case Number (__7__)
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?					x
8	Has the postoperative eyecare provider completed a 12 month hospital internship?					x
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?					x
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?					x
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?					x
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?					x
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?					x

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?		x			
16	Was the care delivered consistent with the surgeon's billing to Medicare?					x
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	x				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?					x
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?					x
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?					x
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?					x
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?					x

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	X				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	X				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	X				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?					X
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					X
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					X

Analysis of Case 7

Licensing: The mechanism which monitors licensing of the surgeon appears to be adequate. The mechanism which licenses the postoperative care provider appears to be inconsistent. According to the Arizona laws governing the practice of medicine and surgery, all health care providers must be licensed in order to practice medicine and surgery. In this case, the optometrist has not completed the necessary minimum requirements of medical school and internship necessary to meet these licensing minimums. Even under the optometric scope of practice at the time care was rendered, optometrists are excluded from practicing "medicine or surgery."

Finance: The mechanism which monitors the finances for surgical co-management does not appear to be functioning in this case. Medicare requires the health care provider to have a "license" to practice medicine and/or surgery before services related to these medical and/or surgical services are reimbursed. In this case, the surgeon is in compliance with the Medicare minimum standards. The optometrist, since he does not have a license to practice medicine and/or surgery, would not be in compliance with Medicare's requirements. The optometrist moved from the community prior to the completion of the patient's postoperative care.

The surgeon billed Medicare using a "-54" modifier which indicated a co-management relationship was occurring, despite the fact that the chart indicated that all of the postoperative care was provided by the surgeon. Additionally, the patient was unaware of the fact that the surgeon had informed Medicare that another provider was going to supply the postoperative care. This Medicare claim submission represents either an error in the surgeon's billing or an incentive for the primary eye care provider to refer patients to this particular surgeon. The chart indicated the referring optometrist was to provide a portion of the postoperative care.

Peer Review: The mechanism which monitors the standards of care appears to be functioning adequately except for "question 21." It is well documented by the American Academy of Ophthalmology that the surgeon should provide his/her own postoperative care. The medical record indicated that the primary care provider would provide a portion of the postoperative care in a clinical situation in which it is not apparent that such an arrangement would be in the patient's best interest. Because of this, the surgeon's practices are deviating from the accepted recommended standards for postoperative care.

The usual peer review pathways, that assure minimum standards of medical and surgical proficiency, are not applicable to the postoperative care provider. Optometrists do not have board certification in the area of medicine and surgery. Without evidence of medical proficiency, the system is unable to assess the quality of care offered by the postoperative care provider. In addition, the postoperative care provider is not a member of the local medical staff and is not subject to the federal and local peer review mechanism.

The patient indicated that he was unaware that he was part of a surgical co-management relationship. There was no indication in the chart of the patient consenting to this form of medical care. The informed consent in this case does not appear to be adequate.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. The questions related to the postoperative care provider indicate that the medical record of the optometrist is not available for review by the state board of medical examiners, federal or local peer review systems. Optometrists are licensed under a separate licensing board and therefore, all issues related to postoperative care must

be directed to the optometric board. The optometric board, however, did not have a system in place to evaluate postoperative care after eye surgery, primarily because the optometric scope of practice excluded the practice of medicine and surgery.

CASE 8: Vitrectomy with Endo-laser

Primary Eye Care Provider (Case 8)

Degree: Doctor of Medicine (M.D.)

Internship(s): General surgery and Internal Medicine

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 8)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: Vitreal-retinal surgery

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: Ophthalmology; vitreal-retinal referral

Location of Practice: Urban Arizona, Phoenix, multiple hospitals and outpatient surgical centers, more than forty ophthalmologists, more than six glaucoma specialists

Laser availability: Argon Laser, YAG laser, Dye laser, endo-laser capability

Patient (Case 8)

age: seventy-nine years old

sex: female

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 8)

Proliferative diabetic retinopathy with vitreous hemorrhage: In a patient with diabetes, eye complications are possible, especially those in which bleeding occurs in the eye. In a severe form of diabetes, new blood vessels may form in the back of the eye in the retina. This form of diabetic changes of the eye is treated with the laser to halt the growth of blood vessels. Most often, laser treatment is administered in the physician's office.

Occasionally, when bleeding occurs and laser treatment is not possible because of poor retinal visualization, a vitrectomy is performed to remove the blood and laser treatment is performed in the operating room with a laser tip inserted into the eye.

Primary treatment: A vitrectomy removes any hemorrhaged blood from inside the eye to improve visualization and is followed by the application of laser treatments in the operating room.

Clinical summary: The patient had a vitreous hemorrhage secondary to diabetic retinopathy. If left untreated, further bleeding may occur secondary to the organization of new blood vessels. Without removal of this blood laser treatment, permanent visual loss was eminent.

Surgical Procedure (Case 8)

Procedure: Vitrectomy and endo-laser

Purpose: to remove the blood from the inside of the eye so that laser treatment may be given in order to prevent further bleeding and blindness.

Surgical setting: this procedure is most frequently performed in a hospital surgical unit with the patient being admitted for one or two days. More often, the may be performed on an outpatient basis in a hospital outpatient

surgical department and more rarely in an ambulatory surgical facility.

Anesthesia: frequently retrobulbar anesthesia is used but, occasionally, general anesthesia is necessary

Complications: (1) recurrent bleeding, (2) retinal detachment, (3) infection, and (4) bleeding.

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy-nine year old female who presented to a rural, general ophthalmologist on 7-23-91 with the complaint of seeing "a half moon or veil" over her left eye. This patient has a history of diabetes and has had laser treatments in both eyes. Additionally, the patient has had a cataract extraction with an artificial lens implantation in her left eye. Upon examination, on 7-23-91, the patient was found to have further bleeding in the back of her left eye. The visualization of the retina was obscured by the blood. The rural ophthalmologist contacted a retinal specialist who concurred that the patient needed further evaluation and a possible vitrectomy followed by endo-laser treatment. After the retinal evaluation, the retinal specialist elected to observe the patient for several weeks to see if the blood would clear spontaneously. After this period of observation, the blood

persisted and the view of the retina remained poor. The patient underwent a vitrectomy to remove the blood followed by the application of endo-laser treatments to the retina to prevent further bleeding. Postoperatively, the surgeon followed the patient for several days and then the remainder of the postoperative care was delivered by the primary eye care provider. The patient's vision eventually improved to 20/20 and she is now under routine follow up care for patient with proliferative diabetic retinopathy.

Case-Review Checklist				Case Number (___8___)		
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?	x				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	x				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	x				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	x				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	x				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	x				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	x				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	x				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	x				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	x				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	x				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?	x				
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	x				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	x				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	x				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		x			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					x
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					x

Analysis of Case 8

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care provider's medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

CASE 9: Trabeculectomy

Primary Eye Care Provider (Case 9)

Degree: Doctor of Medicine (M.D.)

Internship(s): General surgery and Internal Medicine

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 9)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: Glaucoma

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: Ophthalmology; glaucoma referral

Location of Practice: Urban Arizona, Phoenix, multiple

hospitals and outpatient surgical centers, more than forty ophthalmologists, more than three glaucoma specialists

Laser availability: Argon Laser, YAG laser

Patient (Case 9)

age: seventy-seven years old

sex: male

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (case 9)

Glaucoma--chronic open angle: the progressive damage to the optic nerve in the back of the eye as a result of elevated intraocular pressure.

Primary treatment: topical medications

Treatment options: secondary treatment; argon laser trabeculoplasty, tertiary treatment; surgical trabeculectomy

Clinical summary: The patient had advanced glaucoma which was not controlled with medical therapy. The patient had a laser trabeculoplasty in order to control the intraocular pressure. The eye pressure was still not lowered so the patient had a trabeculectomy by the rural ophthalmologist which also "failed" due to the normal healing process sealing the drainage channel. The patient was referred to the glaucoma surgeon to repeat the

trabeculectomy followed by the use of the medication mitomycin C to inhibit the healing process.

Surgical Procedure (Case 9)

Procedure: Trabeculectomy

Purpose: to lower the intraocular pressure of an eye with chronic open angle glaucoma

Surgical setting: This procedure is often performed in an ambulatory surgical facility but may also be performed in a hospital outpatient surgical department.

Anesthesia: retrobulbar anesthesia

Complications: (1) infection, (2) bleeding, (3) cataract formation, (4) closure of the drainage area by the normal healing process.

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy-seven year old male who had been followed by a rural general ophthalmologist for approximately twelve years for glaucoma. During that period of time, the patient's glaucoma was controlled with topical medication alone. Unfortunately, the intraocular pressures began to rise to the level where further optic nerve damage was felt to be inevitable. The patient underwent argon laser trabeculoplasty in both eyes with moderate results. The patient expressed visual complaints secondary to

cataract formation. Cataract surgery was performed with intraocular lens implantation in the right eye in 1989 and in the left eye in 1991. The patient remained stable until the spring of 1993, at which time the intraocular pressure in the left eye was in the mid twenties. The rural ophthalmologist contacted the glaucoma specialist and reviewed the patient's clinical situation. The glaucoma specialist concurred with the rural ophthalmologist that a surgical procedure to lower the eye pressure was necessary to prevent further optic nerve damage.

The rural ophthalmologist performed the surgery but the natural healing process caused the surgical drainage area to be closed off. The patient needed another glaucoma surgery. The glaucoma specialist would perform the surgery with the use of mitomycin C and the rural ophthalmologist would deliver the postoperative care. The patient consented to the surgery and the postoperative arrangement. In June 1993, the patient underwent an uncomplicated trabeculectomy with the use of mitomycin C to inhibit wound healing. Postoperatively, the surgeon examined the patient on the first and second postoperative days. The remainder of the patient's postoperative care was delivered by the rural ophthalmologist in a manner consistent with normal postoperative care for a trabeculectomy patient. The

patient has maintained stable vision in the left eye in the 20/50 range and an eye pressure in the left eye between 9-12mmHg range. The patient is currently on a routine follow-up schedule for patients with glaucoma.

Case-Review Checklist					Case Number (__9__)	
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	X				
2	Has the surgeon completed a 12 month hospital internship?	X				
3	Has the surgeon completed an accredited ophthalmology residency?	X				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	X				
5	Does the surgeon have a license to practice medicine in AZ.?	X				
6	Does the surgeon have a license to perform surgery in AZ.?	X				
7	Has the postoperative eyecare provider graduated from an approved medical school?	X				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	X				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	X				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	X				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	X				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	X				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	X				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	X				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	x				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	x				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	x				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	x				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	x				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?	x				
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	X				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	X				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	X				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		X			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					X
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					X

Analysis of Case 9

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism that monitors the standards of care appear to be functioning in this case.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. On question 29 of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care providers medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

This investigator encountered four examples of surgical co-management between optometrists and ophthalmologists in similar settings as exemplified by "Case 10." All four cases were used in the data for single case and cross-case cases analyses. One representative case is presented in this section.

CASE 10: Cataract Surgery

Primary Eye Care Provider (Case 10)

Degree: Doctor of Optometry (O.D.)

Internship(s): none

Specialty training: Optometry school

Surgical subspecialty training: none

Board certification: none

Fellowships: none

Arizona license: Optometry (Optometric Board)

Meets Medicare criteria for surgical co-management billing (-54/-55): no

Subject to a hospital medical staff or surgical center peer review program: no

Subject to review by the Federal Peer Review Organization (HSAG): no

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): no

Type of Practice: General Optometry

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 10)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix, twenty miles from the primary eye care provider

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Patient (Case 10)

age: seventy-seven years old

sex: female

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 10)

Cataract: A cataract is the clouding of the normally clear lens in the eye which may cause visual impairment.

Primary treatment: surgical removal of the cloudy lens and replacement of the cloudy lens with a clear artificial lens.

Clinical summary: The patient had a cataract which was visually significant and impairing the patient's vision in her right eye. Corrective lenses were unable to improve the patient's vision so cataract surgery was indicated.

Surgical Procedure (case 10)

Procedure: Cataract extraction

Purpose: to remove the cloudy lens in the eye and replace it with a clear, artificial lens

Surgical setting: this procedure may be performed in a physician's office if the office is equipped with a surgical suite. Most often, it is perform in an outpatient surgical facility or in the outpatient department of a hospital.

Anesthesia: Most often with retrobulbar anesthesia and rarely with general anesthesia. A new technique is allowing some patients to have the cataract surgery with use of topical anesthesia only.

Complications: (1) infection, (2) bleeding, (3) glaucoma, (4) retinal detachment, and (5) problems with the artificial lens. A frequent postoperative occurrence (between 5-30% of cases) is the clouding of the posterior capsule, or membrane which supports the artificial lens. In this case, the YAG laser may be used to make a small opening in the membrane to clear the central portion of the capsule.

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy-seven year old female who presented to a rural, general optometrist in June of 1991 with complaints of blurred vision in her right eye. Upon

examination, the rural optometrist found a cataract in the right eye which was consistent with the patient's symptoms and vision. The rural optometrist explained that cataract surgery would be necessary in order to improve the vision in the right eye. The patient was referred to a rural ophthalmologist (surgeon) for further evaluation for cataract surgery. Prior to the patient's first appointment with the surgeon, the optometrist completed the tests necessary to prepare the patient for cataract surgery such as the measurement of the eye for the artificial lens. The patient was evaluated by the surgeon about one week later and the surgeon concurred with the diagnosis and proposed a plan for surgery. The chart indicates that the patient was informed prior to surgery that the optometrist would be providing the postoperative care.

On 7-18-91, the patient under went cataract surgery on the right eye in the surgeon's outpatient surgical facility located in his office. The surgeon saw the patient the next day and found the eye examination to be within normal parameters. The patient was then referred back to the primary eye care provider for postoperative care.

The primary eye care provider saw the patient in his office on a routine schedule which was consistent with routine postoperative care after cataract surgery. The

surgeon also continued to examine the patient in his office in a manner consistent with normal postoperative care for cataract surgery. The patient recovered from the cataract surgery, however, her vision remained somewhat impaired due to the presence of macular degeneration, a disease which impairs the patient's ability to read. The patient was then placed on a routine follow-up schedule by the primary eye care provider.

Case-Review Checklist					Case Number (___10___)	
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?					x
8	Has the postoperative eyecare provider completed a 12 month hospital internship?					x
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?					x
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?					x
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?					x
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?					x
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?					x

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?		x			
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	x				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?					x
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?					x
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?					x
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?	x				
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	x				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	x				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	x				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?					x
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					x
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					x

Analysis of Case 10

Licensing: The mechanism which monitors licensing of the surgeon appears to be adequate. The mechanism which licenses the postoperative care provider appears to be inconsistent. According to the Arizona laws governing the practice of medicine and surgery, all health care providers must be licensed in order to practice medicine and surgery. In this case, the optometrist has not completed the necessary minimum requirements of medical school and internship necessary to meet these licensing minimums. Even under the optometric scope of practice at the time care was rendered, optometrists are excluded from practicing "medicine or surgery."

Finance: The mechanism which monitors the finances for surgical co-management does not appear to be functioning in this case. Medicare requires the health care provider to have a "license" to practice medicine and/or surgery before services related to these medical and/or surgical services are reimbursed. In this case, the surgeon is in compliance with the Medicare minimum standards. The optometrist, since he does not have a license to practice medicine and/or surgery, is not in compliance with Medicare's requirements.

Peer Review: The mechanism which monitors the standards of care appears to be functioning adequately

except for "question 21." It is well documented by the American Academy of Ophthalmology that the surgeon should provide his/her own postoperative care. In this case, the surgeon was located about twenty miles from the patient's community. The optometrist did practice in the patient's community and therefore, an argument could be made that the co-management arrangement was in the patient's best interest.

The usual peer review pathways, that assure minimum standards of medical and surgical proficiency, are not applicable to the postoperative care provider. Optometrists do not have board certification in the area of medicine and surgery. Without evidence of medical proficiency, the system is unable to assess the quality of care offered by the postoperative care provider. In addition, the postoperative care provider is not a member of the local medical staff and is not subject to the federal and local peer review mechanism. The chart did indicate that the postoperative care provider was delivering a service that was not being offered by the surgeon in the patient's community. The chart shows documentation that proper informed consent occurred in this case.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not

appear to be adequate for the postoperative care provider. The questions related to the postoperative care provider indicate that the medical record of the optometrist is not available for review by the state board of medical examiners, federal or local peer review systems. Optometrists are licensed under a separate licensing board and therefore, all issues related to postoperative care must be directed to the optometric board. The optometric board, however, did not have a system in place to evaluate postoperative care after eye surgery, primarily because the optometric scope of practice excluded the practice of medicine and surgery.

This investigator encountered eleven examples of surgical co-management between optometrists and ophthalmologists in similar settings as exemplified by "Case 11." All eleven cases were used in the data for single case and cross-case cases analyses. One representative case is presented in this section.

CASE 11: Cataract Surgery

Primary Eye Care Provider (Case 11)

Degree: Doctor of Optometry (O.D.)

Internship(s): none

Specialty training: Optometry school

Surgical subspecialty training: none

Board certification: none

Fellowships: none

Arizona license: Optometry (Optometric Board)

Meets Medicare criteria for surgical co-management billing (-54/-55): no

Subject to a hospital medical staff or surgical center peer review program: no

Subject to review by the Federal Peer Review Organization (HSAG): no

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): no

Type of Practice: General Optometry

Location of Practice: Rural Arizona, sixty miles from Flagstaff

Community's eye care facilities: One community health care center, no hospital, no outpatient surgical center, one optometrist

Surgeon (Case 11)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General ophthalmology

Location of Practice: Urban Arizona in Flagstaff, approximately sixty miles from the primary eye care provider

Community's eye care facilities: One regional medical center with an active outpatient surgical department, two in-office surgical facilities designed for eye surgery, four ophthalmologists, and eight optometrists.

Patient (Case 11)

age: sixty-five years old

sex: male

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 11)

Cataract: A cataract is the clouding of the normally clear lens in the eye which may cause visual impairment.

Primary treatment: surgical removal of the cloudy lens and replacement of the cloudy lens with a clear, artificial lens.

Clinical summary: The patient had a cataract which was visually significant and impairing the patient's vision in his left eye. Corrective lenses were unable to improve the patient's vision so cataract surgery was indicated.

Surgical Procedure (Case 11)

Procedure: Cataract extraction

Purpose: to remove the cloudy lens in the eye and replace it with an artificial clear lens

Surgical setting: this procedure may be performed in a physician's office if the office is equipped with a surgical suite. Most often, it is perform in an outpatient surgical facility or in the outpatient department of a hospital.

Anesthesia: Most often with retrobulbar anesthesia and rarely with general anesthesia. A new technique is allowing some patients to have the cataract surgery with use of topical anesthesia only.

Complications: (1) infection, (2) bleeding, (3) glaucoma, (4) retinal detachment, and (5) problems with the artificial lens. A frequent postoperative occurrence (between 5-30% of cases) is the clouding of the posterior capsule, or membrane which supports the artificial lens. In this case, the YAG laser may be used to make a small opening in the membrane to clear the central portion of the capsule.

Medicare classification: surgery

Medicare covered: yes

The patient is a sixty-five year old male who presented to a rural, general optometrist in 2-93 with the complaint of blurred vision in his left eye. Upon examination, the rural optometrist found a cataract in the left eye which was consistent with the patient's symptoms and vision. The rural optometrist explained that cataract surgery would be necessary in order to improve the vision in the left eye. The patient was referred to an urban ophthalmologist in Flagstaff for further evaluation for cataract surgery. Prior to the patient's first appointment with the surgeon, the optometrist recorded a conversation with the patient in which the optometrist gave the patient a choice of having all of the postoperative care provided by the surgeon or having the postoperative care provided in the patient's community by the optometrist. The patient consented to the

surgical co-management relationship. The optometrist provided an extensive explanation regarding the protocol used in the surgical co-management of a cataract patient. It is apparent that the communication between the surgeon and the optometrist was organized and dependable. Additionally, there is evidence that an emphasis was placed on accurate recording of the medical care provided in the surgical co-management relationship.

In February of 1993, the patient underwent cataract surgery on the left eye in urban hospital facility. The patient returned to his home community the same day of the surgery and he was told to contact the primary eye care provider if there were any questions. The surgeon examined the patient the next day and found the eye to be normal for the first postoperative visit. The patient was then referred to the rural optometrist for the remainder of the postoperative care. The rural optometrist followed the patient using the pre-established protocol. There were no postoperative complications and the patient received his glasses approximately six weeks after surgery. Currently, the patient is on a routine examination schedule with the optometrist.

Case-Review Checklist		Case Number (___11___)				
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?					x
8	Has the postoperative eyecare provider completed a 12 month hospital internship?					x
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?					x
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?					x
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?					x
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?					x
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?					x

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	X				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	X				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	X				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	X				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	X				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	X				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?		X			
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?					X
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?					X
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?					X
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	X				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	x				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	x				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	x				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?					x
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					x
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					x

Analysis of Case 11

Licensing: The mechanism which monitors licensing of the surgeon appears to be adequate. The mechanism which licenses the postoperative care provider appears to be inconsistent. According to the Arizona laws governing the practice of medicine and surgery, all health care providers must be licensed in order to practice medicine and surgery. In this case, the optometrist has not completed the necessary minimum requirements of medical school and internship necessary to meet these licensing minimums. Even under the optometric scope of practice at the time care was rendered, optometrists are excluded from practicing "medicine or surgery."

Finance: The mechanism which monitors the finances for surgical co-management does not appear to be functioning in this case. Medicare requires the health care provider to have a "license" to practice medicine and/or surgery before services related to these medical and/or surgical services are reimbursed. In this case, the surgeon is in compliance with the Medicare minimum standards. The optometrist, since he does not have a license to practice medicine and/or surgery, is not in compliance with Medicare's requirements.

Peer Review: The mechanism which monitors the standards of care appears to be functioning adequately

except for "question 21." It is well documented by the American Academy of Ophthalmology that the surgeon should provide his/her own postoperative care. There are certain situations where this general rule may be altered. First, there should be some evidence that it is in the patient's best interest to have someone other than the surgeon provide the postoperative care. One situation would be if the travel distance between the surgeon and the patient is interfering with appropriate postoperative care. Second, the surgeon should examine the patient on the first postoperative day and the surgeon should continue to stay involved in the patient's progress throughout the postoperative course. Third, there is clear indication that the patient consented to this arrangement. In this case, an argument could be made that all of the above conditions had been met.

The usual peer review pathways, that assure minimum standards of medical and surgical proficiency, are not adequate for the postoperative care provider. Optometrists do not have board certification in the area of medicine and surgery. Without evidence of medical proficiency, the system is unable to assess the quality of care offered by the postoperative care provider. In addition, the postoperative care provider is not a member of the local

medical staff and is not subject to the federal and local peer review mechanism. The chart did indicate that the postoperative care provider was delivering a service that was not being offered by the surgeon in the patient's community. The chart shows documentation that proper informed consent occurred in this case by both the surgeon and the optometrist.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. The questions related to the postoperative care provider indicate that the medical record of the optometrist is not available for review by the state board of medical examiners, federal or local peer review systems. Optometrists are licensed under a separate licensing board and therefore, all issues related to postoperative care must be directed to the optometric board. The optometric board, however, did not have a system in place to evaluate postoperative care after eye surgery, primarily because the optometric scope of practice excluded the practice of medicine and surgery.

CASE 12: Cataract Surgery

Primary Eye Care Provider (case 12)

Degree: Doctor of Optometry (O.D.)

Internship(s): none

Specialty training: Optometry school

Surgical subspecialty training: none

Board certification: none

Fellowships: none

Arizona license: Optometry (Optometric Board)

Meets Medicare criteria for surgical co-management billing (-54/-55): no

Subject to a hospital medical staff or surgical center peer review program: no

Subject to review by the Federal Peer Review Organization (HSAG): no

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): no

Type of Practice: General Optometry

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Emergency Eye Care Provider (Case 12)

Degree: Doctor of Medicine (M.D.)

Internship(s): General surgery and Internal Medicine

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix, same community as the surgeon.

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Surgeon (Case 12)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix, twenty miles from the primary eye care provider

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Patient (case 12)

age: sixty-six years old

sex: female

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (case 12)

Cataract: A cataract is the clouding of the normally clear lens in the eye which may cause visual impairment.

Primary treatment: surgical removal of the cloudy lens and replacement of the cloudy lens with a clear, artificial lens.

Clinical summary: The patient had a cataract which was visually significant and impairing the patient's vision in her left eye. Corrective lenses were unable to improve the patient's vision so cataract surgery was indicated.

Surgical Procedure (case 12)

Procedure: Cataract extraction

Purpose: to remove the cloudy lens in the eye and replace it with an artificial clear lens

Surgical setting: this procedure may be performed in a physician's office if the office is equipped with a surgical suite. Most often, it is perform in an outpatient surgical facility or in the outpatient department of a hospital.

Anesthesia: Most often with retrobulbar anesthesia and rarely with general anesthesia. A new technique is allowing some patients to have the cataract surgery with use of topical anesthesia only.

Complications: (1) infection, (2) bleeding, (3) glaucoma, (4) retinal detachment, and (5) problems with the artificial lens. A frequent postoperative occurrence (between 5-30% of cases) is the clouding of the posterior capsule, or membrane which supports the artificial lens. In this case, the YAG laser may be used to make a small opening in the membrane to clear the central portion of the capsule.

Medicare classification: surgery

Medicare covered: yes

The patient is a sixty-six year old female who presented to a rural, general optometrist in October 1991 with complaints of blurred vision in her left eye. Upon examination, the rural optometrist found a cataract in the left eye which was consistent with the patient's symptoms and vision. The rural optometrist explained that cataract surgery would be necessary in order to improve the vision in the left eye. The patient was referred to a rural ophthalmologist (surgeon) for further evaluation for cataract surgery. Prior to the patient's first appointment with the surgeon, the optometrist completed the tests

necessary to prepare the patient for cataract surgery such as the measurement of the eye for the artificial lens. The patient was evaluated by the surgeon about two weeks later and the surgeon concurred with the diagnosis and proposed a plan for surgery. The chart indicates that the patient was informed prior to surgery that the optometrist would be providing the postoperative care.

On 11-25-91, the patient underwent cataract surgery on the left eye in the surgeon's outpatient surgical facility located in his office. The surgeon examined the patient the next day and found the eye pressure in the operative eye to be elevated to an unacceptable level. The patient had a history of glaucoma so the surgeon gave the patient oral medication to lower the intraocular pressure. The chart indicates that the surgeon told the patient to return to the referring optometrist the following Monday (6 days later). The following day, the patient noticed a sudden decrease in vision along with pain in the operative eye. The patient called the surgeon's office and was told that the surgeon was out of town on a planned ski vacation. The patient was advised to see the referring optometrist, but the patient refused and insisted that she needed an ophthalmologist. The surgeon's office then referred the patient to an ophthalmologist in Phoenix, but again, the patient refused

stating she was unable to make the trip to Phoenix. The patient contacted her family physician who instructed the patient to go to the emergency room. The patient went to the community hospital emergency room where the physician on call determined that the patient needed to be examined by an ophthalmologist as soon as possible.

The emergency room physician contacted another ophthalmology group in the patient's community and explained the situation. The ophthalmologist on call for that group examined the patient in his office and determined that the patient's problems could be the result of several postoperative complications. The patient could have severe glaucoma, causing the pain and the decreased vision. The patient could have an endophthalmitis or infection inside the eye. The chart indicates that the patient consented for the emergency ophthalmologist to request medical information from the surgeon's office, but the office declined to give the emergency ophthalmologist any of the patient's medical records. Considering the patient's oral history of glaucoma, the emergency ophthalmologist treated the patient for severe glaucoma for one day. The patient's condition did not immediately respond to treatment so glaucoma was ruled out. The emergency ophthalmologist suspected an endophthalmitis advised the patient to be examined by a

Case-Review Checklist						Case Number (___12___)
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?					x
8	Has the postoperative eyecare provider completed a 12 month hospital internship?					x
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?					x
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?					x
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?					x
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?					x
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?					x

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?		x			
16	Was the care delivered consistent with the surgeon's billing to Medicare?					x
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	x				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?				x	
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?					x
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?					x
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?					x
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?					x
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?				x	

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	X				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	X				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	X				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?					X
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					X
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					X

Analysis of Case 12

Licensing: The mechanism which monitors licensing of the surgeon appears to be adequate. The mechanism which licenses the postoperative care provider appears to be inconsistent. According to the Arizona laws governing the practice of medicine and surgery, all health care providers must be licensed in order to practice medicine and surgery. In this case, the optometrist has not completed the necessary minimum requirements of medical school and internship necessary to meet these licensing minimums. Even under the optometric scope of practice at the time care was rendered, optometrists are excluded from practicing "medicine or surgery."

This case is comprised of a series of unusual events. The surgeon, optometrist, and patient all agreed, prior to surgery, that the optometrist would do the postoperative care. But what actually happened was that an emergency eye care provider performed the postoperative care. Although the emergency eye care provider treated the patient after surgery and provided the postoperative care, the emergency ophthalmologist did not bill for the cataract postoperative care that he provided. Using the "-55" billing modifier could have been perceived as a cooperative relationship

between the original surgeon and the emergency ophthalmologist that the second doctor did not want.

Finance: The mechanism which monitors the finances for surgical co-management does not appear to be functioning in this case. Medicare requires the health care provider to have a "license" to practice medicine and/or surgery before services related to these medical and/or surgical services are reimbursed. In this case, the surgeon is in compliance with the Medicare minimum standards. The optometrist, since he does not have a license to practice medicine and/or surgery, would not be in compliance with Medicare's requirements. Even though the plan was to have the optometrist perform the postoperative care in this case, neither he nor the emergency eye care provider billed the "-55" modifier indicating postoperative care was delivered by another person other than the surgeon. Only the surgeon billed with a "-54" indicating another provider was delivering the postoperative care. The surgeon's billing indicated that a co-management relationship was the intended plan for the patient.

Peer Review: The mechanism which monitors the standards of care appears to be functioning adequately except for "question 21." It is well documented by the American Academy of Ophthalmology that the surgeon should

provide his/her own postoperative care. In this case, the surgeon was located about twenty miles from the patient's community. The optometrist did practice in the patient's community and therefore, an argument could be made that this co-management arrangement was in the patient's best interest.

The usual peer review pathways, that assure minimum standards of medical and surgical proficiency, are not applicable for the postoperative care provider. Optometrists do not have board certification in the area of medicine and surgery. Without evidence of medical proficiency, the system is unable to assess the quality of care offered by the postoperative care provider. In addition, the postoperative care provider is not a member of the local medical staff and is not subject to the federal and local peer review mechanism. The chart did indicate that the postoperative care provider was delivering a service that was not being offered by the surgeon in the patient's community. The chart shows that informed consent was inadequate in this case. Even though the patient agreed to the surgeon delegating the postoperative care to another provider, the patient was apparently unaware of who that provider might be in the event of an emergency.

The medical record indicates a significant problem with the release of medical information upon request by the patient as well as the emergency eye care provider. The delay in transferring critical medical information represents a serious problem with ramifications that the current quality control systems were unable to identify and thus, unable to correct.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. The questions related to the postoperative care provider indicate that the medical record of the optometrist is not available for review by the state board of medical examiners, federal or local peer review systems. Optometrists are licensed under a separate licensing board and therefore, all issues related to postoperative care must be directed to the optometric board. The optometric board, however, did not have a system in place to evaluate postoperative care after eye surgery, primarily because the optometric scope of practice excluded the practice of medicine and surgery.

The medical charts of the unplanned postoperative care provider would also not activate the peer review system

because he was not delivering care in a facility that would be accessible to the peer review system.

CASE 13: Vitrectomy, Subretinal Fluid Drainage, Pneumatic Retinopexy, and Intraocular Lens Removal

Primary Eye Care Provider (case 13)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 13)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: Vitreal-retinal surgery

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: Ophthalmology; vitreal-retinal referral

Location of Practice: Urban Arizona, Phoenix, multiple hospitals and outpatient surgical centers, more than forty ophthalmologists, more than six glaucoma specialists

Laser availability: Argon Laser, YAG laser, Dye laser, endo-laser capability

Patient (Case 13)

age: seventy-nine years old

sex: male

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 13)

Retinal detachment: the separation of the nerve fiber layer in the back of the eye from its supportive base. If not treated early, retinal detachments frequently result in permanent blindness.

Primary treatment: surgical repair with the placement of a special gas in the eye which stabilizes the retina so that it may become reattached to its proper base. Prior to placement of the gas, any hemorrhaged blood is removed from inside the eye by a surgical procedure called a vitrectomy. Fluid that has collected between the retina and its

supportive base needs to be removed. Additionally, the patient has an iris fixated intraocular lens that requires removal at the time of surgery to allow retinal visualization. Replacement of an intraocular lens was not attempted due to possible corneal decompensation.

Treatment options: secondary treatment; vitrectomy with an encircling elastic band to further position the detached retina onto its supportive base.

Clinical summary: The patient had a retinal hole in the superior portion of his retina which allowed fluid to collect under the retina and resulted in the retina becoming detached from its underlying supportive base. The patient required surgical intervention to prevent permanent loss of vision.

Surgical Procedure (Case 13)

Procedure: Vitrectomy with subretinal fluid drainage, pneumatic retinopexy, and removal of an iris fixated intraocular lens.

Purpose: The vitrectomy is designed to remove the vitreous jelly from the inside of the eye and replace it with a clear fluid. Clearing the inside of the eye allows the surgeon to visualize the peripheral retina in order to diagnose and treat retinal tears or detachments. Once the retinal tear is recognized, the subretinal fluid is drained

and a special gas bubble is injected into the patient's eye. The gas bubble will rise and press the retina into its normal position where final healing will occur. Again, the artificial lens was removed to allow retinal visualization and because of possible corneal decompensation.

Surgical setting: this procedure is most frequently performed in an outpatient surgical setting of a hospital or in an ambulatory surgical facility.

Anesthesia: frequently retrobulbar anesthesia but occasionally general anesthesia

Complications: (1) increase in the intraocular pressure which could cause the retinal artery to occlude resulting in blindness within one hour, (2) a recurrent retinal detachment which would require additional surgery, (3) infection, and (4) bleeding.

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy-nine year old male who presented to a rural, general ophthalmologist on 5-15-92 with complaints of "black spots" in his right eye. Upon examination, the patient was found to have a retinal tear in the superior portion of the right retina. The patient had had cataract surgery in both eyes when the intracapsular type of cataract surgery was most commonly performed. This

type of surgery is associated with a greater incidence of retinal detachment. Also, the patient had an iris fixated intraocular lens, a type of artificial lens which is held in position by the iris. This type of lens has a higher incidence of dislocation and association with corneal decompensation.

The rural ophthalmologist contacted a retinal specialist and explained the patient's clinical situation. The retinal specialist concurred that the patient needed to be evaluated for possible retinal detachment surgery. The retinal surgeon and the rural ophthalmologist felt that it would be in the patient's best interest for the patient to have the surgery in Phoenix and the postoperative care in the patient's home community. The surgical plan and postoperative care plan was presented to the patient and he consented to those arrangements.

The following day, the patient was examined in Phoenix and the retinal specialist confirmed the diagnosis and then proceeded with the surgery later same day. The surgeon removed the intraocular lens, performed a vitrectomy, used cryotherapy on the superior portion of the retina and then placed the gas bubble in the eye to keep the retina in position. The patient was examined by the surgeon over the next several days. All exams were consistent with a good

surgical result. The patient returned to his home community and the medical record indicates that he had multiple visits with the rural ophthalmologist for postoperative care. The patient ultimately regained most of his previous vision and he was wearing a contact lens for visual correction. The patient is currently under the care of the rural ophthalmologist and a rural optometrist for follow-up of the retinal detachment and contact lens care.

Case-Review Checklist						Case Number (___13___)
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	X				
2	Has the surgeon completed a 12 month hospital internship?	X				
3	Has the surgeon completed an accredited ophthalmology residency?	X				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	X				
5	Does the surgeon have a license to practice medicine in AZ.?	X				
6	Does the surgeon have a license to perform surgery in AZ.?	X				
7	Has the postoperative eyecare provider graduated from an approved medical school?	X				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	X				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	X				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	X				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	X				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	X				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	X				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	X				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	X				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	X				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	X				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	X				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	X				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	X				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	X				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	X				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	X				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?	X				
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	X				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	X				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	X				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	X				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		X			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					X
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					X

Analysis of Case 13

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care provider's medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

CASE 14: Vitrectomy, Subretinal Fluid Drainage, Pneumatic Retinopexy, and Scleral Buckling

Primary Eye Care Provider (Case 14)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology (Board eligible), American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 14)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: Vitreal-retinal surgery

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: Ophthalmology; vitreal-retinal referral

Location of Practice: Urban Arizona, Phoenix, multiple hospitals and outpatient surgical centers, more than forty ophthalmologists, more than six glaucoma specialists

Laser availability: Argon Laser, YAG laser, Dye laser, endo-laser capability

Patient (Case 14)

age: seventy-four years old

sex: female

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 14)

Retinal detachment: the separation of the nerve fiber layer in the back of the eye from its supportive base. If not treated early, retinal detachments frequently result in permanent blindness.

Primary treatment: surgical repair with the placement of a special gas in the eye which stabilizes the retina so that it may become reattached to its proper base. Prior to placement of the gas, any hemorrhages blood is removed from inside the eye by a surgical procedure called a vitrectomy. Fluid that has collected between the retina and its supportive base needs to be removed.

Treatment options: secondary treatment; vitrectomy with an encircling elastic band to further position the detached retina onto its supportive base. In this case, this form of treatment is more advisable due to the extent of the retinal detachment.

Clinical summary: The patient had a retinal hole in the superior portion of her retina which allowed fluid to collect under the retina and resulted in the retina becoming detached from its underlying supportive base. The patient required surgical intervention to prevent permanent loss of vision. The size of the retinal detachment was relatively large and about one half of the retina had become detached from the back of the eye.

Surgical Procedure (Case 14)

Procedure: Vitrectomy with subretinal fluid drainage, scleral buckling and a pneumatic retinopexy.

Purpose: The vitrectomy is designed to remove the vitreous jelly from the inside of the eye and replace it with a clear fluid. Clearing the inside of the eye allows the surgeon to visualize the peripheral retina in order to diagnose and treat and retinal tears or detachments. Once the retinal tear is recognized, the retina will be treated with cryotherapy or "freezing" in order to set up an inflammation which will scar the retina

to the underlying supportive base. Because of the size of the detachment, the retina will be further repositioned onto its supportive base by the use of scleral buckling, a procedure where an elastic band is placed around the eye to help bring the supportive base down to the detached retina. The subretinal fluid is drained and a special gas bubble is injected into the patient's eye. This gas bubble will rise and press the retina into its normal position.

Surgical setting: this procedure is most frequently performed in an outpatient surgical setting of a hospital or, less commonly, in an ambulatory surgical facility.

Anesthesia: frequently retrobulbar anesthesia but occasionally general anesthesia

Complications: (1) increase in the intraocular pressure which could cause the retinal artery to occlude resulting in blindness within one hour, (2) a recurrent retinal detachment which would require additional surgery, (3) infection, and (4) bleeding.

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy four year old female who presented to a rural, general ophthalmologist on 4-14-90 with complaints of "no vision in my right when I woke up." Upon examination, a large bulbous retinal detachment was

found in the superior retina. The rural ophthalmologist contacted a retinal specialist and explained the patient's clinical situation. The patient was evaluated by the retinal surgeon the next day in Phoenix . The surgeon confirmed the diagnosis and recommended surgical repair of the retina. The patient consented to the surgery and asked about the postoperative visits since it was difficult for her to travel to Phoenix. The retinal surgeon suggested that he would perform the surgery and the rural ophthalmologist would perform the postoperative care. The patient agreed to this and the rural ophthalmologist was contacted and also agreed to the surgical and postoperative care arrangements.

On the evening of 4-14-90, the patient underwent a retinal detachment repair with cryotherapy to the retina and scleral buckling. This was followed by the placement of a gas bubble in the eye to keep the retina in position. The patient was examined over the next several days by the retinal surgeon and the postoperative results were satisfactory. The patient was then examined in her home community by the rural ophthalmologist who performed the remainder of her postoperative care. Medications were adjusted and the final prescription was given for glasses. The patient's vision improved to a level of 20/30 in the

operative eye. The patient was placed on a routine follow-up schedule for patient's who have had retinal detachment surgery.

Case-Review Checklist				Case Number (___14___)		
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?	x				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	x				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	x				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	x				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	x				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	x				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	X				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	X				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	X				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	X				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	X				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	X				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	X				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	X				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	X				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?	X				
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	X				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	X				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	X				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	X				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		X			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					X
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					X

Analysis of Case 14

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care provider's medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

CASE 15: Cryoretinopexy

Primary Eye Care Provider (Case 15)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology (Board eligible), American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Cryotherapy: equipment for cryotherapy for glaucoma, but not for peripheral cryoretinopexy

Surgeon (Case 15)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: Vitreal-retinal surgery

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: Ophthalmology; vitreal-retinal referral

Location of Practice: Urban Arizona, Phoenix, multiple hospitals and outpatient surgical centers, more than forty ophthalmologists, more than six glaucoma specialists

Laser availability: Argon Laser, YAG laser, Dye laser, endo-laser capability

Cryotherapy: all types involving treatment for retinal pathology

Patient (Case 15)

age: seventy-five years old

sex: female

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 15)

Retinal tear: the tearing of the retina in the eye. A retinal tear creates a potential route for fluid to enter the space under the retina leading to a retinal detachment. A retinal detachment is the separation of the nerve fiber layer from its supportive base. If not treated early, retinal detachments frequently result in permanent blindness.

Primary treatment: laser treatment of the retina surrounding the retinal tear to produce scarring which will hold the retina in place and prevent it from becoming detached. If the retinal tear is too far in the periphery, the laser cannot reach this site for treatment. Under these circumstances, the retinal scarring is produced by a freezing treatment, or cryoretinopexy. A frozen tipped instrument is applied to the outside of the eye over the area where the retinal tear is located.

Treatment options: secondary treatment; the placement of a special gas in the eye to stabilize the detached retina. An additional treatment may be a vitrectomy with an encircling elastic band to further position the detached retina onto its supportive base.

Clinical summary: The patient had a retinal tear in the superior portion of her retina which predisposes the eye to fluid collecting under the retina and the possibility of a retinal detachment. To prevent a retinal detachment in the peripheral retina, a cryoretinopexy was the treatment of choice.

Surgical Procedure (Case 15)

Procedure: Cryoretinopexy

Purpose: to set up an inflammatory or scar generating response in the supportive base of the retina which will

cause the retina to scar or adhere to its base, preventing a retinal detachment.

Surgical setting: this procedure is most frequently performed in a physician's office but occasionally in an outpatient surgical setting of a hospital or an ambulatory surgical facility.

Anesthesia: most frequently with retrobulbar anesthesia

Complications: (1) a secondary eye irritation called an iritis, (2) retinal detachment

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy-five year old female who presented to a rural, general ophthalmologist on 3-24-93 as a referral from her primary care physician for "flashing lights" in her left eye. Upon examination, an extreme peripheral retinal tear was found. There was no evidence of a retinal detachment. Because of the location of the tear, the rural ophthalmologist contacted the retinal specialist and explained the patient's clinical situation. It was decided that the retinal specialist would examine the patient and perform the cryoretinopexy and the rural ophthalmologist would perform the postsurgical care. The patient consented to these arrangements. The retinal specialist found a retinal tear and performed a

cryoretinopexy on the same day. The patient was examined the next day by the surgeon and the retinal exam was consistent with a good surgical result. The patient was then examined in her home community by the rural ophthalmologist. The chart indicates the rural ophthalmologist performed postoperative care consistent with the normal care expected for a patient with this type of surgery. The patient maintained 20/30 vision in the left eye and was placed on routine follow-up care for a patient with a retinal tear.

Case-Review Checklist				Case Number (___15___)		
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?	x				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	x				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	x				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	x				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	x				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	x				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	x				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	x				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	x				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	x				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	x				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?	x				
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	X				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	X				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	X				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		X			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					X
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					X

Analysis of Case 15

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care providers medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

CASE 16: Epiretinal Membrane Stripping

Primary Eye Care Provider (Case 16)

Degree: Doctor of Medicine (M.D.)

Internship(s): General surgery and Internal Medicine

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 16)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: Vitreal-retinal surgery

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: Ophthalmology; vitreal-retinal referral

Location of Practice: Urban Arizona, Phoenix, multiple hospitals and outpatient surgical centers, more than forty ophthalmologists, more than six glaucoma specialists

Laser availability: Argon Laser, YAG laser, Dye laser, endo-laser capability

Patient (Case 16)

age: seventy-four years old

sex: female

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 16)

Epiretinal membrane: The macula is the central portion of the retina in the back of the eye. It is responsible for providing acute vision such as reading, threading a needle, or reading signs. If the macula is compromised, the individual will lose central vision such as reading. Occasionally, a membrane forms over the macula and the macula becoming "wrinkled". In some cases, the membrane can actually create a hole in the macula by traction forces. A procedure has been developed and perfected in which a retinal surgeon removes the epiretinal membrane thus relieving the tractional forces which cause wrinkling and macular hole formation.

Primary treatment: a surgical removal of the epiretinal membrane which is usually accompanied by a vitrectomy, or removal of the jelly in the eye.

Treatment options: except for the epiretinal membrane stripping, there is no other treatment currently available.

Clinical summary: The patient had had a cataract removed with intraocular lens implantation and a retinal detachment repair in the past. Over the last year, the patient experienced decreased central vision from 20/30 to 20/100. The patient was examined and found to have a progressive epiretinal membrane formation with macular wrinkling. For visual improvement, the only option available to the patient was an epiretinal membrane stripping.

Surgical Procedure (Case 16)

Procedure: Epiretinal membrane stripping

Purpose: The procedure is designed to remove the contracting membrane which has formed over the macula. By removing the tractional forces, the retina flattens out and vision may improve. The membrane is thought to be caused by abnormal and interactions between the retina and the jelly in the eye called the vitreous, so the vitreous jelly is usually removed at the same time.

Surgical setting: this procedure is most frequently performed in an outpatient surgical setting of a hospital or, less commonly, in an ambulatory surgical facility.

Anesthesia: frequently retrobulbar anesthesia but occasionally general anesthesia

Complications: (1) retina tear, (2) a recurrent retinal detachment which would require additional surgery, (3) infection, and (4) bleeding.

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy-four year old female who presented to a rural, general ophthalmologist on 5-20-93 with complaints of decreasing central vision in her right eye. This same eye, in 1990, had cataract surgery and a retinal detachment repair. The vision in the right eye was 20/30. Upon examination on 5-20-93, the patient's best corrected vision in the right eye was 20/100. Further examination showed evidence of a epiretinal membrane formation associated with retinal macular wrinkling. The rest of the exam was unremarkable. The rural ophthalmologist explained the diagnosis and stated that the patient could either do nothing or consider an operation to remove the epiretinal membrane. The patient elected to have the membrane removed. The rural ophthalmologist called the

retinal surgeon and explained the patient's clinical situation. The retinal specialist concurred with the possibility of surgical treatment and over a period of several weeks, examined the patient and determined that she was a candidate for the epiretinal membrane stripping. The patient consented for the retinal specialist to do the surgery in Phoenix and for the rural ophthalmologist to provide the postoperative care. On 7-20-93, the patient underwent a vitrectomy with an epiretinal membrane stripping. She was examined by the retinal surgeon for several days following the operation and the postoperative exams were felt to be consistent with a good surgical result. The patient was referred back to her home community where the rural ophthalmologist continued her postoperative care. Medications were adjusted and eventually the patient's vision began to improve. The final visual result has not yet been obtained but the initial results show a slight visual improvement. The patient is currently under continued postoperative care by the rural ophthalmologist.

Case-Review Checklist				Case Number (16)		
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?	x				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	x				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	x				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	x				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	x				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	x				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	x				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?	x				
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	x				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	x				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	x				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?	x				
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	X				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	X				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	X				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		X			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					X
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					X

Analysis of Case 16

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care provider's medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

CASE 17: Cataract Surgery

Primary Eye Care Provider (Case 17)

Degree: Doctor of Optometry (O.D.)

Internship(s): none

Specialty training: Optometry school

Surgical subspecialty training: none

Board certification: none

Fellowships: none

Arizona license: Optometry (Optometric Board)

Meets Medicare criteria for surgical co-management billing (-54/-55): no

Subject to a hospital medical staff or surgical center peer review program: no

Subject to review by the Federal Peer Review Organization (HSAG): no

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): no

Type of Practice: General Optometry

Location of Practice: Rural Arizona, one hundred twenty miles from Phoenix

Community's eye care facilities: One hospital, one outpatient surgical center, two ophthalmologists, four optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 17)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of ophthalmology, Fellow of the American College of Surgeons

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General ophthalmology

Location of Practice: Urban Arizona in Phoenix, approximately one hundred twenty miles from the primary eye care provider

Community's eye care facilities: Multiple offices with in office surgical center, multiple outpatient surgery

centers and hospitals with outpatient surgery departments, more than forty ophthalmologists

Patient (Case 17)

age: eighty years old

sex: male

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 17)

Cataract: A cataract is the clouding of the normally clear lens in the eye which may cause visual impairment.

Primary treatment: surgical removal of the cloudy lens and replacement of the cloudy lens with a clear artificial lens.

Clinical summary: The patient had a cataract which was visually significant and impairing the patient's vision in his left eye. Corrective lenses were unable to improve the patient's vision so cataract surgery was indicated.

Surgical Procedure (Case 17)

Procedure: Cataract extraction

Purpose: to remove the cloudy lens in the eye and replace it with an artificial clear lens

Surgical setting: this procedure may be performed in a physician's office if the office is equipped with a surgical

suite. Most often, it is perform in an outpatient surgical facility or in the outpatient department of a hospital.

Anesthesia: Most often with retrobulbar anesthesia and rarely with general anesthesia. A new technique is allowing some patient's to have the cataract surgery with use of topical anesthesia only.

Complications: (1) infection, (2) bleeding, (3) glaucoma, (4) retinal detachment, and (5) problems with the artificial lens. A frequent postoperative occurrence (between 5-30% of cases) is the clouding of the posterior capsule, or membrane which supports the artificial lens. In this case, the YAG laser may be used to make a small opening in the membrane to clear the central portion of the capsule.

Medicare classification: surgery

Medicare covered: yes

The patient is an eighty year old female who presented to a rural, general optometrist in 3-5-93 with complaints of blurred vision in his left eye. Upon examination, the rural optometrist found a cataract in the left eye which was consistent with the patient's symptoms and vision. The rural optometrist explained that cataract surgery would be necessary in order to improve the vision in the left eye. The patient was referred to an urban ophthalmologist in Phoenix for further evaluation for cataract surgery. Prior

to the patient's first appointment with the surgeon, the optometrist completed the tests necessary to prepare the patient for cataract surgery such as the measurement of the eye for the artificial lens. The patient was evaluated by the surgeon about two weeks later and the surgeon concurred with the diagnosis and proposed a plan for surgery. The chart indicates that the patient was informed prior to surgery that the rural optometrist would be providing the postoperative care.

On 3-17-93, the patient underwent cataract surgery on the left eye in the surgeon's outpatient surgical facility located in his office. The surgeon examined the patient the next day and found the eye examination to be normal for the first postoperative visit. The patient was referred back to the rural optometrist for the remainder of the patient's postoperative care. The rural optometrist examined the patient and noted a persistent iritis in the operative eye. Adjustments in medications were made after the optometrist consulted the cataract surgeon. The surgeon and the optometrist decided to obtain further evaluation of the patient by a retinal specialist in Phoenix, who found remnants of the original lens left inside the eye. The patient underwent another surgery to remove the retained lens material and, at the same time, a small retinal

detachment was repaired. The retinal detachment was not noted prior to the first cataract surgery. A special gas bubble was placed in the eye to stabilize the retina against its supporting base to facilitate healing. The retinal surgeon examined the patient for several days postoperatively and found the exam to be normal for the early postoperative course. The patient was referred back to the rural optometrist to measure the patient's eye pressure since the patient's home was significantly higher in elevation than Phoenix. The optometrist found the eye pressure to be in the high thirties with the patient experiencing blurred vision and eye pain. The patient was then referred back to Phoenix and a small amount of gas was removed from the eye to lower the pressure. The patient returned home and again noted some eye discomfort and blurred vision. The rural optometrist examined the patient and found the pressure to be high. The optometrist called the retinal surgeon and reviewed the clinical situation of the patient. The retinal surgeon suggested that more gas needed to be removed from the eye. The patient asked if the procedure could be performed by a doctor in the patient's community because the patient didn't want to travel to Phoenix again. Several ophthalmology offices were contacted by the retinal surgeon but, each ophthalmologist declined to

do the procedure and recommended that the patient return to the original cataract surgeon or the retinal surgeon since this was a postoperative complication. The patient has since developed glaucoma and has made multiple trips to Phoenix for additional surgical care. The patient is currently under the care of the rural optometrist.

Case-Review Checklist					Case Number (___17___)	
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?					x
8	Has the postoperative eyecare provider completed a 12 month hospital internship?					x
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?					x
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?					x
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?					x
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?					x
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?					x

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	x				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?					x
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?		x			
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?					x
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?					x
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?					x
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?					x
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?		x			

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	x				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	x				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	x				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?					x
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					x
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					x

Analysis of Case 17

Licensing: The mechanism which monitors licensing of the surgeon appears to be adequate. The mechanism which licenses the postoperative care provider appears to be inconsistent. According to the Arizona laws governing the practice of medicine and surgery, all health care providers must be licensed in order to practice medicine and surgery. In this case, the optometrist has not completed the necessary minimum requirements of medical school and internship necessary to meet these licensing minimums. Even under the optometric scope of practice at the time care was rendered, optometrists are excluded from practicing "medicine or surgery."

Finance: The mechanism which monitors the finances for surgical co-management does not appear to be functioning in this case. Medicare requires the health care provider to have a "license" to practice medicine and/or surgery before services related to these medical and/or surgical services are reimbursed. In this case, the surgeon is in compliance with the Medicare minimum standards. The optometrist, since he does not have a license to practice medicine and/or surgery, is not in compliance with Medicare's requirements.

Peer Review: The mechanism which monitors the standards of care appears to be functioning adequately

except for "question 21." It is well documented by the American Academy of Ophthalmology that the surgeon should provide his/her own postoperative care. The patient was referred to a cataract surgeon outside of the patient's community even though there were several competent cataract surgeons practicing in or near the patient's community.

The usual peer review pathways, that assure minimum standards of medical and surgical proficiency, are not applicable for the postoperative care provider. Optometrists do not have board certification in the area of medicine and surgery. Without evidence of medical proficiency, the system is unable to assess the quality of care offered by the postoperative care provider. In addition, the postoperative care provider is not a member of the local medical staff and is not subject to the federal and local peer review mechanism. The chart did indicate that the postoperative care provider was delivering a service that was not being offered by the surgeon in the patient's community. The chart shows documentation that proper informed consent occurred in this case.

Systems Review: The system which evaluates the surgeon appears to be functioning. The system, however, does not appear to be adequate for the postoperative care provider. The questions related to the postoperative care provider

indicate that the medical record of the optometrist is not available for review by the state board of medical examiners, federal or local peer review systems. Optometrists are licensed under a separate licensing board and therefore, all issues related to postoperative care must be directed to the optometric board. The optometric board, however, did not have a system in place to evaluate postoperative care after eye surgery, primarily because the optometric scope of practice excluded the practice of medicine and surgery.

CASE 18: Argon Laser Trabeculoplasty

Primary Eye Care Provider (Case 18)

Degree: Doctor of Medicine (M.D.)

Internship(s): General surgery and Internal Medicine

Specialty training: Ophthalmology

Surgical subspecialty training: none

Board certification: Ophthalmology, American Board of Quality Assurance and Utilization Review Physicians

Fellowships: Fellow of the American Academy of Ophthalmology, Fellow of the American College of Surgeons, Fellow of the American College of Medical Quality

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by Arizona's Medical and Surgical licensing board (BOMEX): yes

Type of Practice: General Ophthalmology

Location of Practice: Rural Arizona, one hundred miles from Phoenix

Community's eye care facilities: Two hospitals, two outpatient surgical centers, five ophthalmologists, eight optometrists

Laser availability: Argon Laser, YAG laser

Surgeon (Case 18)

Degree: Doctor of Medicine (M.D.)

Internship(s): Rotating Internship

Specialty training: Ophthalmology

Surgical subspecialty training: Glaucoma

Board certification: Ophthalmology

Fellowships: Fellow of the American Academy of Ophthalmology

Arizona license: Medicine and Surgery (BOMEX)

Meets Medicare criteria for surgical co-management billing (-54/-55): yes

Subject to a hospital medical staff or surgical center peer review program: Yes

Subject to review by the Federal Peer Review Organization (HSAG): yes

Subject to review by the state Medical and Surgical licensing board (BOMEX): yes

Type of Practice: Ophthalmology; glaucoma referral

Location of Practice: Urban Arizona, Phoenix, multiple hospitals and outpatient surgical centers, more than forty ophthalmologists, more than three glaucoma specialists

Laser availability: Argon Laser, YAG laser

Patient (Case 18)

age: seventy-three years old

sex: male

residence: rural Arizona, same location as the primary eye care provider

Medicare eligible: yes

Diagnosis (Case 18)

Glaucoma--chronic open angle: the progressive damage to the optic nerve in the back of the eye as a result of elevated intraocular pressure.

Primary treatment: topical medications

Treatment options: secondary treatment; argon laser trabeculoplasty, tertiary treatment; surgical trabeculectomy

Clinical summary: The patient had advanced glaucoma which was not controlled by medical therapy. Laser surgery was the next level of medical intervention indicated to control the progressive glaucoma.

Surgical Procedure (Case 18)

Procedure: Argon laser trabeculoplasty (ALT)

Purpose: to lower the intraocular pressure of an eye with chronic open angle glaucoma

Surgical setting: usually in an ophthalmologist's office, hospital's outpatient setting, or ambulatory surgical facility

Anesthesia: topical

Complications: increase in the intraocular pressure requiring further therapeutic or surgical intervention

Medicare classification: surgery

Medicare covered: yes

The patient is a seventy-three year old male who presented to a rural, general ophthalmologist in 1990 with the diagnosis of glaucoma. The patient's glaucoma was only moderately advanced and the eye pressures remained stable on topical medications until December of 1992. The eye pressures began to rise into the thirties despite increasing

the strength of the topical medications. The chart indicates that the patient needed to be place on an oral medication to control the pressures. The rural ophthalmologist suggested that the patient see a glaucoma specialist for a second opinion since the patient was uncertain of the necessity for more medications or surgery. The patient was examined by the glaucoma specialist who concurred with the rural ophthalmologist that more aggressive therapy was indicated. The glaucoma specialist recommended that a surgical laser procedure be performed in Phoenix and the postoperative care could be provided by the rural ophthalmologist. The patient consented to the laser surgery and the postoperative care arrangement.

On 7-19-93, the patient underwent an argon laser trabeculoplasty in both eyes. The patient was then referred back to the rural ophthalmologist for the postoperative care. The chart indicates that the rural ophthalmologist examined the patient on multiple occasions consistent with normal postoperative care after argon laser trabeculoplasty surgery. The chart also indicates that the patient's eye pressures were lowered but, further surgical intervention may be necessary. At the present time, the patient is under the care of the rural ophthalmologist for glaucoma.

Case-Review Checklist				Case Number (___18___)		
Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
License						
1	Has the surgeon graduated from an approved medical school?	x				
2	Has the surgeon completed a 12 month hospital internship?	x				
3	Has the surgeon completed an accredited ophthalmology residency?	x				
4	Has the surgeon obtained the necessary training to perform the specific surgical procedure in this case?	x				
5	Does the surgeon have a license to practice medicine in AZ.?	x				
6	Does the surgeon have a license to perform surgery in AZ.?	x				
7	Has the postoperative eyecare provider graduated from an approved medical school?	x				
8	Has the postoperative eyecare provider completed a 12 month hospital internship?	x				
9	Has the postoperative eyecare provider completed an accredited ophthalmology residency?	x				
10	Has the postoperative eyecare provider obtained the necessary training to perform the specific surgical procedure performed in this case?	x				
11	Does the postoperative eyecare provider have a license to practice medicine in AZ.?	x				
12	Does the postoperative eyecare provider have a license to perform surgery in AZ.?	x				
Finance						
13	Is the surgeon licensed in AZ. to perform the procedure billed to Medicare?	x				
14	Is the postoperative eye care provider licensed in AZ. to deliver the postoperative care billed to Medicare?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
15	Did the billing to Medicare reflect a co-management relationship?	x				
16	Was the care delivered consistent with the surgeon's billing to Medicare?	x				
Peer Review						
17	Is the surgeon board eligible or board certified by a medical or surgical specialty?	x				
18	Is the surgeon a staff member of any surgical facility or hospital which has a peer review program?	x				
19	Is the surgeon providing a service that is not readily available to the patient (the necessary surgery)?					x
20	Did the surgeon note informed consent by the patient regarding the surgical co-management relationship?	x				
21	Are the activities of the surgeon consistent with the ethical standards for surgical co-management established by the American Academy of Ophthalmology?	x				
22	Is the postoperative care provider board eligible or board certified by a medical or surgical specialty?	x				
23	Is the postoperative eye care provider a staff member of any surgical facility or hospital which has a peer review program?	x				
24	Is the postoperative care provider providing a service that is not readily available to the patient (the necessary postoperative care)?					x
25	Did the postoperative care provider note informed consent by the patient regarding the surgical co-management relationship?	x				

Category		Clearly Yes 5	Probably Yes 4	Cannot Determine 3	Probably No 2	Clearly No 1
Systems Review						
26	Is the surgeon's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?	X				
27	Is the surgeon's chart subject to review by Arizona's Federal peer review operation (HSAG)?	X				
28	Is the surgeon's chart subject to review by a hospital's or a surgical center's peer review system?	X				
29	Is the postoperative care provider's chart subject to review by the Arizona Board of Medical Examiners (BOMEX)?		X			
30	Is the postoperative care provider's chart subject to review by Arizona's Federal peer review operation (HSAG)?					X
31	Is the postoperative care provider's chart subject to review by a hospital's or a surgical center's peer review system?					X

Analysis of Case 18

Licensing: The mechanism which monitors licensing of the surgeon and postoperative care provider appears to be functioning in this case.

Finance: The mechanism which monitors the finances for surgical co-management appears to be functioning in this case.

Peer Review: The mechanism which monitors the standards of care appears to be functioning in this case. The checklist indicates that the patient entered into a surgical co-management relationship even though the surgical procedure was readily available in the patient's community. The case summary, however, indicates that it was in the patient's best interest to enter into this surgical co-management relationship.

Systems Review: The system which evaluates the surgeon does not appear to be adequate. The case review indicates that the surgeon's medical chart could be available to the licensing board in the case of a patient complaint or medical malpractice situation. It is possible that HSAG, the federal peer review organization for Arizona could have access to the chart. This, however, would be unlikely since the surgery was performed in the physician's office rather than in an ambulatory surgical setting. In this setting,

the usual "triggers" that would initiate a medical chart review would not be present. Additionally, the local peer review systems would not have access to the surgeon's medical record for review.

The system which evaluates the postoperative care provider does not appear to be adequate. On "question 29" of the checklist, the medical record could be available to BOMEX in cases of medical litigation or investigation. It does not appear that the postoperative care provider's medical records are available for evaluation by HSAG or a local peer review committee since this provider is not delivering a service in a hospital or outpatient surgery facility. The postoperative care provider is practicing within the state medical laws but since the provider is not directly associated with the hospital or surgical facility, the mechanism that would include this provider in the peer review process is never activated.

Cross-Case Results

In the previous section, the discussion centered on the inadequacies in the medical quality control system that were revealed by the analysis of individual cases. The individual cases were able to demonstrate certain aspects of the current quality control system that were ineffective or

lacking. In the individual case it was relatively clear whether or not there was a problem with the medical care delivered. On a larger scale, individual cases cannot conclusively prove that the quality control system is functional or dysfunctional. Each case, on its own, can be an "anecdotal" example of a system that is working well or not working in one or more areas of medical quality control.

Individual cases show that the current quality control system "appears" to function for the surgeon on a more consistent basis than for the postoperative care provider. The surgeon is "ultimately responsible for the patient's welfare during the total course of surgery. Can it be assumed that if the surgeon achieves the standards for quality medical care that all aspects of surgical co-management pass muster? This investigator has found it necessary to perform a cross-case in order to discuss the entire medical quality control system as it pertains to eye surgery co-management.

For each section (License, Finance, Peer Review, and Systems Review), the mean and the standard deviation of the case scores for that section were determined. Also, the maximum error using a 95% confidence interval was calculated. The results are the following:

Confidence Intervals

	s	u
License	1.008	3.867 ± 0.361
Finance	0.715	4.308 ± 0.256
Peer Review	0.832	3.937 ± 0.298
Systems review	0.311	3.172 ± 0.111
For All Questions	0.744	3.816 ± 0.266

On the following page, the table lists the frequency of scores for each question (table 2). The frequency of the mean scores were determined and the histogram helps demonstrate the distribution of the mean scores (figure 1).

The next set of data is an analysis of the relationship, or lack of relationship between the surgeon and the postoperative care provider. This was done in the following manner.

Licensing: the mean for questions 1-6 and questions 7-12 were determined. Their relationship was plotted on a scatter diagram. The appropriate regression analysis was performed and the coefficient of correlation was calculated.

TABLE 2

FREQUENCIES OF SCORES ON INDIVIDUAL QUESTIONS

QUESTION	SCORE				
	1	2	3	4	5
1					30
2					30
3					30
4					30
5					30
6					30
7	17				13
8	17				13
9	17				13
10	17				13
11	17				13
12	17				13
13					30
14	17				13
15				2	28
16	2			1	27
17					30
18					30
19	5	2			23
20		1		1	28
21	7			10	13
22	17				13
23	17				13
24	17	2		1	10
25	1	1		1	27
26				1	29
27		1			29
28	1				29
29	17			13	
30	30				
31	30				

FIGURE 1

FREQUENCY DISTRIBUTION AND HISTOGRAM
OF MEAN SCORES ON EACH QUESTION

Mean Score	Frequency
5.00	9
$4.9\bar{6}$	1
$4.9\bar{3}$	1
4.90	1
$4.8\bar{6}$	2
$4.7\bar{3}$	1
4.70	1
$4.1\bar{3}$	1
$3.7\bar{3}$	1
$2.7\bar{3}$	9
2.50	1
2.30	1
1.00	2

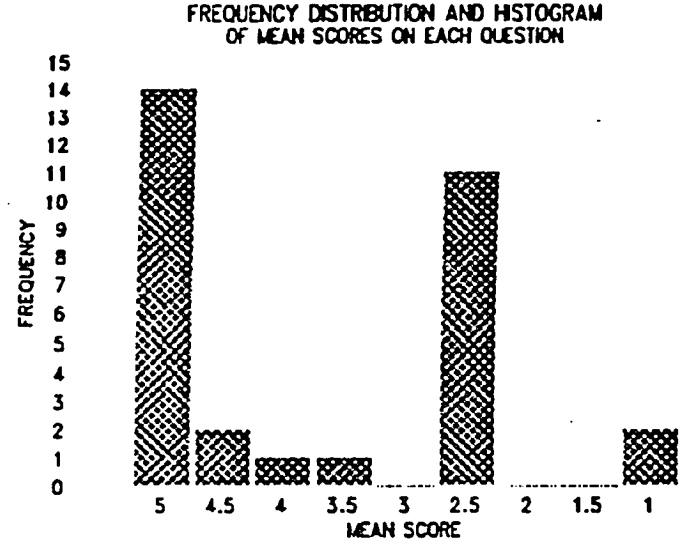


FIGURE 2

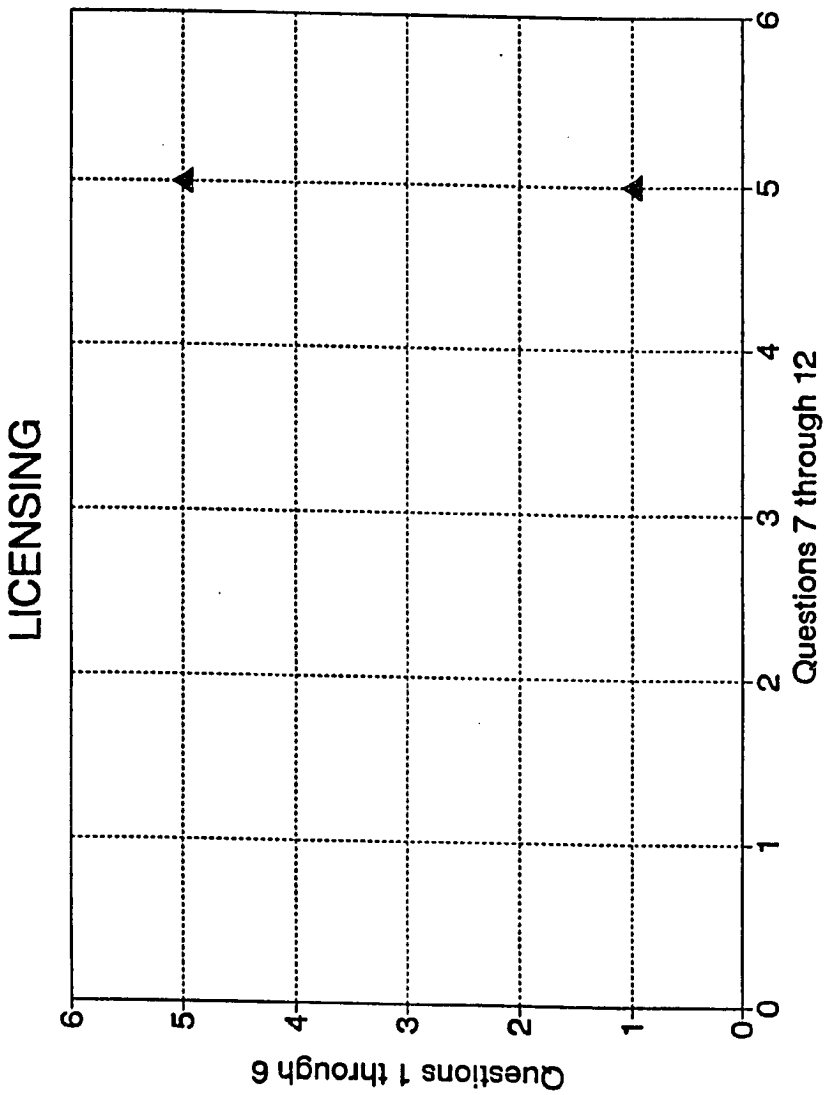


FIGURE 3

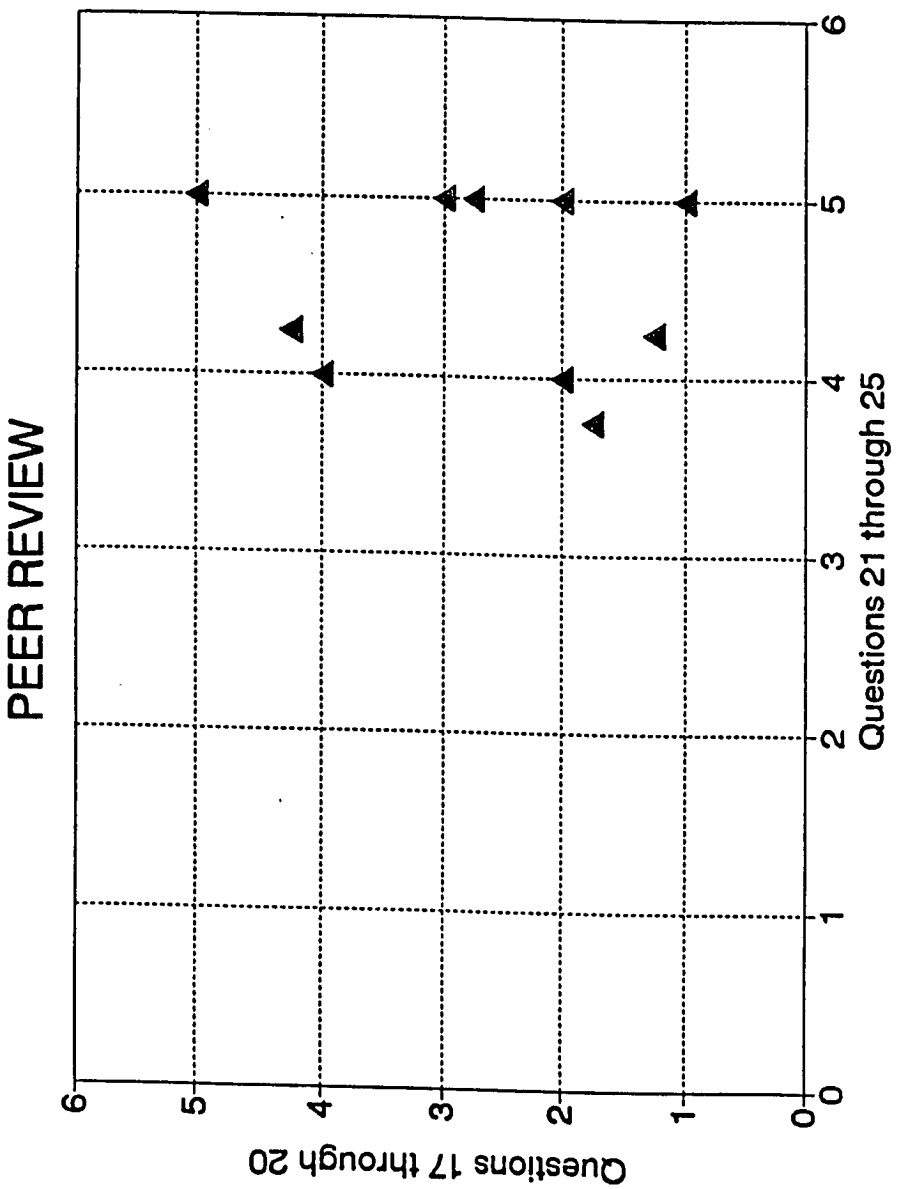
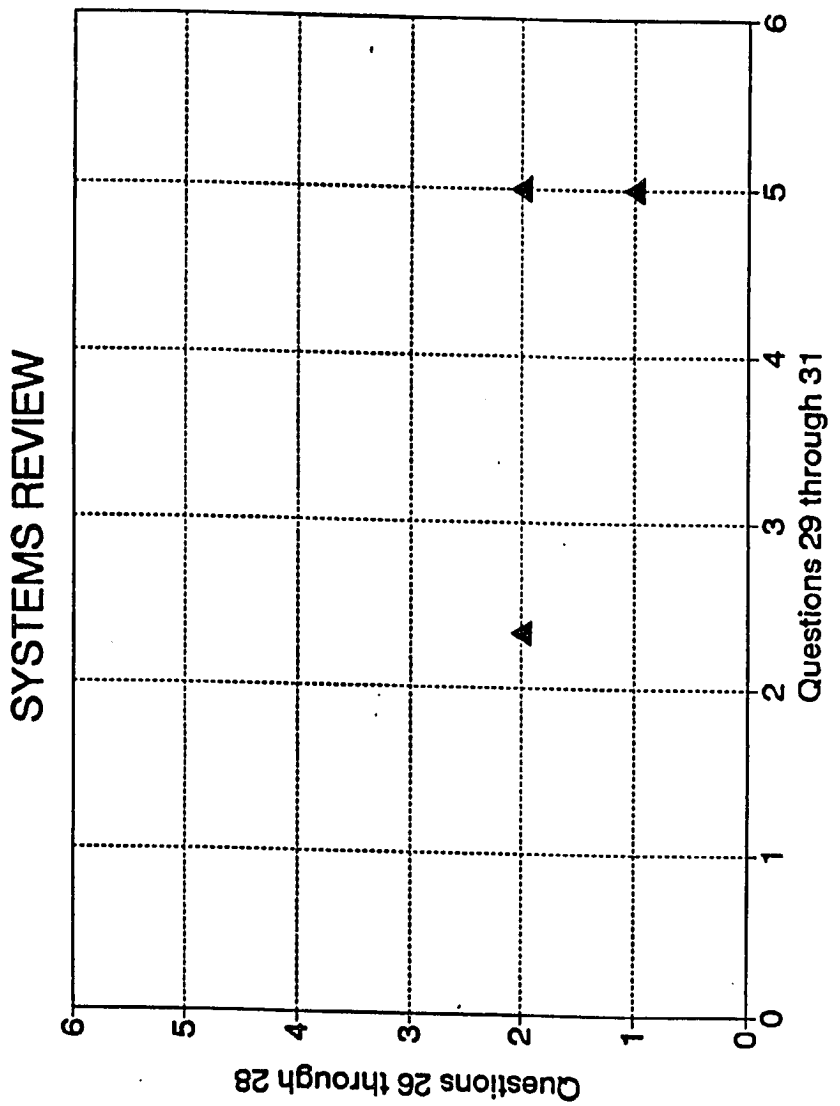


FIGURE 4



The same process was followed for the other sections except for Finance. In the section for Peer Review, questions 17-20 and 22-25 were compared and for Systems Review, questions 26-28 and 29-31 were compared.

Licensing. Figure 2 is a scatter diagram for the Licensing section. The set of data could not be approximated by a function. Statistically, there is no correlation between the licensing of the surgeon and the licensing of the postoperative care provider.

Peer Review. Figure 3 is a scatter diagram for the Peer Review section. The following is a summary of the calculations:

1. Using linear regression, for

$$Y = a + bX,$$

$$a = 1.131,$$

$$b = 0.430,$$

and the correlation coefficient

$$r = 0.128.$$

2. Using a logarithmic model, for

$$Y = a + b \ln(X),$$

$$a = 0.110,$$

$$b = 1.973, \text{ and}$$

$$r = 0.131.$$

3. Using an exponential model, for

$$Y = ab^x,$$

$$a = 1.610,$$

$$b = 1.127, \text{ and}$$

$$r = 0.106.$$

4. Using a power model, for

$$Y = a\ X^b,$$

$$a = 1.208,$$

$$b = 0.551, \text{ and}$$

$$r = 0.109.$$

Statistically, there is no correlation between the peer review of the surgeon and the peer review of the postoperative care provider.

Systems Review. Figure 4 is a scatter diagram for the Systems Review section. The following is a summary of the calculations:

1. Using linear regression, for

$$Y = a + bX,$$

$$a = 2.5,$$

$$b = -0.0210,$$

and the correlation coefficient

$$r = -0.212.$$

2. Using a logarithmic model, for

$$Y = a + b \ln(X),$$

$$a = 2.651,$$

$$b = -0.769, \text{ and}$$

$$r = -0.212$$

3. Using an exponential model, for

$$Y = ab^X,$$

$$a = 2.853,$$

$$b = 0.859, \text{ and}$$

$$r = -0.212.$$

4. Using a power model, for

$$Y = a X^b,$$

$$a = 3.143,$$

$$b = -0.533, \text{ and}$$

$$r = -0.212.$$

Statistically, there is no correlation between the systems review involving the surgeon and the systems review of the surgeon and the systems review of the postoperative care provider.

The data indicates that any conclusions drawn from studies which evaluate the surgeon, cannot be applied to the postoperative care provider. In Arizona, this is important because the current quality control system primarily evaluates the surgeon in clinical situations where co-management occurs.

In any quality control system that evaluates a "co-management relationship, it is important to be able to assess every provider in the relationship. The co-management relationship should be considered a "single unit" because it must work as a single unit for the patient to receive the best possible care. In order for various mechanisms to function as a system, they must, by definition, be interdependent. The output from one subsystem becomes the input for another subsystem. In the area of surgical co-management, quality control determination of one provider in a co-management relationship should relate to some degree to any other provider in the same relationship. This study indicates that in Arizona, the current quality control system evaluating surgical co-management of the eye surgery patient cannot make any inferences about the postoperative care provider by the data which exists on the surgeon, and vice versa.

An "analysis by section" of the current quality control system for co-management of the eye surgery patient, for each two sections, paired observations (mean scores by case) were studied to determine whether there is any relationship between the different sections which make up the quality control system. The following data was used in the

paired-comparisons. Hypothesis testing was used to test the differences between the means of the different sections.

License. Score: 5 3

Frequency: 13 17

$\bar{x}$ = 3.867

s = 1.008

95% confidence interval of the mean --

error = 0.361

μ = 3.867 $\pm$ 0.361

Finance. Score: 5 4 2.750

Frequency: 13 14 3

$\bar{x}$ = 4.308

s = 0.715

95% confidence interval of the mean --

error = 0.256

μ = 4.308 $\pm$ 0.256

Peer Review. Score: 5 4.333 4.111 3.667

Frequency: 9 2 2 1

Score: 3.556 2.778 2.556

Frequency: 11 3 2

$\bar{x}$ = 3.937

s = 0.832

95% confidence interval of the mean --

error = 0.298

$\mu = 3.937 \pm 0.298$

Systems Review. Score: 3.5 3 2.167

Frequency: 12 17 1

$\bar{x} = 3.172$

s = 0.311

95% confidence interval of the mean --

error = 0.111

$\mu = 3.172 \pm 0.111$

The mean scores of each section, that is, License (L), Finance (F), Peer Review (PR), and Systems Review (SR), were calculated, case-by-case.

Case	(L)	(F)	(PR)	(SR)
1	5	5	4.1	3.5
2	5	5	5	3.5
3	5	5	4.3	3.5
4	5	5	4.3	2.16
5	5	5	5	3.5
6	5	5	5	3.5
7	3	2.75	2.7	3
8	5	5	5	3.5
9	5	5	5	3.5
10	3	3.75	3.6	3
11	3	3.75	3.5	3
12	3	2.75	2.5	3
13	5	5	5	3.5
14	5	5	5	3.5
15	5	5	5	3.5
16	5	5	5	3.5
17	3	4	2.7	3
18	3	4	2.7	3
19	3	4	2.5	3

20	5	5	4.1	3.5
21	3	4	3.5	3
22	3	4	3.5	3
23	3	4	3.5	3
24	3	4	3.5	3
25	3	4	3.5	3
26	3	4	3.5	3
27	3	4	3.5	3
28	3	4	3.5	3
29	3	4	3.5	3
30	3	4	3.5	3

The following is a determination of the $\bar{d}$, or the mean of the differences of the case means (case-by-case). $\bar{d}_0$ denotes the cutoff for a 0.05 level of significance. In the hypothesis testing, if $\bar{d} > \bar{d}_0$, then the null hypothesis will be rejected. Where $\bar{d} < \bar{d}_0$, the null hypothesis will be accepted.

Paired Analysis of Finance and License.

Case	(Finance-License)	Case	(Finance-License)
1	0.0	16	0.0
2	0.0	17	1.0
3	0.0	18	1.0
4	0.0	19	1.0
5	0.0	20	0.0
6	0.0	21	1.0
7	-0.25	22	1.0
8	0.0	23	1.0
9	0.0	24	1.0
10	0.75	25	1.0
11	1.0	26	1.0
12	-0.25	27	1.0
13	0.0	28	1.0
14	0.0	29	1.0
15	0.0	30	1.0

$$\bar{d} = 0.475$$

standard deviation = 0.523

$$H_0 : \mu_1 = \mu_2$$
$$H_1 : \mu_1 \neq \mu_2$$

For the comparison of the Finance and the Licensing sections,

$$\bar{d} = 0.475$$
$$\bar{d}_0 = 0.187$$

Conclusion: Reject H_0

Paired Analysis of Peer Review (PR) and License.

Case	(PR-License)	Case	(PR-License)
1	-0.8	16	0.0
2	0.0	17	-0.2
3	-0.6	18	-0.2
4	-0.6	19	-0.4
5	0.0	20	-0.8
6	0.0	21	0.5
7	-0.2	22	0.5
8	0.0	23	0.5
9	0.0	24	0.5
10	0.6	25	0.5
11	0.51	26	0.5
12	-0.4	27	0.5
13	0.0	28	0.5
14	0.0	29	0.5
15	0.0	30	0.5

$$\bar{d} = 0.0704$$

standard deviation = 0.481

$$H_0 : \mu_1 = \mu_2$$
$$H_1 : \mu_1 \neq \mu_2$$

For the comparison of the Peer review and the Licensing sections,

$$\bar{d} = 0.0704$$
$$\bar{d}_0 = 0.172$$

Conclusion: Do not reject the H_0

Paired Analysis of Licensing (L) and Systems Review (SR).

Case	(L-SR)	Case	(L-SR)
1	1.5	16	1.5
2	1.5	17	0.0
3	1.5	18	0.0
4	2.83	19	0.0
5	1.5	20	1.5
6	1.5	21	0.0
7	0.0	22	0.0
8	1.5	23	0.0
9	1.5	24	0.0
10	0.0	25	0.0
11	0.0	26	0.0
12	0.0	27	0.0
13	1.5	28	0.0
14	1.5	29	0.0
15	1.5	30	0.0

$$\bar{d} = 0.694$$

standard deviation = 0.842

$$H_0 : \mu_1 = \mu_2$$
$$H_1 : \mu_1 \neq \mu_2$$

For the comparison of the License and the Systems Review sections,

$$\bar{d} = 0.694$$
$$\bar{d}_0 = 0.301$$

Conclusion: Reject the H_0

Paired Analysis of Finance (F) and Peer Review (PR).

Case	(F-PR)	Case	(F-PR)
1	0.8	16	0.0
2	0.0	17	1.2
3	0.6	18	1.2
4	0.6	19	1.4
5	0.0	20	0.8
6	0.0	21	0.4
7	-0.027	22	0.4
8	0.0	23	0.4
9	0.0	24	0.4
10	0.083	25	0.4
11	0.4	26	0.4
12	0.194	27	0.4
13	0.0	28	0.4
14	0.0	29	0.4
15	0.0	30	0.4

$$\bar{d} = 0.405$$

standard deviation = 0.409

$$H_0 : \mu_1 = \mu_2$$
$$H_1 : \mu_1 \neq \mu_2$$

For the comparison of the Finance and the Peer Review sections,

$$\bar{d} = 0.405$$
$$\bar{d}_0 = 0.409$$

Conclusion: Reject the H_0

Paired Analysis of Finance (F) and Systems Review (SR).

Case	(F-SR)	Case	(F-SR)
1	1.5	16	1.5
2	1.5	17	1.0
3	1.5	18	1.0
4	2.83	19	1.0

5	1.5	20	1.5
6	1.5	21	1.0
7	-0.25	22	1.0
8	1.5	23	1.0
9	1.5	24	1.0
10	0.75	25	1.0
11	1.0	26	1.0
12	-0.25	27	1.0
13	1.5	28	1.0
14	1.5	29	1.0
15	1.5	30	1.0

$$\bar{d} = 1.170$$

standard deviation = 0.547

$$H_0 : \mu_1 = \mu_2$$
$$H_1 : \mu_1 \neq \mu_2$$

For the comparison of the Finance and the Systems Review sections, $\bar{d} = 1.170$

$$\bar{d}_0 = 0.196$$

Conclusion: Reject the H_0

Paired Analysis of Peer review (PR) and Systems Review (SR).

Case	(PR-SR)	Case	(PR-SR)
1	0.61	16	1.5
2	1.50	17	-0.2
3	0.83	18	-0.2
4	2.16	19	-0.4
5	1.5	20	0.61
6	1.5	21	0.5
7	-0.25	22	0.5
8	1.5	23	0.5
9	1.5	24	0.5
10	0.6	25	0.5
11	0.5	26	0.5
12	-0.4	27	0.5
13	1.5	28	0.5
14	1.5	29	0.5

15 1.5 30 0.5

$\bar{d} = 0.765$

standard deviation = 0.675

$$H_0 : \mu_1 = \mu_2$$
$$H_1 : \mu_1 \neq \mu_2$$

For the comparison of the Peer Review and the Systems Review sections, $\bar{d} = 0.765$

$\bar{d}_0 = 0.675$

Conclusion: Reject the H_0

A summary of the hypothesis testing for paired observations (mean scores by case) is presented as follows:

$\bar{d}$ denotes the mean of the differences of the case means (case-by-case) and $\bar{d}_0$ denote the cutoff for a 0.05 level of significance.

The hypothesis $H_0 : \mu_1 = \mu_2$ is tested against the alternative hypothesis $H_1 : \mu_1 \neq \mu_2$.

	$\bar{d}$	$\bar{d}_0$	Conclusion
(F)-(L)	0.475	0.187	Reject
(PR)-(L)	0.0704	0.172	Accept
(L)-(SR)	0.694	0.301	Reject
(F)-(PR)	0.405	0.146	Reject
(F)-(SR)	1.170	0.196	Reject
(PR)-(SR)	0.765	0.242	Reject

Summary of Chapter Four

Chapter IV represents the collection of data using the Case-Study methodology. The propositions and the data checklist directed the collection and organization of the data. Data were collected from thirty individual clinical cases. These case were organized in a manner which presented data concerning eye care providers involved in each case, the patient's medical problem, and a review of how the surgical co-management relationship was used in each case. Each case was reviewed using a case-study checklist. The checklist provided a method by which similar data could be collected from multiple complex and variable cases. Once the data was collected and organized, each case was reviewed based on this study's definition of quality, that is, how well did each case conform to the existing requirements for surgical co-management?

A cross-case analysis was performed in the following manner:

1. A histogram demonstrated the mean score for each question,
2. A matrix of frequencies demonstrated the number of occurrences of each score on each question,
3. The mean, standard deviation, and the maximum error (using a 95% confidence interval) of the case scores for

each section (License, Finance, and Systems Review) was determined.

4. For the Licensing section, case-by-case, the mean was computed for Questions "1" through "6" and the same on questions "7" through "12." The relationship was plotted on a scatter diagram, the appropriate form of regression analysis was applied, and the coefficient of correlation was determined. The relationship or lack of relationship between the licensing of the surgeon and that of the postoperative care provider was analyzed. The same process was applied to the Peer Review section, with questions "17" through "20" being compared with questions "22" through "25", and with the Systems Review section with questions "26" through "28" compared with questions "29" through "31",

5. The mean and standard deviation was computed case-by-case for the entire set of data. As before, the degree of error was determined, and

6. For each two sections, paired observations (mean score by case) were studied to determine whether there were significant differences in the results of various sections. For each pair, the hypothesis (which states the means are the same) were tested.

Chapter 5

DISCUSSIONS AND CONCLUSIONS

Individual Clinical Case Analysis and Discussion

The results of the analysis of the clinical cases are applied to answering the Study's Question which the following:

How is the medical quality control system in Arizona functioning to assure a minimum standard of quality in the area of eye surgery co-management?

The Study's question is based upon the assumption that there is a quality control system functioning in Arizona which is designed to monitor surgical co-management of the eye surgery patient. In the literature review, it was determined that there were three main systems in place which were designed to assure that a minimum standard of quality exists for patients who enter into a surgical co-management relationship. The system is comprised of organizations which control medical licensure, engage in peer review activities, and evaluate the financial arrangements between the providers in the co-management relationship. These systems have established minimum requirements which must be

met by all health care practitioners prior to their entering into an eye surgery co-management relationship. These minimums are encapsulated into the following three propositions:

Proposition 1 Licensure: All health care practitioners who enter into an eye surgery co-management relationship will be licensed to practice medicine and surgery by the Arizona State Board of Medical Examiners (BOMEX).

Proposition 2 Finance: All health care practitioners who enter into an eye surgery co-management relationship for a Medicare patient will be licensed in Arizona to provide that service.

Proposition 3 Peer Review: All health care practitioners who enter into an eye surgery co-management relationship will be subject to the Federal, State, and local peer review programs which are designed to monitor those activities.

As mentioned in Chapter I, the practice of medical or surgical co-management is well known to the medical community. Co-management is, basically, dividing and "sharing" the patient's medical care in a coordinated fashion between two or more health care providers. For ophthalmologists, co-management has been practiced for many years as ophthalmologists would refer to one another based

upon the needs of the patient. Co-management between ophthalmologists and optometrists officially began in the 1980s when two Federal laws were enacted that expanded the definition of "physician" in the Social Security Act to include optometrists. Under the new Federal laws, optometrists are able to receive reimbursement by Medicare for postoperative care (Aetna Medicare 1987, 1).

Traditionally, the ophthalmologist who performs cataract surgery on a patient is responsible not only for the surgery itself but for a preoperative assessment to evaluate surgical necessity and the patient's fitness for surgery and for postoperative care during the healing process. Most ophthalmologists believe that all postoperative medical eye care should be performed only by an ophthalmologist because of his/her unique competence to diagnose and treat postoperative ocular pathologic conditions (AAO-PS-87 1987, 1).

The traditional model of perioperative care (both preoperative and postoperative care) for cataract surgery patients has been challenged by changes in technology and legal definitions as well as other changes in Medicare coverage and reimbursement. As mentioned in Chapter One, the expansion of optometry's scope of practice in many States had made the referral patterns between the

ophthalmologists and optometrists much more complicated. While many of these referral patterns are clearly in the patient's best interest, some are blatant deviations from the accepted standards of practice for surgical co-management. Because of these variant referral practices, guidelines have been established by the American Academy of Ophthalmology which point out the obligations of the ophthalmologist. The Academy states that it is the responsibility of the ophthalmologist to assure the patient's interests are placed first and foremost and to ensure that an ethical relationship exists between health care providers that share in the same patient's care. The guidelines consist of nine rules which are listed as follows:

> Rule 1: First and foremost, in arranging their commercial business relationships, the ophthalmologist must take reasonable precautions to assure that their clinical judgments concerning the best interests of patients are not affected by the physician's own commercial interests.
> Rule 2: In the provision of all services, the ophthalmologist assumes a responsibility to be competent by virtue of his/her specific training and experience.
> Rule 3: Ophthalmologists must take steps to ensure that they, and others acting under their direction, provide patients with only those laboratory procedures, optical devices, pharmacological agents, and medical and surgical services, which are in the patient's best interest.
> Rule 4: The provision of all medical and surgical procedures should be preceded by appropriate informed consent.

> Rule 5: The fee charged by the ophthalmologist for services or the services of those operating under their direction must not be excessive or deceptively complicated, and must not exploit patients or others who pay for the services.
> Rule 6: An ophthalmologist must not delegate to other health professionals, however well trained, those aspects of care which are within the unique competence of the ophthalmologist (which do not include those aspects of postoperative care permitted by law to be performed by auxiliaries).
> Rule 7: The Code of Ethics makes clear that until the patient has recovered from the immediate effects of the surgery, the provision of those aspects of postoperative care which are within the unique competence of the ophthalmologist ordinarily must be provided by the operating ophthalmologist or by another ophthalmologist, but may be delegated in emergency-type situations, or where the patient's best interests clearly are appropriately served. In addition, the arrangements for postoperative care must be made before surgery, and with the advance approval of the patient.
> Rule 8: It must always be made clear to patients who is responsible for each element of their care.
> Rule 9: Advertisements and other communications to the public about ophthalmological care practice must be accurate, not misleading, and not designed to elicit from prospective patients decisions to undertake treatments based on mistaken grounds. (AAO-85-4 1985, 1)

The clinical cases in this study demonstrated various reasons why the patient may enter into a surgical co-management relationship. These are listed as follows:

1. The lack of necessary special surgical care in the patient's home community.

2. The patient requests a surgical co-management relationship.

3. The surgical co-management relationship is good for the eye care providers.

The clinical cases demonstrated that optometrists and ophthalmologists frequently referred to physicians and surgeons who had greater medical and/or surgical expertise when it was felt to be in the patient's best interest. Since medical and surgical specialists tend to be located in larger urban centers, postoperative care may require the patient to travel long distances between the surgeon and the patient's home community. Additionally, co-management occurred when another ophthalmologist in the patient's home community was better able to perform the surgical procedure. The following cases demonstrate the clinical situations mentioned above which led to surgical co-management relationships:

Case 2. The patient had a retinal detachment and required a pneumatic retinopexy. The necessary services were about one hundred miles away from the patient's home.

Case 3. The patient's primary care ophthalmologist determined the patient would see better with cataract surgery, a procedure which he was no longer performing. The ophthalmologist referred the patient to another ophthalmologist in his practice who was competent to perform

the procedure. The primary ophthalmologist would perform the postoperative care as this was the patient's request.

Case 4. The patient presented with symptoms consistent with a retinal tear. Upon examination, the primary care ophthalmologist found a retinal tear which required laser retinopexy to prevent the retina from becoming detached. Because the primary ophthalmologist was no longer performing these procedures, he referred the patient to another ophthalmologist in his practice who was competent to perform the procedure. The primary ophthalmologist would perform the postoperative care as this was the patient's request.

Case 5. The patient had a retinal detachment which required a vitrectomy and a pneumatic retinopexy. The surgeon was located about 100 miles from the patient's home.

Case 6. The patient had a retinal detachment which required a vitrectomy, subretinal fluid drainage, and a pneumatic retinopexy. The surgeon was located about 100 miles from the patient's home.

Case 11. The patient presented with blurred vision to an optometrist in a rural Arizona town that did not have any ophthalmologists. The optometrist felt the patient's vision would improve following cataract extraction. The surgeon was located about 60 miles from the patient's home.

In all of the above cases, the patient entered into a surgical co-management relationship because the optometrist or ophthalmologist could not offer a service to the patient and the surgeon was not located in the patient's home community or an ophthalmologist felt that it would be in the patient's best interest to have another surgeon perform the surgical procedure.

There are situations in which the patient will request that his/her primary ophthalmologist allow another ophthalmic surgeon perform the needed surgical procedure. This is relatively uncommon for several reasons. If a surgeon is able to perform the procedure the patient requires, the surgeon will generally perform it. In any medical specialty, the better the surgeon knows the patient, the better the surgeon will be able to judge what is best for the patient. Splitting the care between various medical providers, as occurs in surgical co-management, tends to disrupt the continuity of care to some degree. Also, most surgeons will actively avoid being placed into the position of "doing someone else's postoperative care." The reluctance of a surgeon to cover the postoperative care for another surgeon is the prime limiting factor to co-management between surgeons. A closer look at Case 1

will provide a good opportunity to assess this aspect of health care delivery.

In Case 1, the patient is an elderly female with the diagnosis of glaucoma. Her eye care has been provided by her primary ophthalmologist who also practices in her home community. The ophthalmologist found the pressures in the patient's eyes to be too high, putting the patient at greater risk of losing vision. The rural ophthalmologist recommended a surgical procedure, argon laser trabeculoplasty, to lower the intraocular pressure. The laser procedure is usually an office based procedure that consists of a five to ten minute laser treatment followed by a second laser treatment about two weeks later.

The patient's son, who lives in Phoenix, approximately one hundred miles from the patient, wanted his mother to get a second opinion. The patient presented this request to her ophthalmologist and he arranged for the patient to see an ophthalmologist in Phoenix who specializes in glaucoma. The glaucoma specialist concurred with the treatment plan of the rural ophthalmologist that laser treatment would be beneficial. The patient returned to the rural ophthalmologist. She told the doctor that her son wanted the ophthalmologist in Phoenix perform the surgery but that she wanted the postoperative care to be performed in her

home community. The rural ophthalmologist related his reluctance to break up the patient's care and that it would be best to stick with one doctor for the surgery as well as the postoperative care. The rural ophthalmologist did, however, agree to provide the postoperative care for the patient if she had her laser surgery in Phoenix.

In this case, the patient requested a deviation from the standard regime prior to the surgery, and the primary ophthalmologist agreed to the co-management arrangement. Fortunately, the case had a good outcome. Case 17 illustrates a situation in which a co-management arrangement exacerbated a postsurgical complication. In Case 17, the patient lived in a rural community served by optometrists and ophthalmologists. Although local ophthalmologists were competent to perform cataract surgery, the patient was referred to an eye surgeon in Phoenix. The following is a more detailed summary of the case.

The patient is an eighty-year-old male who presented to a rural optometrist in 3-5-93 with complaints of blurred vision in the patient's left eye. Upon examination, the rural optometrist found a cataract in the left eye which was consistent with the patient's symptoms and vision. The rural optometrist explained that cataract surgery would be necessary in order to improve the vision in the left eye.

The patient was then referred to a general ophthalmologist in Phoenix for evaluation for cataract surgery. Prior to the patient's appointment with the surgeon in Phoenix, the optometrist completed tests necessary to prepare the patient for cataract surgery such as the measurement of the eye for the artificial lens. About two week later, the patient was evaluated by the surgeon and the patient was scheduled for cataract surgery. Of note, the patient's chart indicates that the patient was informed prior to surgery as to who would perform the surgery and who would provide the postoperative care.

On 3-17-93, the patient underwent cataract surgery on the left eye in the surgeon's outpatient surgical facility in Phoenix. The surgeon saw the patient the next day and found the eye examination to be normal for the first postoperative visit. The patient was referred back to the rural optometrist for the remainder of the postoperative care. During subsequent exams, the rural optometrist noted a persistent iritis in the patient's operative eye. The optometrist relayed the complications to the cataract surgeon. Continuing complications prompted the surgeon and the optometrist to recommend that the patient see a retinal specialist in Phoenix. At no time since the first postoperative exam was the patient examined by the operating

ophthalmologist. The retinal specialist found remnants of the original lens left inside the eye causing intraocular irritation. The retinal specialist performed another surgery to remove the retained lens material and repaired a small retinal detachment that was present, but not noted prior to the original cataract surgery. A special gas was placed in the eye to further stabilize the position of the retina for healing. The retinal surgeon followed the patient for several days postoperatively in Phoenix and found the exams to be normal for the early postoperative course. The patient was referred back to the rural optometrist for further postoperative care. During a subsequent exam, the rural optometrist noted the patient's intraocular pressure to be at an unacceptably high level with the patient having blurred vision and discomfort in the operative eye. Since the optometrist could not treat the complication, the patient was referred back to the retinal specialist in Phoenix where a small amount of gas was removed from the eye to lower the pressure. The increased pressure was the result of the patient's traveling from a lower elevation to a higher elevation causing the gas to expand inside the eye thus elevating the pressure. The patient returned home and again presented to the rural optometrist with discomfort and blurred vision. The

optometrist called the retinal surgeon and reviewed the clinical situation of the patient. The retinal surgeon recommended that more gas needed to be removed from the eye. The patient did not want to travel the nearly one hundred miles to Phoenix and asked if there were any ophthalmologists closer to his rural home who could perform the procedure. Several ophthalmologists in the patient's community were contacted by the retinal surgeon but each doctor expressed reluctance to step into the middle of this case and recommended that the original surgeon or the retinal specialist continue to provide the patient's postoperative care.

Unfortunately, the patient developed glaucoma in the operative eye which required additional trips to Phoenix for continued surgical care. The patient is currently under the management of the rural optometrist for postoperative care.

This case exposes several very disturbing trends in our current health care delivery system. One may ask the question, "Why was the patient referred to Phoenix when the surgical procedure could have been performed in the patient's home community?" This question will be addressed in an upcoming section which reviews why patients enter into surgical co-management relationships. Another question might be, "Why wouldn't the rural ophthalmologists assume

the patient's postoperative care in a situation such as this?" In a conversation with the rural ophthalmologists involved with this case, the two following reasons were presented.

1. Liability: The ophthalmologists related that this patient was going to have chronic problems with this eye. It was also very likely that a medical liability suit would be generated in this case which would involve any eye care provider associated with this case. Because of this, and because the patient could travel to Phoenix but was inconvenienced by the distance he had to travel, the rural ophthalmologists elected not to become involved in this case.

Similar arguments are seen in cases where high risk pregnancies are referred long distances to tertiary medical centers in Phoenix and Tucson from rural physicians who are competent to perform deliveries and C-sections. The medical liability is too great to accept and therefore, the patient is required to travel.

2. Covering up and/or promoting "bad referral practices": The rural ophthalmologists agreed that this patient did not need to travel to Phoenix for a cataract surgery that could have easily been performed in the patient's own community. In addition, the rural ophthalmologists stated that they

felt uncomfortable having a "non-surgically trained optometrist provide retinal surgery postoperative care. The rural doctors suggested that the retinal surgeon should have contacted one of the rural ophthalmologists prior to the second surgery to arrange for the postoperative care to be handled in the patient's community. In an interview with an ophthalmologist in the patient's community, the rural doctor states that he routinely provides postoperative care for retinal surgeons. He stated that he avoids, where possible, situations in which he is presented with uncoordinated postoperative care. The rural ophthalmologists said that they do not want to support the increasing practice of unqualified providers offering postoperative care such as in this case where an optometrist was providing postoperative care for a retinal surgery with a complicated history. By accepting the responsibility of care for eye-care providers who are not equipped or trained to handle postoperative complications, the rural ophthalmologist acts as a safety net and only encourages more surgical referrals "out of town" which may not be in the patient's best interest.

A case in which the rural ophthalmologist accepts postoperative care upon the patient's request is Case 12.

In this case, the patient lived in a community where the optometrist practiced part time. The rural optometrist

provided the postoperative care when the patient had cataract surgery on the right eye. A year later, cataract surgery was necessary for the patient's left eye. For the right eye, the patient was referred to an ophthalmologist who did not practice in the patient's community. After cataract surgery, the surgeon saw the patient the following day and then referred the patient back to the optometrist for postoperative care. The patient lived about 15-20 minutes (by car) from where the surgeon practiced. The postoperative course after the cataract surgery in the right eye was uneventful and the patient ended up with good vision. Unfortunately, the outcome did not follow the same course of events for the left eye. The following is a summary of this case.

The patient is a sixty-six-year-old year old female who presented to a rural optometrist in October 1991 with complaints of blurred vision in her left eye. Upon the examination, the rural optometrist found a cataract in the left eye which was consistent with the patient's symptoms and vision. The rural optometrist explained that cataract surgery would be necessary to improve the vision in the left eye. The patient was referred to a rural ophthalmologist for evaluation for cataract surgery. Prior to the patient's first appointment with the surgeon, the optometrist

completed the tests necessary to prepare the patient for cataract surgery such as the measurement of the eye for the artificial lens. The patient was evaluated by the surgeon and scheduled for cataract surgery. The medical chart indicates that the patient was informed prior to surgery as to who would perform the surgery and who would provide the postoperative care.

On 11-25-91, the patient underwent cataract surgery on the left eye in the surgeon's outpatient surgical facility. The surgeon saw the patient the next day and found that the intraocular pressure of the operative eye was elevated to an unacceptable level. The patient had a history of glaucoma so the surgeon gave the patient an oral medication to lower the intraocular pressure. The chart indicates that the surgeon told the patient to return to the referring optometrist the following Monday (six days later). The second day after surgery, the patient noticed pain and sudden decrease in vision in the operative eye. The patient called the surgeon's office and found that the surgeon was out of town on a planned ski vacation. The surgeon's office advised the patient to see the referring optometrist, but the patient refused and insisted that she needed to be seen by an ophthalmologist. The surgeon's office then referred the patient to a physician in Phoenix, but again, the

patient refused stating she was unable to make the trip. The patient contacted her own family physician who told the patient to go to the emergency room. At the community hospital emergency room (E.R.), the physician on call determined that the patient needed to see an ophthalmologist as soon as possible.

The E.R. physician contacted the other ophthalmology group in the patient's community and explained the patient's situation. The ophthalmologist on call for that group examined the patient in his office within one hour of the E.R. call and determined that the patient's problems could be the result of several postoperative complications. The patient could have severe glaucoma that was causing the pain and the decreased vision. Another possibility was that the patient had an endophthalmitis or infection inside the eye. The ophthalmologist immediately contacted the surgeon's office and requested, but was denied access to the patient's medical records. The ophthalmologist treated the patient for severe glaucoma for one day. The patient's eye did not immediately respond to treatment so glaucoma was ruled out. The ophthalmologist suspected an endophthalmitis and convinced the patient to be seen in Phoenix by a retinal specialist. The patient was seen by the retinal specialist and surgery was performed for the treatment of an

endophthalmitis. The patient's postoperative course was further complicated by corneal decompensation and uncontrolled glaucoma. The retinal specialist arranged for the referring ophthalmologist to provide the postoperative care. In addition, the rural ophthalmologist treated the patient's glaucoma and followed the corneal edema for four to six weeks after which the patient slowly improved. Fortunately the patient's vision eventually improved to a level of 20/30 in the left eye.

The original surgeon's chart showed no evidence of postoperative arrangements, an essential component to any surgical procedure and a critical step in the charting process. The second ophthalmologist, who had assumed the treatment of the patient, was unable to obtain any medical information from the first surgeon's chart and the optometrist's chart, despite repeated attempts by the patient and the ophthalmologist. Eventually, the medical information was transferred, but not until four weeks after the initial request.

As with Case 17, the ophthalmologist did not want to assume any of the surgical liability. the records indicate that the ophthalmologist has never billed for postoperative care which he provided for this patient. The ophthalmologist submitted claims for the management of

glaucoma, endophthalmitis, and corneal edema but he does not want anything to show that he performed postoperative care since "somebody is going to assume that Dr. X and I had a working relationship."

The original cataract surgeon billed with a "-54" modifier which implied that he intended to split the postoperative care with another provider. The surgeon had split the surgical fee with the referring optometrist when cataract surgery was performed on the right eye and it is assumed that the same co-management relationship was in effect for the left eye. In an interview with the patient, she states that the referring optometrist does not want to have anything to do the postoperative care in this case. If Medicare reviews this case, they have a "-54" billing modifier in hand without a corresponding "-55" billing modifier. Actually, the missing "-55" may not be a concern for Medicare because a bill not submitted constitutes a savings.

Case 12 demonstrates another very important point. Medical records are an essential aspect of quality medical care. The diagnosis of the patient's postoperative complication could have been targeted much earlier and appropriate treatment delivered without delay and with less confusion if the "emergency eye care provider" had been

allowed access to the patient's records. This is an issue of professional ethical behavior compounded by the intricacies of the co-management networks established in the community.

With respect to normal peer review activities, the usual protocol would entail a review of the surgeon's chart. In this case, the surgeon's chart would not reflect most of the complications experienced by the patient. Since significant medical care was delivered by someone other than the surgeon, the postoperative medical care falls through the peer review safety net. The peer review organization does not review the postoperative care provider's chart in cases such as surgical co-management. A system designed to improve the quality of medical care does not even assess that care at the point where most complications occur and where the quality of care could be improved the most.

Continuing with the reasons why eye care providers and patients consider surgical co-management arrangements, the surgical co-management relationship is good for the eye care providers. Thirty years ago, most physicians were self employed. These solo practices evolved into "Professional Corporations." Now the standard medical practice is part of the health care "industry." As in any business, there is money to be made and the potential for fraud. Curbing the

abuse of Federal money by health care providers is high on Medicare's list of priorities.

In the review of the literature pertaining to surgical co-management, this investigator was unable to find any reference to "fraud and abuse" by Medicare providers when the surgical co-management occured between two ophthalmologists. In this study, the cases of surgical co-management occuring between two ophthalmologists appear to support this finding. Some cases did indicate that fraud had occurred when optometrists and ophthalmologists co-manage the surgery patient. Before continuing this train of thought, it is important to state that the majority of optometrists and ophthalmologists do have the patient's best interest in mind when planning the patient's co-managed care.

Case 11 describe a situation where the optometrist and ophthalmologist entered into a surgical co-management relationship that is clearly in the patient's best interest. This investigator was impressed by the medical documentation and communication which occurred between the members of the co-management team and how well the patient's interests were addressed. There is clearly a place in the health care delivery system for this type of health care relationship. However, there are a number of cases in which the purpose

for the co-management relationship may not be altruistic. In fact, several of the cases in this study indicate areas where apparent abuse of the co-management relationship has occurred. Case 7 is one such example.

In Case 7, the patient was seen by an optometrist in a rural shopping mall. The patient was found to have a cataract and was then referred to a local ophthalmologist for cataract surgery. The ophthalmologist performed the cataract surgery within three weeks of the referral. The surgeon submitted a bill to Medicare which used the modifier "-54", indicating a co-management relationship. The patient states that the optometrist discontinued his practice not long after the patient's surgery. The patient had seen the optometrist as well as the surgeon after surgery but was unaware that any co-management relationship had been arranged. This case highlights several problem areas. First, there was a lack of patient informed consent concerning the planned co-management arrangement. Although the surgeon and optometrist initiated a co-management relationship for this patient, as evidenced by the surgeon's "-54" billing modifier, the actual co-management was never discussed with the patient. Second, there was a lack of coordination of care between the eye care providers involved in the co-management relationship. The patient saw each eye

care provider but they seemed to be following independent courses of postoperative treatments. Third, it appears that the "-54, -55" billing modifier that allows providers to share reimbursement for co-managed care is acting as a "finders fee" or "kickback" to the referring optometrist. In this situation, the optometrist refers a lucrative surgery patient to the surgeon who in turn bills a "-54" modifier and allows the optometrist to bill the "-55" modifier for reimbursement except that the surgeon is the one actually providing the postoperative care. The surgeon benefits from the increased number of surgical referrals and the optometrist benefits from the revenue generated from the "-55" billing modifier.

At this point it may be beneficial to briefly describe billing codes and modifiers. Medicare has specific alphanumeric codes for all medical services and supplies referred to as the Current Procedure Terminology or CPT codes. Services and procedures related to ophthalmology are assigned CPT codes 92002 through 92499. CPT modifiers provide the means by which the reporting physician can indicate that a service or procedure has been altered by some specific circumstances but not changed in its definition or code. The following represents the two digit modifiers used in ophthalmology.

CPT Modifying Codes
-20 Microsurgery
-26 Professional component
-47 Anesthesia by surgeon
-50 Bilateral procedure
-51 Multiple procedures
-52 Reduced service
-54 Surgical procedure only
-55 Follow-up care only
-62 Two surgeons/different skills
-66 Surgical team
-75 Concurrent care
-76 Repeat procedure/same provider
-77 Repeat procedure/different provider
-80 Assistant surgeon
-81 Minimum assistant surgeon
-82 Asst. surgeon where resident N/A
-99 Multiple modifiers
(Insight Communications 1990, 3-7)

When an ophthalmologist and an optometrist share the care of a cataract patient and the optometrist provides the postoperative care, the ophthalmologist uses modifier "-54" to indicate that reduced services are being billed. The optometrist would then use the modifier "-55" to indicate postoperative care is being provided (HCFA 1987, 1).

In 1987, the average surgeon's reimbursement for a cataract surgery was approximately $2,000.00. In Arizona, the postoperative care is worth 20% of the overall surgeon's fee. In a co-management relationship with the use of the "-54, -55" billing modifiers, the surgeon would receive $1,600 and the Other eye care provider would receive $400.

Since 1987, the reimbursement for cataract surgery has been reduced to the current level of $1,100 to $1,300 and the reimbursement for postoperative care has also been proportionately decreased.

From an economic standpoint, logic would dictate that an optometrist should refer only to an ophthalmologist who will allow surgical co-management in order to receive income from postoperative care. Conversely, an ophthalmologist would increase the number of lucrative surgical referrals if that ophthalmologist promotes surgical co-management. As a result, referral patterns between ophthalmologists and optometrists have been altered. No longer is the patient referred to the best or most competent ophthalmic surgeon but to the surgeon who encourages surgical co-management.

Surgical co-management represents a "goldmine" to high volume eye surgeons. The ophthalmologist with a high volume surgical practice cannot possibly "work-up" all the patients prior to surgery, perform the surgeries as well as provide adequate and individualized postoperative care. Ophthalmic/optometric surgical co-management is vital to the success of so called "Cataract Kings" as their practices are dependent on performing a high volume of surgeries.

Currently, in this investigator's community, there are five licensed ophthalmologists who are capable of performing

cataract surgery. All five of these ophthalmologists prefer to do their own postoperative care. At the same time, a large ophthalmology group in Phoenix is working with a local optometric practice and is encouraging patients to travel to Phoenix for eye surgery. The patients return to their home town to receive postoperative care. The Phoenix ophthalmology group uses a van to transport the patients to a motel where they spend the night. Early the next day, the patients have the cataract surgery and return to the motel for a second night. The following day, the patients are examined by an ophthalmologist, not the surgeon in most cases, and then a van transports the patients to their home town where they will receive the postoperative care. The optometrist in the patient's community submits the bill to Medicare for postoperative care. In an interview with the office manager of the rural optometric practice, she stated that "between six to ten patients per week make the trip to Phoenix for cataract surgery."

This investigator had the opportunity to discuss this issue with the primary surgeon in a high volume surgery practice. He stated that he continues to provide the same postoperative care to patients in a surgical co-management relationship as he provides for his other patients. In further questioning of the surgeon, he was asked to explain

the need of the surgical co-management relationship if he provides the same service to all of his surgical patients. He stated that medicine has changed and ophthalmologists and optometrists need to work as a team. By allowing optometrists to bill for postoperative care, "everybody benefits."

The above conversation was reviewed with Glen Moody, M.D., the President of the Arizona Ophthalmological Society, and he reported a similar conversation with the same surgeon. He stated that he was concerned with the ethical issues inherent in this type of surgical co-management. He was encouraged, however, that the patients were receiving postoperative care by a qualified surgeon. Dr. Moody has relayed his concerns to the high-volume surgeon but the surgeon has continued the aberrant form of surgical co-management.

Dr. Ajamian, an optometrist who has published a book titled Pre- and Postoperative Care of the Cataract Patient, recommends that optometrists refer patients exclusively to ophthalmologists that will allow them to enter into a surgical co-management relationship (Ajamian 1993, 36-37). In choosing his/her ophthalmologist an optometrist should refer their patients to, he asks, "Is the surgeon willing to

co-manage surgical patients and actively involve me in postoperative care?"

There is more evidence to suggest that the ability to enter into a surgical co-management relationship with the surgeon has influenced optometric referral patterns. In 1988, the Office of the Inspector General performed a study which evaluated the "Ophthalmology/ Optometry Relationships Involved in Cataract Surgery." The conclusions of the study are as follows:

> 1. There is a direct correlation between the existence of referral arrangements and the use of optometrists for follow-up care.
> a. Forty-six percent of the highest-paid ophthalmologists sampled referred cataract surgery patients to optometrists for postoperative care, in contrast to ten percent of the ophthalmologists receiving mid-range payments.
> b. Ophthalmologists who refer cataract surgery patients to optometrists for postoperative care receive a higher percentage of their surgical referrals from optometrists than do ophthalmologists who do all postoperative care themselves (32% versus 7%). States that allow optometrists to prescribe therapeutic drugs had a higher overall percentage of referrals. (Office of the Inspector General 1988, 6-10)

Even though Medicare allows surgical co-management relationships, the system prefers the ophthalmic surgeon to provide his/her own postoperative care. This issue has been

tested in Federal Court and a summary of the case is as follows:

> The issue of postoperative care in the context of the Medicare program has been considered by a federal district court in *Green v. Bowen*, 639 F.Supp. 554 (E.D. Cal. 1986). The Department of Health and Human Services has determined that a surgeon should be excluded from the Medicare program for committing "gross and flagrant violations" of his duties to Medicare patients by failing to provide their postoperative care and by leaving that task to the local referring physicians. On the basis of that determination, HHS notified the surgeon that pending an administrative hearing, he would be excluded from participation in the Medicare program, and notice of that exclusion would be published. The surgeon sought a court order to enjoin HHS from excluding him from the Medicare program and from publishing notice of exclusion until the conclusion of that hearing. The court concluded "that an injunction could and should be framed in such a manner as to require the doctor to personally provide postoperative care to patients upon whom he has operated, and that, as also drawn, an injunction will limit any hardship to the government and serve the public interest." Accordingly, the court issued an order granting the injunction, "provided that the plaintiff shall not perform any surgery upon any patient under circumstances in which he cannot personally provide the postoperative care." AAO-KB-PS15 1987, 2)

The optometric literature is actively promoting co-management and is advising optometrists to pattern their referral patterns around the issue of postoperative care. In the April 1993 issue of Optometry Review, an article titled "Put Some Muscle In Your Referrals" stated the following:

> A referral relationship is more than simply getting the patient back. Now a referral relationship means you perform pre- and postoperative care, have M.D.s make referrals to you for primary care, and even bring an M.D. into your office.
>
> Establish referral relationships with M.D.s who focus on surgery, not primary care, contact lenses or dispensing. 'Surgeons will be happy to get your referrals,...' (Winslow 1993, 35)

The article continues by quoting one optometrist's recommendation to fellow optometrists when establishing a working relationship with an ophthalmologist:

> Laine lays out ground rules for the surgeons with whom he works: He expects the M.D. to demonstrate respect for O.D.s in front of mutual patients. Laine demands his patients back, and asks the M.D. to refer primary care patients to him. Also, Laine expects that the M.D. will not prescribe therapeutic drugs, since Laine has a TPA license.
>
> He recommends the direct approach: 'You need to tell the surgeon, I'll do all the visual fields, then refer patients to you. (Winslow 1993, 35)

As optometrists extend their scope of practice into medical ophthalmology, the number of eye care providers increases. The patient, especially a lucrative surgical patient, becomes a "bargaining chip" in the business of health care. As long as the patient is viewed as an economic commodity, the quality of medical care is in jeopardy.

The Study's Question assumes that there is a quality control system functioning in Arizona to assure a minimum standard of quality in eye surgery co-management. The minimum standards include the minimum levels of training and proficiency for eye care providers, licensing eye care providers, peer review, and monitoring reimbursement for medical services.

The minimum standards for licensing an eye care provider to practice medicine and perform surgery in the State of Arizona have been reviewed in Chapter II. To obtain licensure to practice medicine and surgery from the Arizona Board of Medical Examiners (BOMEX) between 1987 and 1993, the time frame for this study, the health care provider had to meet the following minimum requirements:

1. Graduate from an approved school of medicine or receive a medical education which the board deems to be of equivalent quality, and
2. Successfully complete an approved twelve month hospital internship, residency, or clinical fellowship program (State State Medical Directory 1992-93, 18).

In addition to licensing physicians, another function of BOMEX is to monitor physicians who charge a fee for a service not rendered as well as physicians who divide a professional fee for patient referrals among health care providers or health care institutions and includes

contractual arrangements between providers and institutions which have the effect of fee splitting for referrals. In the cases presented in this study, the Board of Medical Examiners performed well in the area of basic licensing of the health care providers. All of the ophthalmologists involved in the cases had the appropriate medical licensure.

The Licensing Board did not perform very well in the area of monitoring physicians for abuses such as "fee splitting." Unfortunately, the apparent means of alerting the system of inappropriate practices is by "word of mouth" through patient complaints or physician complaints. This is obviously a systems error and will be addressed in greater detail a little later in this chapter.

The licensing of optometrists is handled by the Arizona State Board of Optometry. The State Board of Optometry issues a license to optometrists after the applicant has met the optometric minimum requirements. The "practice" of optometry during the time the clinical cases occurred is described as follows:

> "Practice of the profession of optometry" means the examination or refraction of the human eye and its appendages, and the employment of an object or means or methods **other than medicine or surgery, or the use of drugs**, except those diagnostic pharmaceutical agents known as topical anesthetics, cycloplegics and mydriatics, to be administered only at the time and place of examination, for the purpose of determining any visual, muscular, neurologic, or anatomical

> anomalies of the eye, the use of any instrument or device to train the visual system or correct any abnormal condition or relief of or aid to the visual function. Optometrists may use such diagnostic pharmaceutical agents for diagnostic purposes only after first completing a course in clinical pharmacology. (Arizona State Board of Optometry 1990, 3)

The optometric board is responsible to assure that a person does not practice the profession of optometry without a license. A significant issue arises concerning whether this also means to assure that an optometrist practices within his or her licensed scope-of-practice. In addition, the optometric board is charged with the duties of educating, and if necessary, censuring, placing on probation, suspending or revoking the license of its members in Arizona for any of the following reasons:

1. Conviction of a felony or any offense involving moral turpitude.
2. Obtaining or renewing a license by fraud or deceit.
3. Conduct likely to deceive or defraud the public.
4. Unprofessional conduct.
5. Obtaining a fee or compensation by fraud or misrepresentation.
6. Any violation of any statutes, laws or rules regulating the practice of optometry in this state or any other state. (Arizona State Board of Optometry 1990, 17)

According to the Arizona Revised Statutes §32-1761, optometrists are required to refer a patient to a licensed

physician upon finding certain symptomatic conditions which are outside the optometric scope of practice.

> An optometrist licensed pursuant to this chapter providing service to any person shall refer such person to a physician licensed pursuant to chapter 13 or 17 of this title when an optometrist finds an indication of the presence of a disease or a condition of the eye requiring treatment outside the scope of practice as defined in § 32-1701, paragraph 7 (Arizona State Board of Optometry 1990, 30).

According to the Arizona statutes, every case in this study in which an optometrist submitted a Medicare claim for cataract postoperative care is a "violation" of the optometric scope-of-practice. In an interview with an optometrist who served on the State Board of Optometry, he stated that the Board is aware that optometric postoperative medical care occurs and the Board of Optometry did not necessarily condone it. He also stated that the violation would be a difficult item to challenge since HCFA, or the Federal government, has approved reimbursement to optometrists for postoperative care. But, according to Medicare:

> A doctor of optometry (O.D.) is included in the Medicare definition of "physician" and **reimbursed for performing services which he or she is legally authorized to practice in the state of his or her licenser.** Thus, if state licensed to do so, optometrists may bill Medicare for providing physician services, drugs and biologics, ambulatory surgical center and hospital outpatient services, diagnostic services, and prosthetic

devices which replace an internal body organ (Insight Communication 1990, 12-1).

Prior to April 1987, optometrists were authorized to provide services for the condition of aphakia and those services primarily involved a postoperative refraction and the dispensing of spectacles or contact lenses. "Effective April 1, 1987, a doctor of optometry is considered a physician with respect to all services that the optometrist is authorized to perform under State law or regulation" (HCFA 1987, 1).

Within the time parameters of this study, the Medicare system was paying for optometric surgical co-management services billed by optometrists practicing outside of their licensed scope-of-practice in Arizona. The study demonstrates a very obvious flaw in the Medicare "system".

In an attempt to better understand how the Medicare system evaluates a provider prior to paying a claim, this investigator reviewed the claims processing procedures with a representative of AETNA, the Medicare carrier for Arizona. The conclusions drawn from the interview were that AETNA requires all providers to hold a current and unrestricted Arizona license for their specialty. For physicians, this license needs to be issued by the Arizona Board of Medical Examiners. For optometrists, the license is issued by the

Arizona Optometric Board. Surprisingly, Medicare does not cross reference with the state licensing boards to substantiate that the claims submitted are for services that are within the providers licensed scope of practice. In other words, if a licensed physician submits a proper bill to Medicare, Medicare will reimburse that physician even though that physician may be practicing medicine outside the normal and accepted scope of practice. AETNA estimated that six hundred to eight hundred billed charges for optometric postoperative care were reimbursed each year since 1987 in Arizona. It becomes the responsibility of the peer review organizations and licensing boards to regulate scope of practice issues and institute corrective actions.

AETNA/Medicare performs utilization reviews on medical services or procedures. Claims for medical services not covered by Medicare or claims for high priced services or procedures receive special attention. It is possible that this system for economic checks and balances functions for ophthalmologists but the system breaks down when the service of optometric **post**operative care is considered. Since Medicare does not cross reference whether the optometrists are practicing within their licensed scope of practice, then Medicare will continue to pay for a service regardless of whether minimum standards for quality have been met.

Optometric postoperative care is an outpatient service and is performed in an optometrist's office. Only the Optometric Board is allowed to monitor the optometrist's postoperative care. This form of health care delivery is not regulated by the established medical peer review activities. Optometrists are not licensed under BOMEX which eliminates yet another medical quality control and weakens the medical quality control system.

In this study, the peer review activities are performed by the federal peer review organization and/or the local peer review mechanisms established in the hospitals or the ambulatory surgical facilities. The peer review mechanisms appeared to work well for co-management relationships between two opthalmologists except in one clinical setting, exemplified by Case 4. The following is a summary of Case 4.

The patient is a seventy-three-year-old year old male who presented to a rural, general ophthalmologist on 6-3-93 with the complaint that in his left eye his "whole vision" was blocked by floaters. The condition started the week before and had remained unchanged. The ophthalmologist examined the patient and found a retinal tear, superiorly, in the left eye. Additionally, a vitreous hemorrhage was present and accounted for the floaters. The patient's right

eye was normal. The ophthalmologist decided that an argon laser retinopexy was the treatment of choice for this patient.

The ophthalmologist did not routinely perform argon laser retinopexy so he consulted with another ophthalmologist in his group practice who was currently performing this procedure. The second ophthalmologist examined the patient and concurred with the diagnosis and the recommended treatment plan. The first doctor recommended to the patient that the second doctor perform the laser procedure; that the first doctor would provide the postoperative care. The patient agreed to this and on the same afternoon, the patient underwent and argon laser retinopexy of the left eye.

The chart indicates the patient did well and that the first ophthalmologist provided postoperative care consistent with normal post argon laser retinopexy. The patient's retina did not become detached and he currently has 20/20 vision in both eyes. The patient is currently under normal follow-up protocol for patients who have had a retinal detachment.

In this case, all of the medical services and procedures appear appropriate and in the patient's best interest. However, the surgical treatment occurred in the

physician's office and is not subject to the local peer review activities nor the federal peer review system. The case may be reviewed by the Medicare reimbursement system if the case were to have an excessively large charge or billing error. Even though in-office procedures and co-management are not likely to result in abuse of the Medicare system, this case does reveal a defect in the quality control system currently in place which monitors surgical co-management.

The federal and local peer review systems did not perform well in the evaluation of cases involving optometrists and ophthalmologists. Postoperative care is performed in a provider's office. If the provider does not have an affiliation with an ambulatory center or a hospital where the eye surgery is performed, then that provider's medical services will not be evaluated by the existing quality control mechanisms.

In all of the cases involving optometrists and ophthalmologists, all of the postoperative care rendered by optometrists is outside of the current quality control system. In an interview with the Medical Director of the Arizona Federal Peer Review Agency (HSAG), he stated that no optometric postoperative care has been reviewed during the time frame of this study.

One of the major difficulties this investigator notices in the peer review system is that there are several "standards" of care for the same disease process. The standards of medical and surgical eye care have been developed and maintained by the ophthalmological profession. Optometrists are now establishing their own standard of care for medical and surgical eye care as evidence by the recent actions of the Arizona legislature regarding the expansion of the optometric scope-of-practice to include the practice of medicine. Since optometrists are not subject to evaluation by the Arizona Board of Medical Examiners, it becomes the responsibility of the Optometric State Board to establish their own medical standards of practice.

Multiple standards and multiple regulatory agencies make the function of peer review organizations more difficult. Are the peer review organizations to judge optometrists by the same standards as ophthalmologists? Are they to use optometric standards to judge ophthalmologists? There is definitely a snag in the peer review system that represents more than a lack of communication or inefficient feedback mechanisms. Parallel systems of health care delivery are being developed and the standards for both may not be the same. The bottom line is that a major link in the medical quality control system in Arizona cannot even

evaluate the competence of a significant proportion of medical eye care providers.

Theoretically, the primary purpose of a medical quality control system is to assure that minimum standards of quality are met or maintained. An additional goal is to improve the quality of medical care over and above the minimum standards. According to Waelchli (1992), there are eleven Theses which summarize the concepts involved in General Systems Theory (GST). The tenth Thesis is consistent with the theoretical basis for this study. He states the following:

> Thesis 10: "Control" in systems is defined as the maintenance of the values of specified variables of the controlled system within ranges dictated by the "controller." One of the laws of control in complex systems is Ashby's Law of Requisite Variety. Ashby's Law states that to control a complex system, the controlling system must generate at least as much variety as the system being controlled: "Only variety in the control mechanism can deal with variety in the system controlled." (Waelchli 1992, 7)

As Crosby stated, a definition of quality is "meeting the requirements" (Houghton 1992, 12). In Arizona, there are established minimum requirements that health care providers must meet before they perform surgery and/or provide surgical postoperative care. It is the

responsibility of the quality assurance system to establish and enforce the minimum requirements.

In addition, a properly functioning control system must remain flexible, or contain as many variables as the system it is evaluating. Flexibility allows the control system to adapt to the ever changing health care environment. An example of the necessity of system adaptation may be the licensing of health care providers that perform surgery and surgical postoperative care through the medical licensing board of Arizona which is the State Board of Medical Examiners (BOMEX). All health care practitioners that perform surgery and surgical postoperative care are licensed by BOMEX. In this example, the variables of the licensing board match the variables in the system being licensed. What happens if the State legislature expands a group of health care practitioners' scope-of-practice to include postoperative care and surgery and this same group is not responsible to BOMEX for licensure? The control system which is designed to assure minimum standards of quality in surgery (BOMEX) is faced with a problem. There are now more variables in the system being controlled than there are in the controlling system. This situation demonstrates a quality control system that is inadequate to maintain the

integrity of its original purpose. There are several ways to resolve this problem.

1. Maintain a single standard of surgical practice, under BOMEX's authority, and include the health care practitioners whose scope-of-practice has been expanded into the area which BOMEX is designed to cover.

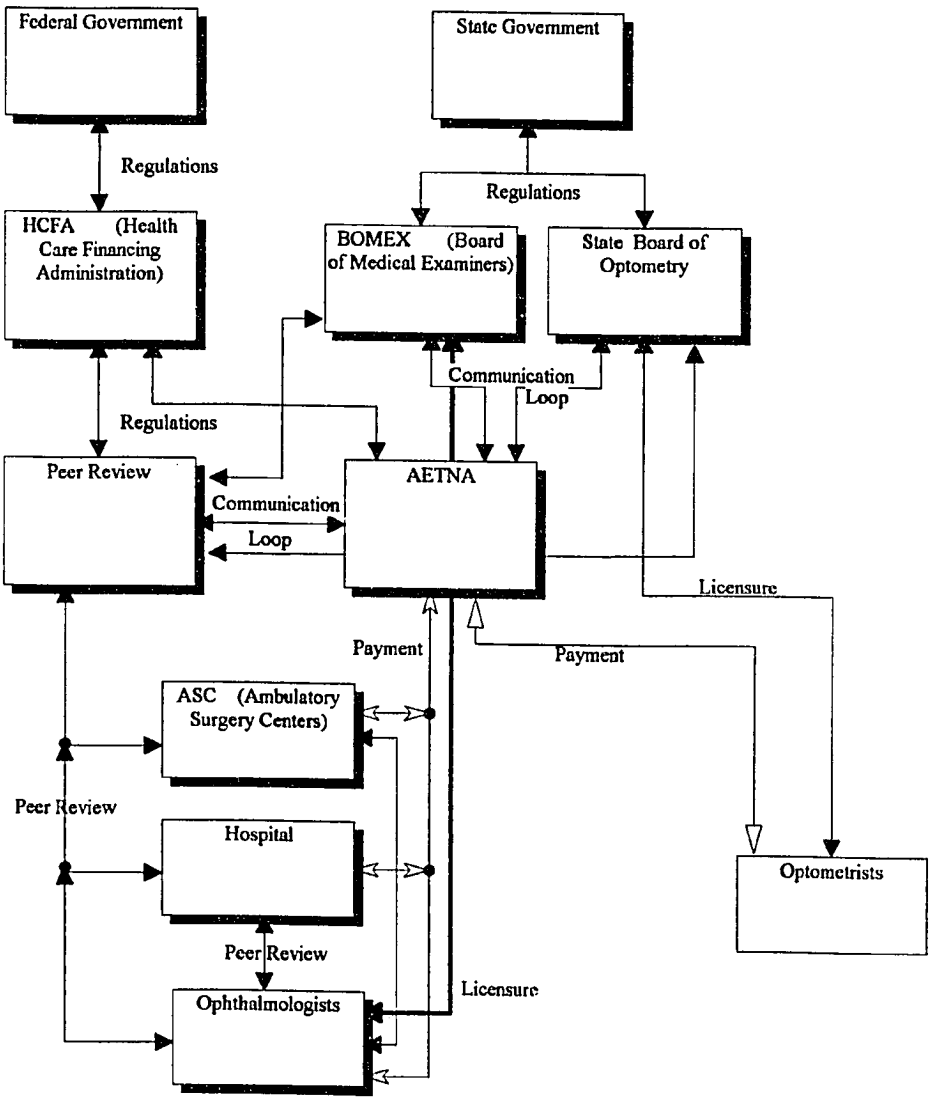
2. Set up two different standards for surgical practice and allow different organizations to enforce those standards.

There may be more solutions, but, the point is that the number of variables in the controlling system needs to at least match the number of variables present in the system being controlled.

Figure 5 illustrates the current quality control system for eye surgery co-management in Arizona. There are several items which stand out on initial review of the diagram which point out a potential problem for this system to truly function as a system. First, there are two "heads" or top levels which are not in communication with one another. At this point it is clear that this system cannot function as a "true" system. In a true system, there must be a "unifying" mission statement; singular in nature and under which all of the subsystems will function in a coordinated manner. In the diagrammed system, both the federal government and the

FIGURE 5

QUALITY CONTROL SYSTEM FOR EYE SURGERY CO-MANAGEMENT IN ARIZONA



state government are setting rules for health care delivery. The edicts from these institutions may coincide with one another or they may be in conflict. This fragmented form of organization in monitoring the health care system is indicative of what Dr. Hoye stated in Chapter One regarding a national health care policy. He states the following:

> Among the world's advanced nations, we have built one of the worst systems that has tied the federal government in fiscal and political knots on health policy. Some observers believe we are totally lacking in a national health policy, but instead, we have developed and maintained a national health budgeting policy. Lacking is a clearly defined mission statement that reflects our implied value system that provides access to quality and affordable health care for all citizens of the United States. (Hoye 1991, 61)

The analysis of the cases indicates that the optometric providers are not included in the peer review mechanism of the quality control system. The current medical quality control system lacks the flexibility to adapt to the very thing it has been designed to monitor. As Ashby stated in the Law of Requisite Variety for Complex Systems, "the controlling system must generate at least as much variety as the system being controlled. Only variety in the control mechanism can deal with variety in the system controlled" (Waelchli 1992,7). This concept leads directly back to the theoretical basis for this study, that is, the design of the

current quality control system is not adaptable enough to the rapid change in health care.

In the diagram, the financial mechanism, or AETNA (Medicare), appears to be the one subsystem which has direct contact with nearly all aspects of eye care co-management. AETNA directly communicates with the providers such as hospitals, ambulatory surgery centers, ophthalmologists and optometrists. There are even communication channels designed to help coordinate interactions between subsystems such as peer review and AETNA. Unfortunately, these communication potentials do not appear to be adequate because AETNA has been paying unlicensed health care providers for services delivered to Medicare beneficiaries. AETNA needs to communicate with the State Board of Optometry to determine whether the billed charges were within the provider's licensed scope-of-practice.

A subtle observation of the current medical quality control system reveals the presence of two licensing agencies; one for optometrists and one for ophthalmologists. This would not be a problem if the dual licensing boards' responsibilities did not overlap. Prior to optometrists becoming licensed to practice medicine, BOMEX set the minimum standards for proficiency and quality. Now that optometrists are licensed to practice medicine, and the two

licensing boards do not have a system to coordinate minimum standards of proficiency for quality, it is not unreasonable to assume that there will exist two standards of care for medical eye care. As stated earlier, multiple standards make peer review activities extremely difficult. How can the peer review organization legally apply two different standards of care to the same medical service? As more paramedical personnel have their licensed scope-of-practice expanded, the potential for problems can be expected to increase.

Cross-Case Analysis and Discussion

In the previous section, the discussion centered on the inadequacies in the medical quality control system that were revealed by the analysis of individual cases. The individual cases were able to demonstrate certain aspects of the current quality control system that were ineffective or lacking. In the individual case it was relatively clear whether or not there was a problem with the medical care delivered. On a larger scale, individual cases cannot conclusively prove that the quality control system is functional or dysfunctional. Each case, on its own, can be an "anecdotal" example of a system that is working well or not working in one or more areas of medical quality control.

Individual cases show that the current quality control system "appears" to function for the surgeon on a more consistent basis than for the postoperative care provider. The surgeon is ultimately responsible for the patient's welfare during the total course of surgery. Can it be assumed that if the surgeon achieves the standards for quality medical care that all aspects of surgical co-management pass muster? This investigator has found it necessary to perform a cross-case in order to discuss the entire medical quality control system as it pertains to eye surgery co-management.

The results of the data analysis indicate that any conclusions drawn from studies which evaluate the surgeon, cannot be applied to the postoperative care provider. In Arizona, this is important because the current quality control system primarily evaluates the surgeon in clinical situations where co-management occurs.

In any quality control system that evaluates a co-management relationship, it is important to be able to assess every provider in the relationship. The co-management relationship should be considered a "single unit" because it must work as a single unit for the patient to receive the best possible care. In order for various mechanisms to function as a system, they must, by

definition, be interdependent. The output from one subsystem becomes the input for another subsystem. In the area of surgical co-management, quality control determination of one provider in a co-management relationship should relate in some degree to any other provider in the same relationship. This study indicates that in Arizona, the current quality control system evaluating surgical co-management of the eye surgery patient cannot make any inferences about the postoperative care provider by the data which exists on the surgeon, and vice versa.

An "analysis by section" of the current quality control system for co-management of the eye surgery patient, for each two sections, paired observations (mean scores by case) were studied to determine whether there is any relationship between the different sections which make up the quality control system.

In studying the current quality control system in Arizona which monitors eye surgery co-management, this investigator has found that assumptions made about the surgeon cannot be carried over to the postoperative care provider. In other words, the following statement cannot be made based on the results of this study:

Because the surgeon is the individual responsible for the total surgical care of the patient, and we have determined that he/she is performing well in that capacity, we can assume that the postoperative care provider is performing his/her function equally as well.

This study does not support the conclusion that if one aspect of the quality control system is performing well, then the other parts of the quality control system are performing in a satisfactory manner.

The current system is clearly designed to have the different aspects of the quality control process shared between various regulatory agencies. For example, the peer review process relies on the licensing board to assure that health care providers are licensed to perform the service they deliver to the patient. Additionally, the Financing agency depends on the licensing board to assure that eye care providers are licensed to perform the procedure or service for which they submit a claim. With a system that has "shared" aspects of total quality control, it is reasonable to assume that the "function" or effectiveness of the organizations within the system is dependent, to some degree, on the effectiveness of the other organizations within the system. The effectiveness of the financial aspect of the system is dependent on the effectiveness of

the licensing aspect within the same system. If the licensing organization fails to adequately "do its job" then it will have a direct effect on the ability of the financial system to "do its job." This system's failure can be seen in several of the clinical cases in which the financial organization is assuming that optometrists are "licensed" to perform medical eye care. The optometrists were in fact licensed to provide optometric care but during the time parameters of this study, the optometrists were not licensed in Arizona to provide the postoperative medical care for which they billed and received reimbursement. The reimbursement to the optometrists is clearly contrary to the stated directive from HCFA.

This study has shown that the various entities within the quality control system for eye surgery co-management are interdependent. Can the overall system be evaluated for effectiveness by evaluating one aspect of the system? For example, can it be assumed that if the peer review system is functioning well then the finance system is functioning well? After evaluating the data, it was found that assumptions cannot be made regarding the effectiveness or lack of effectiveness of one aspect of the quality control system by determining the effectiveness of another aspect of the same system. Except for Peer Review and Licensing, no

statistical relationship exists between the effectiveness of the other aspects of the quality control system which evaluates eye surgery co-management. Although the data analysis does show a relationship within the Peer Review/Licensing comparison, the data analysis does not support the conclusion that a direct relationship exits between the effectiveness of Peer Review and the effectiveness of Licensing.

Conclusions

In President Clinton's address on health care reform in September, 1993, he stated that the United States "is blessed with the best health care professionals, the finest health care institutions, the most advanced research, and the most sophisticated medical technology on the face of the earth." Yet, this same health care system seems to be floundering in its ability to provide quality health care. Hoye (1991) summarizes some of the more obvious problems which appear to be the nidus for the health care revolution occurring in the United States at this present time. He summarizes the problem as follows:

> While we boast of leading the world in advancement of medical technology, some thirty one million people are reported to be without health insurance. In many cases they lack the ability to access the current system. Half of the poor are also ineligible for the Medicaid program and one

> third of the uninsured are children. We are expending 11.5% of the gross national product (GNP) on health care. Among the world's advanced nations, we have built one of the worst systems that has tied the federal government in fiscal and political knots on health policy. (Hoye 1991, 61)

The process of health care reform is critical because it is economically and socially vital that the reform be done correctly the first time. To accomplish health care reform many of the best minds are corroborating to formulate a "system" that will meet the needs of all the people in America and the wants of most.

As mentioned earlier in this study, in order to modify or develop a health care delivery system for the American public, one must have a clear understanding of what comprises a "true system." Additionally, one must have a very clear understanding of the present system with its strengths and weaknesses.

On September 22 1993, President Clinton presented his health proposal to the United States Congress. In his presentation, the President stated the following: "... we have learned a powerful truth: we have to preserve and strengthen what is right with our health care system and fix what is wrong with it" (Eckholm 1993, 303).

President Clinton presented six concepts that will form the basis for his health care proposal. The six concepts are the following:

1. Security: Every American will receive a health security card that will guarantee you a comprehensive package of benefits over the course of your lifetime...(Eckholm 1993, 305).
2. Simplicity: Our health care system must be simpler for patients and simpler for those who actually deliver health care: our physicians, our nurses, and other medical professionals (Eckholm 1993, 306).
3. Savings: Our reform must produce savings in our health care system (Eckholm 1993, 307).
4. Choice: Americans believe they should be able to choose their own health care plans and their own doctor. And under our plan they will have that right (Eckholm 1993, 309).
5. Quality: If we reform everything else in health care but fail to preserve and enhance the high quality of our medical care, we would have taken a step backward, not forward (Eckholm 1993, 308).
6. Responsibility: ...all Americans must take more responsibility for their own health ... (Eckholm 1993, 310).

In the United States, there are numerous systems in place for the delivery of health care, but the processes are not linked to produce a consistent outcome. There is no single medical care system but rather a series of systems which do not work towards the same desired and coordinated outcome. Hoye (1991) continues to describe the American health care system as follows:

> Some observers believe we are totally lacking in a national health policy, but instead, we have developed and maintained a national health budgeting policy. Lacking is a clearly defined mission statement that reflects our implied value system that provides access to quality and affordable health care for all citizens of the United States. (Hoye 1991, 62)

An example of the disjointed medical care system at a local level is the quality control mechanisms overseeing medical care in the state of Arizona. There are multiple systems for assuring that certain aspects of quality medical care are maintained. Some of these organizations are licensing boards, medical credentialling processes, third-party payor reviews, and standards of care statements. These individual systems function to achieve their specific purpose but they do not function under a unifying "mission statement". All of the individual systems are assuring a standard of care in specific areas, leaving gaps in some places and redundancy in other areas resulting in a potentially inferior level of quality which may not exist under a coordinated quality control system.

"Quality" has been defined, and is used in this study, as the "Conformance to requirements" (Cartin 1993, 8). "Control" in complex systems has been described as the maintenance of the values of specified variables of the controlled system within ranges dictated by the "controller"

(Waelchli 1992, 7). For this study, a quality control system would assure that the health care providers involved in a surgical co-management relationship conform to the requirements set forth by the controller, that is, the federal and state governments.

This study evaluated the quality control system for eye surgery co-management in Arizona. The system was comprised of three basic sections: licensing, finance, and peer review. Each of these sections are well established, comprehensive, and complex. Each of these sections also appears to be able to perform its intended purpose in individual situations or clinical cases. On a larger scale, as is occurring with eye surgery co-management in Arizona, these sections are unable to remain "flexible" enough or to change rapidly enough to accommodate the system which they are controlling.

Within an organization that is functioning as a true system, there may be systems operating at different levels, with each level subject to its own purpose yet sharing some characteristics and similar goals with other systems or levels. The systems need to communicate (inputs and outputs) with systems at the same level and with systems at different levels (higher or lower) for optimal effectiveness.

Other characteristics of a system's unit or component are function inputs, outputs, sequence, environment, equipment, and human agents (Nadler 1967, 6).

1. Function: "The mission, aim, or primary concern of the system" (Nadler 1967, 6).

Within the sections of the quality control system monitoring eye surgery co-management, "function" is not clearly defined. As mentioned earlier, a clearly defined mission statement (function) for the overall quality control system does not exist. It is not surprising to see that the mission statements of the "subunits" within the system are either lacking or are dysfunctional for the purpose of coordinating activities between other subunits within the system. Because the critical aspect of function is lacking in the system, subsequent components which operate within the system show evidence of being dysfunctional.

2. Inputs: "Any physical item, information, humans, and/or feedback of any of the three into the system and on which processing is going to be done to arrive at an output" (Nadler 1967, 6).

The "input" mechanism is vital to the overall success of a system. One of the laws of control in complex systems is Ashby's Law of Requisite Variety. Ashby's Law states that to control a complex system, the controlling system

must generate at least as much variety as the system being controlled. The diagram of the "Quality Control System for Eye Surgery Co-management in Arizona" shows that the current system is not adhering to Ashby's Law. In the diagram, the optometric variable lies outside the usual "input" channels for the peer review system. Because of this system discrepancy, the delivery of health care in the setting of eye surgery co-management has a significant obstacle blocking its ability to improve. Clinical cases, such as Case 12, have the potential to recur because the system is not designed to evaluate the postoperative care provider in this co-management relationship.

The directives for the Federal peer review system originate from Washington and they are not sensitive enough or flexible enough to keep pace with the changing health care environment in which eye surgery co-management is occurring. The same dilemma applies to the Medicare system. The input from Washington to the Medicare carrier may be relatively clear, but the input from the licensing boards is not adequate in order for the carrier to carry out the directive from Washington. For example, Washington instructed AETNA not to pay the optometrist for postoperative care if he/she is not licensed in that state to provide that care. This is a relatively clear directive.

However, AETNA has reimbursed optometrists for medical postoperative care, for which they were not licensed to provide in Arizona during this study's time parameters, based on nebulous information obtained from the Optometric Board.

The output generated from one subsystem is not clear or consistent with the directives of the other subsystems resulting in feedback that is inadequate or inaccurate. The feedback now represents the input which drives further actions within the first subsystem. The consequence of "faulty" input is "faulty" output as evidenced by Medicare paying an optometrist for a service for which he/she is not licensed to provide. Ultimately, the whole medical quality control system will become ineffective. The medical care is in jeopardy of becoming substandard in quality and patient will suffer as a result.

3. Outputs: "The physical items or services which result from the processing of input and express how the function is achieved. Function tells what is to be accomplished, output tells how the function is achieved" (Nadler 1967, 7).

A "function" of the Medicare system would be to pay for services which are delivered by a licensed health care provider. The output of consistently reimbursing providers who practice outside of their scope-of-practice reinforces

the activity. The erroneous output lends credibility to questionable co-management relationships. Faulty output may inadvertently allow kickback relationships between providers which may result in potential harm to the patient, as presented in the several of the cases.

Another indication of output dysfunction is that Medicare appears schizophrenic in its output activities. For example, Medicare has successfully stopped a cataract surgeon from allowing an optometrist provide this postoperative care, yet, Medicare reimburses optometrists for postoperative care which may lie outside of their licensed scope of practice.

4. Sequence: "The process, transformation, or order of steps, including feedback and control, required to change the inputs into the outputs" (Nadler 1967, 6).

Within the current medical quality control system, the processing of medical information is out of "sequence." For example, the Federal government has instructed the Federal peer review organization to monitor the quality and utilization of cataract surgeries. The monitoring activities will review many aspects of health care delivery such as the indications for surgery, the type of surgery performed, the location of the services, and the cost of the services. Apparently, the peer review process stops when

the patient leaves the surgical facility. Postoperative care is not reviewed under the current system. Before 1987, postoperative care management was not an issue because the surgeon usually did the postoperative care. Currently, a significant amount of surgery is performed in under the co-management relationship and the peer review organization does not have access to these medical postoperative services. As a result, the subsystem of peer review, designed to monitor the providers of health care, is missing a whole sector of health care providers. There is a conspicuous gap in the flow of information pertaining to eye care medical co-management. How can the peer review organization adequately enforce governmental standards when a portion of health care lies outside of the review process? Without adequate sequencing of input and output, the system is destined to fail.

5. Environment: "The physical and sociological factors within which all other system characteristics take place" (Nadler 1967, 7).

The "environment" of health care is complex and as varied as the number of communities around the United States. Within the overall medical environment are distinct biomes. These medical biomes require adjustments in the medical system. For example, the reimbursement for a

particular surgical procedure varies from state to state and from urban to rural locations.

The environment of quality control in medicine is equally complex and varied. The environment of eye surgery co-management in rural Arizona is unique and agencies responsible for creating an effective quality control system must acknowledge that fact. If quality control is to be effective, it must be carried out on a local level where the sociological variability of the American landscape may be taken into account. The goal of Washington should to make clear what the "spirit" of the law is, the mission statement, not the detailed regulations. The detailed regulations can be effectively and economically handled at the local level.

6. Equipment:

> Physical resources that serve as catalysts or agents in each step of the sequence for changing the inputs into outputs. Physical items arriving at a system can therefore be either inputs, which become part of the outputs, or equipment, which does not (Nadler 1967, 7).

The current medical quality control system has numerous devices for generating and evaluating data. It is the opinion of this investigator that a computerized program could unify the subsystems. A computer link could organize the subsystems into a "true system." Health care in the

United States is changing so rapidly that the current "paper flow" of information is clearly inadequate. The ability to rapidly disseminate new information, organize old information, and eliminate unwanted information is essential to the success of any quality control system.

7. Human agents:

> Human resources that serve as agents or catalysts in operating the equipment within the environment and the sequence of changing the inputs into outputs to achieve a function. Humans arriving at a system can therefore be either input, as patients into a hospital, or human agents, as nurses in a hospital. Humans are often the basis of activating the decision sequence (Nadler 1967, 7).

It is obvious that the human agent is involved in different capacities in the medical quality control-system. As an agent for input, it is generally the nurses who record the necessary information into the medical record which then serves as the basis for most peer review activities. Fortunately, the current system has performed well in this regard. Multiple medical record training sessions are offered by the peer review agencies, Medicare, and licensing agencies. These training programs allow the individuals working with medical records to do a better job and thus better represent the care being delivered.

Patients are also human agents which provide a source of input that drives the system. Unfortunately, this form of input is inconsistent and difficult to interpret. It is, however, an extremely important source of information in areas such as surgical co-management of the eye surgery patient. Several patients are approaching the licensing boards and Medicare with complaints about care they have received in a co-management relationship. Unfortunately, these complaints frequently take the form of medical litigation. Although medical litigation is a method by which information may enter the quality control system, it probably does not represent the most constructive approach to modifying the health care delivery system in a manner which would result in improved patient care.

One other important point in this area, it is the opinion of this investigator that the human agents closest to the point of patient/provider interaction should have significant input to the system regarding "quality." Individuals who are involved in direct patient care should have a significantly greater input into the quality control system. Direct patient/provider input has the greatest potential for improving the current and future health care delivery system.

How is the medical quality control system in Arizona functioning to assure a minimum standard of quality in the area of eye surgery co-management?

This investigator feels the quality control system should be graded at a level of "C" or "average." This level of performance should not be acceptable. James Houghton, the Chairman and CEO of Corning, has described the consequences of a less than 100% effective health care system. He states the following:

> At Corning, our definition of quality is very simple. The definition is: meet customers' requirements 100 percent of the time. And if you think about it, really 99 percent is not good enough. You know what 99 percent is? It means in this country 20,000 lost pieces of mail every hour -- 99 percent good -- it means three or four short or long landings on every runway in the United States everyday -- 99 percent good. It means 5,000 improper surgical procedures a month; it means 200,000 wrong prescriptions a year, and it means your heart beats every minute of every day except for 87 hours a year. That's 99 percent good. (Houghton 1992, 14)

Recommendations

The first and foremost recommendation would be in line with Robert Hoye who states the following: We need a "...clearly defined mission statement that reflects our implied value system that provides access to quality and affordable health care for all citizens of the United States" (Hoye 1991, 63).

Second, the components of the quality control system need mission statements which conform to and compliment the primary mission statement. Well designed mission statements will allow the subsystems to coordinate their respective activities.

Third, the regulating agencies should be linked by a computer network. The "paper" communications must be replaced by electronic communications in order to improve and assure the accuracy of the input and output of the overall system. Computer networking would significantly reduce the time required for input to be processed by the various regulating agencies. Medical quality issues ought to illicit immediate attention but, unfortunately, by the time the current medical quality control system is able to respond to a problem, the variables of that problem have changed enough to warrant reassessment of the issue. The system becomes slow and inefficient.

The recommendations generated by the analysis of the medical quality control system for eye surgery co-management in Arizona are relatively general and may be appropriate for any system. There are several "specific" recommendations which this investigator feels would improve the quality of health care in the eye surgery co-management relationship. These are as follows:

1. All health care providers licensed to practice "medicine" should be subject to the same licensing board. This will eliminate the existence of more than one standard of care for a given service, specifically, in the cases of eye surgery co-management. Optometrists offering medical services such as postoperative medical care should be licensed and regulated by the medical licensing board. Other health care practitioners, such as physician assistants, are already licensed by the Arizona State Board of Medical Examiners (BOMEX). In April of 1993, the Arizona State Legislature passed a bill granting optometrists in Arizona the privilege to practice medicine. The most logical next step, from a medical quality control standpoint, would be for those optometrists to be subject to the medical licensing standards of the Arizona State Board of Medical Examiners. A single standard for medical postoperative eye care will bring uniformity regarding compliance to the "minimum standards."

2. The Federal peer review agency should establish "preferred practice patterns" for eye surgery co-management. The establishment of the preferred practice patterns should begin with cataract surgery because of the a large number of Medicare beneficiaries subject to that surgical procedure. Cataract surgery is the most common surgery performed on

Americans age sixty-five and over, with an estimated 1.35 million procedures being performed every year at a cost of approximately $3.4 billion (HHS 1993, 1). Cataract surgery is in need of closer scrutiny by the peer review agency in light of recent investigations into fraud and abuse within the Medicare system. The United States Department of Health and Human Services has recently published a very comprehensive manual titled Cataract in Adults: Management of Functional Impairment-- Clinical Practice Guidelines (HHS 1993). This publication presents an excellent basis for the establishment of guidelines which may be applied specifically to the co-management relationship for cataract surgery. Additionally, the peer review organization should expand the review parameters to include all postoperative care providers.

3. Medicare should require the carriers, such as AETNA, to expand the licensure screens to assure that the health care provider's licensed scope-of-practice includes the service for which a claim has been submitted.

This investigator is confident that the implementation of these recommendations could have a significant, positive impact on the quality of health care that a patient receives in the area of eye surgery co-management as well as surgical co-management in general.

In closing, eye surgery co-management is beneficial to the evolving health care system. The purpose of the co-management relationship is to deliver the best medical care available to the patient through the cooperative effort of the surgeon and the primary eye care provider. The intent of this study is to gain an understanding of the current quality control system which evaluates surgical co-management. The conclusions of this study are the recommendations based upon data analysis and applied systems theory.

As local, state, and national health care systems are reworked for the future, the quality control systems must have the ability to assure minimum standards of medical quality. Organizations responsible for medical quality assurance system must have the capacity to cover all aspects of patient care despite changing conditions. The emerging health care system must create an environment in which health care can continue to improve. To paraphrase Houghton, the goal of health care must be to meet the requirements 100% of the time.

Recommendation for further study

A study of current "quality control" procedures in providers' practices will provide valuable insight into

methods for incorporating medical provider's practices into the evolving quality control system in the United States.

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APPENDIX A

A DECISION GRID FOR THE RATING OF QUALITY OF CARE CONCERNS IN PEER REVIEW

Type of patient risk	Probability of patient risk occurring 10	9	8	7	6	5	4	3	2	1	
Death											10
Loss of body part or organ											7
Permanent functional impairment of body part or organ											6
Temporary functional impairment of body part or organ											5
Serious long term consequences for the patient											4
Serious short term consequences for the patient											3
Minor long term consequences for the patient											2
Minor short term consequences for the patient											1

PROCEDURE USED IN GAINING RAPPORT WITH BED PATIENTS

PROCEDURE	FREQUENCY OF USE ALWAYS	FREQUENTLY	OCCASIONALLY	SELDOM	NEVER
"Hello," began conversation					
"Good morning," began conversation					
"Hello" or "Good morning" with a gesture, conversation					
"How do you feel?" informal discussion					
"How do you feel?" formal discussion					
Formal greeting, professional discussion only					
Walk in and begin talking about generalities					
Place hand on patient, then speak					
Tweak patient's toe before speaking					
Hold patient's hand before speaking					
Smile before speaking or greeting					
Gesture before speaking or greeting					

CURRICULUM VITAE

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Social Security No.:	527-25-6483
Wife:	Carol
Children:	Jennifer, Kristina

I. EDUCATION:

Yavapai College, Prescott, AZ.	A.A. - 1975
Grand Canyon College, Phoenix, AZ.	Pre-Med.
University of Arizona-College of Medicine Tucson, AZ.	M.D. - 1980
Walden University-Institute for Advanced Studies- Minneapolis, MN.	Ph.D. - Health Systems: in progress

II. PROFESSIONAL EMPLOYMENT:

Roanoke Memorial Hospital, Roanoke, VA.	General Surgery 1980-81
University of Virginia Affiliated Programs, Roanoke, Va.	Internal Medicine 1981-82
Veterans Administration Medical Center Tuskegee, Ala. and University of Arizona-College of Medicine, Tucson, AZ.	Ophthalmology 1982-1985
Central Arizona Eye Clinic,	Private Practice-

	Prescott, AZ.	General Ophthalmology 1985-present
III.	Licensure: Arizona 14391	1983-present
IV.	PROFESSIONAL CERTIFICATIONS:	
	Diplomate of the American Board of Medical Examiners	1981
	Diplomate of the American Board of Ophthalmology	1988
	Diplomate of the American Board of Quality Assurance and Utilization Review	1989
	Fellow of the American College of Surgeons	1990
V.	PROFESSIONAL ASSOCIATIONS:	
	American Medical Association	
	Arizona Medical Association	
	Arizona Ophthalmological Association	
	Yavapai County Medical Association	
	American Academy of Ophthalmology	
	American Academy of Quality Assurance and Utilization Review Physicians	
VI.	MEDICAL FACILITY AFFILIATIONS:	
	Yavapai Regional Medical Center Prescott, AZ	Active Medical Staff
	Prescott Outpatient Surgery Center, Prescott, AZ	Active Medical Staff
	Veterans Administration Medical Center, Prescott, AZ	Consulting Staff
	Boswell Eye Center, Phoenix, AZ	Consulting Staff

VII. PROFESSIONAL POSITIONS:

Yavapai Regional Medical Center, Prescott, AZ	Chairman-Tissue Review
Yavapai Regional Medical Center, Prescott, AZ	Member-Infection Control
Prescott Medical Provider Group (A Multispecialty P.P.O.)	Member-Board of Directors
Northern Arizona Family Health Plan (the state Medicaid plan)	Member-Board of Directors
Prescott Outpatient Surgery Center, Prescott, AZ	Chairman- Q.A. Committee
College of Nursing, Yavapai College, Prescott, AZ	Member-Advisory Board
Yavapai County Medical Society, AZ	Delegate to the Arizona Medical Association
Arizona Medical Association,	Director for Yavapai and Coconino Counties, member of the task force for Arizona health care reform, member of the Board of Directors
American College of Medical Quality	Member-Ethics Committee
Health Services Advisory Group, Phoenix, AZ (the Federal PRO for AZ)	Physician Advisor and Medical Coordinator (active in the second,third, and now fourth scopes-of-work; PA for the UCDS; PA for the trial Cataract PPO.