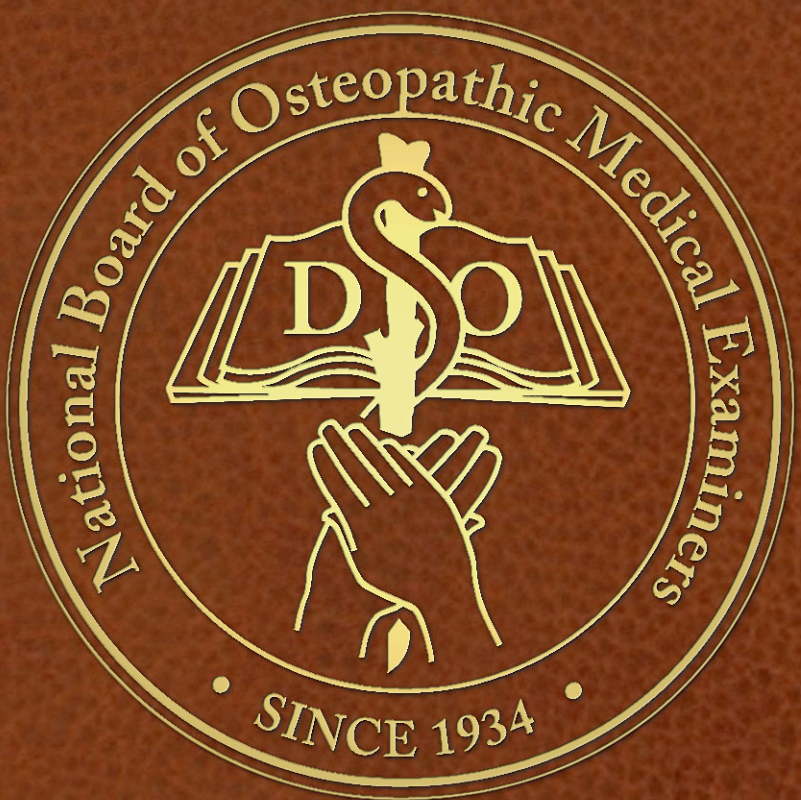

In The Public Trust: The History of NBOME

1934 – 2009

In the Public Trust

Charles Hazzard, DO
First President of the National Board

In the Public Trust: The National Board of Osteopathic Medical Examiners 1934-2009

Betty Burnett, PhD

www.nbome.org

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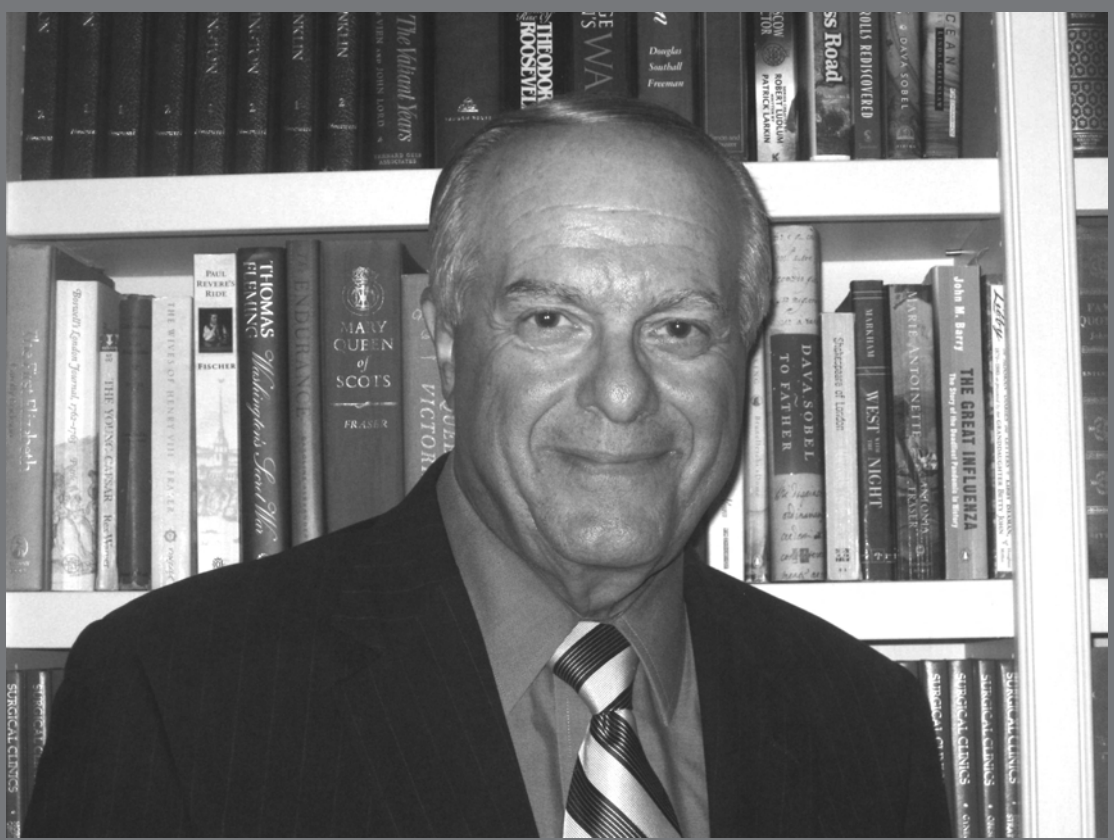
CONTENTS

NATIONAL BOARD
OF OSTEOPATHIC
MEDICAL EXAMINERS



Fredrick G. Meoli, DO, FACOS
First Full-Time President and CEO of the NBOME
2002-2009; President of the NBOME, 1999-2001

Foreword

There is something sacred about the relationship between physician and patient. The basis of the relationship lies in the implicit trust placed in the physician by the patient. That trust stems from the belief that the physician is competent to practice medicine, and thus the public has come to inherently rely on jurisdictional regulatory agencies, licensing examinations, certifying boards, and hospitals to assure them that the physician is competent.

Prior to 1900, there was no regulation or licensure of physicians in the United States. The twentieth century ushered in the regulation of physicians, but judgments regarding their competence were largely made by the use of proxy measures, such as a graduation certificate from a medical school.

After 1920, states began to create medical practice acts and individual state examinations for medical licensure. It was in this milieu that, in 1934, men of like mind had the vision to recognize the need to create an examination sequence to evaluate the physician's knowledge, skill and behavioral sets to competently practice osteopathic medicine.

They established the National Board of Examiners for Osteopathic Physicians and Surgeons which sought to create a universal examination with high standards acceptable to all jurisdictions and to the osteopathic medical profession. This examination would be used to assess physicians seeking to practice osteopathic medicine.

At first voluntary, but later required for graduation from all osteopathic medical schools by the AOA's Commission on Osteopathic College Accreditation, an examination for physician candidates was developed which would ultimately be accepted in every state in the United States in recognition of the practitioner's ability to practice the art and science of osteopathic medicine.

The National Board of Examiners for Osteopathic Physicians and Surgeons

promoted the concept that osteopathic medicine offered a unique approach to both health and disease that must be preserved and promoted as a means to provide the public with a valuable addition to available traditional medicine. With the assistance of the American Osteopathic Association, a cadre of dedicated and committed professionals, the board developed the forerunner of what would become the National Board of Osteopathic Medical Examiners and the COMLEX-USA osteopathic medical licensure examination sequence of today.

Although the name evolved from the National Board of Examiners for Osteopathic Physicians and Surgeons to the National Board of Osteopathic Medical Examiners, the mission of the board has always remained to provide assurance to the public that all candidates who successfully complete the osteopathic licensure sequence have met the minimum requirements of knowledge and skill to practice osteopathic medicine.

During its seventy-five years, the NBOME has faced many obstacles and challenges that make the history of the organization compelling to study in order to comprehend the scope of osteopathic medical licensure. Each decade brought significant change and special characteristics to the National Board of Osteopathic Medical Examiners. Many of the changes are revealed in the symbolism reflected in the great seals of the board. The 1930s brought initial organization and an essay examination. The 1940s introduced live patient clinical examinations in the hospital setting. The 1950s brought identity and reorganization. The 1960s were characterized by the introduction of objective testing formats and wider acceptance across the country. The 1970s brought advances in testing, scoring, and test administration. Some state medical boards sought assistance in building their own examinations for licensure. The 1980s ushered in sophisticated item banking, electronic scoring, and test refinement. The 1990s fostered significant research, the introduction of COMLEX-USA, and organizational changes arising from a series of important board meetings and retreats. In 1995, the last diplomate status was awarded. Today it is no longer necessary.

The new millennium would provide a period of unprecedented growth and expansion. It was in this decade that the NBOME established two venues of operation, introduced computer-based testing, and began clinical skills evaluation. Its examinations for licensure became accepted in all fifty states of the United States and many international jurisdictions.

Thus, the twenty-first century has required more of the physician. Highly sophisticated testing for licensure and specialty certification more closely resemble the actual clinical environment in which the physician works. These tests require the physician to show, rather than tell, that he or she is competent. The physician must now demonstrate a clear com-

mitment to life-long learning and must possess the requisite clinical skills and knowledge to assure the public that the medical professional they are selecting can and will meet their needs, as well as those of society at large.

The pages that follow chronicle the milestones and benchmarks that have made the NBOME the respected organization that it is today in both the domestic and international regulatory and medical educational arenas. It has steadfastly adhered to its mission, "To provide for the public welfare a means to assess competency in the health disciplines relevant to Osteopathic Medicine." It has continued to apply the organization's values of quality, security, safety, commitment, and accountability to create, preserve, and promote competency in osteopathic medical licensure through its examination systems and service to the public and the profession.

The NBOME looks forward to meeting the challenges of the next seventy-five years with the same basic tenets: to support general access to quality medical care and to enhance the osteopathic medical profession.

~ Frederick G. Meoli, DO
December 2009

For all the men and women who fought for the right to unrestricted medical practice and licensure and the recognition of the osteopathic medical profession

In the Public Trust

> "*Frequently there is more Danger from the Physician than from the Distemper.*"
>
> Dr. William Douglass, 1753

As early as 1649, colonists in the state of Massachusetts petitioned for a law to regulate "*Chururgeons, Midwives, Physitines or others imployed at any time about the bodyes of men, women or children, for preservation of life, or health*." Finding safe, honest, and dependable health care has been on the minds of Americans since then.

Developing a system to regulate health care, which now seems routine, was a long, complex process filled with questions that were debated for years. Who was to be licensed? Physicians only? What about midwives, botanists (apothecaries or pharmacists), or phrenologists? How could anyone prove an untried physician or surgeon was qualified? Should there be a written test, oral test, or clinical test or all three? Would a university or college degree be required or was apprenticeship training sufficient?

And, perhaps the most important question of all: Who should be in charge—the government, the public or the medical profession itself?

Early in the nation's history, formal education in the colonies was spotty and the best known physicians were educated in Europe. Although the first American medical school was founded in 1765, only a handful of students attended. A much greater number of physicians and surgeons learned their trade through apprenticeship, as did Andrew Taylor Still.

In the late eighteenth century, medical societies in New York and New Jersey created a system of informal regulation, using the power of ostracism to keep doctors in line. Apprentices were required to pass a test before they could go out on their own, while graduates of a medical school, no matter how inexperienced, were not. Anyone disciplined for unprofessional conduct could simply cross a state line and open a new practice.

During the era of Andrew Jackson's influence, roughly 1830 to 1850, frontier democracy spread and professionals —especially doctors, lawyers, and bankers—were seen as elitist. It was a

time of expanding public education, and Americans felt they were knowledgeable enough to judge the quality of their medical care themselves. State medical licensing laws were repealed. When A. T. Still, MD, DO, founder of the American osteopathic medical profession, was growing up, there were no regulations regarding the licensure of physicians anywhere in the United States.

In 1847 a group of physicians founded the American Medical Association (AMA) to fight this trend. They wanted to raise the status of their profession, which was then lower than that of many tradesmen. To do so, they needed to set standards. But even in 1874, when Dr. Still developed his new method of health care , the medical profession was disorganized and its status low. Few doctors were formally trained and most offered eclectic treatment regimens, rather than scientifically based ones. Homeopathy, water cures, Grahamism, Christian Science, mesmerism (hypnosis), and magnetism were some of the alternatives to allopathic medicine at the time osteopathy was founded.

In its continuing effort to professionalize the practice of medicine, the AMA in 1883 began to advocate for graduation from medical school plus hospital training as necessary before applying for a license to practice. Apprenticeship would no longer be acceptable. Furthermore, they wanted every medical student to have a degree from an accredited college or university before being accepted for study in a medical school. In response to the AMA lobbying efforts, state laws to monitor licensing proliferated, but each was written in accordance with the politics in the state and there were no uniform standards. To obtain a license, a short interview might be required or a comprehensive examination. Some states allowed a diploma to be equivalent to a license. Examiners might be bureaucrats, college professors, or physicians. In 1891, the National Confederation of State Medical Examining and Licensing Boards (now the Federation of State Medical Boards, FSMB) formed in an attempt to bring order from the chaos.

A New Profession

A YEAR LATER, IN 1892, the first class of the American School of Osteopathy (ASO) met for instruction in Kirksville, Missouri. In accordance with the school's charter, Dr. Still could have called graduates Medical Doctors, but chose instead the designation Diplomat in Osteopathy, DO (Later, Doctor of Osteopathy). He insisted that his doctors were different from "regular" MD physicians and surgeons through their emphasis on the well-being of the whole person and the belief that the body had the inherent ability to heal itself. He saw physicians as facilitators, rather than dictators of healing.

In 1897, a few years after DOs had be-

gun practicing in various locations across the United States, a group of students at ASO founded the American Association for the Advancement of Osteopathy (AAAO) with the goal of organizing the profession and promoting its system of holistic health care. The name was changed to the American Osteopathic Association (AOA) in 1901.

"The reasons for the organization are many, are obvious, are strong; and personal protection is the least of these. No; the members of this organization have laid upon them a heavier responsibility, a greater duty, than the so-called "first law of nature," self-preservation. The primary objects of the organization are, in the broadest sense, to work toward and attain all things that will truly tend to the "advancement of Osteopathy," and the rounding of it into its destined proportions as the eternal truth and vital principle of therapeutic science."

—Daniel B. McAuley, DO
First AAAO President, 1897

From the first, perhaps fearing a loss of income, most MDs disdained osteopathy. As its popularity grew, the AMA at both national and state levels actively fought its spread, calling it a dangerous cult. Ignorance about the profession was endemic. "These osteopaths," a New York senator said in 1902, "rub backs and desire to have their rubbing legalized." In the same year, the *Illinois Medical Journal* called osteopathic physicians "medical malefactors," pirates, and publicity hounds, chasing after money and not pursuing genuine health care.

When members of the American Osteopathic Association began a vigorous campaign for licensure, they faced a long, hard-fought battle, filled with contentious politics, galling misinformation and disappointment, with just enough victories to keep them going. No matter that scores of well-reasoned letters to the editor were sent to newspapers, that numbers of patients who had been restored to health (including some politicians) testified before legislators, it was the anti-osteopath vitriol that grabbed the headlines. In 1914, *The New York Times* editorialized, "The bills which . . . the osteopathists have urged through the Legislature are examples of the mischief which the leaders of half-baked cults may do in exposing the health of the community to its worst dangers."

By 1900, licensure was necessary to practice medicine in every state. The process of licensure was structured to measure minimal competency in order to protect patients from ignorance, ineptitude,

and fraud. Licensure did not guarantee good doctors, merely adequate ones. Once licensed, a medical practitioner could "diagnose, treat, operate, or prescribe for any human disease, injury, deformity, or physical condition," but some states gave only partial rights to osteopathic physicians, limiting their scope of treatment. In many states DOs couldn't operate or prescribe medications. Full licensure was often required for signing death certificates, so a DO might have to call on an MD to give a cause for the death of a patient. Besides wanting equal rights, DOs wanted the respect that would come with being recognized as a competent medical professional.

In the early years of the twentieth century, a licensing board could be made up of medical practitioners from the same discipline (MDs, DOs, or homeopathic physicians); a composite of MDs, DOs, and homeopaths; a board consisting of MDs only (usually state medical society members); public health officials and department administrators; or any other combination with which state legislators could be persuaded to agree. Medical society boards routinely failed DOs; many composite ones did as well, depending on the makeup of the board. The ideal situation would have DO candidates apply for licensure from a board made up solely of osteopathic physicians, but this occurred in only a handful of states and required intensive lobbying.

Nineteenth-Century Ailments

Ague	
Apoplexy	*Dengue*
Bad Blood	*Diphtheria*
Blackwater Fever	*Dropsy*
Childbed Fever	*Scarlet Fever*
Cholera	*Typhoid*
Consumption	*Yellow Fever*

Organizational Beginnings

Three early ASO graduates championed that course and developed the standards for osteopathic licensure, independence, and integrity: Arthur G. Hildreth, DO (1894), Charles Hazzard, DO (1898) and Asa Willard, DO (1900). Each served as president of the AOA and each had a deep loyalty to the profession. They never flagged in their insistence on the need for self-regulation.

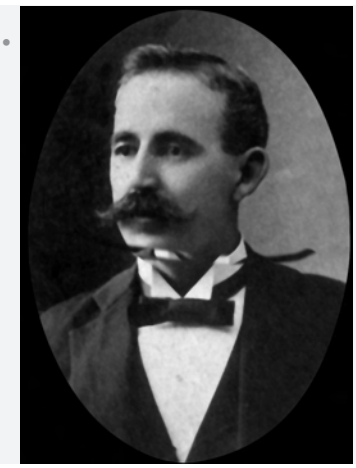
A graduate of Northwestern University, Hildreth was in the first ASO class of students to receive the DO degree. He was a close associate of the Still family, on

the faculty of ASO, and a founder of the Hildreth-Still Sanitarium in Macon, Missouri. In 1910, while president of the AOA, Hildreth sounded a call for self-monitoring at the AOA annual convention. "I have always claimed," he said, "that the only just kind of safeguard to the public, or the practice of medicine, lies in each school of medicine having its own Board of Examiners who should pass upon all applicants to practice in their own particular schools; for who can there be so well qualified to know?" Or, he might have added, as desirous of keeping professional standards high and practices free from arbitrary limitations.

At that time, the AMA required physicians to attend medical school in order to be licensed; apprenticeship was no longer acceptable. In many states an MD diploma was all that was necessary to be licensed, no examination was required. In response, "diploma mills"—medical schools without requirements, testing or occasionally, even faculty—appeared throughout the nation. The AMA became concerned about the number of bogus doctors and asked Abraham Flexner, an educator, to evaluate these schools and the overall state of American medicine.

The Flexner Report, issued in 1910, had far-reaching consequences. Flexner felt that only scientific medicine should be allowed in the United States, no matter what patients wanted. He labeled everyone who wasn't AMA-approved a "medical sectarian" and insisted that these

Arthur G. Hildreth, DO



sectarians should be prohibited from seeing patients. Medical schools, societies, and boards accepted his philosophy and with the power of their numbers, created a single method for health care in the United States. Not surprisingly, it was "regular" or traditional medicine.

Within ten years of the Flexner Report, most of the medical school diploma mills had closed, but the report had alerted public officials to the alleged dangers from fringe practitioners. Throughout the 1920s, the police in major cities were busy with raids on suspected political radicals, raids on speakeasies, and raids on unlicensed physicians. It's a "War on Quacks" declared *The New York Times*. Some osteopathic physicians were caught in the net, along with hypnotists, homeopaths, "Eddyists" (Christian Science practitioners), and chiropractors.

In 1920, the year of the Red Scare, a furor over suspected Bolsheviks, a Wisconsin MD came up with another way to

Asa Willard, DO 1876-1959

Willard was born in Frederick County, Maryland. After attending Missouri State Normal School (now Truman State University) in Kirksville, he entered the American School of Osteopathy, where he was taught directly by Dr. Still. He graduated in 1900 and moved to Missoula, Montana, to open a practice. His chief role was that of gadfly and tireless promoter of full rights for osteopathic physicians. He served as president of the AOA in 1925 and legislative chairman thereafter. His columns in the JAOA *were written in a folksy style with an incisive intellect that feasted on statistics and political machinations. He didn't know how to be dull. A founder of the National Board of Examiners for Osteopathic Physicians and Surgeons, he was its first secretary-treasurer. In his spare time, he was an elder in his Presbyterian church, a Mason, and a Rotarian.*

keep DOs away from patients. He pushed the state legislature to enact a new criterion for medical licensure. His plan was the "Basic Science Law" and required all would-be practitioners of the healing art to pass an examination covering anatomy, physiology, chemistry, bacteriology, and hygiene before they were allowed to take a licensing exam. Questions were not to include medicine or healing techniques, but were strictly about "basic science." Furthermore, no one could take the test until reaching the age of twenty-one. In effect, this mandated a pre-med education. Schools of osteopathy at that time did not require or desire students to have a pre-med education. The California Medical Association editorialized in its journal that basic science legislation probably wouldn't stop the spread of cultish medicine but might at least make the cults raise their educational standards.

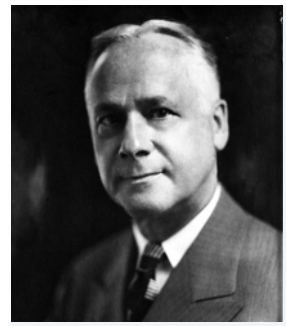
Basic Science legislation moved through the states between 1925 and 1935. In seventeen states and the District of Columbia, DOs were required to pass basic science examinations before taking a licensure exam. AOA activists were able to hold the line there. (Ironically, they later incorporated "basic science" into their own exams and the Medical College Admission Test, MCAT, is now required by all osteopathic school applicants.)

Feisty Dr. Williard, from his home in Missoula, Montana, did everything he could to fight basic science laws and "B.S. boards," as he called them. In all-caps

he announced to the Philadelphia AOA convention in 1930, "IT IS THOSE FACTS THAT ARE MOST USABLE TO US IN OUR WORK THAT WE NEED TO HAVE TAUGHT." Not, presumably, the periodic table and the scientific name for table salt.

More than anything else, basic science legislation galvanized the cause of DOs and became the impetus to create a national board of osteopathic examiners. Dr. Willard supplied the passion and Dr. Hazzard the logic for establishing examinations not dependent on AMA graders. In a 1932 *Journal of the American Osteopathic Association* (JAOA) article titled "Professional Independence is Vital," Dr. Willard wrote, ". . . just in so far as so-called 'regular' medicine is allowed to dominate the regulation of osteopathic practice *is that practice held back*." And further, "Independence in regulation is the vital factor essential to the maintenance of our professional integrity and our numerical expansion."

What Dr. Willard *didn't* want, as he explained in 1930, were "tests applied by men who have an entirely different viewpoint of the healing art and who regard an entirely different set of facts as the most usable for its practice." He was afraid that "the prejudice of allopaths doing the measuring will result in actual discrimination against these new osteopath graduates. That has occurred, and not infrequently." Looking to his own profession, he added, "If we were dominant on medical boards perhaps we would average no better in



Charles Hazzard, DO 1871-1938

A native of Peoria, Illinois, Hazzard graduated from Northwestern University and enrolled in the first class at American School of Osteopathy in Kirksville in 1892. After a short stint in a Chicago office, Dr. Hazzard was hired by the "old doctor" to teach histology at ASO. Eventually he became a professor of histology and pathology, taught the principles and practice of osteopathy, and served as the chief of clinics. He was the author of the widely used The Principles of Osteopathy *and* The Practice of Osteopathy. *Hazzard was elected AOA president in 1903, the same year he moved to New York to begin a private practice. For many years he was treasurer of the A. T. Still Research Institute. Beginning in 1923, he became a member of the New York State Board of Medical Examiners. In 1934 he was named the first president of the NBEOPS.*

John E. Rogers, DO 1884-1950

Born in Scales Mound, Illinois, John Rogers took a BA from Lenox College and an MA from Northwestern University. Before becoming a DO, he worked as an athletic director and loved sports all his life. After he graduated from Des Moines-Still College of Osteopathy, he practiced primarily in Oshkosh, Wisconsin. An early president of the AOA, he later became president of the A. T. Still Research Institute. He served on the NBEOPS board from its inception to his death. Deeply committed to higher standards for osteopathic education, he was chair of the Bureau of Professional Education and Colleges. Dr. Rogers raised pedigreed Scots terriers and had his own radio program called "The Kennel Hour." His son, Richard C. Rogers, was also an osteopathic physician.

our treatment of our competitors – unless possibly our experiences in being discriminated against and unjustly deprived of rights might serve to increase our average charity and determination to be just."

Dr. Willard insisted to the 1932 AOA convention, "With independent regulation and the natural numerical expansion it allows, we will ultimately get every right for ourselves and those to come. If we lose the vision we have shown in the past, yield to expediency, and accept unlimited privileges at the expense of independence, we will take care of the present, but there will be no future."

He pointed out that the basic science requirement had seriously curtailed the expansion of osteopathic medicine. "For instance, in the two years the District of Columbia has had its Basic Science Board, no DO has hurdled [it] to get the unlimited privileges offered." The most telling argument for independent examiners was that more than fifty percent of osteopathic graduates appearing before mixed boards failed the examination. The osteopathic boards failed six percent of their own applicants, exactly the same percent that MD boards failed their own applicants. He summed it up: "Our graduates cannot get licenses to practice."

The AOA membership was convinced. In 1934, the organization agreed to form a National Board of Examiners for Osteopathic Physicians and Surgeons (NBEOPS). The board was made up of fifteen members who would serve for

three-year terms. Charles Hazzard, DO, author of the classic *The Principles of Osteopathy*, and the seventh president of AOA, was chosen to lead it. W. Curtis Brigham, DO, a well-known Los Angeles surgeon was vice-president; Asa Willard, DO, was named secretary-treasurer; and John E. Rogers, DO, president of the A.T. Still Research Institute, became chairman of the committee on examination. He would take over the presidency of the AOA in 1937. Other board members were Samuel V. Robuck, DO, first president of the American Osteopathic Foundation; Edward A. Ward, DO; and Chester D. Swope, DO, who was awarded an AOA Distinguished Service Certificate in 1934 for his work in public relations for the organization.

The NBEOPS board members, nominated by the AOA, were a mixture of outstanding professors, administrators, and prominent clinicians. The new organization had two major tasks—to prepare a test for osteopathic graduates and to get the test results approved by state boards for licensure. The latter was much more difficult than the former.

Dr. Edward A. Ward reported to the AOA annual convention at the Cleveland Hotel in 1935: "The possession of a license to practice one's profession in a state, territory, or other division of the United States should be considered a property right, and the legal protection surrounding the instrument recording that right properly and justly rests upon the legis-

W. Curtis Brigham, DO 1881-1962

A native of Moscow, Idaho, Dr. Brigham was very much an organization man after he moved to Los Angeles. A fellow and founder of the American College of Osteopathic Surgeons and a founder of Monte Sano Hospital, he was also a founding member of the National Board of Osteopathic Examiners and a trustee of the AOA. Dr. Brigham served as chief of staff at Monte Sano for more than twenty years while writing extensively on surgical techniques. He also taught surgery, both in Los Angeles and Denver. He and his wife, Eleanor G. Brigham, DO, often made the society news of the Los Angeles Times *for their activities and especially for their work with Revolutionary War genealogy. Their two children were both DOs, Dr. Fleda Brigham and Dr. Crichton Brigham.*

lature." Although an attorney general or a state health board might grant a license, there was a constant shift in the personnel of both state examining boards and the staffs of attorneys general. The recognition of a national osteopathic examination by state legislators would have more substantial value and protect the holder throughout his or her lifetime.

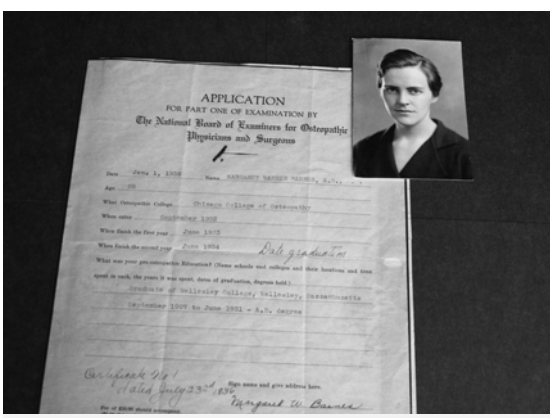
At that time, forty states and territories recognized the MD's National Board of Medical Examiners certificates. It seemed logical that the same states would recognize certificates from the National Board of Examiners for Osteopathic Physicians and Surgeons as well. But it was not easy to convince legislatures, primarily because of the vociferous opposition from the lobbying arm of the AMA.

Testing Begins

In announcing the time for the first test—February 3 and 4, 1936—Dr. Rogers added, "The certificates of this board at the present time are of an honorary nature only since there are no laws as yet to give them legal force." Applications were available from Dr. Asa Willard for a $5 registration fee and an application fee of $15. Each of the five exams was to last two hours, during which time no one could leave. Dr. Rogers ended the announcement with a note of optimism: "If one has reason to believe that he can write the examination before the time limit, he should bring along work to busy himself during the rest of the period."

Parts I and II of the examination included essay questions covering five areas: anatomy (histology, embryology); physiology; physiological chemistry; general pathology; and bacteriology (parasitology, immunology). The questions were written to test knowledge only, not clinical skills. Part III, the clinical test, was scheduled to be given during the AOA annual convention, when a panel of DOs would be coming together.

Twenty-eight-year-old Margaret Barnes, a graduate of Wellesley College and ASO, took the first test. Forty-year-old George S. Rothmeyer from Philadelphia College of Osteopathy took the second. He later became an examiner for NBEOPS. Barnes was given the Distinguished Award in Pediatrics in 1951. On July 23


APPLICATION
FOR PART ONE OF EXAMINATION BY
The National Board of Examiners for Osteopathic Physicians and Surgeons

Margaret Barnes, DO, took the first NBEOPS examination in 1936.

1936, the results were authorized and both passed. Those who passed the examination were awarded a DNB (Diplomat of the National Board). It was more a mark of prestige and professional proficiency than a practical means of obtaining medical licensure, and few applicants were willing to submit themselves to a grueling two-day test for a mark of prestige.

Dr. Hazzard explained the rationale for NBEOPS to the Association of Colleges of Osteopathy convention at the Waldorf-Astoria in July 1936. The "difficulties, inconveniences, and expense" of having to take state board examinations with different requirements could at last be overcome by having one national examination with the highest standards possible. He concluded, "A certificate issued by such a national board should be recognized and honored under the laws of all States, so that, once having established his standing, a physician could practice where he would." "Should be" did not equal "will be." State osteopathic associations were called upon to try to convince their legislators to accept a NBEOPS certificate as equivalent to a license. Board members had to familiarize themselves with the exact requirements for licensure in each state and learn the art of politics.

Vice-president W. Curtis Brigham, DO, took over the board presidency when Dr. Hazzard died suddenly of a heart attack in 1938. Dr. Brigham's attention was diverted from politics by World War II. During the war years, 1941-1945, the AOA was absorbed not only in home front activities, but also in the fight to get DOs into the U. S. Army Medical Corps. Despite the passage of several Congressional acts which seemed to give officer status to DOs, they were given ratings as technicians and assigned jobs as orderlies or pharmacists' mates in the Medical Service Corps. DOs who applied for commissions were turned down. As Georgia Warner Walter writes in *The First School of Osteopathic Medicine*, "The surgeon general, bowing to his medical colleagues of the AMA, refused to recognize osteopaths as physicians or surgeons." This was a blow to the AOA and a step backward in the licensing crusade. DOs would not be

1930s

Parked in front of a stucco bungalow ($3,800, half the annual salary of a DO) is a two-door Buick with a rumble seat ($825). The owners have eaten a healthy breakfast of eggs (18¢/doz,), bacon (38¢/lb.) and white toast (sliced, 8¢/loaf). From their Crosley radio comes news of the shooting of bank robbers Bonnie and Clyde in Louisiana, followed by "Mood Indigo" by Duke Ellington.

recognized as medical officers until 1966, when Secretary of Defense Robert McNamara ordered it so.

Another setback during the 1940s came when the Wassermann blood test for syphilis became mandatory in most states for those seeking a marriage license. DOs were prevented from administering this simple test in states where they were not fully licensed and had to appeal to the courts to determine if they were indeed physicians who could draw blood, which was consider an "operation."

Hostility from MDs toward DOs had not abated by the mid-forties. An article appeared in *Science* in 1946 claiming that osteopathic institutions are perpetuating "a fraud upon a gullible public." Cyrus N. Ray, DO, a former member of the Texas State Board of Medical Examiners replied charitably, "We believe that the great majority of the allopathic profession are just as scientific, just as honest, and just as faithful and hard working as the practitioners of the osteopathic school of medicine."

The baby boom and economic expansion following the war changed the urban-rural dynamics of the nation. Now a new nirvana, suburbia, became the center of the American dream. Many MD physicians moved into suburban offices where they found lucrative practices. Specialty clinics proliferated and the all-purpose family doctors became scarce. DOs for the most part, chose small and mid-sized towns to set up practices as family doctors, but many of them, too, began to specialize and seek practices in or near large cities. By the mid-1950s, many of the old threats to health—polio, diphtheria, whooping cough, tuberculosis—had disappeared or were greatly diminished. It seemed that modern medicine would someday cure every disease.

T. T. Spence, DO, served as president of NBEOPS from 1944 to 1948. During his tenure, in 1947, live patients in osteopathic hospitals were used for Part III examinations. Osteopathic hospitals had been built throughout the nation to keep pace with the growing profession beginning in the late nineteenth century. By 1945, there were 260 such hospitals. The

1940s

In a brand-new suburb is a barely landscaped brick house ($6,200, financed with his VA loan and the money she saved working in the small arms plant during the war). In the garage sits a luxurious Hudson ($2,380); in the basement are a wringer washer and a mangle. The children reluctantly swallow a spoonful of cod liver oil with their orange juice before they run to school, bringing toothbrushes and bars of soap for the displaced children of Europe.

great majority of new DOs interned at osteopathic hospitals, primarily because allopathic hospitals wouldn't accept them. In 1945, the American Osteopathic Hospital Association began to review hospitals objectively in order to ensure that osteopathic students were receiving training in facilities that provided a high quality of patient care.

S. V. Robuck, DO, followed Spence. Walter E. Bailey, DO, of St. Louis served as vice-president, and Paul van Buren Allen, DO, of Indianapolis, secretary-treasurer. Robuck, on the faculty at Chicago College of Osteopathy, had summed up his philosophy of competition between osteopathy and traditional medicine in an article in the *JAOA* in 1923. "Let us not fall into the error that we may so easily," he wrote, "that of consoling ourselves that on an average we are as good diagnosticians as are our medical brothers. That is not the yardstick by which to measure. Our standard must be a new one—that of the needs of the hour and of humanity."

Eugene Oliveri, DO, stated in his 2009 A. T. Still Memorial Lecture that Dr. Robuck "argued passionately before the AOA Board to continue giving the third part of the exam sequence during the internship year." He felt this was a way of ensuring and protecting the public. He wanted DOs to be fully evaluated during a period of monitored and unmonitored training because it would offer "a true reassurance to both the public and licensing boards that competencies during all phases

Samuel V. Robuck, DO 1886-1976

Born in Sterling, Colorado, S. V. Robuck studied finance and accounting at Denver University before beginning his medical career. He was the first president of the American Osteopathic Foundation when it was formed in 1929 and was a founding member of the NBEOPS, as well as the American College of Osteopathic Internists. He served on the faculty of Chicago College of Osteopathic Medicine and on the staff of Chicago Osteopathic Hospital for more than forty years and received a "Physician Emeritus" award from Sigma Sigma Phi. He enjoyed fishing and pheasant hunting. In 1946, he and Dr. T.T. Spence, then president of the National Board, appealed to the AOA Board to give NBEOPS more control over its membership selection, allowing educators and members of DO licensing boards to participate. Dr. Robuck served as president of the NBEOPS 1948-1963.

and periods of osteopathic education and training in patient care were being assessed by a distinctively osteopathic examination." The AOA thought this restriction would hurt those DOs who went into practice without internship, as many states did not then require internship for licensure.

Expansion

The boards of the 1950s made several administrative changes. In 1951, the organization was incorporated in the state of Illinois as the National Board of Examiners for Osteopathic Physicians and Surgeons (NBEOPS), confirming itself as a legal entity. As the board expanded its efforts, its fifteen volunteer members juggled practices, students, families, and a hundred other interests. Spencer Bradford, DO, later described that period as "a modest scale of operations." (A board member in 1973 noted that each member wore six hats of responsibility on the board in addition to twelve they wore in other capacities.)

As the number of applicants for NBEOPS examinations grew, it became obvious that grading essay questions was too time-consuming and not really fair. Facile writers had an advantage over students who might know as much but who found expository writing difficult. Graders found it virtually impossible to give a perfect score because time constraints limited the depth of answers. Furthermore, essay questions could seem ambiguous and, while facts might be correctly recited, the interpretation could be off. In that case, should the applicant receive half credit, one-quarter credit, or no credit? Such decisions were almost entirely subjective.

In 1953, the board began a study of how best to change the testing procedure. By 1958, they were convinced of the advantages of an objective examination. At that time, only sixteen states plus Washington, D.C. and the territory of Hawaii had accorded recognition to NBEOPS diplomats in lieu of a state examination. After twenty years of offering the test, there were only 263 National Board diplomats. Something was preventing the program from going forward.

At their July 1958 board meeting, NBEOPS members voted to go with multiple-choice exams. The decision initiated a staggering amount of work from board members, consultants, and educators. Multiple-choice examinations required a greater number of questions. The board also wanted an equitable representation of the various teaching approaches, with coverage of both academic and clinical material. Questions had to be succinct and clear, with no ambiguity. There was the danger of reductionism: complicated processes might be made too simplified for the sake of clarity. In addition to testing

facts, the board wanted to ensure that the osteopathic principles of autonomy, beneficence, non-malfeasance, fidelity, justice, and utility were implicit in the questions. They debated whether there should be separate questions on osteopathy or if osteopathic principles and practices could be woven into such short questions.

Board members were assigned specific subjects in a discipline. They then contacted clinicians and academics for suggestions and found consultants to review, criticize, and revise questions for clarity and significance. Thousands of questions were gathered, along with four or five possible answers for each. Hundreds were thrown out immediately. Then began the long process of culling, editing, and deciding. The final result was a product of the entire board, almost of the entire profession.

The next step was to use a statistical evaluation of the testing procedure. Dr. Price Thomas, a mathematician and statistician, as well as a DO, laid the groundwork. Preliminary evaluations showed that the new format was successful and from that point on, numerical analysis became a major focus of NBEOPS.

A shortage of U.S. doctors in the late 1950s opened the doors to practitioners—MDs, not DOs—trained overseas. Eventually the Educational Council of Foreign Medical Graduates (ECFMG) would be formed to test their competence. A 1957 editorial in *JAOA* warned of "A Clear and Present Danger, the Disappearing DO." More DOs were graduating than ever before, but the proportion of DOs to the general public was diminishing. In 1955, there was one DO for every 13,500 Americans and as the population grew, DOs would be even more in the minority. An obvious solution was to build and staff more colleges of osteopathy, but this raised questions about the nature of osteopathy vs. "the medical monopoly." Is the insistence on separateness simply feeding a feud between medical factions,

1950s

A new Ford Fairlane ($2,013) sits in the driveway of a suburban ranch house ($14,300, with slab patio). Tonight the family will laugh their way through Milton Berle's Texaco Hour on their Philco television set after having a TV dinner. The baby's last-week earache was treated with a shot of penicillin and baby aspirin, and he is sleeping soundly now. In the morning the family will take the Eisenhower Interstate system as far west as it goes (gasoline is 21¢/gal.) and stay at a fancy Howard Johnsons Motel.

Price Thomas, DO 1920-1972

Price Thomas was born in Oklahoma City and attended William Jewell College in Liberty, Mo. He graduated from Kirksville College of Osteopathic Medicine with a DO in 1943 and received a BS from Northwest Missouri State College shortly thereafter. He practiced family medicine in Weoka, Okla. for a year before entering the Navy where he served as a clinician because DOs were not considered physicians. In 1946, he practiced in Ashland Ore., while he took training in the new science of electronics. He joined the faculty of KCOM in 1949 as an instructor in physiology and served as chair of the department from 1960 until his death in 1972. His many scientific publications earned him honors. He is credited with bringing the National Board into the electronic age with the use of computerized testing procedures. He was also a private pilot and a ham radio operator.

a "continuing cultist deviation"or, is osteopathy a genuine contribution to the healing arts that should refuse to merge with the majority? Certainly osteopathy was becoming more medical and more scientific.

"Science" was a magic word after the USSR launched its Sputnik satellite in 1957. The U.S. space program gathered the best engineering brains in the nation to compete with the Russians. Medicine, too, became more scientific, less intuitive, and more evidence-based. Biologists called the human body "an engineering marvel." Over the decade of the 1960s, organ management took precedence over a holistic view of health care. A dialysis machine could replace failing kidneys and an artificial heart held out hope for heart patients. Within a few more years, transplanted live organs offered a better quality of life than artificial ones.

Pharmaceuticals became synonymous with quality of life during the sixties, and it quickly became evident that DOs would have to be able to distinguish between diazepam, chlordiazepoxide and dozens more new wonder drugs. Pharmacology became an increasingly important part of the National Board examinations, replacing "therapeutics." New DOs had to know the side effects of corticosteroids and the benefits and drawbacks of L-Dopa, broad spectrum antibiotics, birth control pills, and silicon implants.

Americans hoped that one's life could be managed completely with chemicals.

But at the same time, pesticides, herbicides, chemical fertilizers, and industrial pollutants were pouring into the nation's waterways and asbestos fibers and cigarette smoke were damaging lungs. Examiners had to be aware of environmental issues that affected health.

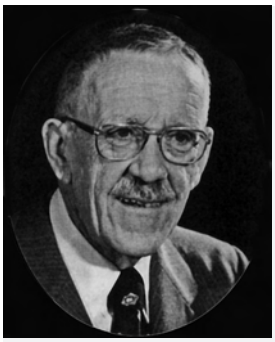
In 1961, the NBEOPS incorporated in Indiana, the home of the Indianapolis office of Paul van B. Allen, DO, then secretary-treasurer. It voted in constitutional amendments which altered the structure of the board and allowed for full-time, paid personnel. There were adjustments, too, in composing and administering the examinations.

California was one of the first states to welcome DOs, with full licensure granted in 1901 via an osteopathic licensing board. The state and county osteopathic organizations grew as the state's population burgeoned during the 1920s and 1930s, but AMA organizations were never happy coexisting with a "cult." Rather than fight this popular profession, the California Medical Association decided to absorb it. Beginning in 1961, it began a campaign that culminated in a state referendum that was intended to make DOs disappear by offering them MD status. Eighty-six percent of the two thousand DOs in the state paid $65 to take on the new initials and the College of Osteopathic Physicians and Surgeons became the California College of Medicine, awarding the MD degree only. The AOA refused to recognize the unearned degrees and a strong remnant of determined DOs fought the legislation until 1974, when the California Supreme Court ruled that the licensing of DOs as DOs must be resumed.

1960s

In a split-level house, the sound of the Beatles comes from a large rec room, somewhat muffled by the shag carpeting. The family has been thrilled by the space program, shocked by assassinations, outraged by a lack of civil rights for citizens, and confused by an endless war and a "drug culture." The son dreams of owning a Pontiac Firebird Transam ($4,366) while flipping burgers at McDonald's; the daughter wants to join the Peace Corps and eventually become a physician, working to eradicate small pox world-wide.

The NBEOPS widened its focus from state licensing boards to looking at osteopathic educational institutions. A new need within the profession was emerging, "for an evaluating agency that would offer the various osteopathic colleges the opportunity to compare their programs to a nationwide standard," as Dr. Spencer Bradford wrote. Using an outside examination agency to test college programs was considered and rejected because the



Spencer G. Bradford, DO

Dr. Bradford received his DO from Philadelphia College of Osteopathy in 1942 and joined the Department of Physiology as an instructor in 1943 while maintaining a private practice. His love was research and he used the facilities at nearby Temple University. In 1963, he was named chairman of Physiology and Pharmacology at PCOM and received a major grant from NIH. He served as president of NBEOPS from 1963 to 1976.

board felt that the unique qualities of osteopathic medical education required special examinations. Only someone thoroughly versed in osteopathic principles could test how well they were being taught.

In 1963, the AOA adopted a statement of educational standards for osteopathic colleges with its first goal "to develop the distinctive osteopathic contribution to medicine." This initiated a closer relationship between NBEOPS and the colleges. Board members visited colleges and formed ties with educators. The College of Osteopathic Medicine and Surgery in Des Moines and Chicago College of Osteopathy requested that NBEOPS provide examinations for all their students. Osteopathic educators were involved in the process of generating questions.

NBEOPS President Spencer G. Bradford, DO, oversaw the new structure. The board hired Carl W. Cohoon, an Illinois educator, as executive director in 1964. The board moved its headquarters to Kirksville for a time, but that proved inefficient and they returned to the Chicago area, first in Park Ridge and then in Des Plaines.

A 1969 report by Dr. Bradford described the testing procedure at that time: two sets of examinations were given to pre-doctoral students: Part I tested knowledge of the basic sciences and was given at the end of the student's second year; Part II covered clinical subjects and was given at the end of the fourth year.

Candidates failing one or more subjects in any examination were permitted re-examination in those subjects. Subsequent failures required that the candidate take additional work in the subject before taking it again. No more than two re-examinations were allowed. For Part III, the oral and practical exam, "the respective directors of medical education are chief examiners, and the candidate is tested by a series of associate examiners, using

actual teaching cases in the hospitals."

Professional statistical evaluators from the University of Iowa were hired to analyze the questions used and all possible answers to each question. They judged the tests accurate and fair.

As the quality of National Board examinations improved, state recognition expanded. By 1969, thirty-five states accepted the NBEOPS test as a basis for licensure. More than twenty states had been added since multiple-choice testing began. In 1966, the state of Florida asked the NBEOPS to develop a licensing examination for its own use.

In the early 1970s, the board began to investigate the emerging computer technology. Computerized scoring of NBEOPS tests through the University of Iowa had begun in 1971. In 1973, the cost of renting a computer was described in a board meeting as "outlandish," especially since it would be needed only for storing examination questions.

Instead of renting space, the board asked Cohoon to look into the purchase of a PDP-8 computer. The PDP-8, the best selling computer in the world in 1973, was described as the model-T of the computer industry because it was the first computer to be mass produced at a relatively low cost. Could it be used enough to justify its cost? Board members were doubtful.

Computers were not just for engineers, visionaries argued. They could be useful in every line of work. Experts predicted that by 1980, computer terminals would be kept in the offices of all physicians. Whenever a quick answer to a medical problem was needed, a physician could simply consult a data base. By 1979, an osteopathic physician urged *JAOA* readers to invest in a 16K microcomputer for less than $1,000. Software was then being developed for assessing the growth of the skeletal system and there were other possibilities as well.

Computer technology would change almost every aspect of health care over the next thirty years; the Internet would transform it even more. Complex information could be collected and analyzed in minutes. Other technology, such as electron microscopy and digital imaging used in conjunction with computers, opened up research into genetics, viruses, and cells. To critics, medicine seemed to be becoming subatomic and the whole person was being overlooked in the haste to find the smallest element of life.

Office management quickly became dependent on computers for billing and inventory. Medical personnel had to be certain accurate medical records were kept, as medical malpractice suits increased geometrically in the seventies. Medical jurisprudence and medical ethics became increasingly important in practice, as well as in theory, and were addressed in NBEOPS exams.

The year 1974 was the centennial of the founding of osteopathic medicine and time for stock-taking. Much of the first hundred years had been taken up

with politics and the fight for the right to practice medicine without restriction. In the annual A. T. Still Memorial Lecture that year, Edward P. Crowell , DO, spoke of his hopes for the next hundred years. Traditional medicine, he said, focuses on disease and dysfunction after they occur. Osteopathic medicine should speak out loudly for preventive medicine. "The public is entitled to reap the benefits of 100 years of osteopathic experience and biomedical research. They are entitled to more than just the palliation of disease. They are entitled to more than episodic care. They are entitled to health maintenance by the application of all preventive measures now available."

Few patients wanted to listen to lectures on prevention; they wanted a quick fix. Increasingly, medicine was focusing not only on curing and managing disease, but also on defense against attack. As the number of malpractice suits soared, liability insurance premiums skyrocketed as well. Many doctors gave up their private practices and joined corporate medicine, such as Kaiser Permanente, to avoid them. Misdiagnosis was the greatest cause of lawsuits, ironically in part because doctors were so successful they didn't have time to do a full "H and P" (history and physical examination), leaving the basics to assistants. To protect themselves, doctors ordered an increasing number of objective tests, not trusting intuitive or "hands-on" medicine. Hospitals required doctors and other medical personnel to define their scope of practice in detail before receiving privileges, and they were not allowed to exceed their scope of practice on threat of censure or expulsion.

In 1976, Marion E. Coy, DO, past president of the AOA, took over the presidency of NBEOPS from Spencer Bradford, DO. Dr. Coy believed in the positive values of change and hoped "to establish policies and programs [that] will anticipate even further change." He issued a report in

1970s

Protest is out and hospitality is in. Suburban cul de sacs (average house price, $21,000) host block parties, where residents debate buying a waterbed or a microwave oven while listening to Pink Floyd or Barbra Streisand on an 8-track stereo. The Vietnam War is over, ex-president Richard Nixon has left D.C., "Gunsmoke" is on television and Ford Motor Co. has come out with a sharp-looking Pinto for less than $2,000. Scientists are experimenting with in vitro fertilization; organ transplants are routine. Alarmists, concerned about the connection between toxic chemicals and cancer, find that few are listening. Science has taken us to the moon. It can do anything.

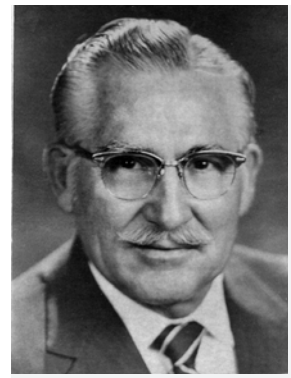
1976 reaffirming the organization's goals of licensure. At that time, the NBEOPS certificate was accepted by professional licensing boards in forty-three states plus the District of Columbia in lieu of their own examinations. Acceptance was not total or unrestricted in all those states, but it was getting closer. Reciprocity of licensure among states was common.

During those years, the National Board entered into agreements with the American Osteopathic Board of General Practitioners (the current AOBFP) for the preparation and administration of their certification examinations and with various osteopathic state licensure boards for assistance with their examinations.

With the first goal almost achieved, the organization turned to its second purpose: "To provide recognized colleges of osteopathy, through its examinations, with the means for impartial, extramural evaluation of the effectiveness of their educational programs." As educational programs became more sophisticated, methods of testing for evaluation had to keep pace.

Early in the 1970s, U.S. Surgeon General, Jesse L. Steinfeld, MD, claimed that education in the health sciences was in ferment. "It is undergoing its most far-reaching changes since publication of the Flexner Report in 1910," he said. He was not referring to affirmative action and equality of access, which were frequently in the news, but to methods of teaching.

Students were encouraged to use



Marion E. Coy, DO 1910-2001

Born in Mattoon, Ill., Dr. Coy earned a BS from Eureka College in 1932 and a DO from Kirksville College of Osteopathic Medicine in 1938, interning at the Laughlin Hospital there. He practiced family medicine and anesthesiology for 34 years before moving to Fort Worth, Texas, where he joined the faculty of Texas College of Osteopathic Medicine as administrative dean and its first president, when the school changed from private to state-supported. He was also professor of osteopathic philosophy, principles and practice. He served on the NBEOPS for twenty years and was president 1976-1980. He held many positions in the AOA as well, including the presidency, 1970-1971.

audiovisual and computerized aids to control the pace of their education. It was thought that professors would become less important as each student became "a class of one," using films, slides, tapes, and programmed instruction.

NBEOPS President Spencer Bradford DO, was an enthusiastic proponent of this approach to education at PCOM until he concluded that videos were no substitute for a hands-on laboratory experience.

Courses in all medical schools came under close scrutiny for relevance. Topics were melded and compressed. Some medical schools experimented with three-year curricula, and others accepted provisional students after high school without pre-med courses.

Internship training was changing, too, as the American Board of Family Practice merged the traditional internship into a new three-year residency training program. Two-thirds of new DOs chose family medicine and interned in osteopathic hospitals, but most new MDs sought out specialties and subspecialties that required long periods of residency training.

GROWTH

BETWEEN 1968 AND 1980, THE number of osteopathic schools rose from five to fifteen and the number of students enrolling jumped 84 percent. In 1969, Michigan State University became the first state-supported university in the nation with both a college of allopathic medicine and a college of osteopathic medicine.

The Comprehensive Health Manpower Act of 1971 appropriated millions of dollars for construction and capitation grants for osteopathic colleges, as well as for all other health care training facilities. While the growth was enthusiastically welcomed, provision had to be made for ensuring that it was quality growth. The NBEOPS continually evaluated its testing procedure for students, depending heavily on its advisory panel of expert consultants.

While osteopathic education was burgeoning in the 1970s and 1980s, osteopathic hospitals were shrinking. Most osteopathic hospitals were small, with less than 150 beds, and many of them found the high cost of new equipment staggering. When insurance companies and Medicare reduced the number of days they would cover for illness or surgery, hospital income dropped precipitously. Patients were lured away from small facilities to large regional medical centers by the promise of state-of-the-art technology and well-known specialists. Competing with hospitals, free-standing clinics offered out-patient surgery and emergency care. It seemed wise for small hospitals to consolidate resources, and many osteopathic and allopathic hospitals merged.

Insurance coverage for health care became ever more complex, with stacks of paperwork required for each procedure.

What were the differences in the types of managed care—HMOs, PPOs, Medicare and Medicaid? This was information that DOs needed to understand, and consequently it was incorporated into their examinations, along with other non-medical information new doctors needed to survive.

Osteopathic physicians had always practiced holistic medicine without calling it such. They believed that mind, body, spirit, and social milieu were wrapped up together in the whole person. In the late seventies and early eighties, as a reaction to atomistic medicine, "holistic" became a buzz word. Often it meant "alternative" and included crystal diagnosis, Rolfing, Native American practices, acupuncture, and a host of other therapies. Bookstores and health food stores were flooded with do-it-yourself manuals which implied that the people were better off taking care of themselves than going to qualified physicians. This was not what Dr. Still had had in mind when he advocated for a new kind of health care, one that looked at the unity of the body.

Part of osteopathy's holistic approach was to consider the entire environment. A 1980 editorial in the *JAOA* declared, "The impact of our environment and some of its toxic elements cry out for further investigation. The relationship of vitamins and hormones to our well-being and to the treatment of disease also should be thoroughly investigated."

The broad subject of public health was a major concern of osteopathic medicine and consequently appeared on examinations, with "overnutrition," poor nutrition, cigarette smoking, alcoholism, and drug abuse receiving special attention. HIV/AIDS overshadowed all other public health issues in the 1980s. The disease was defined and named in 1982, but for years afterward the public was unsure about how easily it might spread. The great number of symptoms and unusual course of the disease made it difficult to treat. U.S. Surgeon General C. Everett Koop, MD, predicted in 1986 that by 2000, AIDS would be the number one killer in the U.S. In fact, it didn't even make the top fifteen because of powerful drug cocktails, meticulous health care, and the increased use of condoms during sexual intercourse.

As the population aged and deadly infectious diseases waned, learning how to manage the complex issues of late life became important to family doctors. Diabetes, Parkinsons, heart disease and stroke, COPD, dementia, loss and grief were the plagues of old age, just as diphtheria, whooping cough, "summer complaint" (diarrhea), mumps and measles had once been the plagues of youth.

Four presidents served the National Board during the 1980s: Lester Eisenberg, DO (1980-85); Thomas F. Santucci, Jr., DO (1985-87); Robert E. Mancini, DO, PhD (1987-89); and Eugene Mochan, DO, PhD (1989-91). In 1986, the organization reincorporated in Indiana as the National

Board of Osteopathic Medical Examiners, Inc. (NBOME).

Two years earlier, the U.S. Department of Health and Human Services awarded the National Board a grant to develop a competency-based standard for their exams. The board hired Joseph F. Smoley, PhD, as its executive director. He had experience in evaluating tests that measured knowledge and ability. His two major research tasks were: first, to construct test development procedures for measurement and second, to develop and refine theoretical approaches to measurement.

Analysis of the effectiveness of any educational process is time-consuming and expensive, but it was absolutely necessary if the NBOME was to convince anyone of the efficacy of its examinations. Sohrob Shahabi, PhD, was hired as director of testing and Linjun Shen, PhD, as psychometrician. They proved to be both brilliant and willing to work long hours. Eventually, additional technical staff joined them, employees who were not merely computer literate but computer intimate, ensuring that test results would be charted and graphed scientifically. Some were specialists in security, and the NBOME adopted tight security measures to ensure that examination materials were handled appropriately prior to and during the administration of the examination.

The board of the late 1980s and through the 1990s was extraordinarily involved in its work. As Dr. Oliveri wrote, "It was a time when . . . great leaders, thinkers, and doers all got together to propel the National Board into a future of monumental changes and technological advances. . . It was a time of reorganization and a new sense of urgency." It was also a time when achievement followed achievement almost faster than they could be absorbed.

New Directions

Dr. Santucci brought to the board of the mid-1980s a new vision of the examinations. At that time, tests were used to measure knowledge of the basic sciences, the very philosophy that Dr. Asa Willard had fought against. Dr. Santucci pushed for clinical applicability. He stressed correct test item writing formats, encouraged clarity of language and the accuracy of graphic images. He also aggressively recruited panels of experts to oversee the writing of test questions and promoted the careful analysis of psychometric data, constantly reminding board members of the need for efficiency and quality in the examinations and their grading.

By 1991, diplomat status was being awarded to approximately 1,300 osteopathic physicians each year. Some 20,000 diplomat certificates had been awarded by then and forty-eight states accepted those who completed the NBOME exams successfully, without further testing.

Dr. Mochan explained in a 1991 arti-

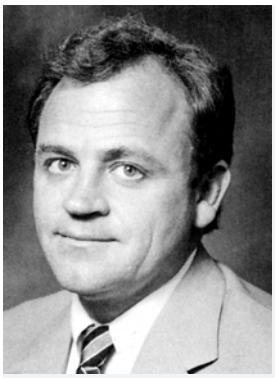
cle in *The DO* that preparing each part of the examination took about one year. All together, 600 osteopathic physicians and PhD scientists participated in the process. About ninety-five percent of the NBOME consultants were experts in their field and affiliated with an osteopathic medical school or teaching hospital. The majority of test reviewers were board certified and considered content experts in their field.

All questions were evaluated by the Test Construction Committees (TCCs) and experts from specific disciplines. A draft of the examination was then submitted to the Test Review Committee (TRC) for further scrutiny. The questions had to be challenging, but not esoteric. They also had to be free from ambiguity and concisely written. After passing this hurdle, the questions went back to the chairs of the individual TCCs, who were responsible for producing the final version of the examination.

It was important for DOs to understand the process of preparing examinations because, beginning in 1989, MD credentialing groups began promoting "a single pathway to licensure." In 1992, the Federation of State Medical Boards (FSMB) was made up of sixteen states with separate boards for DOs and MDs, twenty-eight states with composite boards (MDs predominating), and six states plus the District of Columbia with MD boards only. The FSMB and the National Board of Medical Examiners (NBME) partnered to produce the U.S. Medical Licensing

Lester Eisenberg, DO

A graduate of the Philadelphia College of Osteopathic Medicine, Dr. Eisenberg chose obstetrics and gynecology for his specialty. In 1970, President Richard Nixon invited him to participate in the White House Conference on Children and Youth. Associate editor of Maternal and Child Health, *he was also medical director and director of medical education at Lancaster (Penn.) Osteopathic Hospital, and chairman of the OB-Gyn Department of PCOM. He served as president of the National Board from 1980 to 1985 and was largely responsible for securing a major grant from the Department of Health and Human Services to develop competency-based standards in examinations.*



Thomas F. Santucci, Jr., DO

The Santuccis, father and son, both received the Distinguished Service Award from the American College of Osteopathic Pediatricians, both practiced in New Jersey, and both served on the National Board. Dr. Santucci, Jr., received the DO from PCOM and became nationally recognized as an outstanding pediatric pulmonologist. He was president of the National Board from 1985 to 1987 and is credited with bringing new energy to the board, modernizing its structure and attitude, and changing the discipline-based test to a more clinically based test.

Examination (USMLE), eliminating the FLEX examination formerly produced by the FSMB in 1986. The USMLE was touted as the definitive medical licensure examination, and it was suggested that it was the only test for medical licensure that states needed.

Far from convinced, the AOA reiterated the reasons for keeping MD and DO examinations separate. No examination prepared by MDs could include osteopathic principles and practices because they weren't taught to them. For the profession to maintain its identity and to test the candidates' full scope of practice, it needed its own examination. Robert Mancini, DO, PhD, then president of the NBOME, attended FSMB–NBME merger meetings as an invited observer.

In July 1991, outgoing NBOME President Eugene Mochan, DO, PhD, speaking for new President John Fernandes, DO, addressed the Trustees of the AOA to discuss four areas of concern impinging on the threatened "single pathway" and indicated that some friction was building up between the FSMB and the NBOME. Dr. Mochan made the following points:

"First of all, a number of questions, over the past years, had been raised concerning the quality of the National Board examinations. Comments were made regarding the psychometric validity, security, the uniqueness of our examinations, et cetera, and I am very proud to report to you that the NBOME has approached these criticisms in a very constructive and enthusiastic way. I also know our examinations can favorably compare to any other examining group in the country."

The second area that he addressed was related to not having global input from the medical community in general. "In response to this," he said, "we have

now introduced our plan to expand our Board of Directors to include members of the osteopathic community—including osteopathic state board examiners, AACOM representatives, and representatives from the AOA.

"The third issue raised is that the NBOME has been criticized in many respects related to the restrictions of our Part III examination . . . in that not all DOs were eligible to take this examination if they had not completed an AOA-approved internship."

The NBOME cooperated with the AOA to pass a resolution permitting DOs who completed AOA-approved or American Council on Graduate Medical Education (ACGME)-approved internship to take Part III of the NBOME examination. This step opened the field to DOs who wanted to intern in a specific geographic area where there was no AOA-approved facility or to obtain training in a specialty not offered in an AOA-approved hospital.

The fourth area of concern Dr. Mochan described was much more difficult to address. Throughout the late eighties, a need for independence had been growing among board members. The NBOME had been criticized by various legislative examining groups for having a conflict of interest in that it was not autonomous, and did not function independently of the AOA. While the AOA was the political arm of the osteopathic profession, the NBOME was the assessment arm with the goal of protecting the public from physicians unqualified to practice. Objectivity was paramount in achieving this goal. The NBOME could not allow itself to be influenced by political pressure of any kind, no matter how benign. The public needed assurances that the development, administration, and scoring of examinations had both integrity and security.

Board members had also been long

1980s

House prices rise above $50,000, but so do salaries (about $25,000/year is average). A Pontiac Grand AM can be bought for less than $10,000. Rust Belt residents watch manufacturing go south, and the Sun Belt welcomes snowbirds. President Ronald Reagan brings deregulation to government. The "me generation" invests in money markets, self-actualization, marriage enrichment, and divorce recovery. With so many women working, fast food threatens to end home cooking. Families rent video tapes of popular movies for a dollar or tape episodes of "Dallas" or "The Cosby Show" on their VCRs. Europeans and Americans rejoice as the Berlin Wall comes down—the Cold War is finally over.

Robert E. Mancini, DO, PhD

Dr. Mancini, a noted scientist in biochemistry and pharmacology, received the Distinguished Andrology Award in 1977. Over his scholarly life, he authored or co-authored more than 180 scientific articles. He served as president of the NBOME 1987-1989

chafing under the conditions that the AOA had set in 1934, that new members of the National Board must be approved (if not appointed, as in the early days) by the AOA before they could serve and that amendments to its charter had to be approved by the AOA as well. The AOA's rationale was that it was the representative association of the profession as a whole and had to serve the educational needs of the profession in all other areas, such as accreditation of colleges and hospitals, approval of educational programs, and specialty certification. NBOME was but one of its non-practice affiliates.

A similar circumstance arose in 1946 and was resolved in 1951. In this case, Dr. Bradford, then President of the NBEOPS, and Dr. Robuck both argued before the AOA the NBEOPS should have more control over the election of its members in order to assure the best quality in testing. In 1947, Dr. Robuck, assuming the presidency after Dr. Bradford, insisted that Part III, a live-patient assessment, should be conducted during the internship at the hospital where the candidate was training. By 1951, the AOA agreed that the Part III examination should be conducted during the internship, but insisted that the AOA continue to approve members appointed to the Board of the NBEOPS. The concept of clinical skills assessment would subsequently arise as the COMLEX-USA Level 2 PE some forty years later.

Ultimately, a task force made up of the executive committees of the AOA and the NBOME was scheduled to meet to resolve this issue, but the issue could not be brought to resolution. Instead, the NBOME amended several of its by-laws, allowing decisions to be made, especially on board members, without approval of the AOA. On October 1, 1991, the AOA sent the by-laws back to NBOME with the notation "proposed amendment denied" on page after page. Some of the less sensitive amendments were adopted.

The NBOME board members wanted to reach out beyond the confines of the profession, and to bring in state officials who were not members of the AOA when appropriate. Although the AOA had never rejected a proposed candidate for the

National Board, getting their approval seemed to be a formality that was no longer necessary. The NBOME board members, after years of experience, knew the kind of board members they wanted.

In October 1991, without conferring with the AOA, the NBOME decided on a course of action, understanding that it might have serious repercussions. Under President John Fernandes, DO, the board merged the NBOME, an Illinois corporation, and NBEOPS, an Indiana corporation, then inactive. The articles of incorporation for the new entity terminated the rights accorded to the AOA when the National Board was originally formed in 1934.

AOA leadership reacted immediately, believing that the merger was a means of unilaterally severing the NBOME's ties with the AOA. Those ties, in the eyes of AOA trustees, were essential to the unity of the profession. The NBOME must be accountable to the profession, not merely to itself.

After fruitless attempts at dialogue, and upon the advice of counsel, the AOA filed suit against the NBOME, asserting that the purported merger was invalid. They insisted the issue was a matter of governance and nothing more. The NBOME resisted this suit and a court hearing was scheduled. In 1992, the Indiana Supreme Court ruled for the AOA, and the NBOME dropped its plans for forming a new corporation. As Dr. Oliveri later wrote, the move for independence on the part of the NBOME was "well-intentioned

Eugene Mochan, DO, PhD

Dr. Mochan is an academic physician with dozens of outstanding scholarly publications to his credit. He received a PhD in biochemistry from the State University of New York at Buffalo and served as an NIH-funded postdoctoral research fellow at the University of Pennsylvania. He earned his medical degree at PCOM and completed his clinical training at UMDNJ-SOM. He was president of the NBOME 1989-1991 and presented the AOA trustees with the reasons for NBOME's dissatisfaction with AOA limitations. He currently serves as the associate dean for primary care and continuing education at PCOM, as well as director of the Centers of Evidence-Based Practice and Community Outreach. He has received numerous awards for his dedication to community health.

but ill-advised" and incurred huge legal fees that threatened to set back the work of the organization.

Presidents during the 1990s were John Fernandes, DO (1991-1993); Bruce Gilfillian, DO (1993-1995); John P. Bruno DO (1995-1997); Gerald Osborn DO (1997-1999); and Frederick Meoli, DO (1999-2001).

During Dr. Gilfillian's tenure, the board began a tradition of retreats. The first, held in July 1993, came to be known as Snowbird. The results were primarily practical—forging mission and vision statements, rearranging the committee structure, and preparing a budget—but it was also a time to think creatively and discuss new ideas. One idea that emerged from Snowbird was the trade-name COMLEX-USA for the Comprehensive Osteopathic Medical Licensing Examination of the United States of America, which would change the way tests were administered and evaluated.

As Dr.Meoli explained in the J*ournal of Medical Licensure and Discipline* (2007), in the early 1990s NBOME board members realized "that patients present clinically to the physician with problems, not just with a set of organs or a series of disciplines. The patient must also be viewed in the context of his or her psychosocial milieu. Physicians must address these problems by properly and appropriately applying certain tasks, knowledge and the clinical skills to address the patient's complaint or health-based issues."

In the summer of 1993, a large group of academicians and practicing physicians representing a variety of specialties met to discuss these issues. Knowing that a test of memorized information was no longer relevant, the NBOME sought a way to evaluate the ability to use information wisely in a clinical setting. The licensing examination, they thought, should mirror the setting where diagnosis and management decisions on patient care were made,

1990s

Empty nesters, still-young at 55, move to condos ($150,000) overlooking a golf course. Medical costs skyrocket as medically savvy patients ask for MRIs, CT scans, ultrasound, noninvasive surgery – laparoscopic, arthroscopic, and laser – and plastic surgery. Americans are health-conscious and youth-obsessed; nonetheless, obesity is commonplace. The World Wide Web reaches into homes, offices, and libraries as the information highway becomes the road to success, but the gap between professionals and minimally skilled workers widens. The world awaits the 21st century with trepidation, fearing catastrophe, but clocks and calendars roll over without a blip.

taking into account the context of the real-life demands of physicians and surgeons, including costs and ethics.

It was almost impossible for one individual to memorize the vast amount of medical knowledge available by the mid-nineties anyway. Most doctors, like most engineers and attorneys, had come to rely on computers as an extra brain. Doctors had to know how to access the information they needed, process it quickly, and use it. At every stage of their education they learned how to relate facts to events. How could the ability to use information for the benefit of patients be best evaluated?

There was agreement among the participants that the new examination should test "a comprehensive style of medicine that emphasizes how the structural harmony of the body affects efforts to prevent and treat illness." It should emphasize primary care medicine and osteopathic principles and practice throughout, and it should emphasize life-long learning. This was a new concept in testing, to test the process of education rather than simply the result, and it took years to develop into the full COMLEX-USA examinations.

In 1995 and 1996, after the AOA and the NBOME had mended their differences, the Josiah Macy Foundation, which supports programs that improve health care, sponsored two conferences. The first looked at the history of osteopathic medicine, its present status, and its future.

John J. Fernandes, DO, MBA

Dr. Fernandes, a pathologist by training, is a graduate of the Chicago College of Osteopathy and the J. L. Kellogg School of Management at Northwestern University. He served as dean of CCOM at Midwestern University, where he was also chair of its Pathology Department. He was on the faculty at PCOM and TCOM. Most recently, he was president and dean of Oklahoma State University's Center for Health Sciences in Tulsa. He was president of NBOME 1991-1993, when the NBOME began to forge a new relationship with the AOA.

Bruce Gilfillian, DO

Born in Hackensack, New Jersey, Dr. Gilfillian took a BS in zoology from the University of Pennsylvania, and a DO from PCOM. He interned at Doctors Hospital in Columbus, Ohio, specializing in pediatrics. He joined the faculty of the University of North Texas Health Science Center-Texas College of Osteopathy, where he was a professor of pediatrics for more than thirty years, inspiring students with his zeal for osteopathic medicine. During the years 1993-1995, he served as president of the NBOME.

John P. Bruno, DO, MBA

Dr. Bruno graduated from Philadelphia College of Osteopathic Medicine in 1969. He was one of the first DOs to obtain an MBA degree and moved from clinical practice to teaching to administration. At the request of President Fernandes, Dr. Bruno became an item writer and Part III reviewer for the NBOME. While serving as NBOME president, 1995-1997, he was instrumental in settling the legal dispute with the AOA. The present NBOME committee structure was devised while he was president, and he played a significant role in the development of COMLEX-USA, Levels 2 and 3. He is now vice president for medical affairs at St. Luke's Emergency Hospital in Allentown, Pennsylvania.

The second brought MDs and DOs together to discuss ways they could cooperate. A key issue was licensure, with most MDs arguing for the USMLE as a practical "single pathway." The DOs in attendance explained their philosophy of keeping examinations for DOs separate from those of MDs, although a few DOs were open to the idea of using the USMLE as well as a NBOME examination. David Richards, DO, noted that passing the USMLE protects osteopathic medical students, "so they're not excluded [from practicing medicine] for the wrong reasons," i.e., political ones. Benjamin Cohen, DO, from the University of North Texas Health Science Center said he encouraged students to take the USMLE, in addition to the NBOME examination, because the USMLE may give them access to competitive graduate medical training programs.

Other areas discussed where MDs and DOs would work together in the years ahead were managed care and the growth of enormous, for-profit corporate health-care systems. Small rural hospitals and private practices had all but disappeared by the mid-nineties, unable to compete with the giants, and administrators without medical training seemed to be in charge of telling physicians how to practice medicine.

After the second Macy conference, the NBOME, the FSMB, and the NBME agreed to keep talking with each other on issues of common interest. By then, COMLEX-USA had made its successful debut: Level

Gerald Osborn, DO, MPh

Emergent care for a childhood asthma attack by a DO was Dr. Osborn's introduction to osteopathic medicine. Dr. Osborn earned his DO degree from KCOM. He completed his psychiatry residency at Michigan State University, where he began his academic career. He earned a MPhil degree at the University of Cambridge and is a distinguished fellow in the American College of Neuropsychiatrists and American Psychiatric Association. His work with the NBOME began in 1986; he served as president 1997-99. He was instrumental in the development and implementation of COMLEX-USA. He is widely published and is presently the associate dean for Community and International Medicine at LMU-DCOM, as well as being clinically active.

Frederick G. Meoli, DO, FACOS

Frederick G. Meoli, a New York City native, received his DO from the Kansas City College of Osteopathy and Surgery in 1968 and completed his residency in general surgery at the John F. Kennedy Memorial Hospital in New Jersey. A board-certified surgeon, he taught at both the Philadelphia College of Osteopathic Medicine and the University of Medicine and Dentistry of New Jersey School of Osteopathic Medicine. He was the chair of the Department of Surgery at UMDNJ-SOM for sixteen years. Dr. Meoli's interest in medicine began with a bout of severe tonsillitis at age ten, when he decided to do all it took to get on the other side of that needle. Inspired by his example, his brother Christopher and son Frederick are both DOs, and both osteopathic radiologists. Dr. Meoli became a NBOME board member in 1988, serving at every level within the organization, including as president 1999-2001. In 2002, the NBOME was reorganized, and Dr. Meoli became its first full-time president and CEO, a position he held until his retirement in 2009. During this time he oversaw the great growth of the organization. One of the many issues he worked for is the international recognition of the NBOME .

3 in 1995, Level 2 in 1997, and Level 1 in 1998. The pass/fail standard used reflected the minimal level of competency that should be exhibited by a candidate seeking licensure. (Details can be found in "The Examinations" section.) In 1998, the FSMB challenged the validity of COMLEX-USA as a pathway to licensure and asked for documentation to prove its worth. It also asked for documentation on the validity of USMLE.

A special committee on licensure, chaired by Allen Schumacher, MD, was created in 1999 within FSMB, and had both DO and MD members. Dr. Schumacher had served as Federation president. The committee was to determine the "rigor" and validity of both the USMLE and the COMLEX-USA. The NBOME asked Benjamin Wright, PhD, head of the MESA Institute at the University of Chicago, to evaluate the COMLEX-USA. After an extensive review and analysis, Dr. Wright

published a report that stated that COMLEX-USA was one of the best examinations he had evaluated in his thirty years of experience. Over twenty additional studies were conducted under the direction of Dr. Linjun Shen and others and reviewed.. Strong support for COMLEX-USA came from the AOA, the American Association of Colleges of Osteopathic Medicine (AACOM), and the American Association of Osteopathic Examiners (AAOE).

In April 2001 Dr. Eugene Oliveri, president of the AOA and a member of the NBOME board of directors, was invited to give the annual Galusha Memorial Lecture to the FSMB House of Delegates. It was the first time that a DO had been asked to do so. Dr. Oliveri used the opportunity to praise COMLEX-USA, and to offer an outstretched hand in friendship to MDs. Together, he counseled, the two professions could work on a single examination system that contained two distinct and separate examinations—one for DOs and one for MDs.

Three months later, representatives from the NBME, NBOME, and FSMB met in New York to discuss barriers and strategies to sharing common item pools and a uniform licensure pathway with common standards. This meeting, chaired by George Barrett, MD, a member of the FSMB and a radiologist from North Carolina, ultimately led to a side-by-side comparison of COMLEX-USA and USMLE in January 2001, conducted at the NBME headquarters in Philadelphia. Furthermore, the FSMB psychometric consultant, Stephen Sirici, PhD, from the University of Massachusetts, stated, "I rate the evidence supporting the validity of score-based inferences for the COMLEX-USA as exemplary." He thought it definitely achieved its intended purpose of examining osteopathic candidates for medical licensure.

The results of the comparison and Dr. Sirici's report were included in the final report of the Special Committee on Licensure and were submitted to the FSMB House of Delegates, which then passed Resolution 01-03 recognizing that the USMLE and COMLEX-USA were valid examinations for medical licensure for MDs and DOs respectively. Following adoption of this resolution, in May 2001, the Committee on Medical Licensure Examination Systems (CMLES) was created with members from the FSMB, NBME, and the NBOME to attempt to develop models for a licensure system.

The NBOME, NBME, and FSMB continued to meet to work toward a common licensure system until 2003, when meetings ceased, as no practicable plan had emerged. During these proceedings, the AOA and the AAOE played an important supportive role in the NBOME's efforts to preserve the identity of the osteopathic profession with regard to medical licensure. The AOA was particularly helpful through the efforts of its Bureau for State Government Affairs and through the support of a number

Thomas Cavalieri, DO, FACOI

Dr. Cavalieri began advocating for quality care for older adults in the mid-1980s and was founding director of the Center for Aging, now the New Jersey Institute for Successful Aging, and its chair of the Department of Medicine. Nationally known in the field of geriatrics, he has a special interest in medical ethics and end-of-life issues and sees community service as a part of education. His publication credits include more than ninety scholarly articles, abstracts, and book chapters. He has held dozens of leadership positions within and without the profession. He was the chairman of the NBOME 2001-2002. Currently he is the dean of the University of Medicine and Dentistry of New Jersey School of Osteopathic Medicine. Dr. Cavalieri was also president of the American College of Osteopathic Internists.

of AOA presidents, including Anthony Minisalle, DO; Daryl Beehler, DO; Eugene Oliveri, DO; Donald Krpan, DO; George Thomas, DO; James Zini, DO; and AOA Executive Director, John Crosby, JD. AOA staffers, such as Michael Maille, and Linda Mascheri, were crucial players over the six-year period when relations were cordial but challenging with the FSMB.

Although these organizations worked cooperatively and collaboratively, they could not come up with a workable system or plan, and, due to the fact that both the NBME and the NBOME were in the process of performing a comprehensive review of their entire examination sequences, the work of CMLES was discontinued in 2008.

Because the AAOE had a voice at the FSMB, their efforts in support of the concept of maintaining the identity of the osteopathic profession through licensure for osteopathic physicians as osteopathic physicians was extremely helpful at the political and state regulatory levels. AAOE members Robert Foster, DO; Thomas Pickard, DO; Susan Rose, DO; R. Russell Thomas, Jr., DO; Timothy Kowalski, DO; and countless others were instrumental in the NBOME's success in maintaining the osteopathic pathway. The executive director of the AAOE and current NBOME board member, Gary Clark, gave sage advice based on his broad experience in the regulatory arena. His ability to work within the "political and regulatory environment" helped achieve success over

the long haul.

"The FSMB periodically raises issues regarding the quality of medical licensure examinations, as well it should, in the interest of public safety," Dr. Meoli wrote in 2009. "However, relations with the FSMB have attained a different level today. There is interest in collaboration and cooperation."

The FSMB and the AOA have assisted the NBOME in attaining international recognition through the International Association of Medical Regulatory Authorities (IAMRA) and the Osteopathic International Alliance (OIA). Further, NBOME and AOA representatives were asked to participate in the 2009 Search Committee for a new FSMB President and CEO by the then-FSMB chair, Regina M. Benjamin, MD. Dr. Benjamin, a member of the Alabama Medical Board and director of the Bayou DeBatrie Clinic, was recently nominated by President Barack Obama to the post of U. S. Surgeon General.

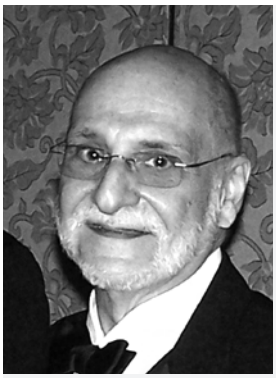
Individual effort, such as exhibited by Kim Edward LeBlanc, MD, PhD, that resulted from the challenges raised by the FSMB also helped the relationship grow stronger. Working with the AOA and NBOME, Dr. LeBlanc took the initiative to have COMLEX-USA recognized within the State of Louisiana for the licensure of osteopathic physicians, and was instrumental in having the Louisiana Practice Act revised to permit full practice rights to DOs in that state in 2005. Louisiana was the last state to do so, making COMLEX-

Boyd R. Buser, DO, FACOFP

A native of Iowa, Dr. Buser earned his DO degree from the Des Moines University, College of Osteopathic Medicine in 1981 and went into family practice at Kennebunkport, Maine. While at the New England College of Osteopathic Medicine, he received dozens of professional awards, including Educator of the Year. He is the first DO to be elected to an editorial panel of the AMA. His interests are world-wide and he has participated in a number of World Health Organization initiatives and is active in the Osteopathic International Alliance. During his tenure as chairman of NBOME, 2003-2005, the PE was implemented. He currently serves as vice president and dean of Pikeville College School of Osteopathic Medicine in Kentucky, where he also holds the rank of professor of Osteopathic Principles and Practice.

Sheryl A. Bushman, DO

When Sheryl Bushman was five years old, her baby sister died of a diaphragmatic hernia. Watching her mother grieve, Bushman made a vow that she would grow up and be a doctor so no more babies would die and no more mothers weep. By a wonderful coincidence, when Bushman was in OB-Gyn residency in Detroit, an ultrasound picked up another diaphragmatic hernia in a fetus. She directed the woman to a hospital in San Diego, where an in utero operation fixed the hernia and the baby was born healthy. Dr. Bushman received her DO in 1984 from the Texas College of Osteopathic Medicine and practiced in Kansas City for five years before moving to St. Louis and then to Fort Scott, Kansas. Her professional career has been balanced between medical practice and medical administration. Among the highlights of her life are medical mission trips to Vietnam and Haiti. She served as the first woman chair of NBOME, 2005-2007.



William F. Ranieri, DO

Dr. Ranieri's interest in medicine began early, and by high school, he had decided on a career in psychiatry. As an army medical officer, he worked in the Psychiatric Service at Ireland Army Hospital in Fort Knox, Kentucky. He received his DO from PCOM. An interest in depression and anxiety led to his co-authoring twenty-one articles in a variety of journals. Dr. Ranieri founded the Department of Psychiatry at UMDNJ-SOM in 1983 and served as chair until 2003, when he became an associate dean for clinical affairs until his retirement in 2007. In 1989, Dr. Ranieri was elected president of the American College of Neuropsychiatrists. He served as a member of the American Osteopathic Board of Neurology and Psychiatry 1986-1996, when he became the executive director. His involvement with the NBOME began in 1991. He was elected chair in 2007.

USA recognized in all fifty states.

"It may be safely said," Dr. Meoli continued, "that relations with the FSMB and its new leadership under Martin Crane, MD, the current FSMB chair and former member of the Massachusetts Medical Board, have evolved from the trials, tribulations, challenges and confrontations of the period from 1998 through 2004. This has resulted in a mutual respect for both organizations, a desire to work cooperatively, and has furthered the mission and vision of both organizations to protect the American public by helping to ensure quality medical care and the ease of access to the healthcare system."

In 2002, the NBOME changed its organizational structure to reflect its growing complexity and hired its first full-time president and CEO, Frederick G. Meoli, DO, FACOS, a long-time NBOME board member. He functioned in these capacities of the expanding organization until his retirement in 2009. During his tenure, he and his management team led the NBOME through a period of unprecented growth and international recognition. The leadership of the board remained a voluntary position, with Thomas Cavalieri, DO, serving as chair from 2002 to 2003. The twenty-one board members by then included DOs and representatives of the AOA, AACOM, and AAOE. Two lay members, Fred Wilson, a vice president of Proctor & Gamble, and Gary Clark, executive director of the Oklahoma Board of Osteopathic Examiners, were added.

John Thornburg, DO, PhD

Dr. Thornburg is professor of pharmacology and toxicology and family and community medicine at Michigan State University College of Osteopathic Medicine, from which he graduated in 1976. He is presently vice-chair of the board of directors of the NBOME, and will assume the role of chair in December 2009. He has a more than twenty-year history with the NBOME. Initially, he served on the pharmacology Test Construction Committee, first as a member and later as chair. Dr. Thornburg was the first coordinator of Level 1 COMLEX-USA. Subsequently, he served as chair of product committee and was elected to the board of directors and to the executive committee.

Today, four standing board committees meet throughout the year: finance, nominations, liaison, and standards and assurances. The operational committees of the NBOME include communications and consumer affairs, research, emerging technologies, Americans with Disabilities (ADA) test accommodations review, clinical skills testing advisory, and product. The liaison committee encourages a free exchange of ideas from all tiers of constituents having an interest in the medical licensure field. Members of this committee include representatives from the AOA, the FSMB, AACOM and AAOE, student associations, and other professional groups.

A major accomplishment during the late 1990s and early 2000s was the development and implementation of the COMLEX-Level 2-Performance Evaluation. Years of research came to fruition with the opening of NBOME's National Center for Clinical Skills Testing (NCCST) in Conshohocken, Pennsylvania, under the leadership of John R. Gimpel, DO, MEd. A history of the process leading to that achievement is on page 45.

The province of Ontario, Canada, accepted COMLEX-USA in 2005, several years after the NBOME began working with the Medical Council of Canada. The certification of foreign-trained osteopaths was an issue that had come up from time to time. Institutions in England, Australia, and New Zealand granted degrees in osteopathy, but the recipients of these degrees were not osteopathic physicians and surgeons, nor were they recognized as DOs by the AOA. Canadian DOs, on the other hand, have frequently been members of the AOA. Three Canadians have served as president of the American Academy of Osteopathy.

In 2005, the NBOME became an associate member of the International Association of Medical Regulatory Authorities (IAMRA) and part of the IAMRA Fast Track Work Group. In 2006, New Zealand accepted all DOs who had passed COMLEX-USA and obtained a license in any U.S. state. More than fifty nations license DOs on an individual basis today. The NBOME is currently working with the Osteopathic International Alliance (OIA) to obtain further recognition.

In the mid-1990s, the Institute of Medicine (IOM) began an in-depth study of the safety and quality of medical care. Their first report, *To Err Is Human,* was issued in 1999. It brought public attention to the deaths and maimings of thousands of Americans each year from medical errors. The media focused on patient safety along with quality medical care, and patients called for reform. The next IOM report, *Crossing the Quality Chasm* in 2001, described broader quality issues and defined six aims or areas of competency. Medical care should be

1) safe
2) effective
3) patient-centered
4) timely

5) efficient
6) equitable

In 2005-2006, the NBOME formed a task force to study the competency issue as it might apply to licensure. Their efforts resulted in the publication of "The Seven Core Osteopathic Competencies; Considerations for Osteopathic Medical Licensure and the Practice of Osteopathic Medicine" in September 2006. The task force defined physician competence as "suitable or sufficient knowledge, skill, experience, values and behavior." The seven competencies identified were:

1) osteopathic philosophy and treatment
2) medical knowledge
3) osteopathic patient care
4) interpersonal and communication skills
5) professionalism
6) practice-based learning and improvement
7) systems-based practice.

The NBOME was invited to participate in the Physician Accountability for Physician Competence (PAPC) Summits sponsored by the FSMB beginning in 2006. The NBOME has been active in this effort to assure physician competence from an academic, clinical, and economic perspective.

2000s

The terrorist attacks on 9/11/01 change much in American life, as security trumps individual liberty. President George W. Bush sends troops to Afghanistan and Iraq in retaliation. The family minivan ($18,000 equipped with GPS and drop-down TV) may be traded it for a more fuel-efficient Prius ($20,000) as Americans try to be less dependent on Mideast oil. Hurricane Katrina strikes New Orleans making global warming seem real. In 2008, after the stock market collapses and financial institutions fail, the nation's first bi-racial president, Barrack Obama, is elected.

While remaining a nonprofit corporation, the NBOME began to offer a variety of services and products in the mid-2000s. Between 2005 and 2006, after years of work by Dr. Shen and his team, COMLEX-USA was converted to computer-based testing (CBT) and examinees were liberated from pencil and paper testing. It was logical to continue to expand this expertise and knowledge.

As part of the goal of life-long learning, COMVEX-USA, in computerized format, was developed to evaluate current osteopathic medical knowledge. Its full name, Comprehensive Osteopathic Medical Variable-Purpose Examination, indi-

cates that it is an examination designed to meet the needs of physicians who experience significant change during their practice life-time. It focuses on applying knowledge in patient evaluation, diagnostic technologies, and case management. The examination is appropriate for DOs who have passed the USMLE and are moving their practice to a state that requires osteopathic examinations, or DOs who want to be reinstated after an interruption in a clinical career, or experienced DOs who need to demonstrate basic osteopathic medical competency for some reason.

Phase 1 of COMSAE, the Comprehensive Osteopathic Medical Self Assessment Examination, was launched in the spring of 2008, followed by Phase 2 and Phase 3. COMSAE resembles COMLEX-USA and allows medical students to evaluate how well they are learning the material in their course work. While the results of self-assessment modules are not 100 percent predictive of future COMLEX-USA performance, the correlation is indeed very high. The NBOME has worked with other specialty groups to assist with high- and medium-stakes testing as part of physician credentialing. In 2008, the NBOME assisted the American Osteopathic Board of Emergency Medicine (AOBEM) with the conversion of their certifying examination into computer-based format. In 2009, it helped the AOBEM introduce its re-certifying examination in computer-based format. The NBOME works with the American College of Osteopathic Surgeons (ACOS) in scoring and analyzing its "in-service" examination and assists the American College of Family Physicians (ACOFP) in creating their "in-service" examination as well.

The NBOME offers a number of no-cost services to DO candidates, osteopathic colleges, and the osteopathic profession, among them, educational programs, faculty development, and item-writing workshops. Examinations are also provided to colleges of osteopathic medicine to assist in the assessment of students' knowledge of certain subjects and disciplines. Other services are psychometric analysis, proctoring, item banking, CBT conversion of written examinations, and seminars in test construction for review committees.

Repeatedly during the past seventy-five years, members of the National Board of Osteopathic Medical Examiners have shown a commitment to the integrity of their profession. From Dr. Asa Willard's impassioned stand for self-regulation to Dr. Frederick Meoli's successful efforts for the world-wide acceptance, respect, and appreciation of the NBOME mission, the line of osteopathic physicians and surgeons has kept moving forward. Not discouraged by opposition, in fact often turning opposition into support through determination, the men and women of the NBOME have shown their pride in

and affection for a profession that aims to preserve the public trust by promoting safe, competent osteopathic health care for all people.

(Above) Offices of the NBOME at 2700 River Road in Des Plaines, Illinois

(Right) Home of the NBOME Chicago corporate offices today.

At these two facilities, the research, development, and implementation of COMLEX-

National Center for Clinical Skills Testing offices in Conshohocken, Pennsylvania.

Ribbon-cutting for the new facility in 2004. *Left to right: The Hon. Connie Williams, assemblywoman; Dr. Boyd Buser, Dr. John Gimpel; Dr. Sheryl Bushman; Dr. Frederick G. Meoli.*

Creation of the National Center for Clinical Skills Testing and COMLEX-USA Level 2-Performance Evaluation (PE)

In 1995, NBOME President John P. Bruno, DO, appointed John R. Gimpel, DO, a new member of the board, as chair of NBOME's Task Force on Performance Testing, with the charge to investigate the possibility of adding a clinical skills examination to COMLEX-USA. The Medical Council of Canada (MCC) had introduced its Qualifying Examination Part II in 1991, which included a multi-station objective structured clinical examination (OSCE), and the National Board of Medical Examiners (NBME) had begun pilot testing models in preparation of including a clinical skills examination in the USMLE pathway. The Educational Council of Foreign Medical Graduates (ECFMG) was planning to introduce the first national, high-stakes standardized patient-based clinical skills examination for international physicians in the United States in 1998.

In his capacity as director of the Skills Program, Dr. Gimpel recruited a talented group of national experts in medical education and assessment to form the task force, including Dennis Dowling, DO, chair of the Department of Osteopathic Manipulative Medicine at NYCOM Anthony Errichetti, PhD, Director of Standardized Patient Training at PCOM; Michael Warner, DO, family physician in Johnstown, Penn.; NBOME president-elect Gerald Osborn, DO, Chair of Psychiatry at MSCOM; and NBOME's Director of Testing Linjun Shen, PhD. Joining the team in the early years were consultants Michael Curtis and Jack Boulet, PhD, both Canadians and both with extensive experience in clinical skills testing from the ECFMG. Dr. Boulet served as consultant for psychometrics throughout the eight-year period of research, development and pilot testing of what would become the COMLEX-USA Level 2 Performance Evaluation (Level 2-PE).

Dr. Osborn and Dr. Gimpel visited and observed the MCC's Part II OSCE in Toronto, Canada, in 1998. During NBOME retreats in 1998 and 2000, members debated and deliberated about the enormous projected obstacles—financial, logistical,

John R. Gimpel DO, MEd

"Students value what you test, not just what you teach," is one of Dr. Gimpel's core beliefs. After graduating from the Philadelphia College of Osteopathic Medicine (PCOM), Dr. Gimpel taught physical diagnosis and clinical skills testing using standardized patients. He joined the NBOME board in 1995 to assist with clinical skills testing in COMLEX-USA. Dr. Gimpel has published widely in the area of high-stakes assessment and medical education and has authored several articles and textbook chapters on family medicine. In 2004, Dr. Gimpel became NBOME's first full-time vice president for Clinical Skills Testing (CST). In 2009 he became NBOME's second full-time president and CEO. When he is not attending to NBOME business, Dr. Gimpel can regularly be found coaching one of his three children on the golf course.

and political—that faced the NBOME in regard to adding a clinical skills examination to COMLEX-USA.

Meanwhile, Dr. Gimpel, Dr. Errichetti, and Dr. Boulet outlined a road map for the development of an osteopathically distinctive clinical skills assessment. The task force developed a blueprint for the Level 2-PE examination and reported regularly to NBOME. After assembling a case development committee with representatives from numerous osteopathic medical colleges and state medical boards, the trio brought a demonstration troupe of standardized patients to the NBOME board retreat at the Samoset Hotel in Rockport, Maine, in 2000.

At this retreat, with the foresight of outgoing President Osborn and incoming president Frederick G. Meoli, DO, each board member completed a mock two-station OSCE in which he or she encountered two standardized patients and were faced with the task of evaluating and treating the patient. The board was sold! Shortly thereafter, developing a clinical skills examination to augment the current COMLEX-USA series was made the top priority for NBOME, despite the lingering uncertainty relative to the political and financial feasibility.

The addition of an assessment of osteopathic diagnosis and OMT by trained osteopathic physicians was a key component of the initial pilot testing of the new PE examination. Led by Dr. Dowling, with considerable input from the Educational

Council on Osteopathic Principles (ECOP) of the American Association of Colleges of Osteopathic Medicine (AACOM), scoring rubrics and rater training processes were developed, piloted and validated in numerous studies and field trials from 1999-2004, partnering with a number of osteopathic colleges. Logistical aspects of the new 12-station Level 2-PE model were fine-tuned. A number of peer-reviewed articles were published in the *Journal of the American Osteopathic Association,* and the development of the Level-2-PE attracted significant attention from the Federation of State Medical Boards, as well as international regulation, testing, and licensure communities.

The landscape seemed ready for a final decision about implementation of clinical skills examinations into the COMLEX-USA and USMLE examinations in 2003. At the annual House of Delegates meeting of the American Medical Association (AMA) in June 2003, a resolution was adopted that opposed the addition of a national clinical skills examination to the USMLE examination. The objection seemed to be primarily centered around financial concerns for medical students. Just one month later, in July 2003, the House of Delegates of the American Osteopathic Association (AOA) adopted a resolution in support of the addition of a clinical skills examination to COMLEX-USA, citing the protection of the public as the prime concern.

The NBOME Board was still skeptical about the ability to finance the $2-3 million investment needed for the launching of Level 2-PE. It posed enormous financial risk and would double the NBOME's entire budget. It became clear that partnering with osteopathic medical schools was not going to be the preferred delivery model for the new examination. While other models were still being evaluated, the NBOME was faced with the need to make a final decision about an implementation model. The 2003 AOA House of Delegates Resolution seemed like a mandate for moving forward, but some significant decisions needed to be made first. Former chair Dr. Frederick G. Meoli had recently returned to the NBOME, having been named the first full-time president and CEO of the organization. The new chair, Thomas Cavalieri, DO, chair of Internal Medicine at the University of Medicine and Dentistry of New Jersey, and chair-elect Boyd Buser, DO, associate dean for Clinical Affairs at the University of New England College of Osteopathic Medicine, worked with Dr. Meoli and Dr.

Dennis Dowling, *DO*

Dr. Dowling was on the task force that led to the NCCST.

Gimpel to organize proposals and formulate the key questions for the NBOME in the late summer and early fall of 2003. Decisions were made to build the NBOME National Center for Clinical Skills Testing in the Greater Philadelphia region, since the number of examinees would make testing at multiple sites impractical and a majority of osteopathic medical students in their fourth year of clinical rotations, the likely candidate pool, were training within several hundred miles of Philadelphia. Proximity to the expertise needed to implement the Level 2-PE examination in 2004, including professionals in testing and standardized patient trainers, and also the ECFMG and NBME headquarters, were also significant reasons to set up shop in Philadelphia, since the NBOME staff were collaborating closely with their colleagues at the ECFMG and NBME on issues relating to examination development and implementation.

Having led the task force (now called the Performance Testing Committee) and the Case Development Committee in an eight-year process of research and development on a part-time basis and as a consultant, Dr. Gimpel decided to join NBOME full-time as vice president for Clinical Skills Testing. Board member John Becher, DO, accepted the appointment as the first chair of the Clinical Skills Testing Advisory Committee (CSTAC), which replaced the Performance Testing Committee and directed oversight of this new examination. A site for the new National Center for Clinical Skills Testing was identified at 101 West Elm Street in Conshohocken, Pennsylvania, at the very border of Philadelphia. The NBOME approved a plan outlined by President Meoli to borrow some of the financial resources necessary to lease and fully equip the NCCST, while limiting the overall need for upfront capital by negotiating a lease for the new site.

Tireless efforts by NBOME staff, including new Managing Director Laurie Kerns, Administrative Assistant Taunya Cossetti, a growing staff of NBOME personnel in the new NCCST, and a number of key partners, including Anurag Singh of the EMS clinical skills software company, allowed for the historic signing the lease on December 23, 2003. Site construction of the NCCST began in late January 2004. Installation of all of the technology and hiring the staff was finished by June 2004. Standardized patients were hired and trained, and pilot testing was carried on in July and August. The NBOME hosted a grand opening of the facility in early September and on September 23, 2004, the first COMLEX-USA Level 2-Performance Evaluation examination was administered to twelve student candidates.

The NBOME initiated an electronic registration system for candidate scheduling through the efforts of Joseph Smoley, PhD, vice president for administration and COO, and hired its first full-time Director of Information Systems, Oracle-expert David Kreines, JD, in 2004. The

NBOME was the first to implement a web-based secure portal for the physician scoring of the written post-encounter SOAP notes and the videotape performances of candidates using osteopathic patient assessment and treatment. Osteopathic physician raters from all around the country were trained to score thousands of SOAP notes and videotape performances, and a system was designed so that the scoring and rater calibration could be done for timely candidate scoring.

The NBOME received widespread acclaim for the success of Level 2-PE. In part due to regular publications in peer-reviewed journals and dozens of presentations at prominent national and international meetings, coupled with a number of innovations in testing that were being emulated by other testing organizations, the NBOME was recognized for excellence when the Federation of State Medical Boards (FSMB) issued its Meritorious Service Award to Dr. Gimpel in 2007.

The NCCST quickly became a very busy place, with 12-24 candidates, 14-28 standardized patients, and testing and administration staff arriving despite snow, hail or rain to deliver the Level 2-PE examination, offering double shifts and weekend administrations at the Conshohocken facility. Candidate feedback about the Level 2-PE examination remained uniformly positive, commending the organization and the staff on the verisimilitude of the standardized patient portrayals and the professionalism of the staff. Managing Director Crystal Wilson, MEd, joined the staff in its second year of operation, and the team grew significantly over the ensuing years as the number of candidates tested increased from 2,900 annually to almost 4,000 in 2008-2009. William Roberts, EdD, was hired in 2006 as the director for Psychometrics and Research for Clinical Skills Testing and in 2008, Erik Langenau, DO, was hired as vice president for Clinical Skills Testing, replacing Dr. Gimpel, who went on to become the dean at the New England College of Osteopathic Medicine.

In 2009, the NCCST doubled its testing space and capacity, adding a second clinical skills testing pod in order to provide greater flexibility in testing candidates. The Level 2-PE staff, including almost thirty full-time employees, several hundred physician examiners and standardized patients, and another hundred or so physician volunteers on committees that support the examination, are poised to continue to develop the Level 2-PE examination and improve the NBOME's ability to protect the public by providing the means to assess the competencies for osteopathic medicine and related health care professions.

The NBOME's Future

Setting the pace for osteopathic medical licensure and competency assessment has provided the NBOME with many challenges and opportunities. The NBOME is prepared to face those of the future in order to meet its mission of protecting the public.

The NBOME board of directors set a new direction for the organization in 2008, when it approved an innovative strategic plan. This plan outlined five major goals for the organization:

1. Preeminence in the arena of domestic and international testing of the osteopathic and relevant health care professions
2. Leadership and collaboration in the fields of osteopathic education, medical regulation and research
3. Innovation and excellence in product lines and services
4. Creation of a strong and sustainable technological infrastructure for the development, administration, promotion and delivery of products and services
5. Promotion of an efficient and effective organizational structure

Over the past decade, the NBOME has evolved from a structure of having an executive director and fifteen full-time employees to a complex organization featuring two corporate locations, a full-time physician president and chief executive officer, four vice-presidents, and fifty full-time staff positions. This growth has positioned the NBOME to implement these ambitious strategic goals. Expanded relationships with other organizations in delivering relevant assessment tools, such as board certification or in-training examinations and COMAT subject examinations, are likely to increase as NBOME attempts to realize the vision of its board to become "the testing organization for the osteopathic profession."

As part of assuring that its signature COMLEX-USA examination series remained current in meeting the needs of the state medical licensing boards and other secondary constituents in protecting the public, the NBOME commissioned a comprehensive review of its COMLEX-USA examination series in 2007. This process originated from discussions of continuous quality improvement at an NBOME board retreat in 2006.

This review included extensive input from the many stakeholders, including state medical board representatives, representatives from schools of osteopathic medicine and graduate medical education programs, physicians in private practice, students, residents, and other content and testing experts. Numerous NBOME committees, subcommittees, and task forces met to evaluate the content, format, and consequences of the COMLEX-USA

series and to devise a plan for assuring that it will continue to elevate the breadth and quality of assessment to meet the expectations of the profession and the public.

One critical committee was the Blueprint Audit Committee, chaired by board member Fredrick Schaller, D.O. Another was the Committee on Competency Assessment, led by former NBOME President Eugene Mochan, DO, PhD. This latter committee had published "The Core Osteopathic Competencies: Consideration for Medical Licensure and the Practice of Osteopathic Medicine" in 2007, and an updated version, "The Fundamental Osteopathic Competencies" in 2009. This document addressed the core osteopathic medical competencies and how the competencies might be evaluated from a licensure perspective.

Upon recommendation from NBOME's Product Committee, chaired by board member Deborah Pierce, DO, and board chair William Ranieri, DO, who also chaired NBOME's In-depth Assessment Committee, the board of the NBOME voted in 2009 to move forward with plans to further study and implement a future design for COMLEX-USA which would be delivered in a competency-based, two decision point model. This model would incorporate the following:

1. Two decision points rather than the current three decision point model (COMLEX-USA Level 1, 2, & 3).
2. The first decision point may consist of several assessments of competencies, including osteopathic medical knowledge and clinical skills, but the decision point would occur immediately prior to entry into graduate medical education, which is considered supervised medical practice. This is the time when medical licenses are typically granted for practice in the supervised setting of a residency training program.
3. The second decision point would be made in postgraduate training and prior to the entry into unsupervised or independent practice. It may consist of several separate assessments of competencies.
4. The revised COMLEX-USA series will adopt a general competencies schema with osteopathic principles and practices integrated throughout all assessment tools and each of the six core competencies.
5. Assessment of the application of biomedical sciences to clinical presentations will be expanded across the examination series, as will the ability to evaluate and use best evidence and appropriate information resources to address clinical presentations.

It was recognized by the board that additional research would be necessary in the upcoming five to ten years in order to implement these changes to COMLEX-USA, and to do so in a fashion that gives consideration to secondary users and

indeed all constituents of the NBOME. The NBOME's mission to protect the public, and the validity and reliability of the NBOME's assessments will remain paramount.

An additional consideration of considerable interest at this time to the Federation of State Medical Boards (FSMB) is the issue of maintenance of licensure and career long competence. The NBOME has joined efforts led by the FSMB to explore pilot testing of additional assessment tools and processes that might assist state medical boards in determining the competence of practicing physicians.

Meeting challenges in osteopathic medical licensure and educational assessment and doing so with innovation, a sense of purpose, and dedication have been the hallmark of the exciting first seventy-five years of the NBOME history. Continuing to meet these challenges and to strive to continually improve its products and services, in the interest of the health of the public, will remain the NBOME's opportunity for the future.

"Almost every phase of society, nearly every section of the country, and certainly quite, if not all, the ills to which flesh is heir, were represented. . . . One thing they possessed in common, and that was a beaming countenance that indicated confidence, an expectancy, if not already a realization of a bettered condition."

Quoted in The DOs by Norman Gevitz describing the infirmary at American School of Osteopathy in 1896.

The Examinations

"To protect the public by providing the means to assess competencies for osteopathic medicine and related health care professions."

"When I joined the NBOME, I was immediately caught up with this desire to improve the quality of the examination. During my over twenty years with the NBOME, I have seen the level of the examination dramatically change and improve to match the challenges of the twenty-first century. Along the way, I have met an extraordinary group of people who are dedicating their time to produce examinations that assure the general populace that our osteopathic physicians are competent to meet their medical needs."

William F. Ranieri, DO
Chair, 2009

To Protect the Public

The first examinations put together by the National Board of Examiners for Osteopathic Physicians and Surgeons (NBEOPS) in the late 1930s, were made up of questions that tested knowledge of science, medicine, and osteopathic principles. They were similar to all university examinations at the time, requiring an essay answer that was graded on coherence as well as correct facts. Part I tested the academic knowledge of second-year students; Part II tested the knowledge of those finishing up their academic education; and Part III tested the clinical evaluations of interns after a year of experience.

Over the next seventy-five years, test questions reflected the evolution of medical knowledge and osteopathic techniques and the changing social milieu of the United States. The greatest changes in medicine in the twentieth century came after 1950 with the expanding use of pharmaceuticals which required in-depth knowledge of biochemistry and physiology. Surgical techniques changed radically beginning about 1975 with the development of open heart surgery, microsurgery, arthroscopic surgery, transplants, and the use of the laser.

In the late 1950s, the National Board began developing multiple-choice questions for its examination and in 1961, essay questions were dropped. Multiple-choice tests allowed for faster grading, but required a new way of thinking and more work for test preparers. The choices given had to be logical and close to the correct answer; otherwise the test would be too easy and meaningless. Examiners began to be concerned with the best way to measure the validity of their tests and looked to the growing science of statistical analysis. In 1971, computerized scoring was introduced.

After 1960, questions about social problems, such as drug and alcohol abuse and sexually transmitted diseases, appear on tests, as well as (briefly) the best way to test for radiation sickness. Medical jurisprudence and medical ethics became important. Beginning around 1970, familiarity with diagnostic equipment was increasingly significant, and more attention was paid to psychological problems, such as depression and anxiety. In the 1980s, questions about HMOs, the fees-for-services system and record-keeping were added

Gradually the examinations moved from testing rote knowledge to testing the ability to diagnose and treat disease. The first series of objective type examinations was subject- and discipline-based. Part

1 covered the basic science subjects of physiology, pathology, anatomy, pharmacology and osteopathic principles. Part 2 covered the medical disciplines of medicine, surgery, pediatrics, obstetrics and gynecology, and osteopathic principles. Part 3 was similarly discipline-based, but more clinically oriented. In the 1980s and early 1990s, the movement in medical education was toward a "systems-based" approach, where basic sciences and clinical disciplines were integrated and applied to human organ systems. Medical students were taught to approach the cardiovascular or the gastrointestinal system from a multidisciplinary approach bringing to bear the anatomy, physiology, pathology and clinical correlations of each organ system. This systems approach became the forerunner of the problem-based and case-based approaches of the 1990s and early 2000s.

Questions about OMT were in a separate section in the early years, but as the tests evolved, OMT and OPP were integrated into test questions and osteopathic principles were evident throughout. Thomas Santucci, Jr., DO, was a major advocate for developing a clinically based test and one that could be measured statistically for validity. In 1987, the NBOME began to use electronic scoring and perform analysis within the organization. Before then, scoring was provided by the University of Iowa.

Before 1985, candidates were allowed to retake the parts of the tests they had failed. This was no longer possible after Dr. Santucci revamped the testing procedure. As the number of candidates for the DO degree increased, test security became a crucial issue. The AOA auxiliary provided proctors for the examinations in the 1980s and 1990s, supervising the administration of Parts I and II, which were then held at the various osteopathic colleges. In the 1990s, the NBOME contracted with a third party, Applied Measurement Professionals (AMP) to oversee the examinations.

The development of COMLEX-USA and its subsequent evolution was a major event in the NBOME's history and a turning point for osteopathic medicine. Following a board retreat in 1990, a committee under the leadership of Michael Clearfield, DO, was charged to develop a new paradigm for the osteopathic licensure examinations. The committee came up with a unique bi-dimensional blueprint that would form the basis of the licensure examination sequence for the NBOME for the next fifteen years. As a result of the foresight of this committee and the board of directors, the new examination sequence would be introduced into Level 3 in 1995 and the entire sequence would be fully implemented by 1998. For the past ten years, board member and staff have presented information about COMLEX-USA to osteopathic medical colleges and state licensing boards. Getting their message out has become a major focus.

COMLEX-USA: a New Paradigm in Testing and Evaluation

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Gerald G. Osborn, DO; Frederick G. Meoli, DO; Boyd R. Buser, DO; Michael R. Clearfield, DO; John P. Bruno, DO; Laura Sumner Truax

From the beginning, the intention of the COMLEX-USA sequence was to use the actual practice patterns of osteopathic primary care physicians as an overlay [for the examination blueprint].

Working in reverse manner, the team determined the preceding knowledge and clinical decision-making elements that an osteopathic physician must have to make clinical decisions independently. Beginning with Level 3, the test committee determined by consensus the degree of sophistication and knowledge discrimination the candidate should possess.

Then, using a pattern of high-impact/high-frequency patient encounters, the NBOME committee members decided which skills and information a practicing osteopathic physician would need to make decisions about a patient. From this clinical starting point, the construction team determined the knowledge blocks of understanding and bio-mechanisms that are the underpinning of medical decision making.

By beginning with Level 3, the team steered the preceding two levels to become more clinically relevant and permitted the fundamentals of biomedical science to be applied to clinical situations and settings.

The examination outline is organized along the integration of two major axes or dimensions of patient encounters and physician knowledge and skill. Both of these dimensions are uniform and consistent through all levels of the COMLEX-USA sequence, as the same grid was used to compose the examination. The first axis (Dimension I) is modeled after a problem-oriented approach to patient care. On this axis, patient encounters are broadly collapsed into the homeostatic categories or capabilities, and clinical signs and symptoms.

The second axis, Dimension II, con-

tains six components and considers this expanding knowledge that an examinee would bring to the situations of Dimension I. . . .

At Level 1, the examination outline reinforces the clinical relevance of the first two years of osteopathic medical school by placing the knowledge and understanding of biological, behavioral, biomechanical mechanism, and osteopathic manipulative techniques in a clinically oriented setting. Approximately 80% of the items from Dimension II address basic science concepts underlying disease mechanisms. Integrated throughout is an emphasis on ambulatory care and stages of the life cycle that represent the scope of patients seen in typical primary care settings. Additionally, the examination grid was constructed to be flexible to accommodate the constant changes in medical knowledge and practice.

Using the identical outline, Level 2 emphasizes the evolving area of clinical knowledge examinees possess as their medical education is completed, with the majority of examination items focusing on clinical application to the patient encounters of Dimension I. Level 3 stresses the management knowledge osteopathic physicians should utilize to practice independent, unsupervised care.

The use of the same outline for all three levels allows test construction teams to modify examination questions to appropriately assess examinee knowledge across all three examination levels. This allows NBOME to not only provide a clear level of assessment, but to allow for efficiency of item use. The following test items provide examples of how test items are practically revised.

At Level 1, the test item focuses on the basic biological defects caused by a vitamin B_{12} deficiency:

A 70-year-old man presents with anemia. The red cell indices indicate hyperchromia, macrocytosis, and hypersegmented neutrophils. The underlying abnormality best explaining the anemia is:

(A) abnormal ß-globulin synthesis resulting in ineffective erythropoiesis
(B) failure of erythropoietin secreting function of the kidney
(C) G-6-PD deficiency causing damage to cells via oxidative stress
(D) impairment of DNA synthesis secondary to vitamin B_{12} deficiency
(E) impairment of RNA synthesis secondary to iron deficiency

Answer D is correct. The distractors are a variety of physiologic findings associated with anemias. The answer suggests a specific abnormality for B_{12}.

The same item presented in Level 2 focuses on the diagnostic skills a fourth-year osteopathic medical student would bring to the same problem:

A 70-year-old man presents with anemia. The red cell indices indicate hyperchromia and macrocytosis. The abnormality suggesting B_{12} deficiency is:

(A) generalized lymphadenopathy
(B) hepatosplenomegaly
(C) scleral icterus
(D) increased reticulocyte count
(E) hypersegmented neutrophils on peripheral smear

Answer E is correct. The distractors are a variety of laboratory and physical findings associated with anemia. The answer suggests a specific abnormality seen with B_{12} deficiency.

The item as used in Level 3 assessment of the treatment and management skill expected of a resident osteopathic physician:

A 70-year-old man presents with anemia. The red cell indices indicate hyperchromia, hypersegmented neutrophils, and macrocytosis. The most likely clinical benefit from the correction of the cause of the anemia is:

(A) improvement in dementia
(B) improved renal function
(C) improved respiratory function
(D) reversal of jaundice
(E) reversal of splenomegaly

Answer A is correct. The sequelae of anemia can result in a variety of abnormalities that can be reversed with appropriate treatment. The answer highlights a common abnormality that can be improved with treatment when caused by a B_{12} deficiency.

Each of the three examples are categorized in the same way under Dimension I, yet the physician knowledge that each example demonstrates is classified uniquely under Dimension II-Level 1 illustrates the scientific understanding of basic mechanisms, Level 2 stresses clinical assessment, and Level 3 presents the item with a case-management orientation.

Application of osteopathic principles is interwoven throughout the entire examination at all three COMLEX-USA sequence levels, with a significant number of test items having clear osteopathic orientation. An example of this integration is seen in the application of structural and palpatory diagnosis and osteopathic manipulative techniques in the diagnosis and management of patients.

In Level 1, knowledge of basic osteopathic concepts and biomechanical principles are examined as illustrated in the following test item:

A 24-year-old man with thoracic back pain has acute tissue texture changes in the right midthoracic paraspinal tissues. Palpatory examination reveals posterior transverse process of T7 on the right side that become more prominent when the thoracic spine is extended. Which of the following is true regarding this somatic dysfunction?

(A) flexion motion is restricted
(B) left sidebending is restricted
(C) motion between T6 and T7 is abnormal
(D) motion restriction is maintained by long restrictor muscles
(E) rotation toward the right is restricted

Answer B is correct. The student must understand the physiologic motion characteristics of the thoracic vertebral column and the proper terminology for describing abnormalities of motion in this region.

In Level 2, the integration of structural findings in the differential diagnosis is one aspect of the osteopathic examination:

A 44-year-old woman with a complaint of vague abdominal pain has tissue texture changes in the right paraspinal tissues at the T8-T9 level. The most likely viscerosomatic relationship is with which of the following organs?

(A) colon
(B) gallbladder
(C) ovary
(D) spleen
(E) stomach

The correct response is B. The visceral afferent nerves from the gallbladder enter the spinal cord in the T8-T9 region on the right side. The distractors are organs whose visceral afferents enter the cord at other sites.

In Level 3, where unsupervised patient care is emphasized, osteopathic manipulative treatment (OMT) in patient management is highlighted:

A 35-year-old man presents with right lower back pain that began after moving furniture at home. Neurologic examination is normal. A diagnosis of lower back strain of mechanical origin is made. Structural findings include hypertonicity of the left psoas muscle. Correct position of this patient for direct muscle energy treatment of this dysfunction includes:

(A) patient supine, trunk sidebent left
(B) patient prone, left hip extended
(C) patient seated, trunk rotated right
(D) patient supine, right hip and knee flexed
(E) patient prone, lumbar spine hyperextended

The correct response is B. To choose the correct answer the student must have knowledge of the anatomy and the function of the psoas muscle and an understanding of basic muscle energy treatment principles.

While the above examples focus on the diagnosis and management of patient care using osteopathic manipulative techniques, the osteopathic medical focus is evident throughout the COMLEX-USA sequence in the tendency of the test

items to emphasize the body's capacity for self-regulation and repair and the corresponding interrelationship of bodily structure and function. Osteopathic integration is further achieved by other interdisciplinary items that reflect the significance of musculoskeletal findings, as shown in the following test item:

A 26-year-old woman is observed pacing in the waiting room prior to a new-employee physical examination. She startles as the physician enters the exam room and appears much more concerned than seems appropriate to the situation. The physician tactfully comments about her demeanor, and she replies, "Oh, I've always been like this and even get teased because I worry about everything constantly." She admits to problems concentrating and also to having difficulty falling asleep even when fatigued. Physical examination is within normal limits except for mild tachycardia and high levels of tension bilaterally in her masseter, temporalis, and trapezius muscle groups. Her presentation is most consistent with:

(A) agitated depression
(B) hypochondriasis(
(C) somatization disorder
(D) generalized anxiety disorder
(E) obsessive-compulsive disorder

The correct answer is D. Increased muscle tension is a DSM-IV diagnostic criterion for generalized anxiety disorder (Diagnostic and Statistical Manual of Mental Disorders, American Psychiatric Association, 1994). Her musculoskeletal findings are corroborative to the other generalized anxiety disorder features with which she presents.

Osteopathic integration is even further achieved by test items that challenge examinees to consider OMT along with conventional management issues. The following item illustrates this feature:

A 53-year-old woman with rheumatoid arthritis of 13 years' duration, stable on a maintenance dose of a nonsteroidal anti-inflammatory drug (NSAID), returns for a follow-up visit. She now complains of a four- to five-week history of increasing dorsal neck pain, and dyesthesias involving both hands and occasionally her arms. Her exam reveals chronic rheumatoid arthritis deformities. Evaluation of her neck reveals restricted range of motion with tenderness in the upper cervical area more pronounced on the right. Routine lab is normal. Which of the following should be done next?

(A) change to a different NSAID
(B) begin methotrexate
(C) begin oral steroids
(D) direct action OMT to the upper cervical spine
(E) cervical spine x-ray in flexion

The correct answer is E. The first

concern is to rule out cervical spine subluxation and myelopathy. Direct action manipulation is contraindicated, and more extensive treatment of the rheumatoid arthritis would probably be of no benefit or could possibly transiently mask the symptoms placing the patient at higher risk. This question illustrates further that examinees must consider the indications and contraindications of adjunctive OMT as they should with any other therapeutic modality.

COMLEX-USA is a sequential process: each level must be successfully completed before moving on to the next level. Levels l, 2, and 3 are each two-day, multiple-choice tests administered twice annually. Each day of testing is divided into two four-hour sessions consisting of approximately 200 examination items with the range of topics randomly ordered. Virtually all osteopathic medical schools require their students to sit for Levels 1 and 2 of COMLEX-USA and the vast majority of osteopathic medical graduates in both AOA-approved and ACGME PGY-l programs sit for Level 3 of COMLEX-USA.

The COMLEX-USA examination is appropriate for U.S. osteopathic medical students and graduates and closely follows the general progression of osteopathic medical education and training of the 19 osteopathic medical schools in the United States, and it is consistent with a model of osteopathic practice. Because of the integrated sequential nature of the examination, there is no mechanism that [permits] medical students to take the examinations out of order.

Primary areas of ongoing research are the refinement of examination reliability and validity. The extent to which the examination is reliable is the degree to which the examination yields the same results on multiple administrations. Reliability asks, "Is the examination a tool that will provide a stable, dependable measurement for different groups of candidates over different periods of time?" The COMLEX-USA sequence performs at a [reliability coefficient] . . . of 0.85 and higher on a value range of 0 to 1, which is considered a high coefficient value for multiple choice examinations.

The validity question asks, "Does the examination measure what we say it is measuring?" The COMLEX-USA construction and review committees regularly ask faculty members and administrators to give feedback on examination items. Items are routinely submitted to those in the fields of osteopathic medical education for feedback about the items' perceived appropriateness. Candidates likewise are surveyed after taking the examination to learn their opinions on whether the examination reflected their expectations and whether it represented an appropriate relationship to their medical education and training experiences.

The development of COMLEX-USA included the adoption of new pass/fail standards to reflect the profession's vision and expectations of minimum com-

petency to practice osteopathic medicine within the current and emerging health-care system. Standard setting is achieved by a method generally accepted for high-stakes examinations. The new standards are content-based and are, therefore, independent of performances of specific examinee groups.

These new standards were set by carefully selecting committees of experts within osteopathic medical education. For Levels 1 and 2, the selection of committee members began with a review of nominations from the osteopathic medical schools and leaders within osteopathic graduate medical education. Final selection was designed so each discipline would be represented. The committees also represented the widest possible cross-section of those faculty having good professional reputations and seasoned understanding of osteopathic medical practice. The process of standard setting involves all committee members reviewing each item used in the examination. Each member then makes an independent judgment about the percentage of borderline candidates who would answer each of the aggregated percentage correct for the total exam. NBOME policy requires reexamination of pass/fail standards for each level of COMLEX-USA every 3 years.

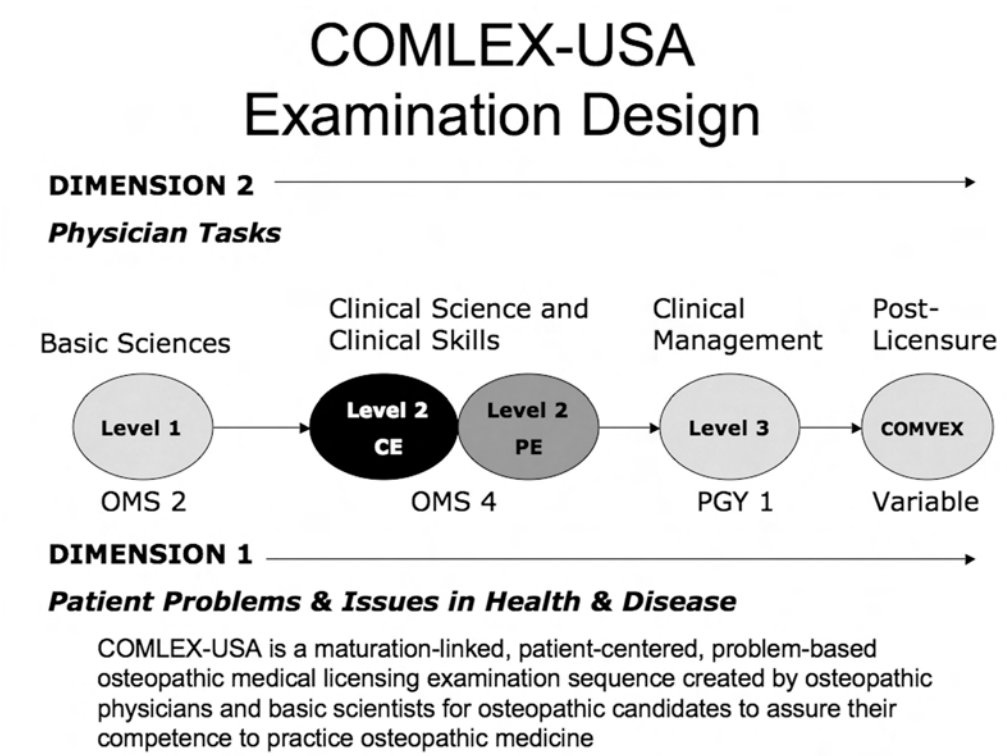
In the past, NBOME's policy has been to accommodate an osteopathic school's request to have their faculty review the actual COMLEX-USA examination materials and booklets. The new NBOME policy is to affirmatively offer to each osteopathic medical college the opportunity for faculty to review the examination under secure conditions. Since the 1998 cycle of COMLEX-USA, osteopathic faculty are asked to fill out a standard survey instrument after reviewing the examination. Over 80 percent of those faculty members rated the quality of the items, connection to osteopathic education, and the balance of the examination content as "good" or "excellent." NBOME will continue to survey formally and systematically a wide sample of osteopathic educators. There are also plans to expand the survey to collect the opinions and impressions of osteopathic practitioners in the field who are not actively involved in education. This "field test" of the examination style and content will provide an added dimension to our ongoing assessment of validity.

As a component of a continuous quality improvement strategy, NBOME is engaged in a study to examine the construct validity of the novel design features of COMLEX-USA. A uniform content specification across all three levels is a unique feature not shared by any other licensing examination process. This new design provides a method to raise the standard of the quality of licensing examinations. It does this by addressing the critical issues of both continuity and differentiation that are characteristic of progressive professional education and training, which are comprised within each level of the examination. These complex issues of

continuity and differentiation have never before been empirically formulated. The purpose of the COMLEX-USA Construct Validity Project is to examine whether the outcomes of the novel features realize the goals of the uniform test specification design.

An inherent assumption of the COMLEX-USA design is that the three examinations together define the minimum competencies to practice osteopathic medicine in an independent, unsupervised setting. Each exam level has its own emphasis in both areas of breadth and depth. Each level is intended to measure the degree of competency expected according to the respective point in the educational/training process. The Construct Validity Project will specifically examine if each higher sequential level demonstrates a difficulty increment over its lower-level counterparts. It will measure the extent to which these increments are reasonably spaced. It will also address if the pass/fail standards of the three levels are meaningfully spaced.

Continuous refinement and quality improvement is an ongoing process for this new examination paradigm.



A distinct licensure examination, addressing the critical differences in educational philosophy, is a principal component of [our] survival. I also believe that it is in the interest of the public health and safety that all states assure that candidates for a license to practice osteopathic medicine have taken and passed an examination that has assessed their knowledge and skill in the areas relevant to their scope of practice. For osteopathic medicine, the only examination series meeting that standard is the COMLEX-USA.

Boyd R. Buser, DO
NBOME chair, 2003-2005

COMLEX-USA TODAY

The article reprinted from the *JAOA* gives a sense of the history of the development of the COMLEX-USA examination and the procedures used to create the test items. It also explains how the examination sequence addresses the maturation of the osteopathic medical candidate. Since the article's publication in 2000, many things have changed. Most notable is that the COMLEX-USA is in administered in a computerized format, the clinical skills examination component has been incorporated into the sequence, and the validity argument has been clearly settled. The CBT examination is now offered nationally at professional test centers more than forty times per Level per year as a day-long test. The Level 2 PE is given all year around at the NCCST.

In 2009, students from the twenty-six U.S. osteopathic medical schools use COMLEX-USA to measure their knowledge and diagnostic abilities. Each COMLEX-USA test item goes through five independent committee reviews and is pre-tested before it is used in an actual examination. New items are scrutinized by the staff to ensure proper coding, grammar, and context. The graphics are checked for accuracy. All "clean test items" are then surveyed by the New Item Review Committee. Those that pass are sent to the Approved Item Review Committee for their approval. A third committee analyzes and approves items selected for pre-testing. The results are subject to statistical analysis. Items passing this hurdle are sent to the Examination Review Committee and

if approved, put into the item bank for use.

The computer based testing (CBT) format was introduced in July 2005 after years of work by Dr. Linjun Shen and his team. Level 2 was implemented first in July 2005. This component of CBT COMLEX-USA was labeled Level 2 CE (cognitive evaluation) to identify and distinguish it from the clinical skills performance component of Level 2, which followed in September 2005. Either of the Level 2 components (CE or PE) could be taken in any order. Level 1 was introduced last to complete the conversion of the COMLEX-USA sequence in May 2006.

As has always been the case, a candidate must successfully complete Level 1 before Level 2. Level 1 and both components of Level 2 must be completed in order to take Level 3 in the CBT format.

The most difficult problem was making the examinations secure, despite offering them on-line multiple times each year. To keep candidates from memorizing the questions and giving them to others, it was thought that multiple test forms with completely different items were needed. As each examination uses 400 questions, the number of available test items required would be daunting. No solution to this problem was available in the literature, but on sudden inspiration, Dr. Shen came up with an idea that worked.

Four years after CBT was launched, a group of national testing experts reviewed the psychometric quality of COMLEX CBT and gave it high marks. They considered NBOME's CBT setup one of the most innovation systems in the nation. Approximately 12,000 candidates take the COMLEX-USA series annually and to each of them, the questions are new.

To be certain that NBOME examinations are valid to measure the competency of DOs seeking licensure, psychometric techniques are used. The NBOME routinely conducts internal audits to ensure the high psychometric quality of its products. It also invites external auditing by national experts. Over the years, the NBOME has continued to conduct research to assure that the content, construct, and psychometric accuracy and integrity of the NBOME examinations. The literature is replete with articles reflecting this continued effort. The NBOME has invested heavily to ensure that the examinations are secure, and that a great deal of professional effort is spent in maintaining and improving the quality, currency and applicability of the examinations used for osteopathic medical licensure.

The NBOME continues to work to assure the security, quality, integrity, currency, and applicability of its osteopathic licensure examination sequence. Visit the NBOME website at www.nbome.org for the most up-to-date, complete and accurate information regarding the NBOME and the COMLEX-USA examination sequence.

NBOME Testing Professionals

Dozens of people—board members, staff, and consultants—worked on COMLEX-USA. It was a team effort in much the same way that the launch of a space shuttle is. Years were spent on the project, thinking, discussing, composing, being disappointed, and thinking, discussing, and composing again until success was achieved.

Among the staff members, no one put more time and effort into developing COMLEX-USA than Dr. Linjun Shen, vice president for research and cognitive testing. It was his skill in implementing ideas that made the project a reality.

Dr. Joe Smoley, vice president for administration, oversaw the whole process, which culminated in the imple-mentation of the delivery of COMLEX-USA at over 320 professional test sites nationwide, on-line electronic registration, electronic item banking, a uniqe website, and improved telecommunications. He was assisted by David Kreines and Michael Kastler, both IT specialists.

Among other professional staff members today, Dr. Erik Langenau, as vice president for Clinical Skills Testing, is in charge of Level 2-Performance Evaluation. Crystal Wilson, MEd, serves as managing director of the National Center for Clinical Skills Testing.

Linjun Shen, PhD

Linjun Shen joined the NBOME as a psychometrician in 1990 when a graduate student. He graduated from the Measurement, Evaluation, and Statistical Analysis (MESA) program of the University of Chicago in 1994 with a PhD degree. In 1998, he completed a master of public health degree (MPH) emphasizing epidemiology from the University of Illinois at Chicago. Dr. Shen's role with the NBOME gradually evolved into program development and management of testing. He has been involved in all NBOME written examinations for the past twenty years and spearheaded computer-based testing. He believes that osteopathic licensing programs have the capability to break new ground in the field of licensure and certification and his technological creativity continues to lead the way.

Joseph Smoley, PhD

Joseph Smoley began employment at the National Board of Examiners for Osteopathic in January 1985 after completing his PhD in Educational Psychology and Research Methods at Loyola University of Chicago. Up to that time, his experience had all been in the area of assessment. Shortly after his arrival, Thomas F. Santucci, Jr., DO, began the task of revamping the entire test development process. This included a new name, the National Board of Osteopathic Medical Examiners (NBOME) with additional staff, committees and resources to implement a strategic plan. The first five-year plan was sketched out in many iterations on cloth napkins or table cloths thanks to the La Famiglia restaurant in Philadelphia. These last twenty years for Dr. Smoley have been filled with the challenges and opportunities necessary to promote a high standard of educational assessment. The next decades promise no less.

Erik Langenau, DO

After growing up in rural Michigan, Erik Langenau received his DO from New York College of Osteopathic Medicine. After completing his internship, pediatric residency and chief residency at Maimonides Infants and Children's Hospital of Brooklyn, he continued as a pediatric hospitalist, outpatient preceptor, associate program director for the institution's allopathic pediatric residency program, and program director for the osteopathic pediatric residency program. As an educator, he enjoyed the opportunity to develop and administer resident-level Objective Structured Clinical Examinations (OSCEs) for formative assessments. As his interest in OSCEs and clinical skills assessment grew, he relocated to Conshohocken to assume the role as NBOME's vice president for Clinical Skills Testing.

PART III

Information about the early clinical examinations is sketchy. The first ones were given once a year, beginning in 1936, during the summer AOA conventions. By 1947, Part III was given annually at the Los Angeles and Philadelphia colleges using live patients. In 1968, NBEOPS President, Dr. Spencer Bradford reported,"After considerable study, a new Part III format was developed, retaining the practical quality but administering the test at the site of the candidate's internship. The respective directors of medical education serve as chief examiners and the candidate is tested by a series of associate examiners, using actual teaching cases in the hospital. . . . Careful analysis of the results by the Part III Committee showed that the examinations had served the desired purpose quite well. In addition, most participating institutions felt that the procedure had been helpful to the intern training program."

A 1976 report gives a few more clues about the history of Part III. The first half then consisted of a written examination with live patient evaluations and a medical record review. It was given annually at an AOA-approved hospital during a rotating internship. A director of medical education was in charge of administering the test.

The second part of Part III was an oral and practical examination for the purpose of assessing a candidate's clinical competence as an osteopathic physician and surgeon. It was given by a panel of associate examiners under the supervision of a director of medical education or a chief examiner and member of the board.

Although Part III reflected greater application of knowledge in the clinical setting, by 1986 it was no longer practicable to continue to use actual patients as part of the testing sequence because of privacy, liability, and test standardization issues. Patient comfort was also taken into consideration. With the discontinuation of Part III as a clinical assessment program, NBOME decided to use the more objective multiple-choice type examination.

From 1986 until the 2004 introduction of the clinical skills assessment program using standardized patients, Part III did not evaluate hands-on clinical skills. It was an objective-type examination in paper-and-pencil format until the introduction of the computer-based (CBT) version of COMLEX-USA Level 3 in 2005.

With the advent of computerized testing, the NBOME was able to use new graphics, audio-visual test items, and interactive test items that more closely resemble the clinical situation as it may appear in actual practice without utilizing real patients. This form of test item, facilitated by CBT technology, helps to augment the assessment of the

clinical competence of the candidate. Ongoing research continues to explore the possibilities for testing and training offered by these emerging technologies and will permit a better assessment of the competence of candidate in the future.

In 2004, the NBOME decided to place the clinical skills assessment program into Level 2 of COMLEX-USA. There was the belief that all candidates must demonstrate certain requisite clinical skills prior to entry into graduate medical education programs. Therefore, the COMLEX-USA Level 2 PE is aimed at the assessment clinical skills of a candidate about to enter into supervised medical care. A more detailed description of the PE program is found on page 45.

The use of Standardized Patients (SPs) was introduced into the Level 2-PE clinical examination in September 2004 after nearly eight years of research, field and pilot testing. SPs are lay persons trained to portray patients with various diseases and conditions that are likely to be encountered by the osteopathic physician or surgeon. Through the use of SPs, history-taking, physical examination, and interpersonal and communication skills can be assessed. Going beyond medical knowledge, the Performance Evaluation (COMLEX-PE) measures the candidate's attitude, behavior, procedural skill, and ability to create a rapport with a patient, a skill critical in primary care.

COMLEX-Level 2-PE is is based on the use of twelve stations to objectively assess a candidate's clinical ability. Fourteen minutes are permitted for the clinical encounter with the SP. The candidate has an additional nine minutes to record the significant aspects of the encounter in a SOAP note, which should propose a differential diagnosis and develop a plan of action to address the case. Each candidate is also evaluated on OMT skills. SPs, using prescribed checklists, score each clinical encounter, while the OMT performance is assessed by osteopathic physicians from videos. A separate cadre of DO examiners rate each SOAP note.

The examination typically takes seven and a half hours to administer, including an extensive orientation program that precedes each examination. All candidates are tested at the NBOME National Center for Clinical Skills Testing in Conshohocken, Pa., a state-of-the-art facility. Score fidelity is assured by rigorous quality control measures.

In the Biomedical/Biomechanical Domain of the examination, the candidate is evaluated on data gathering (history and physical diagnosis), osteopathic manipulative skills, and the ability to formulate and write a SOAP note. The Humanistic Domain requires that the candidate establish the doctor-patient relationship, demonstrate professionalism, and show the ability to communicate.

COMLEX-USA Timeline

1989	Taskforce developed blueprint for COMLEX-USA
1990-1994	Ongoing research and development Special Committee on Licensure, Sirici-Wright review, CMLES
1995	COMLEX-USA introduced with Level 3
1997	COMLEX-USA Level 2 introduced
1998	COMLEX-USA Level 1 introduced
1998	FSMB challenged COMLEX-USA validity
1999-2001	Special Committee on Licensure; Sirici-Wright reviews; CMLES formed
2001	FSMB passed resolution 01-03 indicating COMLEX-USA valid for licensing osteopathic physicians
2004	COMLEX-Level 2 PE administered September 23, 2004
2005	COMLEX-USA converted to CBT - Level 2 and 3 COMLEX accepted in Ontario, Canada, for initial registry Louisiana accepted COMLEX-USA; DOs given full practice rights
2006	COMLEX-USA accepted for registry in New Zealand AOBEM contracted with NBOME to deliver CBT certifying examinations NBOME converted AOBEM certifying examination to CBT format

Item Writers and Case Authors of the Year 2008

Item writers are essential to the development of the COMLEX-USA examination. They contribute a great deal of time and energy to writing, reviewing and editing examination materials. In 2008, special recognition was given to the following contributors for their extraordinary service:

LEVEL 1
Charles Pavia, PhD, NYCOM of NYIT

LEVEL 2-CE:
Carmine D'Amico, DO, LECOM

LEVEL 2-PE
Bruce Bates, DO, UNECOM

LEVEL 2-PE
Gautam Desai, DO, UHS/COM

LEVEL 3
Theodore Spevack, DO, FACOEP, FACEP

LEVEL 3
Timothy J. Hogan, DO

HP/DP
James L. Fleming, DO, MPH, FAOCPM
Medical Director, Phoenix Fire Department Health Center

OPP
Alexander Nicholas, DO, FAAO, PCOM

COORDINATORS

Level coordinators and vice-coordinators are in charge of everything from recruiting the item writers and physician examiners, editing submitted questions, verifying source materials, and reviewing the final product. They oversee the work of the NBOME examination committees.

Level 1
Coordinator: John Goudreau, DO, PhD – MSUCOM
Vice-Coordinator: James Rechtien, DO, PhD – MSUCOM

Level 2
Coordinator: Michael Geria, DO, FACOOG – UMDNJ-SOM
Vice-Coordinator: Rocco Crescenzo, DO, FACOI

Level 3
Coordinator: Roberta Wattleworth, DO, MHA, MPH, FACOFP – DMU-COM
Vice-Coordinator: Peter Gulick, DO, FACOI, FACP, FIDSA – MSUCOM

HP-DP/HCD
Coordinator: H. Timothy Dombrowski, DO, FACOI – UMDNJ-SOM
Vice-Coordinator: James Foy, DO, FACOP – TCOM-CA

OPP
Coordinator: Karen Snider, DO – ATSU/KCOM
Vice-Coordinator: Mark Sandhouse, DO – NSU-COM

OMM for PE Examination
Coordinator: Dennis Dowling, DO

Case Development and SP Training for PE Examination
Coordinator: Jeanne M. Sandella DO

SOAP Note Scoring for PE Examination
Coordinator: Laurie A. Gallagher, DO

Advanced Test Items
Coordinator: Wolfgang Gilliar, DO, FAAPMR
Vice-Coordinator: Robert Hasty, DO, FACOI

"During the years that the responsibility of osteopathic education has been placed more or less upon my shoulders as chairman of the Bureau of Professional Education and Colleges, I have grown in the belief that we have a certain dignity to uphold and that we must continue to build the thought of osteopathy as a complete therapy."

John E. Rogers, DO, 1937
Founding Board Member NBEOPS

NBOME:

The People

"The single most impressive thing about the NBOME is the people. They are a group of dedicated, committed individuals who give freely of the time, expertise, and effort for the greater good of the organization and not for their own personal gain. They often learn more about each other, and about how to improve medical education and testing in the process."

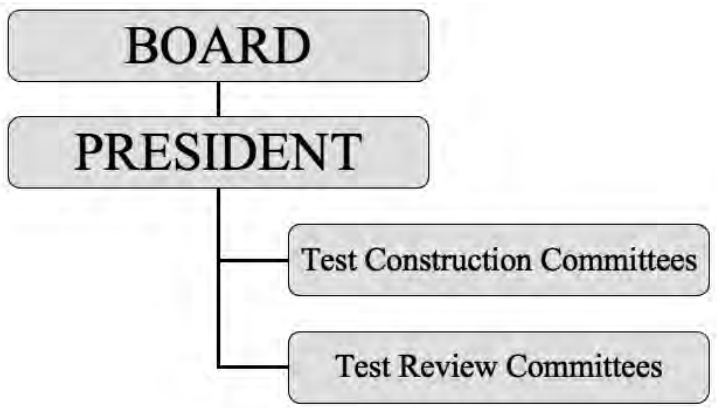
Frederick G. Meoli, DO, 2009

The NBOME is governed by a board of directors consisting of twenty members. Most members are DOs, with the exception of two lay members who represent the general public. The AOA, the AAOE, and the AACOM each have one DO representative. Directors are elected to the board based on experience and expertise in the clinical and basic science disciplines, medical education and assessment, or medical or regulatory administrative experience reflective of the needs of the public and society at large.

Front row: John Becher, DO; John Thornburg, DO, PhD; William Ranieri, DO; Sheryl Bushman, DO; Janice Knebl, DO; William Anderson, DO; Eugene Oliveri, DO.
Middle row: George Thomas, DO; Dana Shaffer, DO; Gary Clark; Brian Fulton, DO; Gary Slick, DO; Deborah Pierce, DO.
Back row: John Gimpel, DO; Craig Lenz, DO; Michael Murphy,DO; Stephen Shannon, DO; Carman Ciervo, DO.

Not pictured: Wayne Carlsen, DO; Frederic Wilson; Frederick Schaller, DO.

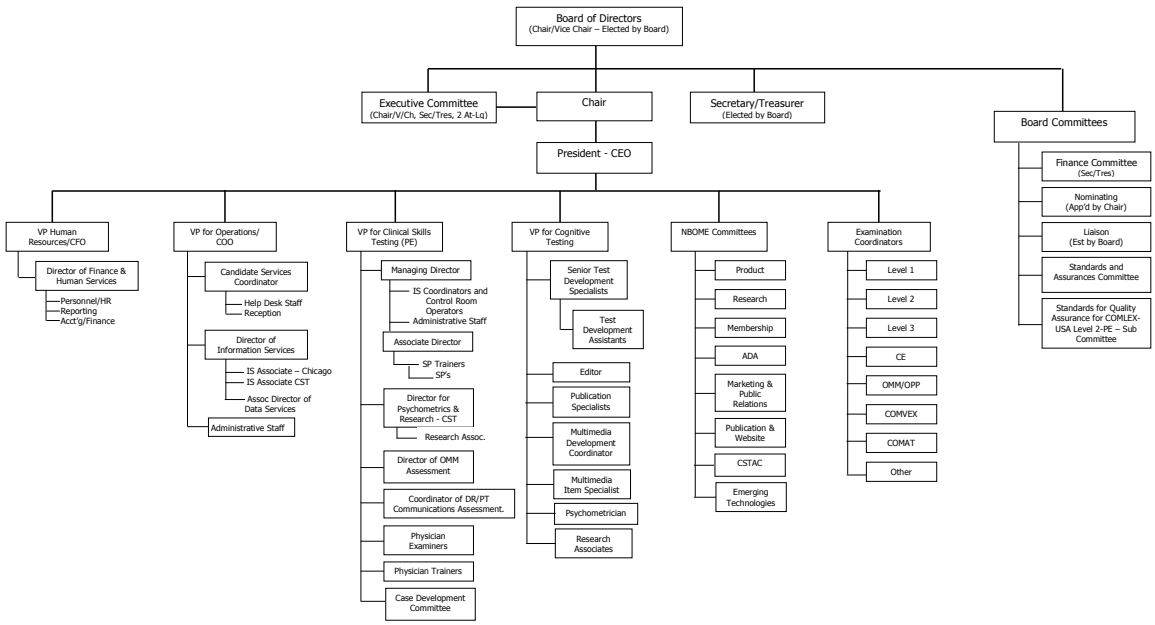
ORGANIZATIONAL STRUCTURE
1935



The organizational structure in 1935 seems as simple as the Model T. The operation of the National Board was completely volunteer without office space or a home base. Communication among member was primarily by mail, with the occasional long-distance telephone call. Meetings were held in conjunction with the AOA annual meeting.

National Board of Osteopathic Medical Examiners, Inc. Organizational Chart

(2008)



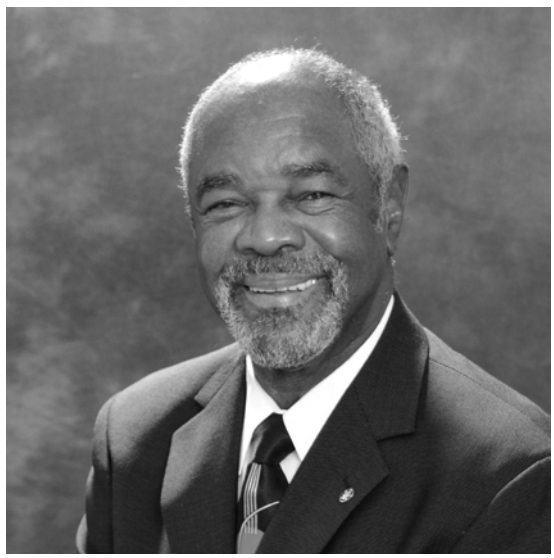
In 2009, the board's organizational structure is complex. and far-reaching. Members work on their portfolios consistently and are in frequent communication with each other, their committee members, and the staff through email, cellphones, meetings, and retreats. The large staff is also in constant motion, traveling to conferences, presenting educational programs, and creating innovations in testing.

NBOME Committees

ADA Review	Creates and administers policy for the accommodation of Americans with Disabilities Act. Chair: Jeb Magan, DO
Blueprint Audit Committee	Ensures that the content and format of COMLEX-USA is consistent with the mission of the NBOME to protect the public. Chair: Frederick Schaller, DO
Competency	Reviews COMLEX-USA to ensure that the core physician competencies are addressed. Chair: Eugene Mochan, DO, PhD
Consumer Affairs and Relations	Develops and recommends strategies to improve relationships with existing agencies, jurisdictions, association, clients and the public.: Chair, Gary Clark
Clinical Skills Testing Advisory Committee (CSTAC)	Assures the NBOME that the Clinical Skills component of COMLEX-USA is current, accurate, valid, reliable and innovative. Chair: John Becher, DO
Emerging Technologies	Explores, evaluates, tests, and recommends implementation of new and existing technologies through the Product Committee. Co-Chairs: Jeanne Sandella, DO, and Rocco Crescenzo, DO
Finance / Audit	Addresses the financial matters of the NBOME. Chair: Janice Knebl, DO
In-depth Assessment	Assures the NBOME that the content and format of COMLEX-USA is consistent with NBOME's mission. Chairs: William Ranieri, DO, John Thornburg, DO, PhD
Liaison	Provides a forum for a free exchange of ideas between stakeholder groups and the NBOME. Chair: John Thornburg, DO, PhD
Product	Prepares and recommends new products that will meet the needs of the profession and updates ones in use. Chair: Deborah Pierce, DO, MS
Research	Stimulates, encourages, and supports intramural and extramural research. Chair: Thomas Hardie, EdD, RN
Standards & Assurances	Assures that all products and procedures used by the NBOME meet acceptable industry standards. Chair: Thomas Cavalieri, DO

A Few Good Members

William Anderson, DO



Dr. Anderson is best-known for his civil rights work and as the first African-American president of the AOA, 1994-95. He was born in Americus, Georgia in 1927, and attended the Des Moines College of Osteopathic Medicine. He served as associate dean of the Kirksville College of Osteopathic Medicine and a clinical professor of osteopathic surgery at Michigan State University's College of Osteopathic Medicine, yet when he returned to Albany, Georgia, in 1957, he was prevented from treating patients because of segregationist policies. He responded by becoming the founder and first president of the Albany Movement, which worked to register African-American voters and devised ways to end racial segregation, getting the attention of Dr. Martin Luther King, Jr. Dr. Anderson is a member of Physicians for Social Responsibility. He writes:

"As one of the newest members of the National Board of Osteopathic Medical Examiners, I am constantly challenged and rewarded as I learn more and more about how this outstanding organization works. I am proud to be a part of a process that assures the public that only the well-qualified physicians will be recommended for licensure.

"The long hours and days of deliberation on how to make the examinations credible and valid are rewarded by producing examinations that can withstand the most critical scrutiny and analysis and meet the objectives and mission of the NBOME.

"The very competent staff of the NBOME makes it the finest testing organization in the country. Working with them is a pleasure, and their efforts to continually improve serve as a stimulus and challenge to me as well as the other board members."

Six of Dr. Anderson's children and grandchildren have become DOs.

John W. Becher, DO

Dr. Becher is professor and chairman of the department of emergency medicine at the Philadelphia College of Osteopathic Medicine. He is also the chair of emergency services at the AtlantiCare Regional Medical Center in Atlantic City, New Jersey. He is a member of the board of trustees of the American Osteopathic Association and treasurer of the American Osteopathic Board of Emergency Medicine. Dr. Becher formerly was the program director for the PCOM/Albert Einstein emergency medicine residency in Philadelphia. He has been president of the Pennsylvania Osteopathic Medical Association and the Pennsylvania Trauma Systems Foundation. He is a member of the advisory group on continued competence of licensed physicians of the Federation of State Medical Boards.

Dr. Becher became involved with the NBOME over ten years ago as an item writer for COMLEX-USA. He has been a COMLEX-USA Level 2 coordinator, chair of the Level 2 examination review committee, the PE case development committee, chair of clinical skills testing advisory committee, a member of the product committee, and a member of the executive committee. As chair of the clinical skills testing advisory committee (CSTAC) he was instrumental in developing policy and procedures for the clinical skills examination. He was a pioneer in his efforts to convert the American Board of Emergency Medicine into a nationally administered, computer-based certifying examination. Working with the NBOME, he was able to develop and implement the new examination and in 2009, introduced the recertifying examination in that specialty in the same format. Dr. Becher's participation in the Physician Alliance for Physician Competence is evidence of his passion for improving medical education and promoting physician competence. His broad experience makes him a valued and contributing member of the NBOME.

Gary Clark, Administrator

Following graduation from Quincy University in 1967, Clark went to Jefferson City, Mo. as a pharmaceutical representative. In 1975, he began work for the Missouri State Board of Healing Arts as executive director and in 1990 he became executive director of the Oklahoma Board of Osteopathic Examiners. He retired from that position in 2007.

For more than thirty years, Clark has been active at both at the state and national levels with organizations associated with licensure and professional discipline. He served on the board of directors and as president of the Council of State Governments' Clearinghouse on Licensure, Enforcement and Regulation (CLEAR). He was a founding member and a past president of Administrators in Medicine (AIM), the organization of executive directors of the state licensing boards. He served three different times on the board of directors of the Federation of State Medical Boards (FSMB), and in this position was a strong voice for NBOME.

For the past several years he has been the volunteer executive director of the American Association of Osteopathic Examiners (AAOE). In 2007, he was elected to the National Board of Osteopathic Medical Examiners as a public member, currently serves on a number of committees, and is highly regarded for his ability to get things done. Now retired, he enjoys reading and writing fiction and cooking Tuscan and Provencal, with a special interest in seafood dishes, from land-locked Jefferson City, Missouri.

Eugene Oliveri, DO, MACOI, FACG, FACOS

Gene Oliveri was born in Brooklyn, N.Y., in a neighborhood that taught him what "multi-ethnic" means. He became a child-entrepreneur, de-livering ice at the age of ten.

After a two-year stint in the U.S. Army, where he became interested in public health, Oliveri returned to Brooklyn College for pre-med work, intending to go to his family's native Italy for medical school. A professor suggested he look into U.S. schools of osteopathy before he made the move. The minute he walked into Kansas City School of Osteopathy, Oliveri felt he belonged there, and after more than forty years of practicing and teaching internal medicine, he is even more enthusiastic about the profession. Medical mission trips have taken him to China, Russia, Cuba, and Italy and these have strengthened his commitment to a healthy public.

A strong advocate for COMLEX-USA, Dr. Oliveri served three terms on the NBOME and was president of the AOA in 1999-2000. He joined the faculty of MSU-COM in 2000 and is presently assistant to the dean and professor of internal medicine there. He delivered the Galusha Address at the FSMB in 2000 and the A. T. Still Memorial Lecture to the AOA in 2009.

One of Dr. Oliveri's four children, Dr. Lisa Jean Oliveri, followed in his footsteps and has a practice of gastero-enterology.

Frederick Schaller, DO, FACOI

After completing his osteopathic medical training at Michigan State University College of Osteopathic Medicine in 1977, Dr. Schaller entered a general practice in the mountains of Pennsylvania. Three years later he returned to an Internal Medicine residency and Cardiology Fellowship at UMDNJ-NJSOM. He served eleven years there on the faculty, followed by sixteen years at Texas College of Osteopathic Medicine. In Texas he founded the Cardiology Fellowship at Plaza Medical Center. He now serves as professor and vice dean of Touro University Nevada, and also directs the internal medicine residency at Valley Hospital. He has served NBOME for eighteen years, the AOA COPT twelve years, and the ACOI twenty-four years (including as its president in 2005).

Over the years with NBOME on many different committees and as a member of the board, Dr. Schaller has observed and assisted the organization in the continuing development of valid, effective and respected examinations which meet the national mandate. He notes the remarkable flexibility, innovation, creativity and adherence to strict standards of quality and validity which mark the activities of NBOME. Development of the Performance Examination, the introduction of new testing modalities, and the restructuring of the testing blueprint in line with the AOA core competencies all demonstrate the adaptability and effectiveness of the organization.

Jim Andriole, DO

Dr. Andriole received his DO degree from PCOM in 1984. While practicing in Pennsylvania, he sustained a traumatic spinal cord injury that resulted in paraplegia. As a result, he founded Disability Consultants USA, Inc., and is a longtime volunteer for the National Sports Center for the Disabled in Colorado. Dr. Andriole has a passion for flying around the United States and the Caribbean in his personal aircraft designed with hand controls, accompanied by his dog Bravo. Until recently, he provided medical care to impoverished villages in Central America. He flew a transatlantic flight in a single-engine aircraft, inspiring people with spinal cord injuries throughout Europe.

He is the current president of the American Association of Osteopathic Examiners (AAOE) and was appointed to the NBOME board of directors in 2009. He is the current treasurer of the FSMB and was recently appointed to the Bureau of International Osteopathic Medical Education and Affairs. He is a delegate to the International Association of Medical Regulatory Authorities. Dr. Andriole, who now resides in Tallahassee, Florida, received the Presidential Achievement Award from the Florida Osteopathic Medical Association. He is past president, and a current member of the Florida Osteopathic Medical Board.

Wayne Carlsen, DO, FACOI

Dr. Carlsen is the chair of the Geriatric Medicine and Gerontology Department at Ohio University College of Osteopathic Medicine (OUCOM), where he has been a faculty member since 1993. He also serves as the medical director for the Medi Home Health Care Agency and is the director for the Geriatrics Cost Center for University Medical Associates. He received the Dean's Award in 2004 from OUCOM, where he serves on the college's promotion and tenure committee, the Institutional Review Board, and is the medical director for community health programs. Dr. Carlsen is a 1986 graduate of UMDNJ-SOM.

In 1989, Dr. Carlsen became an item writer for NBOME and has served on various examination construction committees. He was a level coordinator for Level 3 in the 1990s and a member of the HPDP/HCD Examination Construction

Committee for several years. He currently serves on NBOME's finance committee. Dr, Carlsen has served on the NBOME Board since 2005.

Carman A. Ciervo, DO, FACOFP

Dr. Ciervo is chair of the Department of Family Medicine at UMDNJ-SOM as well as chief of service for family practice in the Kennedy Health System-University Medical Center. A graduate of PCOM, he completed his family medicine residency at UMDNJ-SOM, where he also served as chief resident.

Dr. Ciervo serves on many committees for and is president of the New Jersey chapter of the American College of Osteopathic Family Physicians (ACOFP). He is a fellow in the national ACOFP, and vice chair of that organization's CEE. He has received several awards, including the UMDNJ-SOM Excellence in Teaching Award. He has authored and co-authored numerous articles, abstracts, and lectures on a variety of topics affecting family practice. He sits on numerous advisory boards, including those related to the proper prescribing of antibiotics and appropriate treatment of allergic rhinitis. Dr. Ciervo served as Level 3 Coordinator for six yearsTest Construction Committee for six years and is now a member of NBOME's finance committee. He has been responsible for development of test construction for the ACOFP, bringing NBOME and ACOFP together to work on the project. Dr. Ciervo was elected to the NBOME Board in 2007.

Brian Fulton, DO

Dr. Fulton is a consulting psychiatrist at the Plains Area Mental Health Center in Cherokee, Iowa, a position he has held since 1981. A native of Washington, Iowa, he completed his DO degree at the College of Osteopathic Medicine and Surgery in Des Moines, Iowa, in 1975, then completed a rotating internship at Cranston General Hospital in Rhode Island. After serving as a general medical officer in the U.S. Navy 1976-78, he completed his psychiatry residency at Cherokee Mental Health Hospital in Iowa. He went on to serve there in several capacities, including site training director and staff psychiatrist, throughout the 1980s and 1990s. He also had a private practice in psychiatry in Sioux City, Iowa, and was a consulting psychiatrist at Hope Haven in Rock Valley, Iowa. He is board certified

from the American Board of Psychiatry and Neurology as well as the American Osteopathic Board of Psychiatry and Neurology. He joined the NBOME Board of Directors in 2005.

Janice A. Knebl, DO, MBA, FACOI, FACP, CMD

Dr. Knebl completed her osteopathic medical education at PCOM in 1982. She received the Dallas Southwest Distinguished Endowed Chair in Clinical Geriatrics in 2003 and has been chief of the Division of Geriatric Medicine within the Department of Medicine at UNTHSC-TCOM since 1988.

Dr. Knebl has received several distinguished awards for excellence in teaching, including the 2004 James Pattee Award for Excellence in Education, the American Medical Director's Foundation teaching award, the TCOM M.L. Coleman DO Award for Excellence in Clinical Teaching, and the Golden Apple Award for Clinical Teaching. She also has received the distinguished Internist of the Year Award from the ACOI. Most recently she participated in the Drexel University Hedwig Van Ameringen Executive Leadership in Academic Medicine (ELAM) Program and is now an ELUM. In 2008, she received the University of New England College of Osteopathic Medicine and Gold Foundation Humanism in Aging Leadership Award.

Dr. Knebl began her service to the NBOME as an item writer in the late 1980s, becoming a Level 2 Test Review Committee participant and chair during the 1990s. She was appointed to the NBOME Board of Directors in 1999, elected to the executive committee in 2003, and has served as secretary-treasurer since 2005. Dr. Knebl has enjoyed participating in local, statewide, and national organizations that promote health and quality of life for older adults. She has a passion for osteopathic medical education and for positively influencing the future practice of American medicine.

Craig Lenz, DO, FAODME

Dr. Lenz is professor of Emergency Medicine/Family Medicine/OMM and senior associate dean at Lincoln Memorial University DeBusk College of Osteopathic Medicine. He graduated from PCOM in 1978. He completed his internship at John F. Kennedy Memorial in Stratford, New Jersey. Dr. Lenz is a member of the board of trustees for Southwest Virginia Graduate Medical Education

Consortium and a member of the advisory board of Middlesboro ARH Hospital. He was a founder of the AHEC Program at UNECOM, and a dean at COMP. He also serves the AOA as Osteopathic College Accreditor and team chair for COCA. He is also an OPTI Accreditor and Internship Program Inspector. Dr. Lenz has served on the NBOME board since 2001.

He writes, "I was so proud to be a part of NBOME when I was first asked to write items over twenty years ago. The quality of the organization and the dedication of its leadership has continued to evolve to meet the complex set of challenges for an organization responsible for the pathway to licensure. Linda, my wife of 36 years, and I are proud of our three children: Laurie, who is a DO; Craig Jr., who just started his first year at LMU-DCOM; and Andrew, who does pharmaceutical research. My deepest hope is that by being a part of NBOME, I have given back to the profession that gave me the chance to be an osteopathic physician."

Michael Kenneth Murphy, DO, FACOFP, FAODME

Dr. Murphy is vice president and dean of William Carey University College of Osteopathic Medicine in Mississippi. After graduating from Kirksville College of Osteopathic Medicine in 1973, Dr. Murphy joined the U.S. Navy, completing his internship and residency at Camp Pendleton Naval Hospital in California. He continued an active career with the military, where his assignments took him to major military hospitals throughout the United States and to Guantanamo Bay in Cuba. He retired as captain in the Medical Corps in 1999 then began an academic career in osteopathic medicine.

Dr. Murphy received the KCOM Special Recognition Award and was the recipient of numerous military service awards. He currently serves as Trustee-Region 3 for the AODME. He has also served on various AOA committees and is a member of the AOA Board of Trustees. Dr. Murphy was selected to serve on the first Standard Setting Committee for COMLEX-USA Level 2-PE in 2005. He has been a member of the NBOME Board of Directors since 2005.

Deborah Pierce, DO, MS

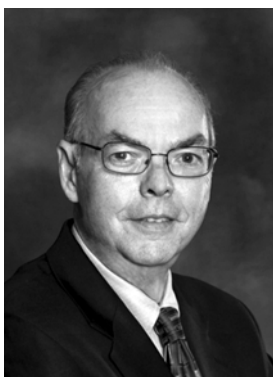
Dr. Pierce is the associate residency director for the emergency medicine residency pro-

gram at Albert Einstein Medical Center in Philadelphia and is a board-certified emergency physician. She has worked with the NBOME for fourteen years, starting with the organization as an item writer for COMLEX-Level 2, was on the item and test review committees for Level 2, and served three-year stints each as vice coordinator and coordinator for Level 2. She has been on the board for the past four years. She is chairman of the product committee, serves on the membership committee and the committee for new innovations and advancing technologies.

Dana Shaffer, DO

After completing undergraduate medical education in 1985 at PCOM, Dana Shaffer completed a rotating osteopathic internship at Des Moines General Hospital. For the next twenty-two years, he practiced the complete spectrum of rural family medicine, including OMM, OB, and ER, as well as both inpatient and outpatient medicine in Exira, Iowa.

Dr. Shaffer serves as the senior associate dean of clinical affairs at Des Moines University College of Osteopathic Medicine in Des Moines, Iowa. Over his career, he has served on the Iowa Board of Medicine and has held several leadership positions on that board, and the board of the American Association of Osteopathic Examiners, where he is currently vice president. In 2008, he was elected the AAOE representative to the NBOME board of directors. In addition, he serves on the NBOME ADA subcommittee, the consumer affairs and product committees.

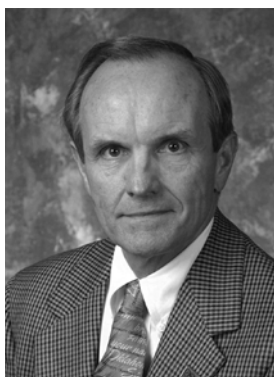


Stephen C. Shannon, DO, MPH

Dr. Shannon has been president of the American Association of Colleges of Osteopathic Medicine (AACOM) since January 2006. Before that, he served as vice president for health services and dean of the University of New England College of Osteopathic Medicine. Dr. Shannon graduated from UNECOM in 1986 and went on to receive his master's of public health degree in 1990 from Harvard University School of Public Health. He is board certified in preventive medicine and osteopathic family practice.

He has been a member of the NBOME Board since 2000, when he was selected as the representative of the AACOM. Over the years, he has witnessed tremendous development in the NBOME, with the transition to a full-time president, implementation of the computer-based examination

and performance evaluations, and the strides taken in evaluation and research to improve the quality and standardization of testing in the osteopathic medical profession. He is tremendously gratified to have the opportunity to participate with this organization as it looks back on seventy-five years of accomplishments, and he looks forward to implementing changes that will maintain and enhance its leadership in coming decades.



Gary L. Slick, DO, MA, MACOI

Dr. Slick is a graduate of the Kansas City University of Medicine and Biosciences and received his master's degree from the University of Kansas. He served as chair of the Department of Internal Medicine at Midwestern University-COM for twenty-one years. He then became vice president for academic affairs at Oklahoma State University Center for Health Sciences and now serves as associate dean for graduate medical education and director of medical education at the OSU Medical Center. Dr. Slick has received numerous awards, including Educator of the Year from the graduating class of 2000 at Midwestern University. He has served the osteopathic profession as president of the ACOI, chair and executive director of the AOBIM, and chair of the Bureau of Osteopathic Specialists of the AOA.

Dr. Slick has served the NBOME in numerous capacities since 1978, including item writer in physiology for Level 1 and item writer in internal medicine for Level 2 and 3, Test Construction Committee member in interdisciplinary medicine, and final reviewer of COMLEX-USA Level 1 examinations. He was chair of the Test Construction Committee in physiology, and served on the committees for emerging technologies. He has been an NBOME board member since 2005.

George Thomas, DO, FACOFP

Dr. Thomas practices medicine at Euclid Family Practice-Meridia Medical Group in Euclid, Ohio. Having graduated from Kirksville College of Osteopathic Medicine in 1972, he completed his internship at Charles Still Hospital in Jefferson City, Missouri. He is a recipient of many honors, including the Trustees Award and the Distinguished Service Award of the Ohio Osteopathic Association (OOA). Dr. Thomas has served in

many capacities for the Cleveland Academy of Osteopathic Medicine, the OOA, and the AOA, where he served as president for 2004-'05. He has represented the AOA with many associations and organizations, including the National Committee of Quality Assurance, the Ambulatory Quality Association, and United Health Group Practicing Physicians Advisory Committee.

Dr. Thomas writes, "During the FSMB/NBME attack on the credibility and validity of the COMLEX-USA exam and NBOME, it was Dr. Fred Meoli's calming personality and strength along with the professional integrity of the validity studies of Linjun Shen, PhD, that blunted the attack and fortified the NBOME in the eyes of the medical community." He has served on the NBOME board of directors as the AOA representative since 2008.

In Memoriam: Frederic Wilson

The NBOME mourn the irreplaceable loss of Mr. Frederic Wilson, who passed away on October 11, 2009, after a long illness. Mr. Wilson worked in the Professional and Scientific Relations Department for Procter and Gamble Pharmaceuticals in Mason, Ohio. He worked closely with the AOA through the AOA Foundation, and was instrumental in establishing a scholarship fund to help students meet the costs and challenges of the COMLEX-USA Level 2 PE examination.

Being disabled himself he acted as an advocate for the handicapped in testing. He was the first public member selected to serve on the Board of Directors of the NBOME, and served the NBOME for nearly six years.

Board members profiled elsewhere:
Sheryl Bushman, DO
John Gimpel, DO, MEd, (until appointed president in July 2009)
William Ranieri, DO
John Thornburg, DO, PhD

A Special Mention

Over the years, the families of the NBOME board members, the NBOME staff, and our committee chairs have supported us in innumerable ways. They have hosted dinners, provided moral support, offered innovative ideas and perspectives and have been there to take the displaced frustrations that come from an organization that strives to be the best that it can be. They have served as ambassadors, emissaries, and advocates for the public, the students, and the NBOME itself. We are very grateful and appreciative.

NBOME Staff

Perspectives from some of the longest-serving NBOME staff members:

Sydney L. Steele, JD, General Counsel

Sydney Steele, was retained as legal counsel in 1993 and has served the NBOME as its general counsel since that time. He is licensed to practice law in Indiana (the state of incorporation of the NBOME) and in all the federal courts, including the U. S. Supreme Court. He graduated from Purdue University and attended law school at Indiana University, graduating in 1964 with a doctorate of jurisprudence. He serves as an officer or board member for numerous national and local legal and civic organizations.

As general counsel of the NBOME, Mr. Steele witnessed and participated in dramatic changes in the organization. His first significant task was to negotiate the settlement with the AOA following the legal disputes in the early 1990s. A successful agreement was reached that recognized the legitimate interests of the both the AOA and NBOME; this accord continues to benefit the osteopathic medical profession and the public. He also has witnessed the growth of the organization over the last two decades as it developed its preeminent computer-based and performance-evaluation COMLEX-USA examinations now being administered throughout the United States and elsewhere.

Shirley Bodett, Senior Testing Consultant

Shirley Bodett thought the job as the NBOME office manager would be only temporary, until she became a full-time orchestra manager. Twenty-five years later, she is still with the NBOME and glad she stayed. When she first came to work, the NBEOPS was housed in a three-room one-story office building with no air-conditioning. On warm days, staff opened the windows and had to make sure papers didn't fly too far. They had no computers, only two giant word processors. Test items were kept on file cards and word processor floppy disks—about fifty items to a disk. Ms. Bodett joined a two-person staff; soon

afterward, two more administrative assistants were hired. An annual item-writing-and-review meeting was held for small groups of physicians to review new items in each discipline. Those items were transferred to file cards, which were stored and used to compile exams. In addition to the multiple-choice Part III examination, interns also had to do "live patient evaluations." In 1987, a new president, Dr. Thomas Santucci, made substantial changes to the exam development process and the structure of the board. From that point on, changes have progressed at lightning speed, to the point where the NBOME now is fully in the computer age and employs many times over the number of employees it once did in its production of high-quality, reliable testing instruments that have been lauded by testing experts.

Taunya Cossetti, Executive Assistant to the President

Taunya Cossetti first became familiar with NBOME nine years ago, having accepted a position to assist with a research study for a potential clinical skills exam for COMLEX-USA. A few years later, the group was building the National Center for Clinical Skills Testing to administer the COMLEX-USA Level 2-PE. Even nine years ago, the NBOME had great aspirations for the future, and over the years, Ms. Cossetti has helped those objectives come to fruition while carrying out the NBOME's mission "To Protect the Public."

She writes, "I am honored to say that I contribute to an organization that makes a difference, an organization that takes pride in its contributions to society, and an organization whose board and employees work hard every day to support its mission, while striving to reach the vision of becoming the testing organization for the entire osteopathic profession. The past seventy-five years of accomplishments are evidentiary of what the NBOME can do, and how it can make a difference. I am looking forward to being a part of this family for years to come as NBOME pioneers for osteopathic medicine into the twenty-first century."

David C. Kreines, Associate Director for Data Services

David Kreines became director of information systems for the NBOME in 2005, and now serves as associate director for data services. He started working with the NBOME in 1987 as a contractor at a time when the NBOME did not even own a computer; a word processing unit was the closest thing the organization had. Mr. Kreines helped to develop a basic system for registering candidates, tracking scores and record keeping, and he programmed the first in-house optical scanner for processing answer sheets. The system initially ran on a single computer using a database management system. That system closely mirrored the existing paper applications and forms, and essentially computerized the manual processes used in the office.

It soon became apparent that a single system would not handle the volume of work and additional functions that were required, so the group purchased its first "server" computer. Since this system was compatible with the database management system, all the programming continued to work, and the NBOME entered the computer age. As computerized systems began to prove themselves, the work of the testing department was also moved from the processor to a server and then to a new item banking system, which was custom designed and built on the NBOME's newly acquired network of PCs. This system replaced the existing system by the mid-1990s. Through the 1990s and into the 2000s, those systems were expanded and tuned, but the basic architecture continued to function. The database management system turned out to be a critical component and is in use at NBOME today in a more modern version. Mr. Kreines has been integral to the way the organization has grown in the computer era to keep pace with the needs of the profession, the candidates, and the public.

75th Anniversary Staff of the NBOME

The NBOME is deeply indebted to and greatly appreciates all the staff members who have provided the energy and effort that has been needed to make the NBOME the strong professional organization it is today and the even stronger organization it will become.

Listed below are those on the active employee roster for the year of the 75th anniversary, 2009 who have not been cited elsewhere.

Chicago Office

Mirela Bonica, Client Service Rep
Ashley Bronersky, Test Associate
Julie Burgett, Sr. Test Specialist
Henryka Chmura, Financial Asst.
Richard Conner, IT Services Coord
Tracey Gates, Client Services Rep
Kathy Green, Sr. Text Specialist
Dee Grimes, VP, HR/CFO
Judy Hibbert, Clerical Associate
Michael Kastler, Director, IS
Feiming Li, Psychometrician
Zhonghe Lu, Test Media Specialist
Peter Lu, Sr. Test Specialist
Jaquelyn Miller, Receptionist
Regina Oryszczak, Dir., Finance/HR
Candice Pernell, Test Associate
Rochelle Teague, Client Service Rep
Yi Wang, Sr. Research Associate
Margaret Wong, Client Services Mngr

Conshohocken Office

Adam Benjamin, Control Rm Operator
Caitlin Dyer, Coord for QA
Gregory Folk, IT Services Coord
Laurie Gallagher, DO, Physician Trainer
Robert Hendricks, SP Trainer
Wayne Hibschman, SP Trainer
Timothy Koltonuk, Control Rm Operator
Kristie Lang, Admin Asst/ PT
Rachel Maxwell, Admin Asst
Donald Montrey, SP Trainer
Kathleen Natter, Exam Administrator
Cara Ondik, Admin Asst/ EA
Gina Pugliano, Research Assoc
William Roberts, EdD, Dir for Psychometrics
Jeanne Sandella, DO, Assoc. Dir for Case Dev/Training
Joseph Schwartz, Exam Administrator
Mia Solomon, PhD, Coord for Dr-PT Communication Assessment
Margot Young, SP Trainer
Amy Zeltner, Asst Dir

Supporting the Community

During the early years of its formation, the National Board was primarily concerned with recognition, acceptance, and the development of a quality universal examination for medical licensure. As the organization became established, the National Board extended its area of concern. NBOME people today are aware that they are part of a larger community, beyond hospital, college, or office. The board and staff feel that fostering a sense of community is important at all levels, international, national, and local.

In Chicago, the NBOME supported the KABOOM program in cooperation with the AOA. The program provides playgrounds and parks for children in distressed neighborhoods.

In Conshohocken, the NBOME staff participate in the "Walk to Cure Diabetes," which includes a walk along Philadelphia's West River Drive to support juvenile diabetes research. The staff also strongly supports local efforts for breast cancer awareness and attentiveness to the health problems connected with being overweight.

The NBOME contributed to a community health care initiative in Fort Scott, Kansas, and to the Bayou la Batre Rural Health Clinic in Alabama which had been damaged by both fire and hurricane Katrina. The NBOME, like the AOA, has a long-standing interest in rural health care, and several of its board members are involved in encouraging new doctors to choose rural medicine.

At the professional level, the NBOME participates in and/or supports almost all organizations involving osteopathic physicians, such as AODME and the various bureaus of the AOA. The NBOME is a strong supporter of the National Alliance for Physician Competence, which produced a document titled *The Guide to Good Medical Practice-USA*.

The NBOME has reached out internationally in many ways, by supporting efforts to improve medical facilities in third world countries, through medical missions, and by participating in organizations such as the Osteopathic International Alliance (OIA) and the International Association of Regulatory Authorities (IAMRA), which addresses issues of medical workforce shortages, physician portability, quality medical care, and better access to medical care.

The profiles of board members, although packed with organizations and educational institutions, do not show the scope of their involvement with the world. Several go on mission trips, bringing their expertise to areas in need. Others volunteer in their churches, in sports activities for children, or in programs for the elderly. Their definition of "the public trust" includes everyone in need.

"I believe most osteopaths . . . are trying to do something to make it possible for humanity to enjoy the wonderful healing powers of this new science. We do not all have the same ideas as to detail in accomplishing the desired results, but we are all justified in expecting cooperation."

Samuel V. Robuck, DO, 1923

APPENDIX

NBOME Timeline

1934	Chartered as the National Board of Examiners for Osteopathic Physician and Surgeons (NBEOPS)
1935	Elected first president, Charles Hazzard, DO
1936	Administered the first examination and issued the first Diplomat Certificates
1946	NBEOPS challenged AOA on membership selection
1947	Part III of the examination involved live patients
1951	Incorporated in Illinois as the National Board of Examiners for Osteopathic Physicians and Surgeons (NBEOPS), AOA approved conducting Part 3 in hospital setting
1961	Multiple choice examination introduced
1966	Developed licensing exam for the Osteopathic Medical Board of Florida
1975	Developed licensing examination for California and Michigan
1981	Developed licensing examination for Pennsylvania
1984	Received grant from the U.S. Department of Health and Human Services to develop competency-based standards
1985	Developed licensing examinations for Tennessee and West Virginia
1986	Incorporated in Indiana as the National Board of Osteopathic Medical Examiners (NBOME)
1986	Discontinued live patient examinations for Part III
1987	Internalized electronic scoring and analysis
1990	AOA rejected NBOME bid for internal controls
1991	NBOME settled third party rights issue with AOA
1993	NBOME and AOA reconciled
1993	New committee structure instituted for NBOME; retreats began
2002	First full-time president/CEO appointed
2004	NCCST opened its doors for Level 2-PE examinations
2004	NBOME admitted as associate member to IAMRA
2005	NBOME became a participant in PAPC and a partner in OIA
2006	NBOME published competency report
2007	NBOME contracts with AOBEM to provide CBT certifying examination
2008	COMSAE released, AOBEM converted to CBT format
2009	Second NBOME president/CEO appointed, AOBEM recertifying examination converted to CBT format

Brief Summary of Osteopathic Medical History in Canada

1898	First osteopathic physician established practice in Canada (New Brunswick).
1901	Ontario Osteopathic Association chartered.
1923	Western Canada Osteopathic Association chartered.
1926	Canadian Osteopathic Association chartered.
1926	Osteopathic physicians in Ontario relegated to practice under the "Drugless Practitioners Act," intended to be a "temporary measure." 200 in practice in Ontario.
1970	Osteopathic physicians granted full practice rights in the province of Quebec.
1991	Medicine Act (Bill 55) incorporated osteopathic physicians; those sections relating to osteopathic physician registry not proclaimed into law.
1992	Medical Council of Canada recognized graduates of AOA-accredited schools as eligible to write their examinations (Medical Council of Canada Evaluating Examination, Medical Council of Canada Qualifying Examination).
2003	College of Family Physicians of Canada recognized graduates of AOA-accredited osteopathic medical schools as eligible to write their family practice certification exams (Certificant College of Family Physicians of Canada).
2003	College of Physicians and Surgeons of Ontario extended full practice rights to American-trained osteopathic physicians.
2005	Royal College of Physicians of Canada recognized graduates of AOA-accredited osteopathic medical schools as eligible to write specialty certification examinations (Fellow Royal College of Physicians Canada/Fellow Royal College of Surgeons Canada).
2009-2010	COMLEX-USA recognized by the College of Physicians and Surgeons of Alberta (anticipated with new Health Professions Act) late 2009 or 2010. COMLEX-USA recognized by the College of Physicians and Surgeons of British Columbia as of June 2009. Defacto recognition of COMLEX-USA by College des Medicins du Quebec as they accept DO qualifications with the addition of one year post-graduate training in Quebec. Defacto recognition of COMLEX-USA by New Brunswick through reciprocity with Maine.

NBOME Presidents

Charles Hazzard, DO	1935-1939
W. Curtis Brigham, DO	1939-1944
T. T. Spence, DO	1944-1948
Samuel V. Robuck, DO	1948-1963
Spencer G. Bradford, DO	1963-1976
Marion E. Coy, DO	1976-1980
Lester Eisenberg, DO	1980-1985
Thomas F Santucci, Jr., DO	1985-1987
Robert E. Mancini, DO,	1987-1989
Eugene Mochan, DO	1989-1991
John J. Fernandes, DO	1991-1993
Bruce Gilfillian, DO	1993-1995
John P. Bruno, DO,	1995-1997
Gerald Osborn, DO	1997-1999
Frederick G. Meoli, DO	1999-2001

Chairs of the Board

Thomas Cavalieri, DO,	2001-2003
Boyd Buser, DO	2003-2005
Sheryl Bushman, DO,	2005-2007
William Ranieri, DO	2007-2009

President / CEO (full-time)

Frederick G. Meoli, DO	2002-2009
John R. Gimpel, DO , MEd	2009-

THE NATIONAL BOARD SEALS

THE FIRST SEAL, ADOPTED IN 1951, was used to imprint each diplomate certificate and other official documents. The use of the likeness of the founder of osteopathic medicine, A. T. Still, MD, DO, indicates the respect the board and the osteopathic profession had for him. National Board of Examiners of Osteopathic Physicians and Surgeons was inscribed in the outer ring.

THE SEAL CREATED IN 1985 displays the new name of the organization, National Board of Osteopathic Medical Examiners (spelled out in the periphery), and its new direction. The book in the lower left portion symbolizes osteopathic medical knowledge and education. The caduceus represents the importance of the NBOME's relations with all stakeholders within the osteopathic profession. The closed double ring of the inner circle represents a commitment to quality, excellence, and the protection of the public. The year 1934 indicates the date of the original charter.

THE SEAL TO COMMEMORATE ITS 75th anniversary, adopted in 2009, displays both a commitment to change and a respect for the past. The name of the organization is again in the periphery with "since 1934" just below the "75th Anniversary" notation. The single inner circular line continues to represent the dedication to the organization's values of quality, integrity, accountability, professional commitment, and public safety. The book in the upper half of the inner circle defines the importance of osteopathic medical knowledge and education to the practice of osteopathic medicine. The most notable features in the new seal are the hands placed at the bottom of the inner circle. This symbol carries many meanings, including the laying on of the hands for diagnosis, treatment and healing; the timely use of manual medicine; and the use of hands to save and preserve life.

The Osteopathic Medical Profession Today

Since 1980, the percentage of DOs in the total U.S. physician population has risen from four percent to seven percent. The osteopathic medical student population continues to increase. Since 2003, five new osteopathic medical schools and three new branch campuses have opened, bringing the number to twenty-seven. There are currently eighteen accredited osteopathic post-doctoral training institutions (OPTIs) in the U.S.

The total enrollment in osteopathic medical schools was just under 17,000 in 2008-09. In 1935, only 459 students graduated from osteopathic medical schools; in 2008, the number was 3,364. The largest college of osteopathic medicine in 2009 is New York College of Osteopathic Medicine of New York Institute of Technology, followed by Philadelphia College of Osteopathic Medicine (PCOM) and Kansas City University of Medicine and Biosciences College of Osteopathic Medicine. The first class to convene at American School of Osteopathy in 1892-93 included a few women. By 2007, women accounted for fifty percent of the total enrollment in osteopathic medical schools. By race and ethnicity, 70 percent of DOs are white, non-hispanic; 17.1 percent are Asian; 3.5 percent are African-American; 3.7 percent are Hispanic; and 0.7 percent are Native American.

Osteopathic physicians and surgeons are licensed to practice medicine with full privileges in every state in the union and in several nations in the world. There is no longer a question of qualification in part due to the sustained effort of the National Board of Osteopathic Medical Examiners.

Glossary of Commonly Used Orgainzational Terms

AACOM: American Association of Colleges of Osteopathic Medicine
AAMC: American Association of Medical Colleges
AAO: American Academy of Osteopathy
AAOE: American Association of Osteopathic Examiners
ABMS: American Board of Medical Specialties
ACGME: American Council on Graduate Medical Education
ACOI: American College of Osteopathic Internists
ACOEP: American College of Osteopathic Emergency Physicians
ACOFP: American College of Osteopathic Family Physicians
ACOOG: American College of Osteopathic Obstetricians and Gynecologists
ACOS: American College of Osteopathic Surgeons
AIM: Administrators in Medicine
AOA: American Osteopathic Association
AODME: Association of Osteopathic Directors and Medical Educators
AOF: American Osteopathic Foundation
AOSED: Association of Osteopathic State Executive Directors
ASPE: Association of Standardized Patient Educators
BOI: Bulletin of Information
BOS: Bureau of Osteopathic Specialists
CBT: Computer Based Testing
CE: COMLEX-USA CE (Cognitive Evaluation)
CME: Continuing Medical Education
COCA: Commission on Osteopathic College Accreditation
COM's: Colleges of Osteopathic Medicine
COMAT: Comprehensive Osteopathic Medical Achievement Test
COMLEX: Comprehensive Osteopathic Medical Licensing Examination
COMSAE: Comprehensive Osteopathic Medical Self Assessment Examination
COMVEX: Comprehensive Osteopathic Medical Variable-Purpose Examination
COPT: Council on Osteopathic Post-Doctoral Training
COSGP: Council of Osteopathic Student Government Presidents
CST: Clinical Skills Testing
ERAS Electronic Residency Application Service
ERC: Exam Review Committee
FSMB: Federation of State Medical Boards of the United States
ECFMG: Educational Council of Foreign Medical Graduates
ECOP: Educational Council on Osteopathic Principles

GME: Graduate Medical Educator
HPDP/HCD: Health Promotion Disease Prevention/Health Care Delivery
IAMRA: International Association of Medical Regulatory Authorities
IMG: International Medical Graduate
LCME: Liaison Committee on Medical Education
MCC: Medical Council of Canada
MOC: Maintenance of Certification
MOL: Maintenance of Licensure
NAOF: National Association of Osteopathic Foundations
NBME: National Board of Medical Examiners
NBOME: National Board of Osteopathic Medical Examiners
NOMA: National Osteopathic Medical Association
OIA: Osteopathic International Alliance
OMERI: Osteopathic Medical Education Research Institute
PE: COMLEX-USA PE (Performance Evaluation)
PAPC: Physician Accountability for Physician Competence (committee of the FSMB)
PLAS: Post-Licensure Assessment System (provided by the FSMB)
SGA: State Government Affairs
SOM: School of Osteopathic Medicine
SOMA: Student Osteopathic Medical Association
SOME: Society of Medical Educators
SPEX: Special Purpose Examination (provided by the FSMB)
USMLE: United States Medical Licensing Examination
UGME: Undergraduate Medical Education

Colleges of Osteopathic Medicine

ATSU/KCOM - Missouri
ATSU/SOMA - Arizona
AZCOM/Midwestern - Arizona
CCOM/Midwestern -Illinois
DMU/COM - Iowa
GA/PCOM - Georgia
KSUMB/COM - Missouri
LECOM - Pennsylvania
LECOM/Bradenton - Florida
LMU-DCOM - Tennessee
MSUCOM - Michigan
NSUCOM/COM - Florida
NYCOM/NYIT - New York
OUCOM - Ohio
OSUCOM - Oklahoma
PCOM - Pennsylvania
PCSOM - Kentucky
PNWU-COM - Washington
RVUCOM - Colorado
TOUROCOM - New York
TUCOM - California
TUNCOM - Nevada
UNECOM - Maine
UMDNJ-SOM - New Jersey
UNTHSC/TCOM - Texas
VCOM - Virginia
Western U/COMP - California
WVSOM - West Virginia
WCUCOM - Mississippi

Credits and Acknowledgments

The Still National Osteopathic Museum and National Center for Osteopathic History at Kirksville, Mo., is a fascinating place to those with an interest in medical history. Under the direction of curator Debra Loguda Summers, the collection of historical material from throughout the world has grown extensively. Barbara Magers, curatorial research assistant at the Still Museum archives, was of invaluable help in assembling material for this book. I can't imagine what we would have done without her. Ida Sorci at the AOA archives also helped with the research. Taunya Cossetti's help was crucial in the last days before publication. I am indebted to Dr. Frederick G. Meoli, who acted as a very welcome and tireless editor-in-chief for the project. His first-hand knowledge of every phase of the NBOME's complex growth over the past twenty years was extremely valuable. He led the organization to places that Dr. Charles Hazard and Dr. Asa Willard could not have begun to imagine in those early years of struggle for recognition, but most certainly would applaud.

-Betty Burnett

The following photographs are courtesy of the Still National Osteopathic Museum Archives: p. 5, A.G. Hildreth, DO; p. 6, Asa Willard, DO; p. 7, Charles Hazard, DO; p. 8, John Rogers, DO; p. 9, W. Curtis Brigham, DO; p. 13, Samuel V. Robuck, DO; p. 16, Price Thomas, DO; p. 18, Spencer G. Bradford, DO; p. 21, Marion E. Coy, DO; p. 25, Lester Eisenberg, DO; p. 26. Thomas F. Santucci, DO; p. 28, Robert E. Mancini, DO.

The photo on p.82 of Dr. John W. Becher is courtesy Philadelphia College of Osteopathic Medicine and John Shetron Photography.

About the Author

Historian Betty Burnett, PhD, is the author of numerous books for both adults and young people. Most involve social history. Her middle-school book on the U.S. Army's Delta Force won a VOYA award given by the American Library Association. A Connecticut native, she now lives in St. Louis, Missouri.

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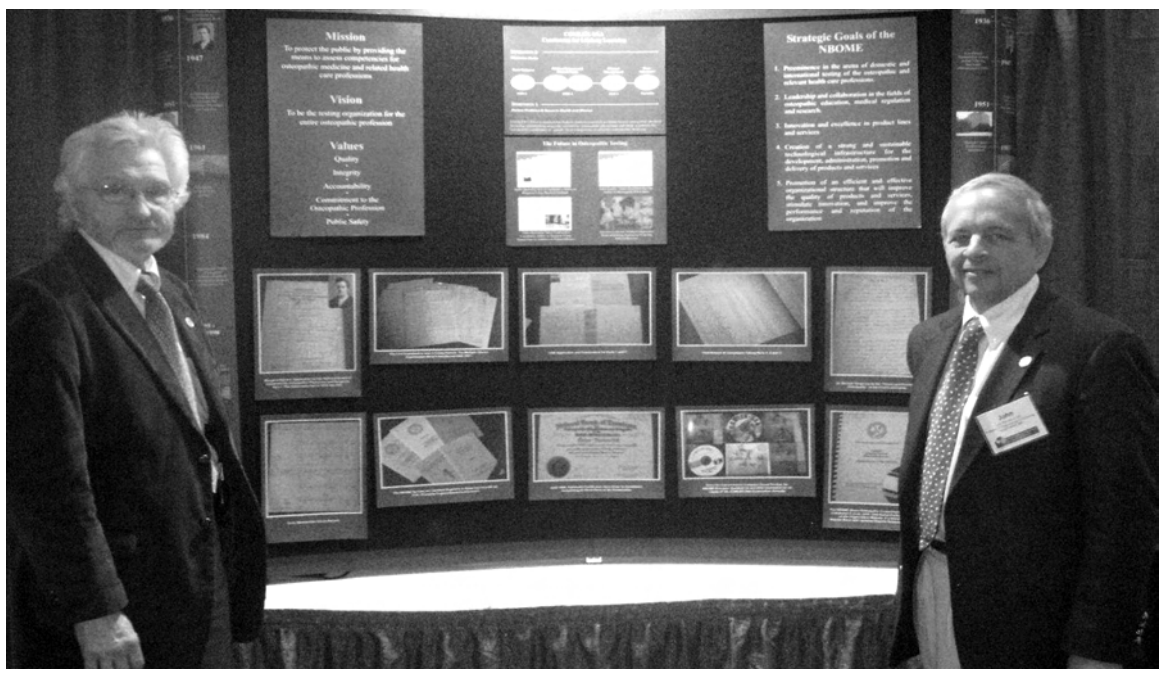

The NBOME display at the 2008 annual meeting of the FSMB in San Antonio celebrated 75 years of dedication, commitment and innovation in osteopathic medical licensure testing and its efforts to earn the public trust. The booth was hosted by John Thornburg, DO, PhD, (right) vice-chair of the NBOME, and Joseph Smoley, PhD, vice-president for administration/COO.

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National Board of Examiners
for
Osteopathic Physicians and Surgeons
of the
United States of America

David E. Robinson, D.O.

having satisfied all the requirements and having successfully passed the examinations is hereby declared a

Diplomate of the National Board of Examiners
For Osteopathic Physicians and Surgeons

President of the Board

Secretary of the Board.

Certificate No. 2714 Date July 1, 1975

"The possession of a license to practice one's profession in a state, territory, or other division of the United States should be considered a property right, and the legal protection surrounding the instrument recording that right properly and justly rest upon legislative authority."

Charles Hazzard, DO, 1935

"With independent regulation . . . we will ultimately get every right for ourselves and those to come."

Asa Willard, DO, 1932