topics in training

how to pass the american board of orthopaedic surgery certifying examinations

by g. paul derosa, md
Now that I have your attention, I would like to explain a few things about the American Board of Orthopaedic Surgery (ABOS) before getting into detail about the examinations themselves.

The ABOS was started by a group of individuals representing the American Orthopaedic Association (AOA), the American Academy of Orthopaedic Surgeons (AAOS), and the Section of Orthopaedics of the American Medical Association (AMA). Their primary objective was to assure the public that the doctors caring for them were competent to do so. As the Board’s Rules and Procedures state, “It [the ABOS] exists to serve the best interests of the public and of the medical profession by establishing educational standards for orthopaedic residents and by evaluating the initial and continuing qualifications and competence of orthopaedic surgeons.”

Residents who are reading this may be curious about who determines what is taught during residency education. The Residency Review Committee for Orthopaedic Surgery of the Accreditation Council for Graduate Medical Education (ACGME), which performs on-site reviews of each residency education program in order to grant accreditation, may be familiar to some. The ACGME was created in the 1950s, but, prior to its formation, the ABOS made site visits to programs to determine whether they were adequately educating residents. The AMA, through its Graduate Medical Education Committee, reviewed the internships. The Residency Review Committee for Orthopaedic Surgery consists of appointees from the ABOS, the AMA Council for Graduate Medical Education, and the AAOS. In addition, there is also a resident member with full voting privileges.

It may surprise some to know that the ABOS is a private, autonomous, voluntary, nonprofit organization. It has no allegiance to any specialty organization or to the AMA. The ABOS maintains its influence on orthopaedic residency education programs because it establishes the curriculum that it judges to be necessary for graduates to become competent orthopaedic surgeons. The Board establishes the minimum educational requirements for certification; stimulates continuing medical education; and, through its appointees to the Residency Review Committee for Orthopaedic Surgery, aids in the evaluation of orthopaedic training programs in the United States.

The ABOS is composed of eighteen Directors, all of whom serve for a term of ten years without compensation. The first year is served as a Director-Elect; the next six years are served as an active Director, during which time a person may hold office and chair committees; and the last three years are served as a Senior Director, who has full voting privileges but may neither chair committees nor hold office.

The ABOS is a member of the American Board of Medical Specialties (ABMS), which oversees the twenty-four member specialty boards. The ABMS was created in the early 1930s to provide a forum to discuss problems common to specialty examining boards in medicine and surgery as well as to stimulate improvement in postgraduate medical education.

Recently, the ABMS has taken on the challenging task of defining the “competent physician.” For many years, most legal authorities advised the Boards not to provide a definition of competence; however, in 1998, in response to public demand and because they believed that the time had come, the ABMS rose to the occasion. In addition to providing a definition of the competent physician, the ABMS also provided fundamental components of competence as follows.

**Definition of Competence**

The competent physician should possess the medical knowledge, judgment, clinical and communication skills, professionalism, and leadership ability to provide high-quality patient care. Patient care encompasses the diagnosis, treatment, and management of medical conditions; promotion of health; prevention of disease; and compassion and respect for patients and their families. Maintenance of competence should be demonstrated throughout the physician’s career by evidence of lifelong learning and ongoing improvement of practice.

**Components**

The components of competence include: (1) medical knowledge, (2) patient care, (3) practice-based learning and improvement, (4) interpersonal and communication skills, (5) professional-
is, and (6) systems-based practice. These six competencies will be measured during medical school, residency education, and the certification process.

**Challenge of Tomorrow**

**Recertification**

The concept of recertification was first discussed by the ABOS in 1955. The first trial recertification examinations were administered in 1981 and 1983, with the examination based on the certification examination model. Unfortunately, because recertification was voluntary, it was not well supported, so the ABOS consequently made recertification mandatory and, beginning in 1986, all certificates became time-limited to ten years. Any ABOS diplomate with a time-limited certificate who does not recertify before the certificate lapses will lose certification. The response to recertification has been outstanding, with a 98% compliance rate for the classes of 1986 through 1992.

Whereas the certification examination is based upon graduate medical education, the recertification examination is based upon continuing medical education. The certification examination requires a superior review from the program director for orthopaedics for residents applying to take the examination; the recertification examination requires a stringent peer review. Of course, applicants for both the certification and recertification examinations must have a full and unrestricted license to practice medicine in the United States or Canada.

The initial certification examination has two parts. The Part-I Examination is a cognitive written examination. The Part-II Examination is a practice-based oral examination. In contrast, the recertification process offers not only a cognitive written examination and an oral examination but also additional pathways, including a computer-administered general clinical examination or computer-administered practice-profile examinations for adult reconstruction, sports medicine, or spine surgery. Candidates who hold a Certificate of Added Qualifications in Hand Surgery may elect to recertify both certificates by choosing the hand pathway for recertification.

**Recertification Versus Maintenance of Certification**

As a result of the work of the ABMS Task Force on Competence, the concept of Maintenance of Certification became an issue in 1998-1999. Rather than episodic recertification, maintenance of certification is a process in which a practitioner continually updates his or her skills and knowledge through a commitment to lifelong learning and self-assessment. The ABMS defined the four basic components of Maintenance of Certification: (1) evidence of professional standing (licensure), (2) evidence of a commitment to lifelong learning with periodic self-assessment, (3) evidence of cognitive expertise (through examination), and (4) evaluation of practice performance.

All of the ABMS Boards are currently dedicated to modifying their recertification programs to one of Maintenance of Certification. Because this concept is still in its early stages, the ABOS has not yet outlined a formal plan for changing its recertification process. Adequate tools for measuring the four components must first be developed.

Be that as it may, several of the components are already being utilized by the ABOS recertification process, i.e., licensure, peer review, continuing medical education, and an examination. The ABOS does not have a self-assessment component, but it has organized a task force in collaboration with the AAOS to address it. The AAOS and some of the subspecialty societies have many excellent, well-tested self-assessment vehicles that could possibly be incorporated into the ABOS Maintenance of Certification program.

In addition, the ABOS recertification process does not currently measure practice performance, but the Board is actively working to develop this component as well. One possibility would be to assess performance with use of the practice-based oral examination, which is already available as a recertification examination pathway. Currently, the ABOS is conducting a pilot study with use of patient-derived outcome data as a tool for measuring practice performance. The goal is to make the vehicle as minimally intrusive as possible but still able to provide good information for measuring this component. However, there are individuals who would like to maintain certification but who are not in the active practice of surgical orthopaedics and they must also be adequately assessed.

To reiterate, it is the purpose of the ABOS "to serve the best interests of the public and the medical profession... by evaluating the initial and continuing qualifications and competence of orthopaedic surgeons."

**How to Pass the Certifying Examinations**

Finally, as promised, I will address the question of how to pass the certifying examinations.

**The Part-I Examination**

The Part-I Examination, or written examination, is a cognitive examination covering the entire field of orthopaedic surgery. It is designed to include information from the entire five years of residency education and cannot be condensed into a review book or course. Therefore, participation in the didactic lectures offered during residency is strongly encouraged if not mandated. As these lectures cycle about every two years, residents should have an opportunity to review the basic curriculum twice during their residency education. The ideal lectures provide up-to-date information with a short bibliography provided for each topic.

Another way for residents to prepare is to be sure to read the literature for each new case with which they are involved. In addition, they should be sure to do a thorough workup upon examination—i.e., an adequate assessment arriving at a differential diagnosis and finally a working diagnosis. They should become involved in the perioperative care of surgical patients as well as the care of patients who do not have surgery. It cannot be stressed enough that the volume of cases is less important than the variety of cases experi-
enced during residency education. There must be a balance of operative versus nonoperative care, and experience must include all aspects of the specialty, such as rehabilitation, prosthetics and orthotics, and the basic sciences as they pertain to orthopaedic surgery.

One way for residents to measure their progress each year is via the Orthopaedic In-Training Examination. This examination was conceived by the ABOS during the late 1950s and early 1960s, but, because of financial constraints, the AAOS produces and administers it. The Orthopaedic In-Training Examination is intended to measure the progress of a program’s residents and is used as a tool to review the strengths and weaknesses of the educational program. Although there is no direct correlation between the Orthopaedic In-Training Examination and the ABOS Part-I Examination, a resident who scores in the highest quintile (20%) of the Orthopaedic In-Training Examination will have a 95% chance of passing the certifying examination. Likewise, if a resident scores in the lowest quintile, he or she has a grave risk of failing the examination.

What is the blueprint for building the orthopaedic certifying examination? Slightly less than one-third of the questions concern orthopaedic basic knowledge, including the basic sciences as they relate to the field of orthopaedic surgery, i.e., the interpretation of histological slides and knowledge of anatomy, genetics, pharmacology, physiology, biochemistry, etc., all of which are important areas of knowledge for a competent physician. The remainder of the examination consists of vignettes designed to test the breadth and depth of clinical knowledge. It takes approximately eighteen months to construct the examination. Great care is taken in equating the examination for severity so that the amount of knowledge required to pass the examination in 1995 is the same as that for the examination administered in 2002. A total of 30% to 35% of the questions on the examination were used previously and therefore the statistical psychometrics are known. This enables the Board to determine the passing score before administering the examination. This examination is a criterion-referenced examination, which implies that all candidates with the requisite knowledge who take the examination could theoretically pass it—it is not graded on a curve and there is no predetermined fail rate.

The Part-II Examination

The Part-II Examination is a practice-based oral examination. Candidates must complete a twenty-two-month practice requirement before submitting an application for the examination, which is based upon a candidate’s six-month case list that is collected from July 1 through December 31 for the year prior to taking the examination. This exercise is conducted in a manner similar to rounds or conferences during residency, with the candidate presenting his or her cases and responding to the examiners’ questions and comments. What could be more valid than examining a candidate with use of his or her own cases? It is truly the best way to measure practice performance. Whereas the Part-I Examination measures cognitive knowledge, the Part-II Examination measures the ability to apply such knowledge and skills to one’s practice.

In order to prepare for the oral examination, candidates must have approached each case thoroughly, beginning with a well-documented history and physical examination. Candidates are graded on how they collect data, how the information was interpreted, the preparation of a differential diagnosis, what was considered in determining a working diagnosis, the formulation of treatment options, the demonstration of technical skills, and the resulting outcome of the ultimate course of action. Candidates should be able to defend their treatment plan by referencing relevant literature. If this is done in a systematic and consistent manner, the candidate should do well on the examination.

The oral examination is graded with use of six components for each case: (1) data gathering, (2) diagnosis, (3) treatment plan, (4) technical skills, (5) outcome, and (6) ethics. The candidate’s case list is also rated on the basis of (1) surgical indications and (2) surgical complications. Each component is ranked on a scale from 0 to 3, with 3 being excellent; 2, satisfactory; 1, marginally acceptable; and 0, unsatisfactory. In order to pass, candidates must accumulate a 2.0 average for all cases. The examiners grade independently of one another—there is no global rating, i.e., there is no pass/fail and no caucus among examiners. Scores are adjusted according to the severity/leniency rating of each examiner as determined by his or her scoring history as an examiner, i.e., the observed average is recalculated to a fair average. Again, the passing standard is a fair average of 2.0.

To reiterate, the purpose of the examination process is to protect the public by certifying that individuals are competent to practice orthopaedic surgery. It is, however, only one component of the lifelong quest for knowledge pursued by orthopaedic surgeons so that they may demonstrate both to the public and to themselves that they are not only keeping up with the literature but also assimilating that knowledge into practice.

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