

Forks in the Road

The Assessment of Surgeons from the American Board of Surgery Perspective



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KEYWORDS

- Assessment • Certification • Maintenance of certification • Diplomate
- Surgical resident • Re-entry • Boot camp

KEY POINTS

- The American Board of Surgery (ABS) serves both the public and the profession.
- Certification is the culmination of multiple assessments beginning during residency. Some assessments can be embedded in residency as part of a continuum of learning and assessment.
- Continued learning and assessment after formal training is completed are critical to ensure the quality of the profession and to enhance the public trust.

The ABS exists to protect the public and enhance the profession. The original ABS Booklet of Information from 1937 includes the following explanation: “This (the formation of the ABS) is to be done for the protection of the public and the good of the specialty.” The ABS works to fulfill this charge by assessing surgeons with the best tools available. Assessment of surgeons, similar to the field of surgery itself, is something that changes over time...New tools, new techniques, and new understanding emerge.

There are 4 distinct periods of learning during the career of a surgeon. The first period is in medical school, during the core surgery clerkship and during the fourth year. Ideally, during this period, basic knowledge and some early skills and judgment are acquired so that the first-day resident is prepared to suture a wound, tie a knot, place a bladder catheter, or answer a call about a postoperative patient. Historically, the ABS has had no role in the medical school portion of surgical training.

The second period is during surgical residency. Until recently, the role of the ABS during residency has been limited. In conjunction with the Residency Review Committee for Surgery (RRC-S) of the Accreditation Council for Graduate Medical Education (ACGME), the ABS sets training standards for surgical residency. The ACGME

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accredits programs that adhere to these standards; the ABS certifies individuals who successfully complete these programs and successfully pass the Qualifying Examination and Certifying Examination of the ABS. Ideally, during residency trainees acquire the skills necessary to practice independently or to pursue further training in a specialty.

The third period, which most but not all surgeons undertake, is postresidency (or, in the case of surgical critical care, during residency) fellowship. During fellowship training, a particular skill or knowledge set is honed. Some fellowships culminate in ABS or other American Board of Medical Specialties (ABMS) assessment and, if successful, certification. Others function outside of the ACGME/ABS axis and serve as additional training under other independent organizations. Ideally, fellowship training allows for mastery of a subspecialty of general surgery.

The fourth period is the longest and is the period from the end of formal training until retirement. During this period, both knowledge and skills continue to develop. Ideally the practicing surgeon also keeps abreast of changing information and technology and adapts their practice to accommodate new information. The role of the ABS during this phase of a surgical lifetime has evolved from nothing prior to 1976 to Maintenance of Certification (MOC) beginning in 2005.

HISTORY

Initially, the ABS focused exclusively on one point in time: the moment when a surgeon had completed training and was poised to begin practice. The first period of learning, medical school, was left to medical schools, with no oversight or interaction with the boards. The years of residency, likewise, were spent out of sight of the ABS, other than that they occurred in programs where the standards had been developed with the ABS as a lead in defining those standards.

The ABS interaction with surgeons began at the end of residency, when an applicant makes contact with the board for the first time by applying for formal assessment, ideally culminating in certification. The assessment consisted of 3 parts: an application testifying to the details and experience acquired in training; part I, a written or qualifying examination; and part II, an oral or certifying examination. Originally there was also a practical component of Part II, consisting of an observed operation and witnessed patient examinations, among other things, but the use of live patients was discontinued in the 1950s. Certification was for life: once the process demonstrated adequate training (application), knowledge (the written examination), and judgment (the oral examination), a surgeon was certified. Those who were certified were free to practice and to carry that certificate for life.

TIME-LIMITED CERTIFICATES AND RECERTIFICATION

More recently, the ABS has concerned itself with the continuum of training across the lifetime of a surgeon. The first step toward this was the institution of time-limited certificates. As early as 1940, the Commission on Graduate Medical Education made the argument that the explosive growth in medical knowledge made point-in-time, lifetime certification insufficient to assure current knowledge and practice. The American Board of Family Practice (later the American Board of Family Medicine) was the first to adopt time-limited certification, in 1970. The ABS quickly followed suit, becoming the second board to require time-limited certificates, in 1976 (with an initial foray into that arena with time-limited certificates in pediatric surgery in 1973).

Subsequent experience with requirements for recertification have validated the need for time-limited certificates. It quickly became apparent, as suspected, that

a surgeon's knowledge base changes over the years and that a surgeon who has been out of training for 10, 20, or 30 years is not the same as a fresh trainee. This is demonstrated by the variation seen in the scores and failure rate on the Recertification Examination (now MOC) of the ABS. Surgeons who are 10 years away from their initial certification fail the examination at a rate of 3.4%. Those who are 20 years out fail at 7.9%, and those 30 years out fail at 10.9%. Just recently, there have been some 40 year cohort examinees, who failed at a rate of 22% (Table 1). This has served to reinforce the tenet that more frequent assessment of knowledge is necessary and appropriate to fulfill the dual charges of protecting the public and enhancing the profession. There may be several factors in the increasing failure rate over time. Narrowed field of practice may lead to loss of familiarity with some areas of surgery. Dual certification such that the specialty certification has more importance to the surgeon may make studying for the surgery examination less pressing. Nevertheless, the variation in scores supports the idea that a surgeon 10 years out of residency is not the same as a surgeon 30 or 40 years out of residency, and it is incumbent on the ABS to recognize that fact in its assessment and certification procedures.

Time-limited certificates and recertification were the first steps in the ABS addressing the full lifetime of learning in the practice of surgeons.

Table 1

American Board of Surgery diplomate cohort fail rates on the recertification examination or maintenance of certification examination in surgery, 1995–2014

	10 Years		20 Years		30 Years		Total	
	N	Fail (%)	N	Fail (%)	N	Fail (%)	N	Fail (%)
1995	857	3.6	252	8.7	—	—	1109	4.8
1996	872	4.5	395	6.8	—	—	1267	5.2
1997	830	2.5	584	7.7	—	—	1414	4.7
1998	796	3.0	678	9.4	—	—	1474	6.0
1999	846	3.2	773	10.5	—	—	1619	6.7
2000	639	3.3	584	12.5	—	—	1223	7.7
2001	728	2.6	642	11.7	—	—	1370	6.9
2002	759	4.3	596	11.9	—	—	1355	7.7
2003	816	3.9	650	16.2	23	43.5	1489	9.9
2004	800	3.8	665	9.9	98	22.4	1563	7.5
2005	784	4.5	611	9.3	160	18.8	1555	7.8
2006	753	4.5	633	6.2	192	9.4	1578	5.8
2007	764	3.4	665	6.2	275	12.7	1703	6.0
2008	768	3.1	642	6.4	340	11.2	1750	5.9
2009	868	4.0	729	4.1	470	11.1	2067	5.7
2010	898	2.6	678	4.0	451	11.1	2027	4.9
2011	842	2.5	627	4.8	426	9.2	1895	4.7
2012	782	1.9	619	2.9	404	7.4	1826	3.7
2013	872	2.8	680	4.6	364	9.1	1932	4.8
2014	604	3.1	520	3.7	315	8.3	1462	4.7
TOTAL	15,878	3.4	12,225	7.9	3518	10.9	31,681 ^a	6.0

^a 2012 to 2014 = 59 candidates, 40-year cohort, 22.0% fail.

MAINTENANCE OF CERTIFICATION

The ABMS is a federation of 24 member boards who have voluntarily agreed to cooperate around standards and best practices in certification. The focus of the ABMS is in improving the quality of health care by supporting the lifelong professional development of physicians. The member boards of the ABMS are listed in [Table 2](#).

In 2005 all member boards of the ABMS launched MOC to improve on the standards set by a 10-year cycle of episodic recertification. Each board developed the details of its own program, according to overarching standards set by the ABMS. The ABS was an early leader in MOC.

The ABS MOC program incorporates much of what was already being done with recertification. MOC is divided into 4 parts. Part 1 addresses professionalism, and, as with recertification, the ABS requires evidence of an unrestricted state license to practice medicine, hospital credentials, and testimonials from the chair of surgery and chair of the credentials committee. Part 2 addresses lifelong learning, and, as with recertification, there is a requirement for continuing medical education (CME) credits. ABS MOC requires self-assessment CME, which sets a higher bar for accountability than the more passive learning of traditional CME required for recertification. Part 3, a secure assessment of medical knowledge, remains unchanged. Under MOC, the Recertification Examination of the ABS becomes the MOC Examination

Table 2	
American Board of Medical Specialties member boards and year in which they were approved	
Board	Year
American Board of Ophthalmology	1917
American Board of Otolaryngology	1924
American Board of Obstetrics and Gynecology	1930
American Board of Dermatology	1932
American Board of Orthopaedic Surgery	1935
American Board of Pediatrics	1935
American Board of Psychiatry and Neurology	1935
American Board of Radiology	1935
American Board of Urology	1935
American Board of Internal Medicine	1936
American Board of Pathology	1936
American Board of Surgery	1937
American Board of Neurologic Surgery	1940
American Board of Anesthesiology	1941
American Board of Plastic Surgery	1941
American Board of Physical Medicine and Rehabilitation	1947
American Board of Colon and Rectal Surgery	1949
American Board of Preventive Medicine	1949
American Board of Family Practice	1969
American Board of Thoracic Surgery	1970
American Board of Nuclear Medicine	1971
American Board of Allergy and Immunology	1971
American Board of Emergency Medicine	1979
American Board of Medical Genetics	1991

but remains a secure, multiple-choice, computer-based examination given at 10-year intervals. To be admitted to the MOC Examination, diplomates of the ABS must be in compliance with MOC.

Part 4 of MOC focuses on assessment and improvement of performance in practice. This is not addressed in initial certification nor was it addressed with recertification. It is a laudable target. The ABS recognizes that assessing performance in practice is a complicated undertaking. This is an area of active investigation. As of now, the ABS accepts participation in an outcomes registry as fulfillment of MOC part 4. The best known of such registries is the National Surgical Quality Improvement Program. Other valuable registries from a variety of surgical societies and hospital or government resources are also accepted.

A summary of ABS MOC standards is in [Table 3](#).

PREPARATION FOR RESIDENCY

Changes in the culture of medical school training have changed the experience of medical students. Students have essentially no autonomy during medical school, instead being relegated to the position of bystanders and observers. Hours of clinical exposure have become shorter. Surgical clerkships are shorter, anatomy classes have been cut, and hours on call are the exception rather than the rule. As a result, residents arrive at their training institution with less experience and exposure to patient care. The first months of training are thus spent in remediation, which slows the process of learning surgery. Some individual medical schools have independently developed specific rotations, or boot camps, to better prepare medical

Table 3 American Board of Surgery maintenance of certification program requirements	
Every 3 years, diplomates submit information via the ABS Web site regarding	
Professional standing	Full and unrestricted medical license; hospital or surgical center privileges; contact information for chief of surgery and chair of credentialing where most work is performed
CME activities	90 Hours of Category 1 CME relevant to the practice is required over a 3-year cycle, with at least 60 of the 90 including self-assessment (written or electronic question-and-answer exercise). A score of 75% or higher must be required on the self-assessment activity; however, no minimum number of questions is required and repeated attempts are allowed. In addition, the ABS waives 60 hours of CME with self-assessment for passing a certifying or MOC Examination given by the ABS or another ABMS board.
Practice assessment participation	Participation in a local, regional, or national outcomes registry or quality assessment program—surgeons are asked to describe how they are meeting this requirement; no data are collected.
Every 10 years, diplomates are required to successfully complete	
MOC Examination in the specialty	Surgeons are eligible to apply for an MOC Examination starting 3 years before their certificate's expiration. A full examination application is required, including a 12-month operative log (case numbers only), reference forms, and CME documentation. Diplomates must be in compliance with MOC to apply. For surgeons who hold multiple ABS certificates, this is the only requirement that must be repeated for each certificate.

students for surgical residencies. Participants in those programs have been shown to be more confident and to outperform their nonparticipating peers in the first several months of residency.¹ In response to this situation, several of the leadership groups in surgery, including the ABS, the American College of Surgeons (ACS), the Association of Program Directors in Surgery, and the Association for Surgical Education, produced the “Statement on Surgical Pre-Residency Preparatory Courses.”² This calls out the need for programs that ensure that all medical students going into surgery have the fundamental skills required for safe and effective patient care on entering residency. These programs should include interactive sessions, simulation sessions teaching basic procedural skills, communication skills, and learner feedback.

SURGICAL RESIDENCY

The leadership of American surgery has been aware for many years that changing times require ongoing vigilance and attention to the standards of residency training. A blue ribbon committee was convened in 2004 to take a focused look at these issues and in 2005 published an article in the *Annals of Surgery*,³ in which a series of recommendations regarding training and practice in surgery were made. The recommendations of the Flexner Report, widely credited with substantially improving and standardizing medical education in the United States more than 100 years ago, took 10 years to be fully enacted; based on that experience, the process of re-evaluating and improving surgical training is just about on the same timeline for success.

The ABS, too, in conjunction with the ACS, the RRC-S, and the American Surgical Association, has continually looked for ways to improve resident training. This raises the question: are all residencies the same? To measure progress it is essential to have a common baseline. With that in mind, starting in 2010, the ABS engaged in residency in a more active way, inserting requirements for admissibility to the Qualifying Examination into surgical training. This had the goal and effect of making the experience of residencies in different locations more similar, so that improvement could be measured as apples to apples not oranges to apples. The initial set of new requirements included successful completion of Advanced Trauma Life Support, Advanced Cardiovascular Life Support, and Fundamentals of Endoscopic Surgery. These requirements assured that a certain standard of knowledge in these 3 areas—trauma, cardiovascular resuscitation, and laparoscopy—had been met by all residents in the country.

Over the next few years, additional requirements were implemented, including requirements for observed operations and clinical interactions (surprisingly, this had never been formalized as part of residency training); an increase in the number of teaching assistant (TA) cases required (TA cases are those in which a resident takes a more junior resident through a case); a requirement for 250 cases to be done during the first 2 years; and a requirement to complete a curriculum in endoscopic surgery (Fundamentals of Endoscopy Curriculum), culminating in a skills and knowledge test (Fundamentals of Endoscopic Surgery).

The ABS In-Training Examination (ABSITE), has been a long-standing assessment tool provided to the program directors by the ABS. The purpose of the ABSITE is to allow programs to assess their teaching programs compared with other programs and to assess the knowledge level of individual residents. It is not a pass-fail examination but rather is reported by percentile rank as related to other surgical residents in the country in the same year of training. It is intended as a formative assessment tool, not a summative examination. The high quality and value of this examination

have been recognized internationally, and as many as 17 other countries in a given year offer the examination to their trainees for similar purposes.

These requirements and assessments, and the role of the ABS in establishing standards in training, are serving to improve the consistency of training across the country. Having established a stable baseline of training makes improvement and measuring of improvement more attainable.

RE-ENTRY TO CLINICAL PRACTICE

Surgeons leave the practice of surgery for a wide variety of reasons. Some suffer from a medical illness or injury, with forced leave from practice as a consequence. Some make a career change, deciding to pursue further education or other interests or passions. Some make the decision to leave for personal reasons, such as caring for a family member, whether a parent, spouse, sibling, or child. In some cases, the surgeon in question has practiced for many years. In other situations, a surgeon may leave after just a year or 2. Not surprisingly, when the illness resolves or stabilizes, or the family situation changes or perhaps the career change does not work out, these surgeons may want to return to the practice of surgery.

Until recently there was no standard pathway for assessing the skills and knowledge of these surgeons, such that they could be safely returned to the practice of surgery. Recognizing this gap, the ABS convened a retreat on the subject and in 2012 published guidelines on re-entry to surgical practice.⁴ Each re-entry pathway is individualized, because no 2 situations are the same. The main elements of re-entry include assessment of status of practice at departure; a re-entry pathway constructed by a local champion and addressing all arenas of competency; a proctoring plan; outcomes assessment; and MOC. Individuals work and their champions work with the ABS to develop an appropriate program, taking into account previous years of experience, the nature of the practice prior to leaving surgery, the time elapsed since leaving surgery, and goals for future practice. Re-entry is recommended for surgeons who have been away from clinical practice for 2 or more years. This multilevel assessment is an improvement that has been helpful to both the credentialing bodies of hospitals and the surgeons who seek re-entry.

SUMMARY

Assessment of surgeons at various points in their training is the main charge of the ABS. Although many surgeons equate assessment only with the Qualifying Examination, Certifying Examination, and MOC Examination, assessment is woven throughout the lifetime of surgical practice. Surgeons engage in self-assessment at morbidity and mortality conferences, through personal reflection, and via the self-assessment requirements of MOC. External assessment is provided by teachers and mentors during medical school, residency, practice, and re-entry. Formal assessment in the form of programs, such as Fundamentals of Laparoscopic Surgery, Advanced Trauma Life Support, Advanced Cardiovascular Life Support, Fundamentals of Endoscopic Surgery, operative evaluations, ABSITE, Qualifying Examination, Certifying Examination, and MOC Examination, are only pieces of the whole.

REFERENCES

1. Antonoff MB, Swanson JA, Green CA, et al. The significant impact of a competency-based preparatory course for senior medical students entering surgical residency. *Acad Med* 2012;87(3):308–19.

2. American Board of Surgery, American College of Surgeons, Association of Program Directors in Surgery, et al. Statement on surgical pre-residency preparatory courses. *JAMA Surg* 2014;149(11):1198–9.
3. Debas HT, Bass BL, Brennan MF, et al. American Surgical Association blue ribbon committee report on surgical education: 2004. *Ann Surg* 2005;241(1):1–8.
4. Re-Entry to Surgical Practice. American Board of Surgery website.