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Commentary on: Thoughts on the American Board of Radiology Examinations and the Resident Experience in Radiation Oncology

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In this issue of the journal, Drs. Amdur and Lee make several observations regarding the state of medical education and standardized assessment in general, and the assessment instruments of the American Board of Radiology (ABR) in particular (1). While we recognize their intent as experienced and committed educators, we disagree with their conclusions related to the qualifying (computer-based) and certifying (oral) exams administered by the ABR.

The authors observe that USMLE Parts 1 and 2 test scores for residents in radiation oncology have been progressively improving over the past decade, and that first-time examinee pass rates for the ABR-administered qualifying and certifying examinations have remained stable over that same time. From this fairly straightforward observation, they draw the conclusion that the ABR exams are, therefore, becoming more difficult. The authors reach this conclusion partially because of what they perceive to be an increasing amount of training department resources dedicated to teaching in general, and "teaching to the exams" specifically. They also appear—both directly and indirectly—to decry the amount of resources being dedicated to exam preparation (1).

Regrettably, we believe that the authors have developed their hypothesis based on flawed reasoning and personal observations (as they specifically indicate). We base our belief on several critical issues:

- First, the material tested on the USMLE examinations is unrelated to the material tested on the ABR exams, assessing entirely different domains of knowledge at disparate points in training and with varying degrees of preparation, essentially based on a generally standardized curriculum.

- Second, the authors are admittedly faculty members of large, academically sophisticated departments with many colleagues receiving significant support and time set aside specifically for their educational activities. In this regard, they represent a somewhat limited and optimized milieu in radiation oncology, where most postgraduate training programs have six or fewer trainees and small
faculties. In fact, most RO programs possess neither the resources nor the faculty depth and breadth described as part of the authors’ departments. One of us (PEW) served as a faculty advisor for the Association of Residents in Radiation Oncology (ARRO) for six years and became keenly aware of the lack of didactic programming and schooled educators in many of our training programs. Numerous faculty members in these small departments are committed almost full-time to clinical activities, with postgraduate trainee education seen as merely an adjunct to these clinical activities.

- Third, the Angoff standard setting procedure employed for determining the scoring standards of the ABR exams, as alluded to but not described, is carried out annually for each individual exam instrument. This process is conducted by physicians actively practicing in academic and private practice settings and working with trainees who will actually take the exams. The essence of the Angoff standard setting procedure is to opine the number of individuals who would answer a specific question correctly (not the number who should answer it correctly). Every item (question) is judged individually on this basis, with no pre-ordained intent for outcomes. Therefore, the scoring “target” moves, in any given year, based on this judgment in relation to the difficulty of the unique set of items on a particular exam. The Angoff scores for individual items are then totaled to form an average percentage of questions that would be answered correctly for the entire exam (2). The final pass-fail score cut is thus a criterion-based reference, which makes it possible for all examinees to pass the exam if they meet or exceed the standard for a given set of questions. To support this element of their hypothesis, the authors refer to a manuscript by Becker et al (4) describing the process, policies, and background of ABR exams, and interpret a statement regarding a responsibility to maintain the public trust as an ABR-established policy regarding maintaining a ≈10% failure rate. In fact, that publication makes no such linkage of the issues, and the only mention of a ≈10% failure rate is a response to a hypothetical question posed by an outsider. The
ABR has never set an arbitrary or norm-referenced passing standard for written or oral examinations and has no intention of doing so.

- Fourth, generally available National Residency Match Program (NRMP) data suggest that over the past decade, regardless of a belief within the radiation oncology community, trends in the quality of residents accepted for training have been drifting slightly downward (4).

The authors correctly indicate the difficulty in testing all six core competencies as promulgated by the American Board of Medical Specialties (ABMS) and the Accreditation Council for Graduate Medical Education (ACGME) (5), but this problem is no different for the ABR than for any of the other 23 ABMS medical specialty certifying boards. They also decry the intensity of time spent in preparation for the ABR exams, and in teaching "to the exams" rather than in teaching what they perceive to be needed for the high-quality practice of radiation oncology. This argument is somewhat circuitous and involves the ABR testing materials as required for training by the ACGME, rather than in developing test materials in a vacuum. Regrettably, the ACGME program requirements for postgraduate training in radiation oncology are quite vague as to specific curriculum content (5); thus, the material assessed by the ABR represents a modest baseline for assessment of clinical competency. Where possible, elements of all core competencies are included in exam content.

There have been suggestions that a national dialogue should be convened to develop a consensus regarding what more precisely should be taught to develop a cohort of excellent radiation oncologists in the future (6), and then what should subsequently be assessed in their development. In the meantime, and also regrettably, any high-risk exam will lead to intense preparation and anxiety among those taking the exams, and in our society, a belief that educators should prepare their charges for these standardized exams.
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