



## The Process of Creating ABR Examinations

The mission of the American Board of Radiology (ABR) is to serve patients, the public, and the medical profession by certifying that its diplomates have acquired, demonstrated, and maintained a requisite standard of knowledge, skill, and understanding essential to the safe and competent practice of diagnostic radiology, radiation oncology, and medical physics. Examinations are one of the most important steps in the overall certification process, and the ABR is invested in ensuring that its exams promote confidence in the integrity of certification decisions.

The ABR administers more than 29 different exams each year to candidates and diplomates for board certification in the fields of diagnostic radiology, radiation oncology, and medical physics. Current ABR examinations consist of approximately 60 percent new and 40 percent “reused” questions, also known as items. Reused content is drawn from a bank of thousands of previously used questions. The ABR monitors the reused questions to ensure they continue to perform well.

ABR exam questions are written by numerous committees of approximately 600 subject matter experts who practice in the many specialties of radiology. These individuals donate their time and expertise to develop exam content. ABR staff members facilitate all volunteer committee activities, including the submission of questions and images, editorial review of material for clarity and accuracy, and preparation of multimedia assets to meet ABR needs. Staff members are also responsible for ensuring all exam products meet the quality benchmarks set forth by our Standards Divisions, including psychometric integrity of items/questions, adherence to the ABR Item-Writing Guide, and HIPAA compliance and quality standards for multimedia.

The volunteer subject matter experts then select content, both new and used, that will appear on a given exam. Test-assembly meetings are conducted to review each question in detail for appropriateness, accuracy, clarity, and clinical relevance. ABR staff members make the recommended revisions to produce a final version of each exam for administration.

As a result of the many detailed steps involved in this process, the production of each new ABR examination is extremely resource-intensive. Even with the donation of time by volunteers, it costs more than \$100,000 to produce a set of examination questions used in a given year<sup>1</sup>. If the ABR were to produce entirely new content for examinations each year, the production expenses would double, resulting in higher examination fees for candidates and diplomates.

However, cost is not the only factor. Drawing from a pool of previously tested and refined questions also allows for:

- required statistical reliability to validate each examination from year to year<sup>2</sup>,
- more predictable and stable examination performance as items that perform below standards are removed, and
- monitoring of passing standards to ensure that they do not arbitrarily vary across time.

Reused questions are analyzed by ABR staff psychometricians, who determine those that statistically perform best and discriminate well on previous exams. Without reused questions, the difficulty level of

a new exam could unpredictably vary from year to year. Also, an unknown number of new test questions may perform poorly, necessitating their removal from scoring. This potential for inconsistency diminishes an exam's validity and reliability. For these reasons, best testing practices typically incorporate the reuse of items on subsequent exams.

The ABR's mission is at the crux of its exam development processes. Great effort and care is applied to make certain that ABR exams are indicators of the quality and professionalism that the public expects from board-certified radiologists.

### **References**

<sup>1</sup>Shields B, Hoffman T. Studying or cheating? Misusing ABR exam questions will cost you. *ACR Bulletin*. July/August 2011:27-28.

<sup>2</sup>College Board. Course and exam development. Available at: <http://professionals.collegeboard.com/testing/ap/about/development> . Accessed on October 14, 2011.

### **Related Reading**

[American Board of Radiology exams: What's new?, May 19, 2011](#)

### **Acknowledgement**

Parts of this article were excerpted from "ABR Policy on Exam Recalls: Please Read Carefully," by Dr. Jannette Collins, published online January 13, 2011, by *AuntMinnie.com* at:

<http://www.auntminnie.com/index.aspx?sec=sup&sub=res&pag=dis&ItemID=97972>

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