

## Medical School Hotline

### An Update on the USMLE and Performance of Medical Students at the John A. Burns School of Medicine

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The United States Medical Licensing Exam (USMLE) has now become the only path to licensure in the U.S. and its territories. Although a license to practice medicine is granted by individual state licensing boards, all require, as part of the process, certification of passing scores in all three Steps of the USMLE. With this situation in mind, the John A. Burns School of Medicine (JABSOM), along with 70% of all medical schools, has required students to pass both Steps 1 and 2 in order to receive the MD degree. Since it is also a nationally standardized exam, although highly discouraged by the National Board of Medical Examiners (see related article published in *HMJ* July 1996), much attention has been focused on student performance as an indication of the strength and success of a school's curriculum. Reported here are changes which have been implemented in the Steps 1 and 2 exam, problems which have arisen from the transition, national performance statistics, and an update on the

June 1997 performance of the JABSOM Class of 1999 on Step 1. Also included is a brief description of plans for major changes in the exam administration which will take place in 1999.

The USMLE Step 1 exam is designed to assess a student's ability to apply knowledge and understand key concepts of basic biomedical science, with an emphasis on principles and mechanisms of health, disease, and modes of therapy.<sup>1</sup> More recently, however, changes have been implemented to not only insure mastery of the core basic science material, but also the scientific principles required for maintenance through lifelong learning. The exam content is basically organized by organ system (e.g., cardiovascular, reproductive) and process (e.g., metabolism, host defense, influence of emotional and behavioral factors on disease prevention, progression and treatment). However, an increasing number of interdisciplinary topics, such as nutrition and aging, has been added. In addition, there is less emphasis on rote memory and recall of information, and more reliance on a student's ability to interpret and apply data, and apply basic science knowledge to clinical problems.

The emphasis of the Step 2 exam is to determine whether a student can apply basic science knowledge and understand the clinical science necessary to care for patients under supervision, and now includes health promotion and disease prevention.<sup>1</sup> Content is determined by a single integrated content outline that is organized by physician task and disease classification. For example, categories include, in addition to the usual clinical disciplines, Health and Health Maintenance, Understanding Mechanisms of Disease, Principles of Management, Immunologic Disorders, Normal Growth and Deve-

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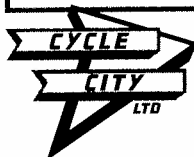
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As the number of candidates taking the exam and the significance of passing has increased, so has the number of problems associated with test validity, standardization, and security. The most recent security breach was highly publicized by the press, and involved apparent pre-administration access to parts of the exam. This situation was not detected by examiners, but by sophisticated statistical analysis of the performance of individual examinees; as a result, their scores could not be validated, and they will be required to repeat the exam. Another problem with the large number candidates has been the logistics of finding appropriate space and sites, and compounds the security issues related to shipping and maintaining security of the exams until administration. It is hoped that some of these problems will be alleviated by the changes in test administration, plans for which will be presented later in this article.

As evidence of the dramatic increase in the number of individuals taking the exam, for the June 1992 inaugural administration of the Step 1 exam, 15,023 candidates sat for the exam at over 140 testing centers in the United States, its territories and Canada. The 1996 exam was taken by 31,139 individuals at over 200 centers.

The results of the 1996 USMLE Step 1 (June and October), reported in early 1997, showed a 93% pass rate for US and Canadian medical students taking the exam for the first time, compared to 55% for foreign medical students. The overall mean score for the former group was 205 with a standard deviation of 20; the passing score set in 1992 for Step 1 is 176. The mean score for foreign medical students is not available. For Step 2, the overall pass rate for US and Canadian medical students taking the exam for the first time in 1995 (August) - 1996 (March) was 92%, with a mean score of 200±23. In May 1996, after completion of an in-depth review of the 1992 passing score of 167, the passing standard was raised to 170, effective with the August 1996 administration. Interestingly enough, despite raising the passing score, the passing percentile ROSE from 92% to 95%, although the passing percentage of those repeating the exam declined from 66% to 60%.

Similar to previous JABSOM classes, the Class of 1999 which took the June 1997 exam for the first time performed at or near the national mean both in percent passing (96%) and mean score (211). However, the number of students performing above the 90th percentile rose dramatically from four students in 1995 and 1996, to 11 students. Several hypotheses for this increase have been proposed by the faculty, including the

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impression that the exam has begun to place more and more emphasis on recalling and applying information in a clinical context, which closely parallels the process in our problem-based learning curriculum. Another is that JABSOM students have successfully solved the problem of how to prepare for the boards. The lower numbers in the 90th percentile range (compared to pre-PBL figures) had remained the last major criticism of our problem-based curriculum, except for those who now say, "at or near the mean should not be what we strive for". To these people, one response is that since the major emphasis of problem-based learning is to help students learn how to learn, and the time taken to do this means less time is available to memorize facts, their performance is more of an indication that they have indeed mastered the skill of learning.

For completeness sake it should be reported that performance statistics for the August 1996 administration of Step 2 (Class of 1997), the last one for which complete results are available, again reveal JABSOM students are at or slightly above the mean in total score and percent passing. The number above the 90th percentile, however, has consistently remained the same as pre-PBL figures, approximately 10 students.

Finally, an extremely innovative change in test administration is scheduled to take place in 1999, when all three Steps will become computer-based. Phase 1 of the program will include use of Computer Assisted Sequential Testing (CAST) to shorten the duration of

## How to Become an Ophthalmologist

### Preface to Residency Spotlight on Ophthalmology

Robert T. Wong MD  
Guest Editor

We are reproducing a Philadelphia news article which gives attention to this subject. The authority is Dr Stephen Wong who is a graduate of our University of Hawaii School of Medicine.

The article lists in detail the competitive admission process to the ophthalmology program, the educational program, and the training process that candidates undergo to become ophthalmologists.

Dr Stephen Wong is a graduate of the two-year University of Hawaii School of Medicine in 1970. He went on to Jefferson Medical College to earn his MD degree in 1972. He served his internship at Jefferson's affiliated Lankaneau Hospital where he learned some basic ophthalmology from the distinguished Robb McDonald MD. He served his three year ophthalmology residency at the renowned Wills Eye Hospital of Jefferson Medical College followed by a fellowship in retinal surgery at the same institution. After completing his training he entered the military service and was assigned as ophthalmologist to the Philadelphia Naval Hospital. He was one of only three retinal surgeons in the entire Atlantic Zone of the U.S. Navy. He joined Temple University School of Medicine after completing his military service.

Incidentally, he is the son of guest editor Robert Wong and the brother of Bradley Wong.

\*Preface to news article  
(Beginning article in October issue—Special Issue on Ophthalmology HML)

the exam, and implement strong computer-based simulations in the implementation of Step 3. In Phase 2, Step 1 content will be enhanced, standardized patients will be introduced into Step 2, and further use of technology will occur.<sup>2</sup> Field testing using Computer Based Testing (CBT) for the Step 2 exam took place in and around the Chicago, Los Angeles, New Orleans, New York and Philadelphia areas in 1996, and showed that, with some modifications, it was extremely feasible and would address many of the security concerns. Students performed similarly with respect to the test delivery mode, which suggested that moving test items to CBT would not affect results in any systematic way. Another significant finding was that after completing the tutorial and practice items provided as part of the exam, performance was not influenced by prior computer experience. In the interest of our students and residents, JABSOM, with the support of the Dean and the National Boards, has joined a number of other medical schools in preparing to become a CBT site.

#### References

1. "Report on 1996 USMLE Steps 1, 2, and 3", *The National Board Examiner*, Vol. 44, No. 1, Winter 1997.
2. *Executive Summary*, AAMC/NBME Liaison Committee, July 1997.