MKSAP 14—Medical Knowledge Self-Assessment Program, edited by Paul E. Epstein, MD, and Patrick C. Alguire, MD

Philadelphia: American College of Physicians, 2006. Available in 11 print books, a CD-ROM, and an on-line version; the complete package is

\$568 for ACP members and \$788 for nonmembers, and individual components are also sold separately.

Reviewed by F. David Winter, Jr., MD, MSc

In this 14th edition, the MKSAP delivers another comprehensive review of internal medicine and its subspecialties. Eleven separate booklets cover the topics of internal medicine foundations, cardiovascular medicine, gastroenterology and hepatology, rheumatology, neurology, hematology and oncology, infectious disease, pulmonary and critical care medicine, general internal medicine, endocrinology and metabolism, and nephrology.

Editors Paul E. Epstein and Patrick C. Alguire have ably directed the distillation of a large amount of material so that we might pursue Osler's recommendation for "lifelong progressive personal training" (1). The self-study program is filled with abundant bibliographic references, an organized table of contents, and an ample index. Up to 150 AMA Physician's Recognition Award Category I continuing medical education credits are available, and access is also provided to five electronic question modules for points toward maintenance of certification. The syllabus is easy to read, with a two-column, full-color layout, and key points are summarized in bold, colored stand-alone tables. New developments are highlighted under Recent Advances headings.

Physicians who embark on this study course will be reminded of the vastness of knowledge required in the practice of medicine. Keeping up can be a challenge, and Dr. Lawrence L. Weed pessimistically concludes that in modern medicine "the *unaided* human mind is not a reliable instrument for processing of information in the solution of patients' problems." He has encouraged the use of computerized software tools to assist the clinician and by analogy argues that "what the telescope did to expand the horizons of the human eye and thereby increase exponentially our understanding of astronomy, the computer can now do to expand the horizons of the human mind and thereby change [improve] our abilities to accurately diagnose and recommend treatment to our patients" (2). As most physicians lack access to computerized assist devices, periodic updates such as this one may have value.

Stated objectives of the MKSAP are to assess the current state of one's clinical knowledge, update that knowledge in key areas of internal medicine, apply new clinical problem-solving

skills to improve the health of patients, compare performance on self-assessment tests with that of peers, and encourage in-depth study using critically reviewed evidence-based references.

The study program begins in each field with chapters and paragraphs designed to update the reader. A self-assessment test follows, which allows further learning by presenting real-life clinical dilemmas followed by detailed, referenced answers with highlighted key points. Physicians who have learned best through the years from clinical dilemmas will find the testing segment particularly valuable, and detailed discussion of the answers adds further information to the text.

A disclaimer by the authors and publisher reminds us that new material offers many opportunities for error, and a few errors can be found. The cardiovascular medicine section contradicts itself when it talks of a murmur that does not radiate to the carotids in self-assessment question 44 but mentions one that does radiate in the answer. The infectious disease section recommends that oseltamivir (Tamiflu) be given in a dose of 75 mg twice daily for prevention of influenza A and B. The manufacturer, Roche Laboratories, and the Sanford Guide recommend using the drug only once daily (3, 4). Pneumococcal immunization recommendations are also confusing. A table suggests reimmunization every 5 years, while the text calls for a single booster 5 years after initial vaccination.

The bane of all published texts is the obsolescence that can occur between writing and publication. As expected, the MKSAP finds no safe haven. Amantadine and rimantadine were both recommended for treatment and prophylaxis of influenza A, but more recent information indicates viral resistance to these drugs. And pertussis was not mentioned as a vaccine but is now recommended for nonpregnant adults under age 64 as a one-time immunization in the combined vaccine Tdap (5).

The Foundations of Internal Medicine section contains new discussions on health care policy and quality improvement. The projections on expected health care spending should get the attention of all of us, as the implications are foreboding. Issues about the medically uninsured, medical liability, and disparities in health services are also nicely summarized. Eight different initiatives regarding the popular topics of quality and safety are mentioned, and the chapter on medical ethics has been expanded to cover privacy issues, terminal sedation, error reporting, and palliative care. Those who have wondered about the origin of confidentiality signs in hospital elevators and cafeterias will find the answer in this section. Practical advice is abundant, such as when to consider antidepressant medication after the loss of a loved one. The authors are exercise enthusiasts who pronounce physical inactivity as much a risk factor for heart disease as hypertension and even smoking. And diagnosticians who take pride in their clinical exam will be reminded of its limitations. One third of hypothyroidism cases, for example, are said to have no convincing findings on physical examination.

The leading cause of death in this country, cardiovascular disease, deserves and receives one of the larger sections. Newer information about electronic stethoscopes is interesting. The shortcomings of nesiritide infusions, newer indications for implantable defibrillators, and the advantage of lower doses of digitalis are all presented. And for primary care physicians whose most common chest pain patient typically proves to have a musculoskeletal problem, the unusual cases of heart conditions are fascinating to read.

The gastroenterology section confirms that esophageal surgery for reflux results in poorer outcomes than medical management and that all proton pump inhibitors are equally effective. Current recommendations for monitoring patients with Barrett's esophagus are cited with the admission that no evidence has been produced to demonstrate that screening alters survival. The shortcomings of bariatric surgery are also discussed.

For physicians outside of the subspecialties of hematology, oncology, and rheumatology, those sections are the most laborious. The generalist is not likely to see many of the uncommon conditions that are detailed, and discussions of treatment options go beyond the interest of anyone outside of those fields.

To cover all topics germane to the field of internal medicine is a daunting task, and we might expect some oversights. Discussion of normal pressure hydrocephalus, particularly after its extensive coverage in the news media, for example, might have been included in the neurology section.

In the absence of a diagnostic and treatment-guiding computer that Dr. Weed envisions, physicians will find the MKSAP a noble attempt to refresh, teach, and keep us as current as mortally possible.

MKSAP requires quite a financial and time commitment. For those inclined, I would suggest a minimum dedication of 6 months to the process. The American College of Physicians actually allows 3 years to complete the self-assessment testing and to apply for continuing education credit. By that time the next edition will be available and you can start over.

1. Silverman ME, Murray TJ, Bryan CS, eds. *The Quotable Osler*. Philadelphia: American College of Physicians, 2003:196.
2. Weed LL, Weed L. Reengineering medicine. *Federation Bulletin: The Journal of Medical Licensure and Discipline* 1994;81(3):149–183. Available at <http://www.pkc.com/papers/reengineering.pdf>; accessed April 23, 2007.
3. Tamiflu (oseltamivir phosphate) [package insert]. Nutley, NJ: Roche Laboratories. Available at <http://www.rocheusa.com/products/tamiflu/pi.pdf>; accessed April 23, 2007.
4. Gilbert DN, Moellering RC Jr, Eliopoulos GM, Sande MA, eds. *The Sanford Guide to Antimicrobial Therapy* 2007, 37th ed. Sperryville, VA: Antimicrobial Therapy Inc, 2007:110.
5. Centers for Disease Control and Prevention. Recommended adult immunization schedule, United States, October 2006–September 2007. Available at <http://www.cdc.gov/nip/recs/adult-schedule.pdf>; accessed April 23, 2007.

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