

FIRST AID[®] FOR THE

USMLE STEP 1

应试指南

第20版

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- 24-page full-color insert of high-yield images ●
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TAO LE ■ VIKAS BHUSHAN ■ NEIL VASAN



北京大学医学出版社

FIRST AID FOR THE®

USMLE STEP 1

应试指南

第 20 版

TAO LE, MD, MHS

Assistant Clinical Professor of Medicine and Pediatrics
Chief, Section of Allergy and Immunology
Department of Medicine
University of Louisville

VIKAS BHUSHAN, MD

Diagnostic Radiologist
Los Angeles

NEIL VASAN

Medical Scientist Training Program
Yale University

JULIANA TOLLES

Yale University
Class of 2011



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出版说明

美国医师执照考试 (United States Medical Licensing Examination, USMLE) 是针对全世界各国医学院的学生或毕业生, 欲到美国从医的执照考试, 考试全部为选择题, 采用计算机考试。考试分为:

Step 1 (第一阶段): 考察医学基础学科知识, 包括解剖学 Anatomy, 生理学 Physiology, 生物化学 Biochemistry, 微生物学 Microbiology, 病理学 Pathology, 药理学 Pharmacology, 遗传学 Genetics, 营养学 Nutrition, 神经科学 Neuroscience 等。

Step 2 (第二阶段):

(1) 临床医学知识 (Clinical Knowledge, CK): 包括内科学 Medicine, 外科学 Surgery, 妇产科学 Obstetrics and Gynecology, 儿科学 Pediatrics, 神经病学 Neurology, 家庭医学 Family Medicine, 急诊医学 Emergency Medicine, 预防医学 Preventive Medicine 等。

(2) 临床技能 (Clinical Skill, CS): 要通过 Step 1、Step 2 及 TOEFL 之后才能报考, 主要是考察考生的临床实践操作知识。

Step 3 (第三阶段): 测试考生的实际工作能力。内容包括采集病史、体格检查、诊断、治疗措施, 以及医疗法规等。

USMLE 在北京、上海和广州设有考点, 在中国大陆可参加 USMLE Step 1 和 USMLE Step 2 CK 的考试。考试介绍及报名情况可参见 <http://www.ecfm.org>

为了帮助有志于参加 USMLE 的考生更好地复习, 北京大学医学出版社全面引进了 McGraw Hill 公司的两个著名 USMLE 复习品牌丛书: PreTest 系列、FIRST AID 系列。这两套丛书经过多次再版, 受到世界各地考生的欢迎。本次引进的均为其最新版本。

当前, 我国很多医学院校在进行英文授课、考试的改革, 本书对国内从事英语授课、考试的教师和学生也有重要的参考价值。为广大的医学生和医务工作者比较中美医学教育和自己掌握的知识提供参考。同时, 该书也是学习专业英语的好教材。

北京大学医学出版社

Notice

Medicine is an ever-changing science. As new research and clinical experience broaden our knowledge, changes in treatment and drug therapy are required. The authors and the publisher of this work have checked with sources believed to be reliable in their efforts to provide information that is complete and generally in accord with the standards accepted at the time of publication. However, in view of the possibility of human error or changes in medical sciences, neither the authors nor the publisher nor any other party who has been involved in the preparation or publication of this work warrants that the information contained herein is in every respect accurate or complete, and they disclaim all responsibility for any errors or omissions or for the results obtained from use of the information contained in this work. Readers are encouraged to confirm the information contained herein with other sources. For example and in particular, readers are advised to check the product information sheet included in the package of each drug they plan to administer to be certain that the information contained in this work is accurate and that changes have not been made in the recommended dose or in the contraindications for administration. This recommendation is of particular importance in connection with new or infrequently used drugs.

DEDICATION

To the contributors to this and past editions, who took time to share their knowledge, insight, and humor for the benefit of students.

and

To Dr. William Ganong, a beloved teacher and an early believer in the power of *First Aid*.

FACULTY REVIEWERS

DIANA M. ANTONIUCCI, MD, MAS

Assistant Professor of Medicine, Division of Endocrinology
University of California, San Francisco

SUSAN BASERGA, MD, PhD

Professor of Molecular Biophysics and Biochemistry, Genetics, and
Therapeutic Radiology
Yale University

LINDA S. COSTANZO, PhD

Professor of Physiology
Virginia Commonwealth University

JANINE EVANS, MD

Associate Professor of Medicine
Program Director, Rheumatology Fellowship Program
Yale University

STUART D. FLYNN, MD

Associate Dean, Academic Affairs
Professor, Departments of Pathology and Basic Medical Sciences
University of Arizona

FRED GORELICK, MD

Professor of Medicine and Cell Biology
Yale University and VAMC West Haven

RAJESH JARI, MD, MSC

Resident in Physical Medicine and Rehabilitation
Johns Hopkins University

SHANTA KAPADIA, MD

Lecturer, Surgical Anatomy and Experimental Surgery
Yale University

BERTRAM KATZUNG, MD, PhD

Professor of Pharmacology
University of California, San Francisco

WARREN LEVINSON, MD, PhD

Professor of Microbiology and Immunology
University of California, San Francisco

PETER MARKS, MD, PhD

Associate Professor of Hematology
Yale University

CHRISTIAN MERLO, MD, MPH

Instructor, Medicine
Division of Pulmonary and Critical Care Medicine
Johns Hopkins University

DANIEL MUNDY, MD

Assistant Professor of Psychiatry
New York Medical College

DHASAKUMAR S. NAVARATNAM, PhD

Assistant Professor of Neurology and Neurobiology
Yale University

ANDREA OECKINGHAUS, PhD

Postdoctoral Fellow
Columbia University

SANJIV J. SHAH, MD

Assistant Professor of Medicine
Division of Cardiology, Department of Medicine
Northwestern University

STEPHEN F. THUNG, MD

Assistant Professor, Department of Obstetrics and Gynecology
Yale University

ADAM WEINSTEIN, MD

Department of Pediatrics/Pediatric Nephrology
Dartmouth Hitchcock Medical Center

TWENTIETH ANNIVERSARY FOREWORD

It feels oddly premature to be writing a 20th-edition foreword given how vivid preparing for the exam remains in our minds. In 1989, our original idea was to cobble together a “quick and dirty” study guide so that we would never again have to deal with the USMLE Step 1. We passed, but in a Faustian twist, we now relive the exam yearly while preparing each new edition.

Like all students before us, we noticed that certain topics tended to appear frequently on examinations. So we compulsively bought and rated review books and pored through a mind-numbing number of “recall” questions, distilling each into short facts. We had a love-hate relationship with mnemonics. They went against our purist desires for conceptual knowledge, but remained the best way to absorb the vocabulary and near-random associations that unlocked questions and eponyms.

To pull it all together, we used a then-“state-of-the-art” computer database (Paradox/MS DOS 4) that fortuitously limited our entries to 256 characters. That single constraint mandated brevity, while the three-column layout created structure—and this was the blueprint upon which *First Aid* was founded.

The printed, three-column database was first distributed in 1989 at the University of California, San Francisco. The next year, the official first edition was self-published under the title *High-Yield Basic Science Boards Review: A Student-to-Student Guide*. The following year, our publisher dismissed the *High-Yield* title as too confusing and came up with *First Aid for the Boards*. We thought the name was a bit cheesy, but it proved memorable. Interestingly, our “High-Yield” name resurfaced years later as the title of a competing board review series.

We lived in San Francisco and Los Angeles during medical school and residency. It was before the Web, and before med students could afford cell phones and laptops, so we relied on AOL e-mail and bulky desktops. One of us would drive down to the other person’s place for multiple weekends of frenetic revisions fueled by triple-Swiss white chocolate lattes from the Coffee Bean & Tea Leaf, with R.E.M. and the Nusrat Fateh Ali Khan playing in the background. Everything was marked up on 11- by 17-inch “tearsheets,” and at the end of the marathon weekend we would converge on the local 24-hour Kinko’s followed by the FedEx box near LAX (10 years before these two great institutions merged). These days we work with Adobe Acrobat, iPhones, and ubiquitous broadband Internet, and sadly, we rarely get to see each other.

What hasn’t changed, however, is the collaborative nature of the book. Hundreds of authors, editors, and contributors have enriched our lives and made

this book possible. Most helped for a year or two and moved on, but a few, like Ted Hon, Chirag Amin, and Andi Fellows, made long-lasting contributions. Like the very first edition, the team is always led by student authors who live and breathe (and fear) the exam, not professors years away from that reality.

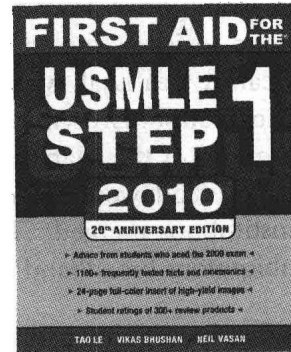
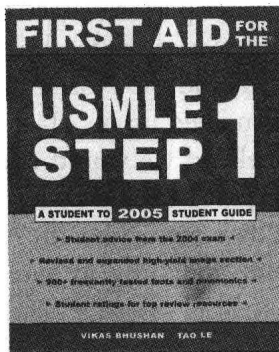
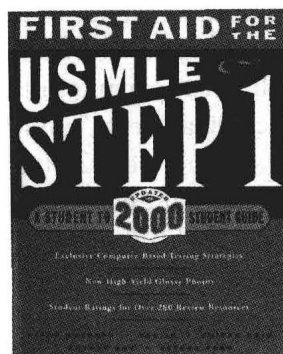
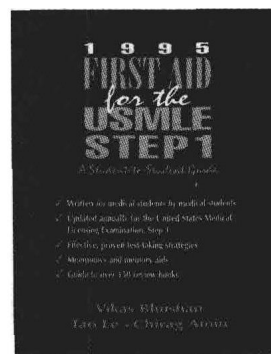
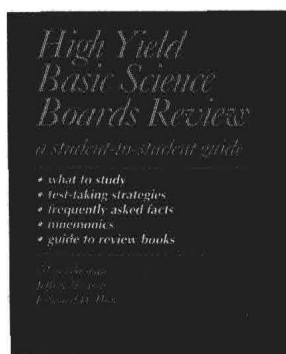
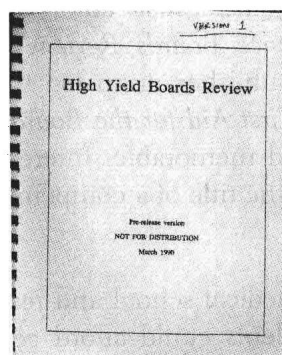
We're proud of the precedent that *First Aid* set for the many excellent student-to-student publications that followed. More importantly, *First Aid* itself owes its success to the global community of medical students and international medical graduates (IMGs) who each year contribute ideas, suggestions, and new content. In the early days, we used book coupons and tear-out business-reply mail forms. These days, we get more than 2,000 contributions each year via blog, e-mail, and Facebook.

At the end of the day, we don't take any of this for granted. There are big changes in store for the USMLE, and a bigger job ahead of us to try to keep *First Aid* indispensable to students and IMGs. We want and need your participation in the *First Aid* community. (See How to Contribute, p. xvii.) With your help, we are hoping editing *First Aid* for the next 20 years will be just as fun and rewarding as the past 20 years have been.

Louisville
Los Angeles

Tao Le
Vikas Bhushan

First Aid for the USMLE Step 1 Through the Years



PREFACE

With the 20th anniversary 2010 edition of *First Aid for the USMLE Step 1*, we continue our commitment to providing students with the most useful and up-to-date preparation guide for the USMLE Step 1. This edition represents a major revision in many ways and includes:

- ✱ A revised and updated exam preparation guide for the USMLE Step 1. Includes detailed analysis as well as study and test-taking strategies for the new FRED v2 format.
- ✱ Revisions and new material based on student experience with the 2009 administrations of the computerized USMLE Step 1.
- ✱ Revised USMLE advice for international medical graduates, osteopathic medical students, podiatry students, and students with disabilities.
- ✱ More than 1100 frequently tested facts and useful mnemonics, including hundreds of new or revised entries in reorganized sections.
- ✱ A high-yield collection of nearly 200 glossy photos similar to those appearing on the USMLE Step 1 exam.
- ✱ An updated guide to hundreds of recommended USMLE Step 1 review resources based on a nationwide survey of randomly selected third-year medical students.
- ✱ Bonus Step 1 high-yield facts, cases, video lectures, corrections, and updates exclusively at our blog at www.firstaidteam.com.

The 20th anniversary 2010 edition would not have been possible without the help of the hundreds of students and faculty members who contributed their feedback and suggestions. We invite students and faculty to continue sharing their thoughts and ideas to help us improve *First Aid for the USMLE Step 1*. (See How to Contribute, p. xvii.)

<i>Louisville</i>	Tao Le
<i>Los Angeles</i>	Vikas Bhushan
<i>New Haven</i>	Neil Vasan
<i>New Haven</i>	Juliana Tolles

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This has been a collaborative project from the start. We gratefully acknowledge the thoughtful comments, corrections, and advice of the many hundreds of medical students, international medical graduates, and faculty who have supported the authors in the continuing development of *First Aid for the USMLE Step 1*.

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Thanks to our publisher, McGraw-Hill, for the valuable assistance of its staff. For enthusiasm, support, and commitment for this ongoing and ever-challenging project, thanks to our editor, Catherine Johnson. For editorial support, an enormous thanks to Andrea Fellows. A special thanks to Rainbow Graphics, especially David Hommel and Susan Cooper, for remarkable editorial and production work.

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Thanks to Kristopher Jones, Kristina Panizzi, and Peter Anderson of the Department of Pathology, University of Alabama at Birmingham, for use of images from the Pathology Education Instructional Resource Digital Library (<http://peir.net>), and to Vishal Pall, Vipal Soni, and Dhanashree Rajderkar for their contributions to the High-Yield Image section.

Finally, thanks to Ted Hon, one of the founding authors of this book, for his vision in developing this guide on the computer, and to Chirag Amin for his enormous contributions as an editor and author over many editions.

Louisville	Tao Le
Los Angeles	Vikas Bhushan
New Haven	Neil Vasan
New Haven	Juliana Tolles

HOW TO CONTRIBUTE

This version of *First Aid for the USMLE Step 1* incorporates hundreds of contributions and changes suggested by faculty and student reviewers. We invite you to participate in this process. We also offer **paid internships** in medical education and publishing ranging from three months to one year. Please send us your suggestions for:

- Study and test-taking strategies for the new computerized USMLE Step 1
- New facts, mnemonics, diagrams, and illustrations
- High-yield topics that may reappear on future Step 1 exams
- Personal ratings and comments on review books that you have examined

For each entry incorporated into the next edition, you will receive a **\$10 gift certificate** per entry from the author group, as well as personal acknowledgment in the next edition. Diagrams, tables, partial entries, updates, corrections, and study hints are also appreciated, and significant contributions will be compensated at the discretion of the authors. Also let us know about material in this edition that you feel is low yield and should be deleted.

The preferred way to submit entries, suggestions, or corrections is via our blog:

www.firstaidteam.com

Otherwise, please send entries, neatly written or typed or on disk (Microsoft Word), to:

**First Aid Team
914 N. Dixie Avenue
Suite 100
Elizabethtown, KY 42701**

Contributions received by June 15, 2010, receive priority consideration for the 2011 edition of *First Aid for the USMLE Step 1*.

NOTE TO CONTRIBUTORS

All contributions become property of the authors and are subject to editing and reviewing. Please verify all data and spellings carefully. In the event that similar or duplicate entries are received, only the first entry received will be used. Include a reference to a standard textbook to facilitate verification of the fact. Please follow the style, punctuation, and format of this edition if possible.

INTERNSHIP OPPORTUNITIES

The author team of Bhushan and Le is pleased to offer part-time and full-time paid internships in medical education and publishing to motivated medical students and physicians. Internships may range from three months (e.g., a summer) up to a full year. Participants will have an opportunity to author, edit, and earn academic credit on a wide variety of projects, including the popular *First Aid* series. English writing/editing experience, familiarity with Microsoft Word, and Internet access are required. Go to our blog at www.firstaidteam.com to apply for an internship. A sample of your work or a proposal of a specific project is helpful.

HOW TO USE THIS BOOK

Medical students who have used previous editions of this guide have given us feedback on how best to make use of the book.

It is recommended that you begin using this book as early as possible when learning the basic medical sciences. You can use Section IV to select first-year course review books and Internet resources and then use those books for review while taking your medical school classes.

Use different parts of the book at different stages in your preparation for the USMLE Step 1. Before you begin to study for the USMLE Step 1, we suggest that you read Section I: Guide to Efficient Exam Preparation and Section IV: Top-Rated Review Resources. **If you are an international medical graduate student, an osteopathic medical student, a podiatry student, or a student with a disability,** refer to the appropriate Section I supplement for additional advice. Devise a study plan and decide what resources to buy. We strongly recommend that you invest in at least one or two top-rated review books in each subject. *First Aid* is not a comprehensive review book, and it is not a panacea that can compensate for not studying during the first two years of medical school. Scanning Sections II and III will give you an initial idea of the diverse range of topics covered on the USMLE Step 1.

As you study each discipline, **use the corresponding high-yield-fact section in *First Aid for the USMLE Step 1* as a means of consolidating the material and testing yourself** to see if you have covered some of the frequently tested items. Work with the book to integrate important facts into your fund of knowledge. Using *First Aid for the USMLE Step 1* as a review can serve as both a self-test of your knowledge and a repetition of important facts to learn. High-yield topics and vignettes are abstracted from recent exams to help guide your preparation.

Return to Sections II and III frequently during your preparation and fill your short-term memory with remaining high-yield facts a few days before the USMLE Step 1. The book can serve as a useful way of retaining key associations and keeping high-yield facts fresh in your memory just prior to the examination.

Reviewing the book immediately after the exam is probably the best way to **help us improve the book in the next edition.** Decide what was truly high and low yield and **send in your comments or your entire annotated book.**

First Aid Checklist for the USMLE Step 1

This is an example of how you might use the information in Section I to prepare for the USMLE Step 1. Refer to corresponding topics in Section I for more details.

Years Prior

- ☐ Select top-rated review books as study guides for first-year medical school courses.

Months Prior

- ☐ Review computer test format and registration information.
- ☐ Register six months in advance. Carefully verify name and address printed on scheduling permit. Call Prometric for test date ASAP.
- ☐ Define goals for the USMLE Step 1 (e.g., comfortably pass, beat the mean, ace the test).
- ☐ Set up a realistic timeline for study. Cover less crammable subjects first. Review subject-by-subject emphasis and clinical vignette format.
- ☐ Simulate the USMLE Step 1 to pinpoint strengths and weaknesses in knowledge and test-taking skills.
- ☐ Evaluate and choose study methods and materials (e.g., review books, practice tests, software).
- ☐ Ask advice from those who have recently taken the USMLE Step 1.

Weeks Prior

- ☐ Simulate the USMLE Step 1 again. Assess how close you are to your goal.
- ☐ Pinpoint remaining weaknesses. Stay healthy (exercise, sleep).
- ☐ Verify information on admission ticket (e.g., location, date).

One Week Prior

- ☐ Remember comfort measures (loose clothing, earplugs, etc.).
- ☐ Work out test site logistics such as location, transportation, parking, and lunch.
- ☐ Call Prometric and confirm your exam appointment.

One Day Prior

- ☐ Relax.
- ☐ Lightly review short-term material if necessary. Skim high-yield facts.
- ☐ Get a good night's sleep.
- ☐ Make sure the name printed on your photo ID appears EXACTLY the same as the name printed on your scheduling permit.

Day of Exam

- ☐ Relax. Eat breakfast. Minimize bathroom breaks during the exam by avoiding excessive morning caffeine.
- ☐ Analyze and make adjustments in test-taking technique. You are allowed to review notes/study material during breaks on exam day.

After the Exam

- ☐ Celebrate, regardless.
- ☐ Send feedback to us on our blog at www.firstaidteam.com.

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