

CLINICAL EMERGENCY MEDICINE CASEBOOK

Unlike the comparatively calm and orderly world of many specialties and subspecialties in medicine, emergency medicine is not divided into specific areas of practice. Emergency patients come in all shapes and sizes, at any time of day or night, with a wide range and acuity of maladies. Emergency physicians must become experts in diverse areas of medicine. They are required to make prompt, informed and often lifesaving decisions about patient care. A cornerstone of emergency medicine training is the constant study of clinical scenarios and simulated cases. This book offers a unique yet underutilized strategy for learning: a case-based approach from real patients and actual events. Each case provides the opportunity for learning essential clinical concepts. Focused exclusively on the needs of emergency physicians in training, students and nurses, the book covers more than 100 common and unusual emergency medicine case scenarios. The procedures and learning have been class-tested by the Stanford/Kaiser EM Residency Program and are supplemented with high-quality clinical photographs and images.

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Joel T. Levis and Gus M. Garmel
Frontmatter
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Dedication

Joel T. Levis, M.D., Ph.D.

To my mother, Eileen Levis: For your constant support, encouragement and sacrifices throughout the years.

To my colleagues at Kaiser Santa Clara and Stanford University, and the residents of the Stanford/Kaiser Emergency Medicine Residency Program: You are all such wonderful clinicians and talented people, and you continue to inspire me.

To Gus: A superb mentor, phenomenal educator, tremendous clinician and true friend; without your efforts, this textbook would not have happened.

And to my wife Estelle: For your encouragement and love that gives me strength to pursue my dreams. Without you, the rewards of life would have little meaning.

Gus M. Garmel, M.D.

To my residents, students and colleagues in emergency medicine, nursing and other specialties: Because of you, outstanding patient care happens.

To The Permanente Medical Group, Kaiser Santa Clara, and Stanford University: The organization and institutions that support my academic pursuits and encourage me to excel in all aspects of my professional life.

To Joel, a former resident and chief resident: Your enthusiasm for our specialty is refreshing, and your work ethic unparalleled. I am honored to be your colleague, mentor and friend, and to have collaborated with you on this and prior scholarly projects.

To my parents, siblings and friends: Thanks for encouraging me to follow my dreams.

And to Laura, my true passion in life.

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Preface

Emergency medicine is a tremendously challenging medical specialty. Fortunately, this field is profoundly rewarding. It gives health care professionals the unique opportunity to help individuals at their time of greatest need. Sometimes, simply offering reassurance, kindness or compassion is all that we can do; the importance of which should never be underestimated.

In emergency medicine, health care professionals assist individuals whose pain, anxiety and stress levels are high. Often, our quick decisions and actions are life-saving. Emergency medicine personnel continuously use their extraordinary skills, knowledge and experience to “make things happen” and “get the job done,” in an attempt to positively impact patients and their families, significant others, friends and persons important to them.

In reality, physicians, nurses, mid-level providers, paramedics, residents and medical students generally have time to look up information from various sources. Yet emergency personnel have the responsibility to provide services not available to individuals at that moment anywhere other than an emergency department. Therefore, our purpose is even more vital.

Practitioners with the most experience often provide the best care, which suggests that lifelong learning and learning from errors is crucial to medical practice (perhaps why it is called “practice”). Educators of and mentors for residents, medical students, nurses, mid-level providers, paramedics and support staff recognize that the amount of knowledge one must possess is overwhelming. Often, knowing how and where to obtain information at a moment’s notice is critical to successful patient care outcomes. With *Clinical Emergency Medicine Casebook*, we attempt to offer what we consider to be an essential yet underutilized strategy for learning: a case-based approach from real patients and actual events. There is agreement in medicine that patients teach us a great deal; this textbook will provide the opportunity for significant learning to occur at one’s leisure. Using carefully selected cases with key teaching points, each learning opportunity (case) illustrates important clinical concepts that can expand even the most sophisticated learner’s knowledge base.

Our goal is not to offer a definitive encyclopedia of emergency medicine (if such a book were possible). Rather, we have produced a unique textbook that gives readers the chance to intelligently work through cases, rehearsing the approach they might take for a similar patient in their clinical setting, and what actions they might initiate to render outstanding patient care. Each case is arranged by organ system or special category and is included because of its educational value and interest to clinicians. These cases are not exclusive to emergency medicine practice, even though each occurred at a single high-volume, high-acuity emergency department. The variety

of cases offered should assist health care professionals in diverse fields who wish to improve their diagnostic and clinical skills. It is our hope that you, our colleagues, will benefit from our efforts. Without question, future patients will benefit from your efforts.

With great admiration and respect for our specialty and those active in its practice, we hope you enjoy *Clinical Emergency Medicine Casebook*.

Gus M. Garmel, M.D.
Joel T. Levis, M.D., Ph.D.

Acknowledgments

Joel T. Levis and Gus M. Garmel wish to express gratitude to their emergency medicine colleagues at Kaiser Santa Clara, California, for expertly caring for the patients presented in this unique case-based textbook. We appreciate the assistance of several of our specialty colleagues from our medical center, whose input helped make this textbook a far superior resource for a much broader audience. Our medical staff colleagues who cared for these patients in the hospital and after discharge are to be praised for their efforts. Sonia Y. Johnson, M.D., an emergency medicine colleague and gifted artist, offered beautiful illustrations that detail key points in several cases. Drs. Levis and Garmel are especially grateful to Amal Mattu, M.D., FACEP, FAAEM, Program Director for the Emergency Medicine Residency, Co-Program Director for the Emergency Medicine/Internal Medicine Combined Residency and Associate Professor of Emergency Medicine, University of Maryland School of Medicine. An incredibly talented author and educator himself, his enthusiasm for this project demonstrates his commitment to our specialty and his respect for us as leaders in medical education. Thank you, Amal, for your friendship, and for sharing your passion by contributing the foreword to our textbook. Finally, we appreciate the complete confidence that Marc Strauss and the staff at Cambridge University Press had in us and in our emergency medicine case-based resource.

Foreword

Sir William Osler once said, “He who studies medicine without books sails an uncharted sea, but he who studies medicine without patients does not go to sea at all.” Osler championed the importance of providing clinical correlations to the learning provided by books. In recent years, medical schools have come to recognize the importance of clinical correlations. The majority of medical schools in the United States have increased patient interactions for even first- and second-year medical students. Education has become much more problem-based, using simulated cases and case presentations. However, the authors and editors of textbooks have been much slower to adapt to this change. The majority of medical textbooks, including those in the specialty of emergency medicine, remain disease-oriented rather than patient-oriented. In other words, readers are expected to improve their practice of medicine by reading about diseases rather than by reading about patients. As a result, most textbooks occupy prominent positions on dusty bookshelves, rarely used, let alone read cover-to-cover. Fortunately, those of us who are teachers and students of emergency medicine are in luck. Two outstanding educators have stepped forward to provide a text that will not be relegated to those dusty bookshelves but will instead be relished and appreciated for its ability to help us navigate those uncharted seas that Osler spoke of many years ago.

Drs. Gus Garmel and Joel Levis have been teaching emergency medicine for many years. Both have proven track records of success in medical education. Dr. Garmel has received several prestigious national teaching awards and scholarships and has published several important textbooks, many book chapters and numerous articles. Dr. Levis has also been recognized among his peers for his scholarly activities, including teaching, authorship and research. These dedicated educators have already produced several successful academic collaborations. Congratulations to them for having the insight to produce a novel textbook that allows readers to study emergency medicine with the patient in mind.

Clinical Emergency Medicine Casebook presents the reader with real-life case presentations that cover the entire spectrum of the specialty of emergency medicine. These cases are presented in a succinct manner, with just enough information and relevant visual clues that the patient seems to magically appear from within the pages. The reader is then prompted for a diagnosis and, with a flip of the page, the clinically oriented teaching begins. The authors provide a diagnosis, followed by a concise discussion of the condition, including management plans and a set of concluding “Key Teaching Points” that reinforce the essentials of the case. Their detailed and thoughtful discussions frequently address myths, pitfalls and risk management pearls useful for readers at every level, from student through experienced

practitioner. Following the discussion and teaching points is a brief set of references and suggestions for further reading. The cases are organized in sections important to clinical practice. Within each section, the randomness of case presentations simulates the randomness of actual emergency medicine practice, forcing readers to remain focused and “stay on their toes.”

The quality of the cases selected is a particular strength of the text. Drs. Levis and Garmel have chosen cases that practicing emergency physicians are likely to see in a busy emergency department. Some cases are relatively common; for these, the authors provide critical teaching points that are often not well known. They have also included cases that are less commonly encountered in routine practice yet are equally important because of their likelihood for morbidity or mortality. For these cases, the authors focus on methods to minimize risk and improve patient outcomes. Esoteric cases have been specifically excluded in favor of maximizing practical teaching.

Another obvious strength of the book is the quality of the visuals throughout the text. The electrocardiograms, radiographs, photos and illustrations are crisp and unambiguous in their demonstration of important findings, a rare quality in most medical texts. The text is therefore incredibly useful for gaining visual diagnosis skills. Overall, students, residents, mid-level providers and experienced emergency physicians will find this book useful for improving their clinical practice and practical knowledge base.

Kudos to Drs. Levis and Garmel, who have written a special textbook. *Clinical Emergency Medicine Casebook* represents a valuable addition to the emergency medicine literature. Students and clinicians will find this unique book practical, easy to read and downright enjoyable. My sincere hope is that this text will serve as a model to other authors regarding the importance of bringing the patient to the reader.

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