

Volume 1

Advances in Trauma

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ADVANCES IN TRAUMA

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Foreword

It has often been stated that trauma is the neglected stepchild of American medicine. There is some hard evidence that indeed this may be true:

1. Each year, 140,000 Americans die of injuries. This represents two, three, or more Vietnams or Koreas annually, yet the public outcry one would expect is strangely muffled.

2. Trauma kills more Americans than all diseases combined from ages 1 to 34 and is the leading cause of death to the age of 44. The flower of our youth dies on the highways and in the taverns of America, yet there seems to be little concerted public effort to change the devastating effects of trauma.

3. Research in trauma care is minimal. Less than two cents of each federal dollar for research in health problems relates to trauma. Institutes abound for the other great killers, cancer and heart disease, but no coordinated research in trauma has been implemented.

4. Private funding of research in cancer, arthritis, heart disease, multiple sclerosis, birth defects, muscular dystrophy, and a host of other problems reflects *public* concern. Little of those funds seems to be available for study of injuries.

5. The public still considers it "accidental" when a nineteen-year-old male with two six-packs under his belt steps into a two-ton automobile without his seat belt fastened and roars off to kill himself or someone else. The same public might encourage him to go to Canada rather than let him handle an M-16.

6. The development of elementary systems of trauma care meets with resistance in most areas of the United States. Good prehospital systems with medical control are often absent. The coordination of ground and helicopter transport into a real system awaits development in most of our communities. The "nearest hospital" concept has been demonstrated to be outmoded. The trauma center that can function only as the crown jewel of the *system* is often overcome with political and economic problems.

7. *Trauma is a surgical disease.* Recent studies by the American Association for the Surgery of Trauma and statistics from the appli-

cants for certification by the American Board of Surgery indicate deficiencies in the education of surgeons in trauma. The ubiquitous nature of trauma and its devastating effect on all of society cry out for a sustained effort at all levels of medical study. The intent of *Advances in Trauma* is to fill in some of the gaps in trauma education.

The previews of *Advances in Trauma* are indeed heartening. The authors are well-known in the field of trauma, authoritative because of experience in dealing with the acutely injured in the trauma centers of this country.

The epidemiology of trauma, injury scoring and its relation to outcome, the relationship of timely care to optimal outcome, and studies of systems of care utilizing national standards are waiting for adequate funding. The effects of prolonged shock, sequential organ failure, and the ultimate killer, sepsis, all must be addressed again and again in the laboratory as well as in the intensive care units of our trauma centers.

Prevention of smallpox and polio is far better than the treatment of either. When trauma is approached with an honest effort to deal with the relationship of alcohol and drugs to injury, gun control, auto safety features, mandatory restraints, and many other preventive measures, we may see trauma deaths and tragic disabilities decline.

I applaud Dr. Maull for bringing the scientific surgical world to bear on the last great plague of society—trauma.

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Preface

In the burgeoning field of medical literature, one might wonder about the need for yet another publication seemingly focused on a limited subject. Have we not reached the saturation point beyond which redundancy describes the final product? The answer to both these questions may be found in the 1965 National Research Council–National Academy of Sciences white paper entitled “Accidental Death and Disability—The Neglected Disease of Modern Society.” Since the publication of this landmark paper, many have struggled to improve care of the injured patient. There have been many new programs, policies, and protocols; new tools with which to render immediate lifesaving trauma care; and profound changes in the evaluation and management of the injured. To some degree it has been a true “technical evolution” as trauma surgeons recruited the assistance of other specialists and learned to use new tools of the trade.

During the past 20 years, the forum for the exchange of information in trauma has not kept pace with this rapidly expanding field. Prehospital care, changing approaches to resuscitation and stabilization, transportation of the injured, and of course, the entire inhospital arena and its many facets—all are changing rapidly and will continue to do so. Our approach to trauma today differs from what was routine just a few years ago. There is no reason to expect otherwise tomorrow.

It is with pride and purpose, therefore, that the editors bring to you the first volume of *Advances in Trauma*. This annual publication is intended for surgeons, emergency physicians, and other specialists who render care to the acutely injured patient. Nurses practicing in the emergency units, intensive care units, and on the hospital wards and rehabilitation services will find much important and useful information in this and subsequent volumes of *Advances in Trauma*. Emergency medical technicians at all levels should regard this series as both a ready source of practical information as well as a reference work for understanding what happens to the patient after he or she safely enters the hospital environment. The scope of *Advances in Trauma* is intentionally broad. Trauma is a disease that transcends

specialty lines and the provision of optimal trauma care demands commitment of all levels of our health care system. Hospital administrators and other health managerial personnel may find topics of considerable interest in this and subsequent *Advances* volumes.

Volume I consists of 14 chapters and a varied range of topics all written by experts in the field. Some chapters provide the latest information on new technical advances in trauma care. Arnold Sladen describes the theory, function, and adaptability of high-frequency jet ventilation; Peter Trafton and James Herndon, the indications and use of external fixators; and Howard Champion and William Sacco, the role of injury scoring and its implications for triage and meaningful clinical research. Other authors offer the latest in the definitive care of specific injuries: Lawrence Pitts for the head injured patient; David Mulder, Hanni Shennib, and Peter Angood for the victim of chest trauma; and Roger Siebel, John Border, and Lewis Flint, Jr. provide a comprehensive approach to the difficult subject of major pelvic injuries. Salvatore Sclafani brings his expertise to bear on the rapidly changing field of diagnostic imaging; and glimpses of what may be ahead are offered by Joseph Piepmeyer and Lee Thibodeau in their in-depth look at improving outcome following spinal injury.

The support of the multisystem-injured patient often defines survival versus non-survival. Stephen Hershey, Ernest Moore, and Todd Jones provide a complete review and bring us up-to-date on what is current in nutrition; Boyd Bigelow and Michael Iannuzzi tackle a major killer in our ICUs: the adult respiratory distress syndrome; and Frank Mitchell, Bruce Hamory, and Michael Metzler review the ever-changing but critical area of surgical infections and the appropriate use of antibiotics. John Cavo, Jr., Gerald Leonard, and Abraham Tzadik provide a concise report on an uncommon but deadly injury—laryngeal trauma. Notwithstanding the controversy, William Schwab and Steven Ross, and Norman McSwain directly approach the pros and cons of exsanguination and penetrating neck trauma, respectively.

In years past, trauma was the neglected disease of modern society. In many aspects, this is no longer true. *Advances in Trauma* is a carefully considered and timely new approach to providing an annual ready reference work for summary articles on major recent advances in the broad field of trauma by those who are, themselves, contributors to progress in the field. Our publisher, Year Book Medical Publishers, Inc., is a leader in the field of annual publications. *Advances in Trauma* joins a long list of respected and authoritative journalistic efforts by Year Book to provide the medical profession with accurate and pertinent scientific information on a timely basis and in a readable format.

I would like to acknowledge the support and insight of Year Book's Richard H. Lampert in the design and development of this series. I would also like to express appreciation to my Associate Editors for their wise counsel and assistance in the selection of topics and contributors; to Nancy E. Chorpenning, Editor-in-Chief, Serial Publishing, and Diane M. Mansfield, Assistant Managing Editor, Serial Publishing, for their assistance and forbearance in bringing Volume I to completion; to Frances M. Perveiler whose staff brought order out of chaos with expert copyediting; and finally to my secretary, Sandra Branton, for her organizational attributes and for doggedly pursuing the timely submissions of our contributing authors.

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EDITOR-IN-CHIEF

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