



# What's New in the 9th Edition

The ninth edition of *International Trauma Life Support for Emergency Care Providers* has been reorganized to reflect a more functional approach to the assessment and management of the trauma patient in the prehospital environment. The book is divided into four sections.

Section I, “Essential Information,” includes Chapters 1–7. These topics are core to the care of the trauma patient and include mechanism of injury, assessment of the trauma patient, hemorrhage control, and shock and airway management. Following each didactic chapter on a clinical topic is a chapter that reviews the essential skills needed to manage the clinical situation.

Section II, “Foundational Knowledge,” includes Chapters 8–16. Topics include assessment and management of injuries to specific body areas: chest trauma, abdominal trauma, spinal injuries and spinal motion restriction, extremity trauma, and traumatic cardiac arrest. Chapters covering specific skills follow the didactic material.

The chapters in Section III, “Special Populations,” include burn patients, older adults, pediatric and pregnant patients, and patients under the influence of intoxicating substances.

The final section, available online or in text, covers other important areas: standard precautions, pain control, multi-casualty triage, trauma scoring, air medical, drowning, heat and cold injuries, advanced skills, and overview of tactical medical care.

## What's New in This Edition

The ninth edition of *International Trauma Life Support for Emergency Care Providers* has been updated to provide the emergency care provider with information on the latest and most effective approaches in the care of the trauma patient. The science of trauma is constantly evolving, and the authors, in collaboration with the research working group at ITLS, have updated the text with the latest information that is pertinent to the initial care of the trauma patient.

This is the first edition without the presence of Dr. John Campbell, FACEP, the founder of ITLS and the first Editor in Chief. Dr. Campbell passed away in 2018 after a long and valiant battle with cancer. This text strives to continue his focus on providing the emergency care provider with the knowledge and skills to render to trauma patients the best possible care.

Also new to this edition is the editorial assistance of Dr. Kyee Han, Consultant in Accident and Emergency Medicine, who has joined Dr. Alson as the Associate Editor of the text. Dr. Han has extensive experience in EMS care and education and has been a contributor to the ITLS text and course for over 20 years.

The text again conforms to the American Heart Association/International Liaison Committee of Resuscitation (AHA/ILCOR) guidelines, as well as those put forth by the Committee on Trauma of the American College of Surgeons, as well as position statements from the National Association of EMS Physicians, the Committee for Tactical Emergency Casualty Care, the American College of Emergency Physicians, and other international advisory groups.

Some of the chapter-by-chapter key components and changes are:

- The *Introduction* explains the concept of the “Golden Period” and why it remains important to what we do as emergency care providers.
- *Chapter 1* continues to emphasize scene safety and the concept that trauma care as a team effort involving many disciplines as central components. The chapter now includes a discussion of the changes in response put forth by the Hartford Consensus.
- *Chapter 2* includes minor changes in the assessment sequence based on feedback from ITLS instructors and providers. It also reinforces the importance of identifying and controlling hemorrhage at the start of the assessment. As the leader performs the assessment, he or she will delegate responses to abnormalities found in the initial assessment. This is to reinforce the rule that the leader must not interrupt the assessment to deal with problems but must delegate the needed actions to team members. This emphasizes the team concept and keeps on-scene time at a minimum. The order of presentation of the three assessments (ITLS–Primary Survey, ITLS Reassessment Exam, and ITLS Secondary Survey) has been changed. The ITLS Reassessment Exam is performed before the ITLS Secondary Survey, a more common situation, and may replace it. The chapter also mentions the use of fingerstick serum lactate levels and prehospital abdominal ultrasound exams as ways to better identify patients who may be in early shock.
- The assessment skills in *Chapter 3* reflect the changes in Chapter 2.
- *Chapter 4* includes an updated discussion of hemorrhagic shock to once again reflect the latest experience of the military during recent conflicts. A discussion of the role of tranexamic acid (TXA) in the management of hemorrhage has been added as well as the need to limit crystalloid infusion to prevent hemodilution of clotting factors. Emphasis on fluid resuscitation in the field is to restore perfusion, not normalize vital signs.

- *Chapter 5* covers the skills associated with hemorrhage control including wound packing, use of hemostatic agents, and early application of tourniquets. It also reviews intraosseous access.
- *Chapter 6* again stresses capnography as the standard for confirming and monitoring the position of the endotracheal tube as well as the best way to assess for hyperventilation or hypoventilation. The volume of air delivered with each ventilation now emphasizes the response of the patient (rise and fall of the chest), rather than a fixed volume amount.
- *Chapter 7* discusses the importance of properly positioning the patient to improve successful airway management and reinforces the key role of supraglottic airways (SGAs) in basic airway management. The chapter also includes a discussion of video intubation as a tool for difficult airways and reviews drug-assisted intubation.
- *Chapter 8* reviews the indications for needle decompression of tension pneumothorax and pericardiocentesis when such procedures are in the emergency care provider's scope of practice. It also discusses the use of ultrasound to identify such injuries and also to identify a pneumothorax.
- *Chapter 9* covers needle decompression of the chest for a tension pneumothorax, reflecting challenges faced by tactical EMS providers, as well as the use of chest seals. Three-sided taping of field-expedient chest seals is replaced with four-sided taping and use of needle decompression.
- *Chapters 11 and 12* now reflect current science and evolution of when to apply spinal motion restriction based on published guidelines. Emphasis is on the use of the backboard as a transfer device and the transport of a patient on a backboard is now discouraged. These chapters also include how to remove the patient from the backboard once placed on a transport stretcher.
- *Chapter 13* now includes pelvic fractures, reflecting the association of these injuries with concurrent abdominal injuries. The chapter also discusses application of pelvic binders and reviews the use of fingerstick serum lactate levels and the use of prehospital abdominal ultrasound exams.
- *Chapter 14* reviews the management of bleeding from extremity injuries, including a discussion of hemostatic agents.
- *Chapter 15* reviews procedures for use of a tourniquet and use of hemostatic agents and includes a discussion of pelvic binders for pelvic fractures.
- *Chapter 16* now includes an algorithm for management of traumatic cardiac arrest. Again, the chapter also reviews indications for termination of resuscitation for the trauma patient in the prehospital setting.
- *Chapter 19* now includes a discussion of the ways in which advancing age increases mortality and identifies it as an independent risk factor for needing trauma center care.
- **Appendices:** Online at Student Resources Page ([www.pearsonhighered.com/bradyresources](http://www.pearsonhighered.com/bradyresources)) and/or in-text—Added a section on pain control in the prehospital setting
  - Updated section on drowning and hypothermia (online)
  - Bloodborne pathogens has been moved to online—
  - Tactical EMS has been revised to reflect current thinking within the Hartford Consensus (online)
  - Additional skills includes surgical cricothyrotomy (online)

- Videos (online) demonstrating
  - Cricothyrotomy: needle and surgical
  - Wound packing
  - Tourniquet application
  - Chest seal application
  - IO insertion—electric and manual
  - Needle decompression of tension pneumothorax
  - Supraglottic airway insertion
  - Log roll
  - Scoop stretcher

## Note on Skills and Terminology

Prehospital personnel around the world vary in their permitted scope of practice, based on local regulations. This textbook may at times describe procedures that are out-side the permitted scope of practice. Completion of an ITLS course should not be construed as permission for an emergency care provider to exceed their permitted scope of practice. Ultimately, the final arbiter of what the emergency care provider is permitted to do is determined by the physician medical director (advisor) for the EMS system.

The text has attempted to be gender neutral in describing personnel. In places where it is not, it should not be construed as diminishing the ability of any one person to perform the skills needed to provide emergency care.

Throughout the world, there are many terms used to describe those who provide emergency care to the victims of injury and illness. In this text, we use emergency care provider to describe such individuals. When used, the terms “first responder” and “emergency medical technician (EMT)” refer to personnel trained at a basic life support level, while “paramedic” refers to personnel trained at an advanced life support level

As has been said before, EMS constantly undergoes changes. Things that were only ideas a couple of years ago are now in common use. This change in technology and resources will only continue to grow. As this book goes to press, we note the markedly increasing use of point-of-care ultrasound to help identify life threatening injuries and help with determination of destination for trauma patients. EMS agencies and helicopter emergency medical services are beginning to carry blood for transfusion when dealing with a patient in shock due to blood loss. Retrograde endovascular balloon occlusion of the aorta (REBOA), which acts like cross clamping of the aorta during a thoracotomy, is showing promise as an intervention for patients with massive internal hemorrhage. At this point however, civilian field use is limited to those systems where there is an EMS physician on scene who is trained in use of the device. At this time, ITLS has not included discussion of REBOA in the text due to the limited availability of this device to EMS personnel.