Handbook of
Polytrauma Care
and Rehabilitation

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and Rehabilitation

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Preface

With advancements in body armor technology and battlefield trauma care, the health care system is faced with an increasing number of combat survivors who have sustained a combination of multiple physical injuries and psychological trauma. In a 2005 directive, the Veterans Health Administration (VHA) coined the term polytrauma to describe “injury to the brain in addition to other body parts or systems resulting in physical, cognitive, psychological, or psychosocial impairments and functional disability” (Department of Veterans Affairs, Veterans Health Administration Directive, 2005) (1).

There are many textbooks on critical care and traumatic brain injury (TBI), as well as physical medicine and rehabilitation (PM&R), which health professionals have relied on to take care of this growing cohort of military service members and veterans with polytrauma. In the context of clinical care and effective teaching, the authors felt the need to develop a practical, pocket-sized handbook that focuses on polytrauma care and rehabilitation. This handbook was written in a reader-friendly style, with succinct text and flow charts to highlight the key concepts.
While the extent of recovery from TBI often guides the overall rehabilitation process, other comorbidities are equally important. The individual chapters focus on common conditions that polytrauma patients present with, including medical/physical issues (aphasia, burns, contractures, dysphagia, focal weakness, headache, hearing dysfunction, neglect, neuroendocrine dysfunction, neurogenic bowel/bladder, postconcussive syndrome, posttraumatic seizure, pressure ulcers, sexual dysfunction, spasticity, visual dysfunction) and psychological issues, such as depression, posttraumatic stress disorder (PTSD). Vocational issues (ability to return to work) are also discussed. The goals are to (1) summarize the most frequent problems encountered by these patients and (2) offer a roadmap for clinicians regarding how to initiate and navigate through the continuum of care in order to achieve the best possible outcome.

The Defense and Veterans Brain Injury Center (DVBIC) has been working collaboratively with the Department of Veterans Affairs (VA) and the Department of Defense (DOD) to provide continuing education for health professionals in the care of patients with polytrauma. The authors would like to thank the DVBIC leadership and staff for their continued dedication to improve the diagnosis and treatment of our wounded warriors.

REFERENCE

Polytrauma Basics
1. Conservative estimates of the incidence for traumatic brain injury (TBI) range from 1.5 to 3.0 million annually, with 80%–95% being mild in severity (ie, a concussion). While most of these injuries will have progressive recovery in the months to years after injury with excellent long-term functional outcomes, the impact of a TBI alone is usually sufficient to significantly challenge the injured individual, their family and the clinicians providing their care. Even injuries that are initially mild in severity can present with marked physical, cognitive, and behavioral dysfunction that requires considerable time and clinical expertise to recover. When a significant secondary injury (eg, amputation, burn, spinal cord injury, fracture) or medical/psychological disorder (eg, posttraumatic stress disorder, depression, generalized anxiety disorder, substance use) occurs, the
resulting “polytrauma” can have profound effects that greatly compound that seen with a TBI alone. Similarly, individuals who incur repeated TBIs (even mild TBIs) within a relatively short period of time (eg, less than 1 year apart) can have both short- and long-term difficulties that are significantly worse than would have been expected.

2. In military conflict, polytrauma is far more common than civilian injury, although the multiple injuries of polytrauma are seen in both settings. The recent conflicts in Afghanistan and Iraq generated TBIs in nearly 10% of all combat-deployed service members and polytrauma was seen in more than 90% of these individuals with TBI. Fortunately, a rapid recognition of this injury type and the extent of functional deficits that could accompany such a complex injury allowed for the development of a comprehensive polytrauma care system in the military and Veteran Affairs health care system.

3. The hallmark of care for polytrauma (as with all but the least severe TBIs) is a patient-centered, interdisciplinary approach that works with the injured individual and the family to address all aspects of the injury as they impact the person’s life. While the acute assessment and management of most traumatic injuries are well circumscribed and coordinated in both the military and civilian trauma systems, the initial period of recovery (“rehabilitation”) that focuses on symptom management and a return to home independence is less standardized and consistently managed. Even less attention is paid to the long-term recovery of community reintegration, a return to productivity (work, school, leisure), and a focus on overall wellness.
4. While optimal care for polytrauma is delivered by compassionate, experienced, interdisciplinary teams of specialty clinicians with a holistic approach and an emphasis on patient engagement, the key to success lies in a thorough understanding of the types of difficulties seen and the effective means of managing them. Unfortunately, the research evidence supporting much of polytrauma rehabilitation is limited, thus consensus and expert opinion remain the state of the art for care.