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Nota di contenuto	Fluid Resuscitation -- Copyright -- Reviewers -- Preface -- Photographs -- Contents -- Executive Summary -- 1 Introduction -- HISTORY OF FLUID RESUSCITATION -- ORIGIN, SCOPE AND ORGANIZATION OF THE REPORT -- 2 Pathophysiology of Acute Hemorrhagic Shock -- DEFINITIONS OF HEMORRHAGIC SHOCK -- Organ Involvement in Shock -- PHYSIOLOGIC RESPONSES TO HEMORRHAGE -- Shock Decompensation -- Cellular Responses to Shock -- Altered Energy Metabolism, Ion Compartmentalization, Lipid Metabolism, and Radical Production and Metabolism -- Alterations in Macrophage Function -- Surgical Bleeding Disorders -- Fundamental

Alterations in Transcription and Translation: Apoptosis -- Alterations in Secretion of and Cellular Responsiveness to Growth Factors -- HEMATOLOGIC ABNORMALITIES ASSOCIATED WITH SHOCK AND RESUSCITATION -- Transfusion of the Patient in Shock -- Massive Transfusion -- Risks of Blood Transfusion -- Blood Substitutes and Alternatives to Transfusion -- Disseminated Intravascular Coagulation -- CONCLUSIONS AND RECOMMENDATIONS -- 3 Experience With and Complications of Fluid Resuscitation -- OVERVIEW OF COLLOID AND CRYSTALLOID RESUSCITATION -- COMPLICATIONS OF RESUSCITATION IN GENERAL -- Effects of Fluid Resuscitation on Coagulation -- Oxygen Toxicity Associated with Resuscitation -- Reperfusion-Mediated Injury -- Oxygen-Derived Free Radicals -- Nitric Oxide -- Activated Neutrophils -- Complications of Late Resuscitation of Shock -- COMPLICATIONS OF COLLOID RESUSCITATION -- COMPLICATIONS OF CRYSTALLOID RESUSCITATION -- Effects of Crystalloid Resuscitation on Immune Function -- Effects of Crystalloid Resuscitation on Cytokine Response -- Adverse Effects of Large-Volume Crystalloid Resuscitation -- Adverse Effects of Lactated Ringer's Solution -- Safety and Efficacy of Hypertonic Saline Solutions -- ALTERNATIVE RESUSCITATION APPROACHES -- SUMMARY. CONCLUSIONS AND RECOMMENDATIONS -- 4 Novel Approaches to Treatment of Shock -- PREVENTION -- Oxygen Therapeutics -- First-, Second-, and Third-Generation Therapeutics -- Perfluorochemicals -- Liposomes -- Other Novel Approaches -- INTERVENTION -- Targets for Intervention -- Therapies for Reperfusion-Mediated Free-Radical Damage -- Antioxidant or Scavenging Strategies -- Iron Chelation -- Inhibition of Polymorphonuclear Neutrophil Adherence and Activation -- Nitric Oxide Inhibition -- Novel Strategies for Scavenging Free Radicals -- Hormonal Influences -- Diagnostic Instrumentation -- TOLERANCE -- RECOMMENDATIONS -- 5 Protocols of Care at the Site of Injury -- THE COMBAT ENVIRONMENT -- Expected Condition of Combatant on the Battlefield -- Limits of Battlefield Care for the Injured Combatant -- Resuscitation Needs of the Injured Combatant on the Battlefield -- Immediate Versus Delayed Fluid Resuscitation -- Current Protocols -- CONCLUSIONS AND RECOMMENDATIONS -- Training First Responders -- Available Approaches for Treatment of Injury -- Hemorrhage -- Airway and Breathing -- Additional Considerations -- Prompt Aeromedical Evacuation -- Monitoring -- 6 Future Directions -- ANIMAL MODELS -- Effects of Extent of Hypotension and Rates of Hemorrhage on Immune Function in Mouse Models -- Swine Models of Combined Hemorrhage and Injury -- Value of Animal Models -- Technical Models -- Role of Anesthesia -- CLINICAL TRIALS -- Role of Clinical Trials in Development of Therapies -- Endpoints and Indications -- Evaluation of Resuscitation Protocols -- Unique Problems of Clinical Trials of Trauma -- Heterogeneity of Subject Population -- Informed Consent -- Applicability of Civilian Clinical Data to Military Needs -- Clinical Research and Clinical Trials in Trauma Centers -- CONCLUSIONS AND RECOMMENDATIONS -- References -- Appendixes -- A Acknowledgments. Conference Speakers -- Conference Attendees -- Other Contributors -- B Acronyms -- C Conference Agenda -- D Committee and Staff Biographies -- Committee Biographies -- Iom Project Staff -- Index.

Sommario/riassunto

The challenges associated with immediate resuscitation of the wounded soldier are daunting and often unappreciated by civilian medical personnel. When you consider that field medics frequently work in less than friendly field conditions, exposed to the elements, while carrying only limited medical gear, potentially under fire, you get a sense for the extraordinary obstacles that must be overcome. Which technologies are

best suited to this situation? What are the most promising research directions?
