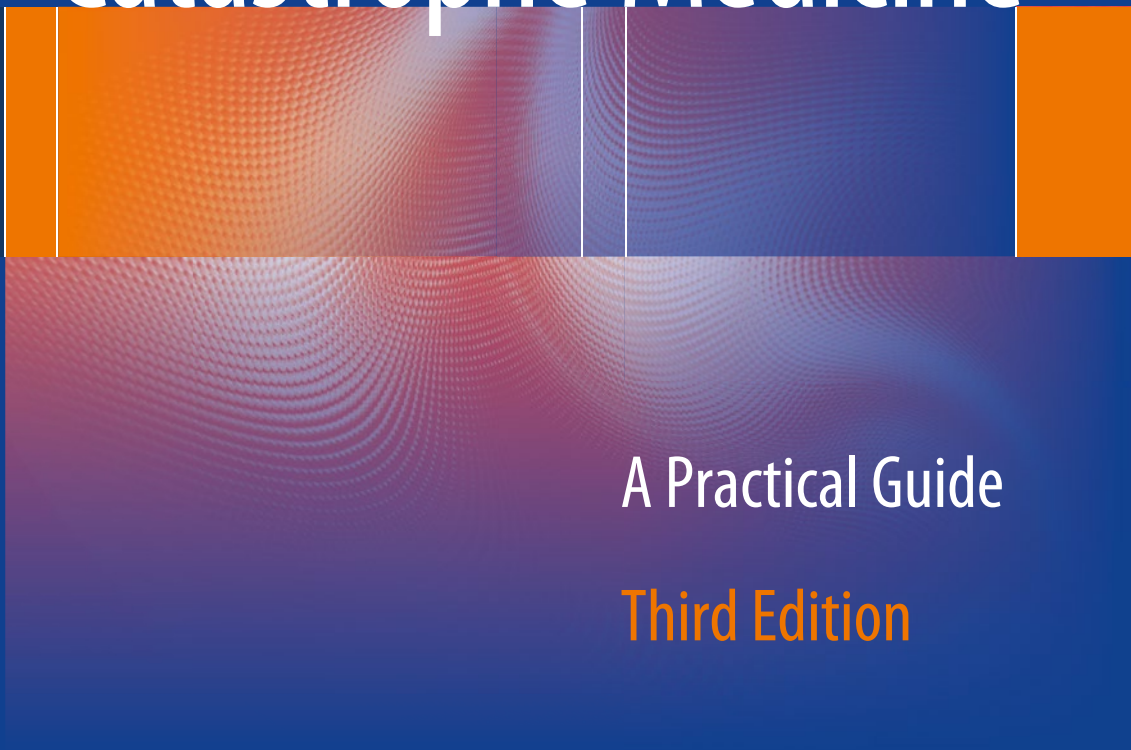
Ryan · Hopperus Buma · Beadling · Mozumder
Nott · Rich · Henny · MacGarty *Editors*

Conflict and Catastrophe Medicine



A Practical Guide

Third Edition

Springer

Conflict and Catastrophe Medicine

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Third Edition

Foreword by Larry W. Laughlin

Springer

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To the late Colonel David Graham Burris, MD, FACS, DMCC, who died in 2010: A surgeon, soldier and scientist

We, the editors, dedicate this third edition to our friend and colleague Dr. David Burris who died in 2010. David was professor and chairman at Norman M. Rich Department of Surgery at USUHS. He was co-editor of the second edition of this book and was in the forefront in the development of the Diploma in the Medical Care of Catastrophes (DMCC). Our consulting editor, Dr. Norman Rich, has provided us with his very personal and moving tribute to David, read at his memorial service, and asked if we might include it as our collective tribute. It is a fitting and moving resume of David's life, and an edited version is reproduced herewith.


Baghdad, Iraq
August 2003

David Graham Burris (1955–2010)
Memorial Service Church of Christ at Manor Woods
Remarks by Norman M. Rich
11 August 2010

Having known David for the past 32 years, I knew him, initially, as a medical student. At least two of his classmates from 1982 are with us today, Steve Hetz and his wife, Mary, from El Paso, Texas, and Chris Kaufmann and his wife, Jenny, from Johnson City, Tennessee. We developed an early bond because of our mutual Arizona heritage and because of his early experience in Phoenix as an operating room technician. Although we attended rival Arizona universities, we did have the opportunity to eat tacos together on the Sonoran Desert at a gas station between Tempe and Tucson to put those rivalries in proper perspective. As a fourth-year medical student, David wrote to me 29 years ago about his rotation in surgery at Brooke Army Medical Center in San Antonio, Texas, stating, "I enjoyed an opportunity to speak with Dr. (Dan) Rosenthal who, as always, combined philosophy and wit in discussing his rigorous academic program". Dr. Rosenthal, who is here with us today, has been David's faculty representative at Brooke since David became chairman of surgery. Following graduation from the USUHS in 1982, David rose through the military ranks from second lieutenant to Colonel and through the academic ranks from corresponding member of surgery to professor and chairman. I enjoyed periodic exchanges with David during his overseas assignments and

deployments as well as during his training at William Beaumont and Walter Reed Army Medical Centers and the Washington Hospital Center. The last 16 years on active duty, David was assigned to the Department of Surgery at USUHS with deployments to Honduras and Iraq. In October 2002, David and I reversed roles and he became my chairman and I became his deputy. We agreed that he was the exciting future and I was the experienced past. We enjoyed a particularly rewarding personal and professional relationship. When David informed me of his diagnosis in late December 2007, he said,
"I withheld this from you for a few days because I did not want to ruin your holiday with your family. Now, you will have to take care of me when I was supposed to take care of you!" We all know that this is an example of David's dedication to caring for others. David was recognised widely, both nationally and internationally, for his compassionate concern and care for the battlefield wounded. His contributions in combat casualty care research have been very important and resulted in his receiving the Raymond H. Alexander Award from the Eastern Association for the Surgery of Trauma, the Baron Dominique Jean Larrey Military Surgeons Award for Excellence from the USU Surgical Associates, the Army Surgeon General's "A" Proficiency Designator in Surgery and numerous military awards including the Defense Meritorious Service Medal. Early this summer, David received singular recognition from the Army Surgeon General, LTG Eric Schoomaker, who

presented him with the Legion of Merit at USUHS, and this was particularly meaningful to David. David was an established principle investigator, working in recent years in telepresence surgery, far forward treatment of hemorrhagic shock and induced hypothermic arrest in traumatic shock. David's contributions to the Refereed Medical and Surgical Literature will maintain his legacy for many years in the future. This is highlighted by remarks from Dr. Ari Leppäniemi from Helsinki, Finland, who worked with David in our research laboratories and wrote, "During our time together at USUHS in the mid-1990s, we did many, many experiments together… and David had a special skill to come up with great ideas in a way that others did not think of, until he said it, then we all said, 'Ah! Of course.' Our work on fluid resuscitation and hemorrhagic shock, for example, gets cited very often". Because of David's valuable contributions, the surgical research laboratories will be named the David G. Burris Surgical Research Laboratories. With the assistance of Mrs. Mary Dix, then USUHS vice president, David redesigned and upgraded our surgical research laboratories. David and I shared interesting military vignettes, including Walter Reed's contributions in territorial Arizona, Henry Shrapnel and his shell, and Halsted-Holman contributions to vascular trauma, published in this month's Journal of Vascular Surgery. David was a proud Fellow of the American College of Surgeons, and he served as chairman of the Military Region, committed to the Advanced Trauma Life Support

Courses taught annually at USUHS and in many military locations around the world. He received the 2009 Advanced Trauma Life Support Meritorious Service Award for his efforts. To show the respect held widely by his peers, Dr. David Hoyt as executive director of the American College of Surgeons and Dr. Michael Rotondo as chairman of the Committee on Trauma of the American College of Surgeons plan to be with us today. Among many other societies, David was also a member of the American Association for the Surgery of Trauma, the Eastern Association for the Surgery of Trauma, the Society of Critical Care Medicine, the Shock Society, the Panamerican Trauma Society, the Christian Medical and Dental Associations, USU Surgical Associates, the Halsted Society, the Society of University Surgeons and the American Surgical Association. The important point to emphasise for all of you is that David's membership in both the Society of University of Surgeons and the American Surgical Association while on active duty is very unique, and there are very few who have achieved singular and academic recognition from peers and from senior civilian academic surgeons. He served in the Department of Defense, Surgical Committee, on the War Surgery Handbook Editorial Board and as president of the Ambroise Paré International Military Surgery Forum. David served his alma mater on all of the important committees, always providing constructive and consensus building contributions.
One of our previous highly respected senior surgeons with a World War II British

experience in North Africa and Southern Europe, Charles G. Rob, encouraged all of us to write our own concise one-page autobiographical sketch. We have that from David, providing reassurance that we know what he thought was important to him in his life. The following are a few selected remarks from others around the world who admired and respected David Burris:

Colonel Peter Becker of the German Army, currently in Afghanistan as hospital commander of the combined German-American Hospital, has emphasised his long friendship with David Burris, which I know David cherished. David made a scientific presentation in German to the German Military Medical Society a few years ago, which was greatly appreciater by our llies.

Dr. Donald Jenkins, USUHS Class of 1988,director of trauma at the Mayo Clinic in Rochester, Minnesota, has written that they have laid an engraved brick dedicated to David's memory in the Walk of Remembrance at the Veterans' Memorial in Rochester. LTC Niten Singh, Class of 1997, has emphasised how grateful he is to Professor Burris for his surgical teaching as Dr. Singh has accepted the baton from Dr. Burris to provide leadership in military surgery.

In addition to his compassionate support of combat casualties through his basic research and clinical contributions, David was committed to teaching those who followed him. He always enjoyed his analogy of the military academy at West Point's "Long Gray Line" to the "Long Red Line" in military medicine and surgery. His legacy

will endure for those whom he helped train. Under his leadership, we had 52 of 163 members of the Class of 2010 express an interest in a surgical career, the highest number and the highest percentage in the USUHS experience to date. General Douglas McArthur in his last West Point address stated, "Old soldiers never die – they just fade away". David was too young to die and he was our future. Nevertheless, we have all benefitted from his commitment, his faith, his friendship, his leadership by example and his love. His legacy will endure.

Foreword to the Third Edition

When the first edition of *Conflict and Catastrophe Medicine*: *A Practical Guide* was published over a decade ago, it was in reply to a growing realisation that those responding to provide disaster relief needed much more than technical competency in their primary field – health and medicine in our case. Organising, planning, executing and sometimes surviving missions to austere and on occasion hostile environments requires knowledge and skills not acquired during traditional education and practice. The second edition made significant additions and improvements. Our rapidly changing world, increasingly frequent conflicts, and devastating catastrophes are driving forces for this third edition. It provides an extremely valuable updated and expanded source of information for those preparing to participate in disaster response.

This text is appropriate for anyone – civilian or military, experienced or novice – wanting to increase his/her competency. One primary purpose for this text is to prepare candidates for the examination for the Diploma in the Medical Care of Catastrophes, under the auspices of the Society of Apothecaries of London. This widely recognized credential contributes to the global effort to "professionalize" the volunteers responding to natural and man-made disasters, as discussed in Chap. 54.

I am proud that our university, the Uniformed Services University of the Health Sciences, is one of three international sponsors for the DMCC, including the UK, the Netherlands, and the USA. The editors of this edition, under the leadership of Professors Jim Ryan and Norman Rich, reflect strong international representation, which is expanded further by the diverse group of experts contributing as authors. As you go through the Table of Contents, I am confident you will find many chapters relevant to your interests and needs. Our hope is that this book is useful and helpful as you act to reduce human suffering and loss of life.

Larry W. Laughlin, MD, PhD
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Bethesda, MD, USA

Preface to the Third Edition

We are writing this preface in mid-January 2013. Our media are reporting on the latest hostage crisis – on this occasion an unfolding tragedy in an oil and gas facility in eastern Algeria close to the Libyan border. Terrorists have taken hundreds of workers hostage – many have already been killed. A new front in global insurgency seems also to have opened in Mali, with French forces supporting the government in that Saharan state. Both of these events may be linked to the collapse of the Gaddafi regime in Libya. In the past years, Iraq has been invaded, Saddam Hussein deposed and a democratically elected Government installed. Yet, Iraq remains hostile and unstable and ever closer to Iran, which is developing a nuclear capability and threatening to erase Israel from the map. The USA, the UK, and many other Western nations have spent 10 years in Afghanistan in an attempt to destroy the Al Qaeda network and the Taliban and to support the development of the country and ensure a stable government. They will leave Afghanistan in 2015 but with the defeat of the Taliban at best uncertain. The brutal civil war in Syria is perhaps the world's most acute humanitarian crisis with numerous displaced people facing a harsh winter and intense suffering widespread. The eastern area of the Democratic Republic of Congo remains violent and highly unstable with huge mortality from violence and instability. There are other aspects of conflict which concern humanitarians. These include routine violence against women, the proliferation of narcotics, transnational criminal activity, human trafficking, ethnic cleansing and the widespread use of kidnapped children as child soldiers.

Natural disasters are of increasing concern. Disasters have been defined as "a situation or event which overwhelms local capacity, necessitating a request to a national or international level for external assistance" (Centre for Research on the Epidemiology of Disasters – CRED). As we head into the second decade of the twenty-first century, the numbers and scale of disasters facing the world's population are increasing.

The population of the world is growing fast, and ever-increasing numbers of people are forced to live in marginal areas. These may be areas where growing food is difficult due to climate, water shortages, or environment, or they may be areas that are particularly vulnerable to the impacts of sudden impact natural disasters.

Already more than 90 % of those who die in natural disasters live in the developing world, and the economic impact of such disasters is far more serious in deprived countries than in the developed world.

Political and religious extremism is resulting in high levels of social instability in many of those countries that are least able to cope with such situations, as well as in parts of the world that are better developed. This greatly increases the risk of the development of complex emergencies. The UN Inter-Agency Standing Committee defines this type of disaster as "a humanitarian crisis in a country, region, or society where there is total or considerable breakdown of authority resulting from internal or external conflict, and which requires an international response that goes beyond the mandate or capacity of any single agency and/or the on-going United Nations country program".

Complex emergencies are characterised by extensive violence with large-scale injury and loss of life, extensive damage to societies and their economies, massive population displacement, and mass famine or food shortage. Large-scale humanitarian assistance is needed, but this may be hindered or prevented by military, religious, or political constraints, and significant security risks may face the humanitarian aid workers responding to the crisis.

It seems then that wars, conflicts and humanitarian calamities will be exercising our thoughts for the coming decades at least. The world too has become a dangerous place for humanitarian volunteers who face kidnap and murder by extremists and criminals with little sympathy for humanitarian ideals. The term "failed states" has entered the language of diplomacy, anthropology, politics and the media.

When we edited the first edition in 2002, we knew much of this – what we did not know was how the problem would grow and threaten to engulf us. Never has there been a greater need to prepare and plan for humanitarian interventions in a wide variety of hostile environments. Never has there been a greater need for properly trained humanitarians to work in these challenging environments.

We hope that the third edition of this textbook will play a role in this preparation. This new edition has been configured to tie in with other initiatives, in particular the Diploma of the Medical Care of Catastrophes (DMCC) under the auspices of the Society of Apothecaries of London, which is now examined in the UK, the USA and the Netherlands, and has been evolving over almost 20 years. The editors are examiners for the DMCC and have been involved in developing a new core curriculum and putting together a course of instruction in preparation for the exam. It is intended that this edition should become the course textbook.

It is also aimed at an increasing body of medical students who recognise the need to include this subject into undergraduate medical studies. Many medical schools in the UK now encourage medical students to interrupt their studies to present for an intercalated Bachelor of Science (iBSc) degree, normally after completing the basic medical science component of medical school training. In St George's University of London, intercalating students may choose a conflict and catastrophe module. The third edition provides a supporting textbook for this module.

As we stated in the preface to the first edition, we hope this work will educate and inform those healthcare workers who now, or in the future, deploy on humanitarian assistance operations, whether civil or military, and in doing so help to improve the standards of healthcare provided to those in desperate need.

London, UK — James M. Ryan
Rotterdam, The Netherlands — Adriaan P.C.C. Hopperus Buma
Bethesda, MD, USA — Charles W. Beadling
Lichfield, UK — Aroop Mozumder
London, UK — David M. Nott

Preface to the Second Edition

Six years have passed since the first edition of *Conflict and Catastrophe Medicine* was published. Those 6 years have not been peaceful: conflict has continued in Iraq, Afghanistan, Africa, and the Middle East.

Terrorist attacks have continued around the world, and London has had its first experience of suicide bombings.

The landscape for humanitarian work is dangerous and challenging.

The aim of this second edition is in line with the first edition: to provide an entry-level resource for people working (or considering work) in a hostile environment.

Contributors with real hard-won practical experience have been invited to share their views, and they do this with raw honesty in a variety of writing styles.

The second edition of *Conflict and Catastrophe Medicine* has benefited from these contributions, and we hope our prospective readers will do so as well.

The book editors are donating their royalties from this book to the charity "Help for Heroes".

Rotterdam, The Netherlands — Adriaan P.C.C. Hopperus Buma
Bethesda, MD, USA — David G. Burris
Manchester, UK — Alan Hawley
London, UK — James M. Ryan
Birmingham, UK — Peter F. Mahoney

Preface to the First Edition

This work is intended as an *entry-level* text aimed at medical, nursing, and paramedical staff undertaking work in a hostile environment.

It covers aid across a spectrum of hostile environments encompassing natural disasters, man-made disasters, and conflict in all its forms and extending to cover remote areas and austere industrial settings. The common thread in these situations is an increased risk of injury or death, which extends to both the local population and the expatriate workers.

Providing care in these environments needs an understanding of the situation and how this constricts and limits what can be achieved. This understanding bridges the fields of medicine, politics economics, history, and international relations.

Many humanitarian and equivalent organisations have long recognized the difficulties which can be experienced, and run a wide variety of courses, workshops, and exercises to broaden the skill and knowledge of the worker.

We hope this work will help in these endeavours and provide a link to the more specialist texts and training available.

It should give the prospective volunteer a feel for the depth and breadth of the subject and make volunteers realise the importance of external factors which impact upon medical care. It should also heighten their respect and understanding of other professionals in the field, such as engineers and logisticians.

Finally, this work should educate and inform those who now, or in the future, volunteer to deploy into an environment of conflict or austerity.

London, UK — James M. Ryan
Birmingham, UK — Peter F. Mahoney
Middlesborough, UK — Ian Greaves
Southampton, USA — Gavin Bowyer

Contents

Part VI Resources

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