

## **Wilderness and Rescue Medicine**

**By Jeffrey Isaac and David Johnson**

### **Preface**

For nearly 30 years, Wilderness Medical Associates International has been teaching practical medicine to people who work in remote and difficult environments. Our core curriculum is designed to provide the skills and insight needed to improvise, adapt, and exercise reasonable judgment at any level of medical training. Although our roots are in the mountains, deserts, and oceans as our name implies, our training philosophy has proven effective in any setting where access to definitive care is delayed or impossible. The term *wilderness perspective* applies just as well to a city whose infrastructure has been destroyed as to a fishing boat off the coast of Alaska.

Throughout its history WMA has promoted the idea that pre-hospital practitioners can be trained to make a diagnosis and develop a treatment plan appropriate to whatever challenges they face. The company's founder, Dr. Peter Goth, added spine assessment criteria, the treatment of anaphylaxis, long term wound care and other medical protocols to the first aid training of Outward Bound instructors and wilderness guides more than 30 years ago. More importantly, he insisted that his students understand the principles behind the procedures. This met with considerable resistance from the mainstream medical community, but was so much more effective than anything previously offered that the program flourished anyway.

Today, wilderness medical training is ubiquitous worldwide, and many of the protocols and training procedures are being adopted by the mainstream emergency medical services. They are learning, as we have, that there is no place in field medicine for unreasonable restrictions on the practical application of medical judgment. This is nowhere more apparent than in a difficult backcountry rescue or the chaos of a mass disaster. We need to give our pre-hospital practitioners the ability to think critically and function independently when the medical system is disrupted or unavailable.

Inevitably, we have eliminated some sacred cows and challenged some long-standing assumptions. Although randomized, double-blinded, placebo controlled trials may be the gold standard for evidence-based medicine, they are few and far between for practice in the field. Some studies purporting to comprehensively speak for wilderness medicine are too narrowly focused to have much application to the broad range of environments we seek to address. In addition, some of the better-known sources focus on the hospital treatment of wilderness-related problems but do not pay sufficient attention to the realities of solving them in the field. This is a difficult environment in which to seek scientific validation.

We do not deviate from the mainstream arbitrarily, but are not afraid to do so when necessary. Our opinions and positions are based on careful analysis of the available science and considerable clinical experience, measured against the reality of providing medical care in difficult and dangerous places. We are not trying to change mainstream medicine; we are trying to provide some guidance to those working well outside of it.

We have relied on sources that we believe to be useful enough to at least hint at what may or may not work. This is the interesting and exciting process of extrapolating good science to real field medicine. In doing so, we have applied the collective wisdom of hundreds of instructors, rescue personnel, and medical practitioners. We also owe our grounding in reality, in part, to the contributions and feedback from many of our tens of thousands of graduates.

Nevertheless, we do not claim to be the final word or the absolute authority on anything. This is a wide-open and rapidly expanding field with a variety of opinions offered by many wise and experienced people. We will continue to offer our own perspective while remaining alert, open, and grateful for the opportunity to learn from others.

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Wilderness Medical Associates International

## Introduction

First and foremost, this book is designed to be a clear, concise, and user-friendly guide to wilderness and rescue medicine. In contrast to current trends in some EMS education, we have remained focused on knowledge and technique that is practical and useful for the practitioner in the field. We have resisted the temptation to expand and dilute the message with extraneous information and diagnostic criteria that have no practical field application.

This sixth edition offers updated material that reflects our knowledge, experience, and the medical literature as of this writing. The content will be appreciated by practitioners at all levels of training but is aimed at the Wilderness First Responder and the Wilderness Emergency Medical Technician.

*Wilderness and Rescue Medicine* is more practical than encyclopedic and is written to be read from front to back. The general principles described in the beginning will enhance your appreciation of the systems and problems discussed later. Your initial understanding of the body systems will guide the process of developing appropriate assessments and plans, and make it easier to gain experience with more complex problems.

Although this text can be understood as a stand-alone resource, it is best accompanied by the *WMA Workbook*, *Class Notes*, and *Field Guide*. The case studies that follow some chapters in the text and those in the workbook provide a summary and review of the important principles in a realistic setting, much like the practical sessions during a course. Because *Wilderness and Rescue Medicine* is not designed to be an emergency quick-reference or to be carried in your first aid kit, we offer the *Wilderness Medical Associates Field Guide* as a smaller, more weather resistant summary of the important information.

Within these publications, you will find certain procedures identified as Wilderness Protocols that define a scope of practice for trained and authorized pre-hospital practitioners. These protocols address specific situations in wilderness and rescue medicine where the procedure clearly exceeds the scope of traditional first aid or emergency medical services practice. Wilderness Medical Associates students are trained and certified in these techniques, but the authorization to use them comes from the patient's informed consent and, where relevant, the practitioner's licensing agency.

The Wilderness Protocols are freely offered for modification and use for the wilderness and rescue setting. Each carries the acknowledgement that the practitioner is appropriately trained and that the protocol is employed only in situations where transport to definitive care would result in unacceptable risk to the patient or rescuers, or where field treatment offers a clear benefit in improved outcome and diminished pain. The Wilderness Protocols require a clear diagnosis and a specific action.

Not all situations, however, can be so clearly addressed. As you train for medical care in the unconventional setting, you must be prepared to do some unconventional thinking. Mainstream medical practice may have little relevance to you as the skipper of small boat hundreds of miles from shore or as the leader of rescue team on a high mountain ledge. There are some cases, for example, where applying conventional spine stabilization protocols will substantially increase rather than decrease the risk to the patient. For some of you, especially those with years of emergency medical services training, this perspective may be difficult to adopt.

Within the text and presentations, these issues take the form of wilderness perspective notes and risk versus benefit discussions. You know that the ideal treatment for traumatic brain injury is evacuation to a hospital, but what if the effort will be exceedingly hazardous? How do you balance the risk versus the potential benefit? These types of decisions are not easy, but they *are* necessary.

This text and the courses it serves are designed to provide you with some background with which to make tough choices and to provide the most effective medical care possible in unique and challenging circumstances. In addition to understanding principles and learning procedures, you will need to keep an open mind. The ability to innovate and adapt will serve you far better than trying to memorize a protocol for every circumstance.

Finally, if you are new to the study of medicine, you may feel overwhelmed by abbreviations, mnemonics and acronyms. Even experienced practitioners are occasionally baffled by their colleague's documentation shortcuts. To help with some of this, we have included a glossary and list of abbreviations in the back of the text. The bibliography and additional resources and updates can be found online at [www.wildernessandrescuemedicine.com](http://www.wildernessandrescuemedicine.com).

All of us at Wilderness Medical Associates hope that you find *Wilderness and Rescue Medicine* interesting, relevant, and useful. We plan to update and revise this text and our curriculum regularly, and we welcome and encourage your comments and critique. The authors can be reached through Wilderness Medical Associates International, 51 Baxter Blvd., Portland, ME USA 04101. E-mail: [office@wildmed.com](mailto:office@wildmed.com). Web: [www.wildmed.com](http://www.wildmed.com).