

OFF-GRID MEDICAL CARE



The Comprehensive Guide for Wilderness Rescuers & Medical Professionals



DR. MOUINE KHALIL ERRAHMANE AMEUR

OFF-GRID MEDICAL CARE

THE COMPLETE GUIDE TO REMOTE FIRST AID &
EMERGENCY MEDICINE: FROM CLINICAL
PATHOPHYSIOLOGY TO FIELD IMPROVISATION FOR
MEDICS AND RESCUERS

MOUINE KHALIL ERRAHMANE AMEUR

PREFACE

The transition from the urban frontcountry to the wilderness is more than a change in geography; it is a fundamental shift in the laws of survival. In the city, emergency medicine is governed by the "Golden Hour"—the narrow window where a patient must reach a surgical suite to survive catastrophic trauma. In that world, the medic is a conduit, a stabilizer whose primary goal is a ten-minute transport to a higher echelon of care.

But when you cross the threshold into the off-grid environment, the Golden Hour evaporates. It is replaced by the daunting reality of Prolonged Field Care (PFC). Here, the clock does not tick in minutes, but in hours, days, and weather cycles. In the wilderness, you are not just the first responder; you are the intensive care unit, the wound specialist, and the psychological anchor. You are, quite literally, the highest medical authority on the scene.

This book, *Off-Grid Medical Care*, was born from the necessity of bridging a dangerous gap. On one side lies sterile clinical theory—knowledge that often fails when there is no electricity, no laboratory, and no imaging. On the other side lies the "MacGyver" spirit of the woods—improvisation that, while creative, can be lethal if not rooted in sound pathophysiology.

Our mission is to fuse these two worlds. Within these pages, we do not just tell you to apply a pelvic binder; we explain the structural physics of the pelvic ring and show you how to "close the book" using a fleece jacket and a climbing carabiner. We don't just list the symptoms of High-Altitude Cerebral Edema; we provide the protocol to build a "head-bed" in a rescue litter to prevent brain herniation during a grueling midnight descent.

The reality of wilderness medicine is often brutal. You will face the "Lethal Triad of Trauma"—hypothermia, acidosis, and coagulopathy—in environments that want to accelerate all three. You will have to make "Load and Go" decisions while staring at a grounded helicopter. You will have to manage pain using a tiered ladder of pharmacology when your supplies are dwindling.

This manual is designed to be your cognitive offloading tool. When the adrenaline spikes and "cognitive tunneling" threatens to blind you to the big picture, these checklists and protocols are your anchor. They are designed to keep you disciplined when the environment is chaotic.

You have taken on a massive responsibility by opening this book. Whether you are a professional rescuer or a dedicated adventurer, the lives of your teammates now rest on your clinical acumen and your ability to remain calm when help is far away. Study these pages. Practice these skills until they are second nature. The wilderness is unforgiving, but with the right mindset and the tools provided here, you are no longer a victim of the elements—you are the master of the outcome.

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CHALLENGES OF WILDERNESS MEDICINE

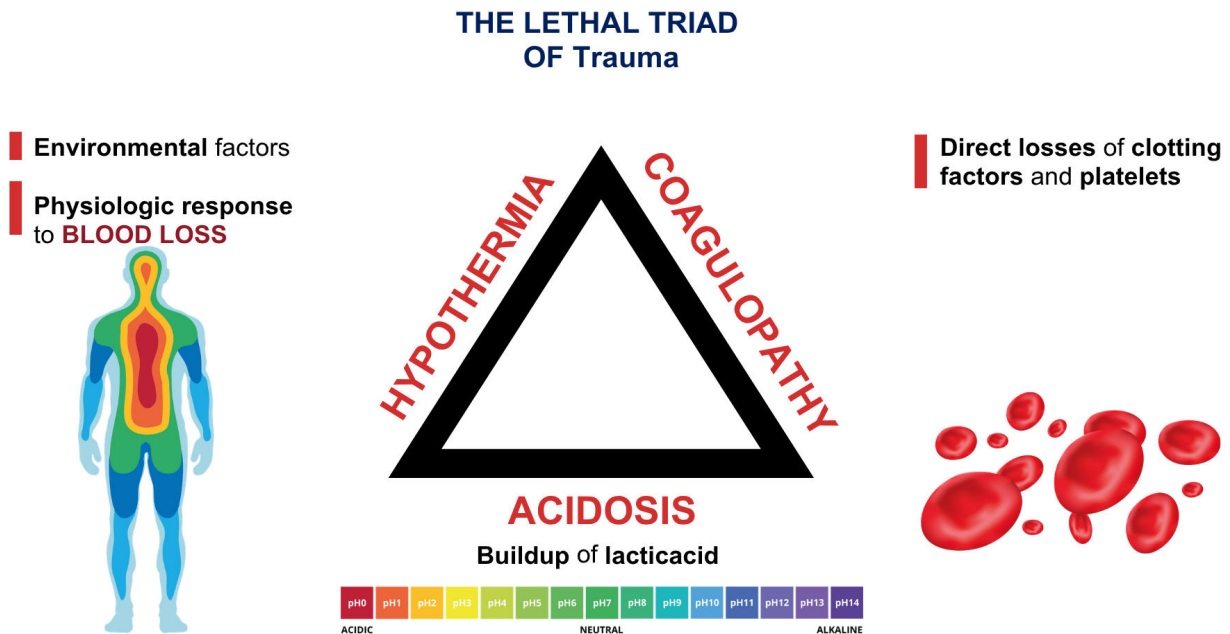
LEARNING OBJECTIVES

By the end of this chapter, you will be able to: **(1)** Identify the pathophysiological challenges specific to wilderness medicine and the Lethal Triad of Trauma; **(2)** Recognize how environmental stressors mask or alter clinical presentation; **(3)** Apply the MARCH-E algorithm for systematic assessment in remote settings; **(4)** Execute a field management protocol for prolonged care scenarios; **(5)** Construct improvised medical equipment using available materials; and **(6)** Determine evacuation urgency based on clinical trajectory and scene safety.

1. INTRODUCTION & PATHOPHYSIOLOGY

Wilderness medicine is defined not strictly by geography, but by the delay to definitive care, resource scarcity, and hostile environmental conditions. While urban Emergency Medical Services (EMS) operate within the paradigm of the “Golden Hour”—emphasizing rapid stabilization and swift transport to a trauma center—off-grid medicine operates under the principles of Prolonged Field Care (PFC). In PFC, the rescuer must manage complex pathologies for hours or even days.

At the pathophysiological level, the primary challenge of wilderness medicine is the compounding effect of environmental stress on the body’s allostatic load. A patient suffering from hemorrhagic shock in a controlled environment faces hypovolemia; in the wilderness, that same patient rapidly loses core body heat to the ground (conduction) and air (convection). This accelerates the onset of the “Lethal Triad of Trauma”: hypothermia, coagulopathy, and metabolic acidosis.



Hypothermia impairs enzymatic cascades necessary for the coagulation cascade, worsening hemorrhage, which in turn deepens systemic hypoxia and acidosis. Furthermore, environmental extremes such as hypoxia at high altitude or severe dehydration in arid climates compromise the body's compensatory mechanisms, causing an otherwise stable patient to rapidly decompensate.

2. CLINICAL PRESENTATION

In remote environments, the clinical presentation of a patient is frequently masked or altered by ambient conditions and physiological exhaustion. The wilderness provider must possess high clinical suspicion, as classic textbook presentations are rare.

- ▶ **Masked Symptoms (Subjective):** Extreme cold can cause peripheral neuropathy, masking the pain of fractures or compartment syndrome. High-altitude hypoxia can cause confusion that mimics traumatic brain injury (TBI) or hypoglycemia.
- ▶ **Altered Signs (Objective):** Severe dehydration combined with physical exertion will present with baseline tachycardia and tachypnea, making it difficult to detect the early stages of compensated hypovolemic shock.

Table 1.1: Classification of Environmental Stressors & Systemic Effects

ENVIRONMENTAL STRESSOR	PRIMARY PATHOLOGICAL EFFECT	MASKING EFFECT ON PRIMARY ASSESSMENT
Extreme Cold	Peripheral vasoconstriction, depressed myocardium	Masks capillary refill time; mimics bradycardia/shock
Extreme Heat	Vasodilation, severe diaphoresis, electrolyte loss	Tachycardia mimics hemorrhagic shock; masks fever
High Altitude	Hypobaric hypoxia, cerebral/pulmonary edema	Altered mental status mimics TBI or intoxication
Prolonged Exertion	Glycogen depletion, dehydration	Weakness/lethargy mimics spinal injury or systemic infection

3. SYSTEMATIC ASSESSMENT

The standard ABCDE algorithm is often insufficient for off-grid trauma, where massive hemorrhage and environmental exposure are the leading causes of preventable death. Wilderness medicine utilizes the MARCH-E algorithm (Massive Hemorrhage, Airway, Respiration, Circulation, Head/Hypothermia, Evacuation).



QUICKLY IDENTIFY MASSIVE, LIFE-THREATENING BLEEDING

IMPORTANT! Casualties with severe injuries can bleed to death in **as little as 3 minutes**

BRIGHT RED BLOOD is pulsing or spurting, or there is steady bleeding from the wound



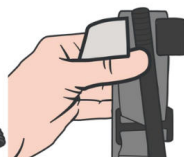
Overlying clothing or ineffective bandaging is becoming **SOAKED WITH BLOOD**



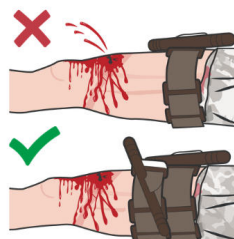
BRIGHT RED BLOOD is pooling on the ground

AMPUTATION of the arm or leg

Assess for other sources of hemorrhage and control all life-threatening bleeding



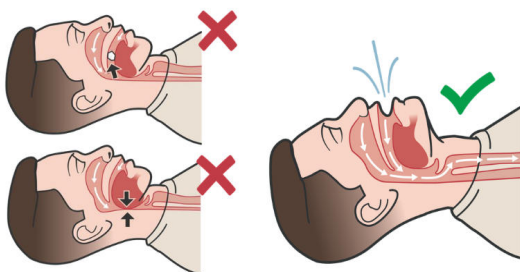
If not already done, where appropriate, use a CoTCCC-recommended limb tourniquet (TQ) to control life-threatening external hemorrhage, applying it 2-3 inches above the source of bleeding, directly on the skin



Reassess CUF interventions, and if bleeding is not controlled with the first TQ, apply a second TQ side-by-side with the first

AIRWAY MANAGEMENT

IDENTIFYING OBSTRUCTED AIRWAY



SIGNS AND SYMPTOMS AIRWAY MAY BE BLOCKED:

- Casualty is in distress and indicates they can't breathe properly
- Casualty is making snoring or gurgling sounds
- Visible blood or foreign objects are present in the airway
- Maxillofacial trauma (severe trauma to the face) is observed

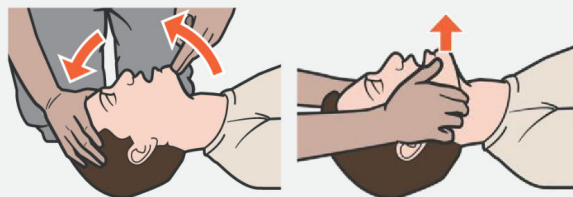


IMPORTANT! Remove any visible objects, but do not perform a blind finger sweep

OPENING THE AIRWAY

IN A **CASUALTY** WITHOUT AN AIRWAY OBSTRUCTION, YOU CAN PERFORM THE FOLLOWING MANEUVERS:

HEAD-TILT CHIN LIFT



Unconscious casualty's tongue may have relaxed, causing the tongue to block the airway by sliding to the back of the mouth and covering the opening to the windpipe



If you suspect that the casualty has suffered a neck or spinal injury, use the jaw thrust method

Tactical Combat Casualty Care (TCCC) CARD

BATTLE ROSTER #: *A23-17-5893* DATE (DD-MMM-YY): *24-MAY-24* TIME: *1432*

LAST 4: *5893* NAME (Last, First): *DOE, JOHN* SERVICE: *AR* UNIT: *2-75 RGR*

Mechanism of Injury: *GSW L THIGH*

Injury: ☐ Blunt ☒ Penetrating
Type: ☒ GSW ☐ Frag ☐ Burn ☐ Other

VITAL SIGNS (at time of assessment)							
TIME	B/P	HR	RR	SpO ₂	AVPU	GCS	TEMP
<i>1430</i>	<i>92/58</i>	<i>112</i>	<i>20</i>	<i>97%</i>	<i>A</i>	<i>15</i>	<i>36.8°C</i>

Treatments (by Provider)
TQ: 1428 LLE (CAT)
PAK: L THIGH WOUND
NS TKO

Fluid(s) Given
☐ None ☒ Yes
Type / Amount
NS TKO

Medications Given
☐ None ☒ Yes
Type / Amount / Route
KETAMINE 20mg IV

Evacuation: ☐ Self ☒ Vehicle ☐ MEDEVAC ☐ Other _____

Evacuation Priority: ☐ Urgent ☒ Priority ☐ Routine

REFUSAL OF CARE

I understand the possible consequences of my decision to refuse care.
I refuse the following care: ☐ Assessment ☐ Treatment ☐ Evacuation

Patient Signature: _____ Witness Signature: _____
Date/Time: _____ Date/Time: _____

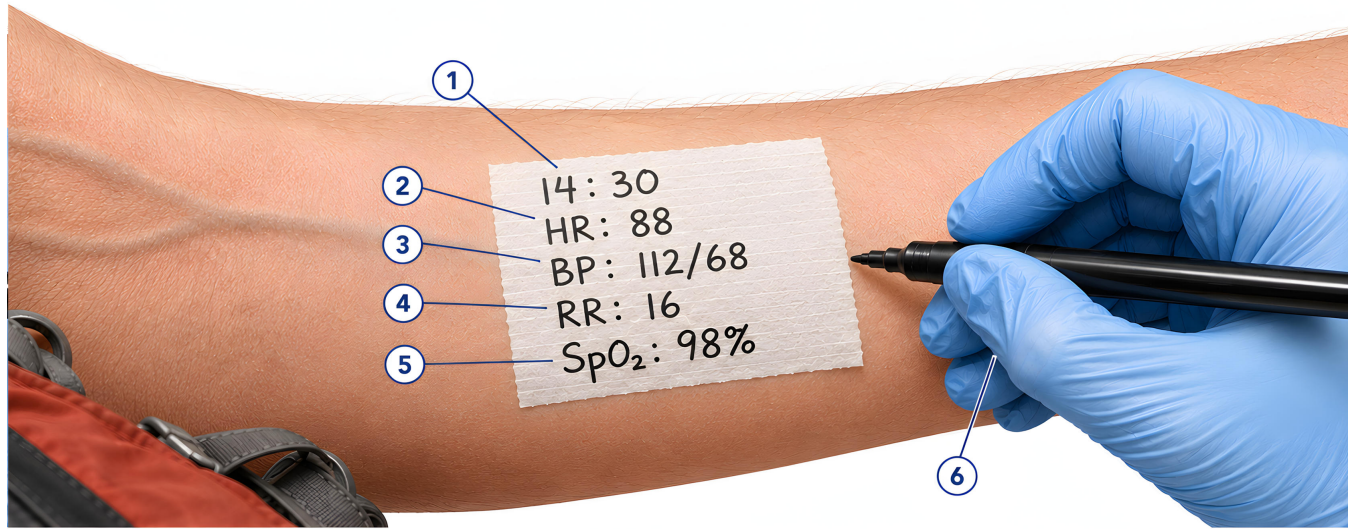
DD FORM 1380, JUN 2014 TCCC CARD Controlled Unclassified Information (CUI)

5. **Step 5: Document Everything.** In the wilderness, documentation is your only defense. Record the time of injury, the mechanism, vital signs, treatments rendered, and the patient's exact words regarding consent or refusal.

5. THE OFF-GRID EDGE (IMPROVISATION)

In austere environments, you will rarely have pre-printed AMA forms or standardized SOAP notes.

- **Improvised Documentation:** Use a permanent marker to write vital signs, tourniquet application times, and medication dosages directly on the patient's skin (e.g., forehead or chest) or on white medical tape affixed to their clothing.



- | | |
|---|--|
| ① Time of assessment | ④ Respiratory rate (breaths per minute) |
| ② Heart rate (beats per minute) | ⑤ Peripheral oxygen saturation (%) |
| ③ Blood pressure (systolic/diastolic, mmHg) | ⑥ Medical professional documenting vital signs |

- ▶ **Digital Consent:** If a competent patient refuses vital evacuation, use a smartphone, GoPro, or satellite communication device to record an audio/video log of the patient stating their name, the date, their understanding of the risks (including death), and their explicit refusal.
- ▶ **Managing the Deceased Off-Grid:** If resuscitation is withheld (e.g., injuries incompatible with life, decapitation, dependent lividity) or terminated after prolonged effort, the body becomes a medicolegal scene. Document the time of death. Do not move the body unless it is in a hazardous location (e.g., avalanche path or rising tide) that threatens the survival of the remaining team.

6. EVACUATION LOGIC

Evacuation decisions in off-grid settings must account for the patient's consent status and legal capacity in addition to clinical trajectory.

RAPID EVACUATION (LOAD AND GO)

- Any patient with a life-threatening condition (e.g., severe hemorrhage, airway compromise) who is altered and treated under implied consent.
- A minor with a life-threatening injury whose parents are not present.

FIELD CASE STUDY

The High-Alpine Shadow

North Cascades, Granite Basin — Elevation: 11,200 ft (3,414 m)

The Scenario & Initial Contact

The Setting

The North Cascades, Granite Basin. Elevation: 11,200 ft (3,414 m). It is 16:30 in late October. The ambient air temperature is 28°F (-2°C), but with a 25-mph wind, the windchill is equivalent to 9°F (-13°C) (ref. Fig 223). A storm front is moving in rapidly from the west, with visibility dropping to under 50 meters. You are a solo trekker coming off the ridge when you stumble upon a solo climber lying at the base of a 15-foot (4.5 m) granite slab.



The Patient

- **Age/Sex:** Approximately 45, Male.
- **Mechanism of Injury (MOI):** Apparent fall from height onto a rocky surface. No witnesses.
- **Visual Impression:** The patient is supine, partially wedged between two boulders. He is wearing a climbing harness and a cracked helmet. There is a significant pool of blood beneath his head and right shoulder. He is shivering violently but appears non-responsive to your shout.

Initial Findings

Upon approach, you confirm Scene Safety. The slab above appears stable, but the falling temperature and incoming snow pose an immediate environmental threat. You are at least 12 hours from the trailhead by

foot, and satellite communication indicates a “Watch” status for the area—meaning air extraction is unlikely for several hours if the ceiling drops.

Physical Examination (Primary Survey):

- **Airway:** Patient is unconscious; you hear “snoring” respirations, indicating a partial airway obstruction by the tongue.
- **Breathing:** Respirations are rapid and shallow.
- **Circulation:** Brisk bleeding is noted from a 10-cm scalp laceration. Radial pulses are present but “thready.” Capillary refill is delayed (3 seconds).
- **Disability:** GCS is 9 (E2, V3, M4). Pupils are slightly unequal; the right is 4mm and sluggish, the left is 3mm and reactive.
- **Exposure:** Patient is wet from sweat and early snow.

The Legal/Ethical Framework

As a solo trekker, you are under no legal “Duty to Assist” unless a prior relationship exists (ref. p. 27), yet you choose to intervene under Good Samaritan Statutes. You must operate under the principle of *primum non nocere* (First, do no harm) while acknowledging that your resources are severely limited by time and isolation.

CHALLENGE: What are your first 3 priorities?

- 1.
- 2.
- 3.

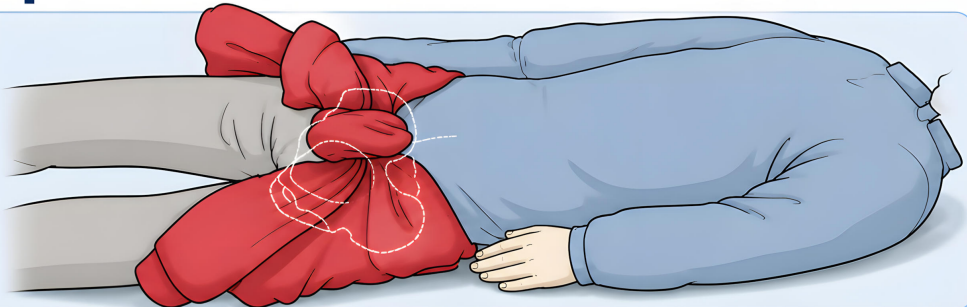
Hypothermia Burrito Wrap



— Improvised Pelvic Stabilization —

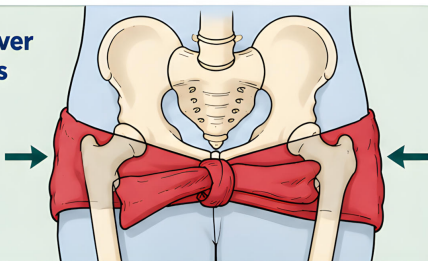
1 Position the binder

Place a folded blanket, jacket, or cloth across the pelvis, directly over the greater trochanters.



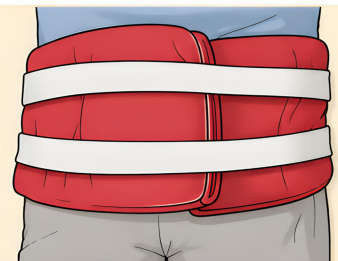
2 Center over the pelvis

Ensure the knot is centered over the midline of the pelvis.



3 Secure and tighten

Wrap the ends around the patient and secure tightly to apply steady pressure on the pelvis.



Purpose: Stabilizes the pelvis, reduces movement, and helps control internal bleeding.



Remember: Do not remove once applied. Monitor the patient and transport promptly.

- **Step 4: Splinting Principles.** A proper splint must immobilize the bone and the joints above and below the injury. The splint must be rigid, well-padded (to prevent pressure sores), and adjustable. Position the limb in the “Position of Function” (e.g., holding a soda can for the hand; knee slightly flexed at 15 degrees).
- **Step 5: Post-Splint Reassessment.** Reassess CSM immediately after securing the splint. If pulses are lost, loosen the securing straps. Elevate the limb to minimize dependent edema.

5. THE OFF-GRID EDGE (IMPROVISATION)

When commercial SAM splints or Kendrick Traction Devices are unavailable, the wilderness provider must utilize structural engineering principles with backcountry gear.

The Improvised Trekking Pole Traction Splint: For a mid-shaft femur fracture, traction is required to overcome massive quadriceps spasms and prevent the bone ends from lacerating the femoral artery. Place a trekking pole or tent pole on the outside of the leg, extending from the hip to 12 inches past the foot.



Create an ankle hitch using a cravat or webbing. Secure the top of the pole to the upper thigh/groin. Tie the ankle hitch to the distal end of the pole. Insert a sturdy stick between the cords of the ankle hitch and twist (a Spanish Windlass) to apply mechanical traction until the leg

FIELD MED-MATH & TOXICOLOGY

Pharmacological Conversions, Improvisations, and Envenomations

CRITICAL UNIT CONVERSIONS & MED-MATH

Weight: 1 Kilogram (kg) = 2.2 lbs.

Volume: 1 Teaspoon (tsp) = 5 mL | 1 Tablespoon (tbsp) = 15 mL | 1 Fluid Ounce = 30 mL.

Temperature:

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) / 1.8$$

$$^{\circ}\text{F} = (^{\circ}\text{C} \times 1.8) + 32$$

Pediatric Weight Estimation: 1 yr = 10kg | 3 yrs = 15kg | 6 yrs = 20kg | 8 yrs = 25kg | 11 yrs = 35kg.

IMPROVISED ORAL REHYDRATION SALTS (W.H.O. RECIPE)

- 1 Liter of disinfected water.
- 6 level teaspoons of sugar.
- 0.5 level teaspoon of salt.

Action: Exploits sodium-glucose co-transporters in the gut to reverse hypovolemic shock. Do not alter ratios (risks hyponatremia or osmotic diarrhea).

TOXICOLOGY: SNAKE BITES & SCORPION STINGS

Pit Viper (Hemotoxic/Cytotoxic): Rapid swelling, ecchymosis, metallic taste.

- Grading: Dry (0) = No swelling. Mild (1) = Local edema. Moderate (2) = Edema crosses a joint, systemic signs. Severe (3) = Entire limb edema, hypotension.
- Treatment: Immobilize limb. Draw leading edge of swelling with a marker every 15 mins. NO tourniquets, NO cutting, NO ice.

Coral Snake (Neurotoxic): Delayed onset (1-6 hrs), ptosis (drooping eyelids), slurred speech, respiratory paralysis.

- Treatment: Apply Pressure Immobilization Technique (PIT) at 40-70 mmHg to trap venom in lymphatic beds. Prepare to bag (BVM) the patient.

Bark Scorpion: Excruciating pain without swelling. Positive "Tap Test" (extreme pain when tapped). Roving eyes, hypersalivation.

CROSS-THERAPEUTIC PHARMACOLOGY (THE "VISTARIL TRICK")

Co-administering a narcotic (e.g., Nalbuphine) with an antihistamine (e.g., Hydroxyzine/Vistaril) potentiates (multiplies) the pain relief while completely eliminating opioid-induced nausea.

1. PRIMARY SURVEY (MARCH-E)

***Objective:** Identify and aggressively treat immediate, life-threatening conditions. Do not move to the next step until the current threat is neutralized.*

- ☐ **M – Massive** Sweep the body for arterial bleeding. Apply direct pressure, pack deep **Hemorrhage:**wounds with hemostatic gauze, and apply tourniquets "high and tight" on limbs until bleeding stops.
- ☐ **A –** Look, listen, and feel for air exchange. Open the airway using a jaw-thrust (if **Airway:**spinal injury suspected) or head-tilt/chin-lift. Clear debris, vomit, or blood. Insert airway adjuncts if trained and necessary.
- ☐ **R –** Assess breathing rate and depth. Expose the chest. Seal all open, **Respirations:**sucking chest wounds with a vented chest seal. Monitor for tension pneumothorax (burping the seal if necessary). Assist ventilations if breathing is inadequate.
- ☐ **C –** Check radial and carotid pulses. Assess skin color, temperature, and **Circulation:**moisture (SCTM) to gauge shock. If pelvic fracture is suspected from high-velocity blunt trauma, apply a pelvic binder.
- ☐ **H – Head &** Assess baseline mental status using AVPU (Alert, Verbal, Pain, **Hypothermia:**Unresponsive). Manually stabilize the cervical spine if the mechanism of injury warrants it. Immediately halt heat loss by removing wet clothing.
- ☐ **E –** Expose concealed injuries by opening bulky clothing. Cover the patient back **Expose &** up immediately to preserve heat. Make a rapid "Stay and Play" vs. "Load **Evacuate:**and Go" evacuation decision based on current findings.

***PRO-TIP:** Blood belongs in the body. You cannot oxygenate a patient who has no red blood cells left to carry the oxygen. Stop massive bleeding first—seconds count.*

A FINAL WORD

As you reach the end of this manual, remember one fundamental truth of the backcountry: Knowledge is the only weightless tool in your pack. You can lose your medical kit in a swift-water crossing; your satellite communicator can fail in a narrow canyon; your medications can degrade in the desert heat. But the understanding of the "Perfusion Triangle," the ability to recognize a "silent chest" in a respiratory patient, and the skill to fashion a traction splint from a trekking pole can never be taken from you.

The transition from student to practitioner is a continuous journey. I urge you not to let this book gather dust on a shelf. Take it into the field. Practice the "Vistaril Trick" for pain management, rehearse the "Leapfrog" litter carry with your team, and master the art of the "Blood Sweep" until it becomes muscle memory. In a crisis, you do not rise to the level of your expectations; you fall to the level of your training.

To serve as a medic or rescuer in the off-grid world is a profound honor. You are the one who stands between a fellow human being and the finality of the wild. It is a secondary, sacred duty to protect the sanctity of life when the world is at its most austere.

"Stay prepared. Stay resourceful. And above all, stay safe. The mission is not over until everyone is home."

Mouine Khalil Errahmane Ameur
Author, *Off-Grid Medical Care*

REFERENCES & BIBLIOGRAPHY

The following references informed the preparation of this publication. Readers are encouraged to consult the latest editions and official sources for the most current clinical recommendations.

American Heart Association. (n.d.). *Heartsaver First Aid CPR AED Student Workbook*.

Figure Labs. (n.d.). *Figure Labs*. Retrieved from <https://figurelabs.ai>

Magnific AI. (n.d.). *Magnific AI*. Retrieved from <https://www.magnific.com/>

MDPI. (n.d.). *MDPI – Open Access Journals*. Retrieved from <https://www.mdpi.com/>

Nursing Times. (n.d.). *Nursing Times*. Retrieved from <https://www.nursingtimes.net/>

ResearchGate. (n.d.). *ResearchGate*. Retrieved from <https://www.researchgate.net/>

Tactical Combat Casualty Care. (n.d.). *TCCC.org.ua*. Retrieved from <https://tccc.org.ua/>

University of Washington. (n.d.). *UWorld Medical*. Retrieved from <https://medical.uworld.com/>

Wilkerson, J. A. (Ed.). (Latest ed.). *Medicine for the Outdoors: The Essential Guide to First Aid and Medical Emergencies*. The Mountaineers Books.

Auerbach, P. S. (Latest ed.). *Expedition and Wilderness Medicine*.

Leclerc, J., & collaborators. (Latest ed.). *Les premiers soins – Intervention en situation d'urgence*.

National Outdoor Leadership School. (2020). *NOLS Wilderness Medicine* (7th ed.). Stackpole Books.



University of Colorado



THANK YOU & STAY CONNECTED



SUPPORT THE MISSION

Thank you for placing your trust in **OFF-GRID MEDICAL CARE**. By investing your time in learning wilderness medicine and emergency care, you have taken an important step toward becoming better prepared to protect yourself and others when professional medical help is delayed or unavailable. Whether you are a healthcare student, first responder, rescuer, outdoor professional, humanitarian volunteer, or wilderness enthusiast, I sincerely hope this guide becomes a practical companion that supports your learning and strengthens your confidence in the field.

If you found this book valuable, I would be truly grateful if you could take a few moments to leave an honest review on Amazon. Your feedback not only helps me improve future editions, but it also enables other rescuers, hikers, medics, healthcare professionals, and outdoor adventurers to discover this resource. A thoughtful review may ultimately help place life-saving knowledge into the hands of someone who needs it most.

I would also be delighted to stay connected with you beyond these pages. If you have suggestions, questions, corrections, professional opportunities, or simply wish to exchange ideas about wilderness medicine, emergency care, and medical education, I warmly invite you to reach out. You can also become part of our growing off-grid medical community by scanning the QR codes below to connect with me on **LinkedIn, Instagram, Facebook, WhatsApp, and Telegram**.

STAY CONNECTED

LINKEDIN



 Scan Me

INSTAGRAM



 Scan Me

FACEBOOK



 Scan Me

WHATSAPP



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TELEGRAM



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Thank you once again for reading this book and for your commitment to improving emergency medical care where it matters most.

Stay prepared. Stay resourceful. Stay safe.

MOUINE KHALIL ERRAHMANE AMEUR

Author, *OFF-GRID MEDICAL CARE*