

# Tactical & Remote Medicine

## 6 days



### Adventure Doc Education

Through the partnership of an experienced group of tactical medicine operators and remote/expeditionary medical doctors comes a very unique series of education modules. These opportunities are geared to help the tactical operator become a competent medical provider or the medical provider to be a valued asset to a tactical team, in any location.



## TEMS & Remote Medicine 6 day

3 DAY TACTICAL	Day 1	TEMs Introduction	1 Hour	8 hours
		Introduction to TCCC	1.5 Hours	
		Evaluating a Casualty	1 Hour	
		Airway: Lecture & Skills	1.5 Hours	
		Chest Trauma: Lecture & Skills	1.5 Hours	
		Casualty Evacuation: Lecture & Skills	1.5 Hours	
Day 2	Hemorrhage Control: Lecture & Skills	3 Hours	8.5 hours	
	Vascular Access: Lecture & Skills	2.5 Hours		
	Introduction to Tactical Movement	3 Hours		
Day 3	Day Scenarios	3.5 Hours	7 hours	
	Night Scenarios	3.5 Hours		
3 DAY REMOTE	Day 4	Field Water Disinfection	1 hour	8 hours
		Environmental Medicine	3 Hours	
		Overview of Tropical Medicine	4 Hours	
	Day 5	Medical Kit Construction	1 Hour	8 hours
		Solar Radiation and Insect Bite Prevention	1 Hour	
		Fluids and Dehydration	2 Hours	
Day 6	Envenomation and Insects	4 Hours	8 hours	
	Sick Call Clinic	3 Hours		
	Vaccines for Travelers	1 Hour		
		Wound Closure: Basic	4 Hours	

## Day 1

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### TEMs Introduction (1 Hour)

Participants are welcomed to the class and sign-in process is completed. At this point the materials and equipment used in the class will be signed-out to participants and the use of these materials will be explained. Participants will also be given a basic layout of the course schedule and the breakdown of training.

- TEMs (Tactical Emergency Medicine)
- Sign-in
- Receive Equipment
- Course overview

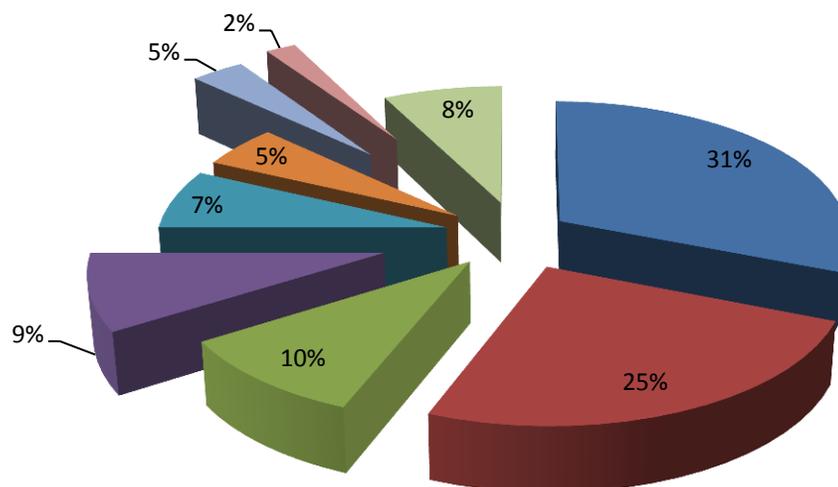


## Introduction to TCCC (1.5 Hours)

The basic concepts of TCCC (Tactical Combat Casualty Care) will be discussed. The participants will be given a broad overview of Tactical Emergency Medical training, application, goals and brief history of the specialty. A survey of basic concepts and theory is addressed and the class is prepared for their upcoming 3 days. Participants are also encouraged to discuss their unique applications for the training and goals they might personally have. Relevant literature and sources in the field are also examined.

- TCCC (Tactical Combat Casualty Care)
- TEMs Goals
- TEMs History
- Relevant Literature and Contributors

### Causes of Combat Deaths



## Evaluating a Casualty (1 Hour)

Initial patient survey is discussed, from a TEMs perspective. Concepts of airway, breathing and circulation are examined and then prioritized based on the tactical environment, patient needs and security. This module builds on prior pre-hospital training and initial patient assessment skills. The unique tactical environment is taken into consideration and life-threatening injuries are prioritized accordingly. Concepts such as “where to treat this patient” and scene safety are emphasized. An initial rapid trauma survey followed by a detailed exam approach is discussed in detail.

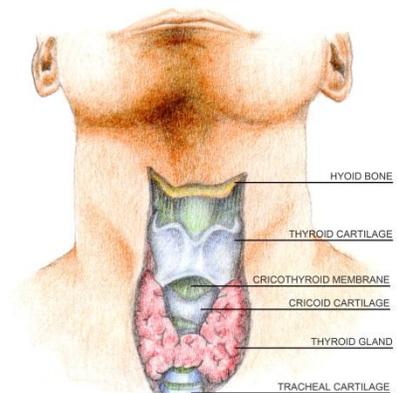
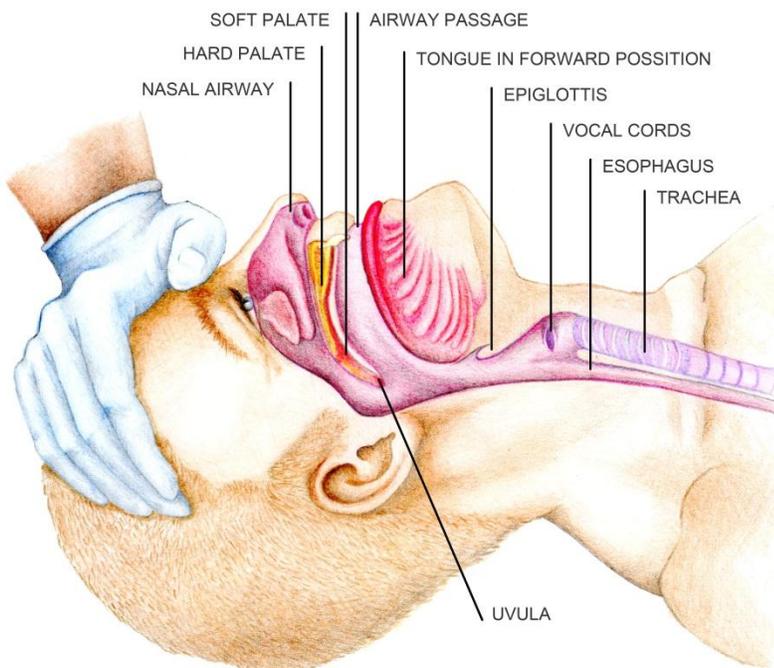
- Stages of Care
  - Care Under Fire
  - Tactical Field Care
  - Tactical Evacuation Care
- A, B, C
- C, A, B
- Patient Assessment
- Rapid Trauma Survey
- Detailed Exam



## Airway: Lecture and Skills (1.5 Hours)

Basic airway management skills are refreshed and then improved upon with this module. Endotracheal intubation, cricothyroidotomy, oral and nasal adjuncts and improvisational techniques are examined in this module. After didactic lectures, participants will participate in hands-on skills sessions to master necessary airway techniques. Mannequins and animal tissue lab aids facilitate participant mastery. Commercially manufactured products are examined and the participants will be competent to select the appropriate devices, as dictated by the needs of their patients.

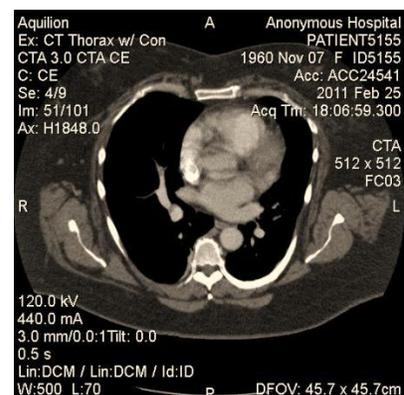
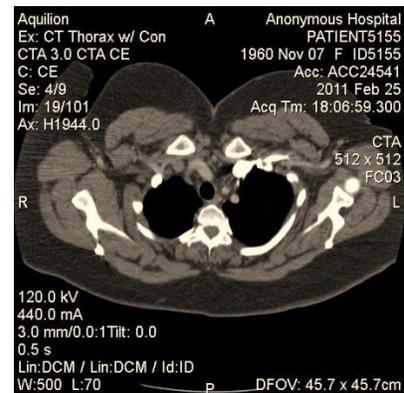
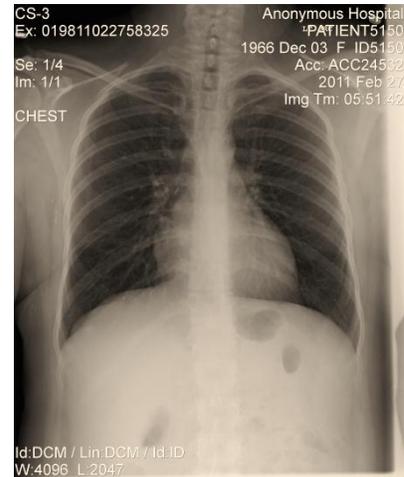
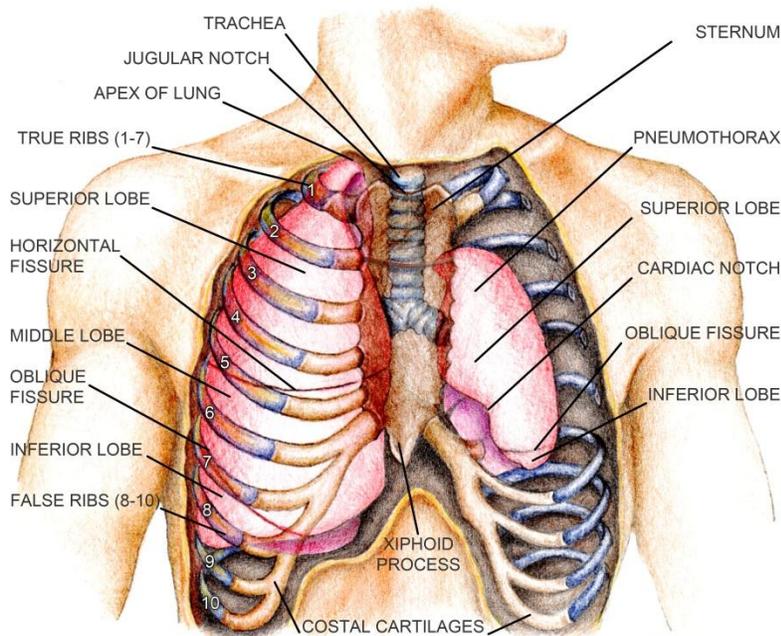
- Tracheal Intubation
- Cricothyroidotomy
- Oral/Nasal Adjuncts
- Skills Lab



## Chest Trauma: Lecture and Skills (1.5 Hours)

Penetrating chest trauma accounts for significant morbidity and mortality in a tactical setting. A competent operator requires a high comfort level with management of these types of injuries. Chest decompression, drainage and splinting techniques are discussed during a didactic component followed by skill sessions allowing participants to become comfortable with these procedures. Our skill sessions are augmented with both mannequins and tissue adjuncts. Resource poor settings and the concept of improvisation is also examined in this module.

- Hemothorax
- Pneumothorax
- Chest Drainage and Decompression
- Flail Chest
- Skills Lab

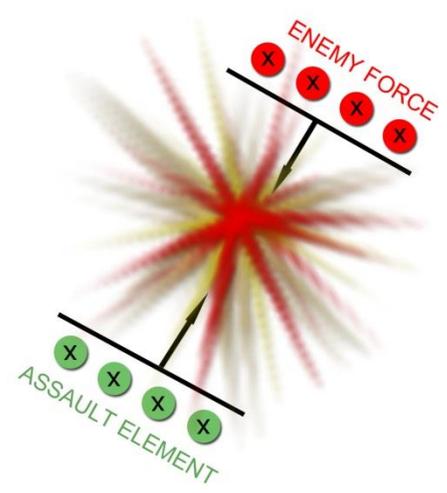


## Casualty Evacuation: Lecture and Skills (1.5 Hours)

The evacuation of a casualty to a higher or specialized level of care is a vital part of TCCC and TEMs. After a patient has been stabilized... What Next? Multiple methods of Casualty Evacuations (Cas-Evacs) are examined in detail. Both tactical and non-tactical scenarios are practiced and discussed. Carries, drags, ground ambulance and air ambulance techniques, packaging and preparation are highlights of this module.



- Cas-Evac
- Carries and Drags
- Ground
- Air
- Patient Scenarios



CARE UNDER FIRE

CCP

TACTICAL FIELD CARE

CAS-EVAC

FIELD HOSPITAL

ATLS CARE

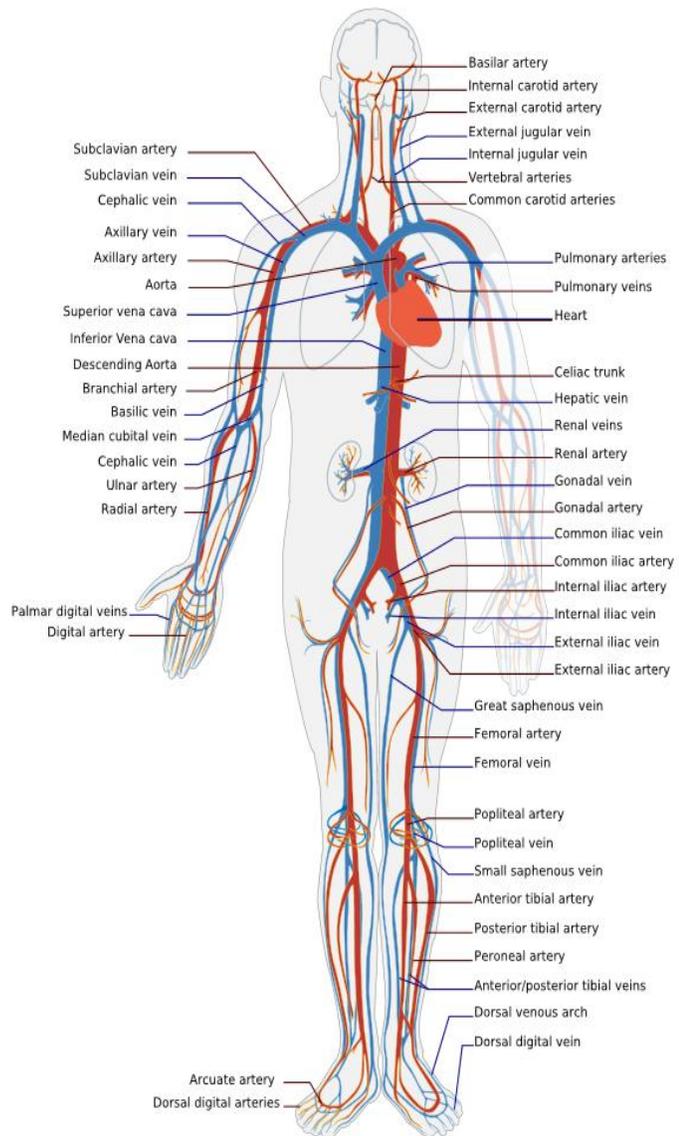
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## Day 2

### Hemorrhage Control: Lecture and Skills (3 Hours)

“Stop the bleeding” is the take home message of this lecture. Participants will be exposed to and practice various methods of hemorrhage control. These include tourniquets, hemostatic gauze and granules and vessel ties and/or clamping. The controversies and myths surrounding many concepts are examined in detail and supported with appropriate medical literature.

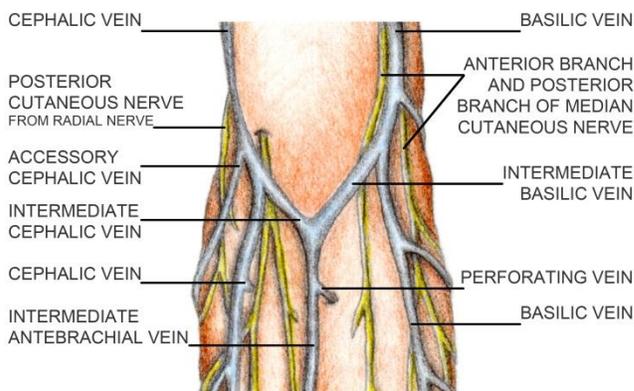
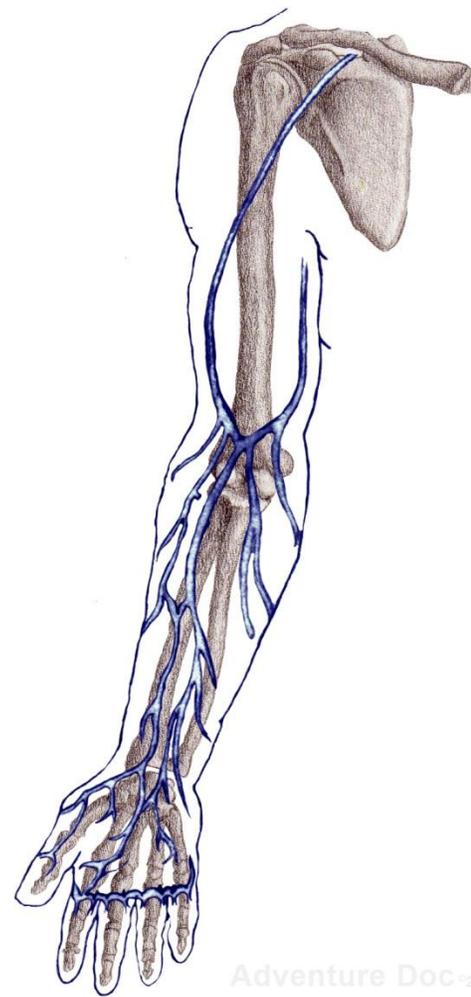
- Stop the Bleeding
- Tourniquets
- Hemostatic Agents
- Myths and Controversy
- Skills Lab



## Vascular Access: Lecture and Skills (2.5 Hours)

Initiation of IV (intravenous) access and administration of fluids is a critical adjunct to treatment of a casualty. Building on prior experience in IV administration, participants will perfect their skills in intra-venous cannulation and fluid administration. Those who have never been exposed to this procedure will become competent in this life-saving procedure. Multiple methods of access are examined including intra-osseous and central venous lines. Various commercial products will be examined and appropriate uses of these items are discussed in detail. This session is augmented with the use of both mannequin and tissue adjuncts.

- Intravenous access
- Central Line
- Osseous
- IV fluids
- Skills lab



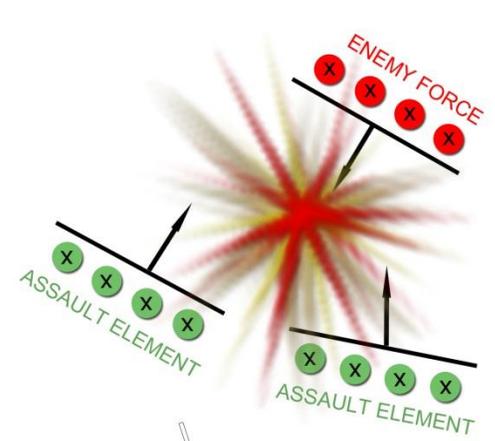
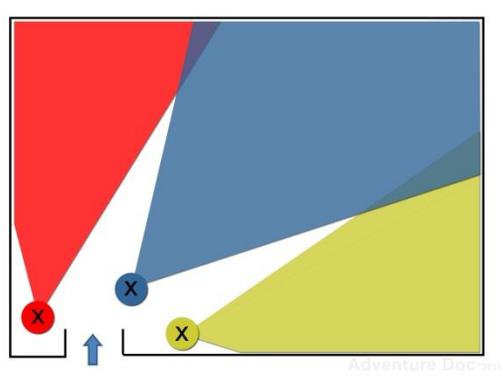
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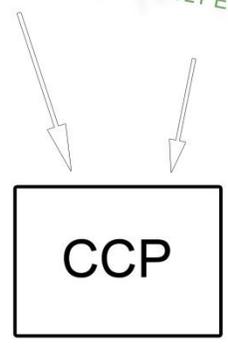
## Introduction to Tactical Movement (3 Hours)

With this lecture, participants being to enter the "tactical" world and learn basic concepts of movement, zones of fire, kill zones and safe zones. This is a precursor to the outdoor movement scenarios in the following days. Experienced medical providers will find this module useful to deploy with their tactical "shooter" colleagues in a safe and effective manner. Experienced tactical operators will be able to understand the location of medical support personnel and reasons for their positioning and placement. Safety is paramount during these phases and is stressed throughout the exercises.

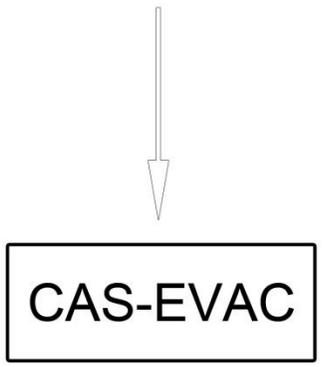
- Zones of Fire
- Safe Zones
- Kill Zones



CARE UNDER FIRE



TACTICAL FIELD CARE



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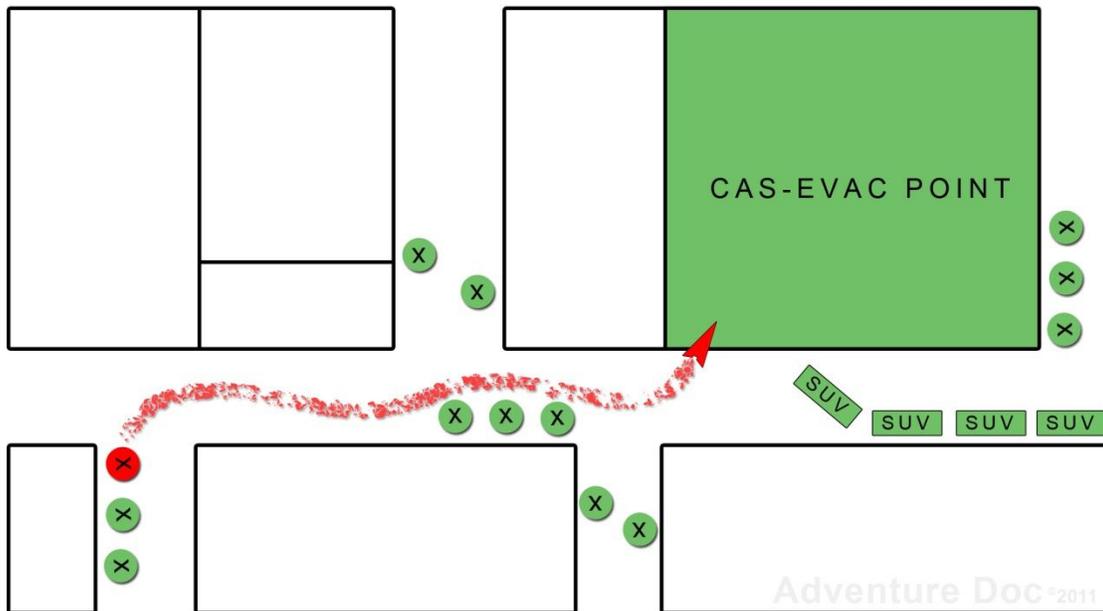
## Day 3

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### Day Scenarios (3.5 Hours)

Participants will run scenarios based on real-world application of TEMs skills. Movement under fire, patient care under fire, patient extrication and packaging and return of fire are all skills that are examined and then practiced. Scene safety is stressed through the scenarios as is situational awareness. Teamwork and patient hand-offs are also examined. Participants will become comfortable with movement in a tactical scenario as well as patient assessment and stabilization.

- Real life scenarios
- Teamwork
- Safety
- Objectives
- Patient Care



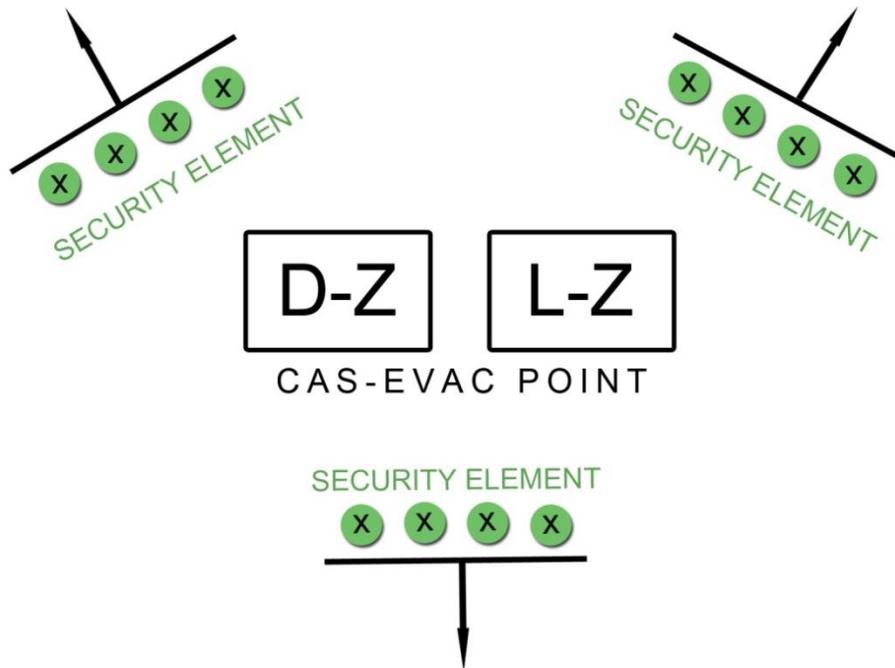
### Night Scenarios (3.5 Hours)

"Real-world" scenarios do not just happen in good visibility or daylight hours. Participants train and complete various scenarios in low-light and night time conditions. Similar to their day-light operations, safety and tactical movement are highlighted. Participants are exposed to concepts of light discipline, patient care in low-light conditions and similar unique challenges to the provision of TEMs in a night operation.

- Low light operations
- Light Discipline
- Medical skills in low light arenas



SCENARIO #2: NIGHT PARACHUTE INSERTION



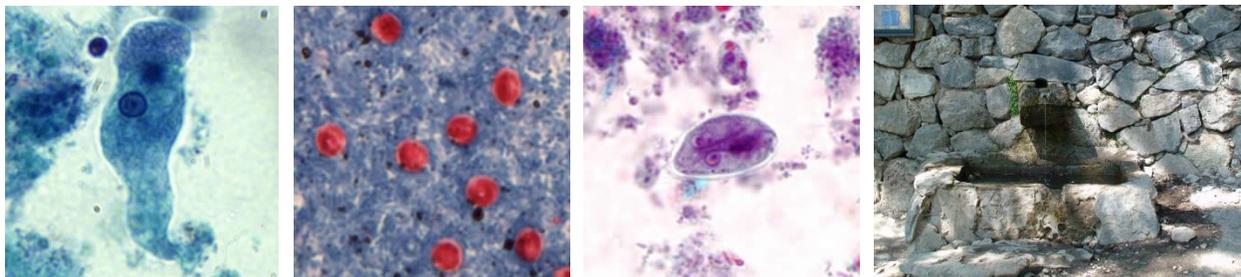
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## Day 4

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### Field Water Disinfection (1 hour)

Health care providers often serve as public health practitioners on their team. Ensuring the group has access to potable water is vital to mission success. Surveys of common pathogens as well as multiple disinfection methods are covered. Attention is given to helping the participants know when to select the appropriate method(s) of purification and specific benefits and drawbacks of each method. In addition, participants will be comfortable with many methods of water purification for both large and small groups at the end of this class. Coursework includes scenarios and case management in remote and resource poor areas. This class is advised for those who will be responsible for water control for their personal use, team use or camp/village use. The course curriculum is designed and instructed by a physician who specializes in remote and expeditionary medicine.



- Common pathogens (Amebiasis, Cryptosporidium, Giardia, Enterovirus)
- Methods (heat, filter, chemical, UV)
- Small and large volumes of water preparation

## Environmental Medicine (3 Hours)

Operations in extreme environments require advanced training for the health care providers. This class examines commonly encountered problems in hot, cold and high altitude areas. Pathology, recognition, treatment and disposition are discussed in detail. Participants will be comfortable in management of a multitude of conditions in a variety of environments. Coursework includes scenarios and case management in remote and resource poor areas. The application of clinical skills is stressed without burdening the participants in unnecessary/non-critical information. The course curriculum is designed and instructed by a physician who specializes in remote and expeditionary medicine.

- Hot climates (heat stroke, heat cramps, cooling techniques)
- Cold climates (hypothermia and rewarming techniques)
- Frostbite treatment and prevention
- Altitude, High Altitude Cerebral Edema (HACE), High Altitude Pulmonary Edema (HAPE), treatment and GAMOW bags
- Motion sickness treatment and prevention

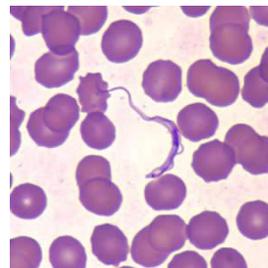


## Overview of Tropical Medicine (4 Hours)

This is a survey of tropical medicine pathology, prevention and treatment. This is critical for operations in tropical environments and is best combined with our complete series of tropical medicine lectures. Our tropical medicine lectures are taught by an expert in the field and geared to the Physician, mid-level provider (PA or NP) or advanced trained paramedics. "Real-life" application is stressed and clinical tropical medicine is the primary focus. The curriculum is designed to impart critical information without burdening the partaker on academia. Upon completion, participants will be comfortable with diagnosis, treatment and disposition of common tropical illnesses and conditions. Coursework includes scenarios and case management in remote and resource poor areas. The course curriculum is designed and instructed by a physician who specializes in remote and expeditionary medicine in addition to his post-graduate specialization in tropical medicine.



- Malaria (main types, prevention and treatment)
- Viral Illnesses (Yellow Fever, Dengue Fever, Chikungunya, Rabies, Japanese Encephalitis)
- Worms (Ascaris, Ancylostoma/Necator, Trichuris, Enterobius, Tapeworms)
- Trematodes (Schistosomiasis)
- Trypanosomiasis (American and African)



## Day 5

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### Medical Kit Construction (1 hour)

Construction of a field medical kit is vital for mission success and the health of participants. This class explores concerns, common pitfalls and concepts that providers should be considering when assembling their mission ready medical kits. Participants will feel confident to prepare a medical kit based on the needs of the mission, location and team members at the end of the class. Improvisational items and multi-use items are also explored. Participants will learn from "real life scenarios" on what has worked and what has failed in specific instances. Coursework includes scenarios and case management in remote and resource poor areas. The course curriculum is designed and instructed by a physician who specializes in remote and expeditionary medicine.



- Location of operations
- Medical skill of operators
- Medical needs of group
- Weight of materials
- Multiple use items



Scenario 3: marching the desert



Scenario 5: remote mountain



Scenario 7: tour the ruins

## Solar Radiation & Insect Bite Prevention (1 hour)

Health care providers charged with medical care of a team operating in an outdoor environment should be specifically trained to prevent and treat common issues arising from this area of operation. Insect bite prevention is critical for avoidance of insect borne illnesses such as malaria, dengue fever and leishmaniasis. "Real world application" is examined with regard to selection of proper solar protection methods. This class prepares the provider to accurately and effectively educate their team on preventative health issues related to insect bite prevention and solar radiation illness. Treatment and prevention of solar radiation illness is examined in detail. In addition, the lecture explores basic public health interventions for insect control on a camp or village level. Coursework includes scenarios and case management in remote and resource poor areas. The course curriculum is designed and instructed by a physician who specializes in remote and expeditionary medicine in addition to his Master's Degree in International Health and Tropical Medicine.



- SPF creams/UPF fabrics
- DEET
- Permethrin
- Bed nets
- Public health insect control

## Fluids and Dehydration (2 hours)

This class is targeted to the physician, mid-level provider or advanced trained paramedic looking to improve their fund of knowledge in dehydration management and fluid replacement. The multitude of Intravenous and oral solutions are examined and the participant will be comfortable with appropriate selection and administration by the end of the class. Recognition, anticipation and treatment of electrolyte abnormalities are also covered in depth. This class is ideal for health care providers working in hot and tropical environments. Curriculum is centered on clinical management and disposition of the patient from an austere and remote location. Improvisational concepts are also discussed. The course curriculum is designed and instructed by a physician who specializes in remote and expeditionary medicine.



- Types of fluid (D5, NS, LR and D5 1/2 NS)
- Fluid replacement with PO and IV
- Hyponatremia and electrolyte abnormalities

## Envenomation and Insects (4 hours)

Envenomation recognition and management are discussed from a wide variety of animals, worldwide. This class focuses on real life application of skills in the treatment of envenomation. Health care providers who might be treating either team members or indigenous locals will be served well from this class. Specific attention is given to reptiles, arachnids and insects from 6 continents. Basic venom toxicology is covered as well as systemic pathophysiology. Participants will be taught to not only recognize the venomous animals by sight but also their bite patterns. Coursework includes scenarios and case management in remote and resource poor areas. Concepts of anti-venom and venom detection kits will also be discussed. The class focuses on clinical care for the envenomed patient including prompt recognition and diagnosis of the venom type, case management and disposition of the patient. The course curriculum is designed and instructed by a physician who specializes in remote and expeditionary medicine.



- Reptiles and types of poisons (neurotoxic, hemotoxic)
- Insects, anaphylaxis
- Scorpions and arachnids
- Marine life envenomation
- Pressure immobilization dressing



## Day 6

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### Sick Call Clinic (3 Hours)

Healthcare providers operating in a remote environment must perform many services. The operation of a “sick call” or “walk-in clinic” is one of the duties. This class prepares a provider to manage common complaints that prompt a team member to seek non-emergent care. Coursework includes scenarios and case management in remote and resource poor areas. The basic pathology, history and physical exam, differential diagnosis, treatment and disposition of these complaints are explored in detail. In addition, the provider is trained to recognize and triage potential complications of these complaints to ensure the patient gets referred to a higher level of care, as needed. Coursework focuses on provision of strong patient care and returning the patient to operational status as quickly as possible. The course curriculum is designed and instructed by a physician who specializes in remote and expeditionary medicine in addition to being a board certified primary care physician.



- Abdominal pain (management, red flags and disposition)
- Back pain (management, red flags and disposition)
- Cellulitis (management, red flags and disposition)
- Chest pain (management, red flags and disposition)
- Colds, cough and Influenza-like-illnesses (management, red flags and disposition)
- Conjunctivitis (management, red flags and disposition)
- Constipation (management, red flags and disposition)
- Contact dermatitis (management, red flags and disposition)
- Corneal Abrasions and ulcers (management, red flags and disposition)
- Dental pain (management, red flags and disposition)
- Diarrhea (management, red flags and disposition)
- Ear infections (management, red flags and disposition)
- Fevers (management, red flags and disposition)
- Flank pain and Renal Stones (management, red flags and disposition)
- Headache (management, red flags and disposition)
- Ingrown toe nail and foot care (management, red flags and disposition)
- Joint pain (management, red flags and disposition)
- Leg swelling (management, red flags and disposition)
- Lower extremity injury and minor trauma (management, red flags and disposition)
- Muscle strain (management, red flags and disposition)
- Pneumonia (management, red flags and disposition)
- Seasonal allergies (management, red flags and disposition)
- Shortness of breath (management, red flags and disposition)
- Skin Abscess (management, red flags and disposition)
- Smoke Inhalation (management, red flags and disposition)
- Sore throat (management, red flags and disposition)
- Syncope (management, red flags and disposition)
- Testicular pain (management, red flags and disposition)
- Upper extremity injury and minor trauma (management, red flags and disposition)
- Urinary tract infections (management, red flags and disposition)

## Vaccines for Travelers/Adults (1 hour)

Health care providers serving their team or a local indigenous population need to have a strong understanding of preventative health. The use of vaccines in health maintenance is critical. Coursework includes scenarios and case management in remote and resource poor areas. This class will allow the provider to assess a patient for vaccine requirements and appropriately deliver this service. The course curriculum is designed and instructed by a physician who specializes in remote and expeditionary medicine in addition to being a board certified primary care physician and certified in travel health.

- Yellow fever
- Japanese encephalitis
- Tetanus/Boosters in adult life
- Rabies pre-exposure
- Typhoid fever
- Meningitis
- Influenza
- Polio (oral and injectable)



## Wound Closure (4 hours)

This enormously popular class teaches the health care provider basic laceration and wound closure techniques including the use of anesthesia and wound cleaning. Our class serves as the perfect foundation to wound management for advanced trained paramedics operating in an austere environment or as a strong refresher to physicians and mid-level providers who might not have used this skill recently. Multiple methods of wound closure are examined including improvisation techniques. By the end of class our participants are confident in proper assessment of a laceration or wound, cleaning and debridement, anesthetic selection and administration, selecting the appropriate closure method and proper closure. Our participants are also instructed on providing education to their patients on wound care and follow-up. Coursework includes scenarios and case management in remote and resource poor areas. This course is very "hands-on" and utilizes animal tissue to facilitate skill mastery. Participants will be trained in a variety of suturing methods and instrument handling. The course curriculum is designed and instructed by a physician who specializes in remote and expeditionary medicine.

- How wounds heal
- LACERATE technique
- Anesthesia (Lidocaine and improvised)
- Dirty vs. Clean wounds; when not to close
- Simple interrupted sutures
- Octylcyanoacrylate, staples and strips
- Infections and antibiotics

