

BELIZE INSTITUTE FOR TROPICAL & WILDERNESS MEDICINE

WILDERNESS & INTERNATIONAL MEDICINE ROTATION FOR LOWER LEVEL MEDICAL & ALLIED HEALTH STUDENTS 2004 CURRICULUM

The Wilderness & International Medicine Rotation will provide the basic wilderness and international medical skills & knowledge needed to recognize and stabilize life threatening illness and injury, as well as treat a variety of common minor problems. Basic search and rescue skills as well as personal safety and survival skills are integral to providing effective care in wilderness and international settings, and will be practiced extensively in the course, along with basic disaster response and related topics.

The rotation consists of two weeks of self study coupled with practical field instruction in the country of Belize, Central America. The field portion consists of an fourteen-day module with two days off in the middle of the program. The program will be conducted at the Institute's Sibun River Training Base, a modern classroom & housing facility, with field exercises being conducted in the surrounding jungle, caves, and river areas. The field program is unique and very challenging – physically, but even more so mentally and emotionally – you will face challenges unlike those that you have faced before – and emerge a much stronger medical provider, technically and personally. The difficult challenge this program represents is a consistent theme prior students have commented on – and they have universally praised not only what they have learned about medicine, but what they have learned about themselves.

Note: This program is physically demanding - you do *not* need to be a world class athlete - but you do need to be able to walk up and down steep muddy hills with the equivalent of a 20 pound pack in high heat and humidity, function in dark and narrow spaces for brief periods, and be able to swim in water deeper than your height with the aid of a life jacket. All of our students to date have had little problem in meeting these challenges.

Instructors for this program are physicians and Paramedic instructors with extensive real world emergency medicine, wilderness, developing country, and teaching experience who have been working in Belize and around the world for many years. They are assisted by Belize National Cave & Wilderness Rescue Team medics who have completed an instructor development program, and other specially qualified staff, including selected honor graduates from prior programs.

All specialty gear and equipment will be provided. All students will be issued a rescue/caving helmet, webbing, rope, jungle hammock, and life jacket for use in the program. Students are responsible for all other personal gear as specified in the individual equipment list provided to you.

Join us for the adventure of a lifetime! A course syllabus follows on the next pages.
DAY 0 – ARRIVAL EVENING:

LOCAL ORIENTATION

- Transport to Sibun River Training Base
- Intro to instructors, staff, & students
- Facility orientation, rooms, meals
- Class & program schedule, finish registrations, issue gear

DINNER

SURVIVAL BASICS

- Basic safety rules, insects & insect control, wildlife
- Survival lecture, 10 basics, Rule of 3's, common errors
- Psychological emergencies & stress reactions
- 1 hour

MEDICAL & SURVIVAL KITS

- What works, what doesn't
- Most & least useful
- Show & tell
- 1 hour

DAY 1 - 24 HOURS:

HEAT INJURY & ILLNESS

- Types, signs, symptoms of heat injury
- Hypolytemia & electrolyte abnormalities
- Oral fluid rehydration, commercial & improvised solutions
- Sunburn prevention & treatment
- 1 hour

24 HOUR JUNGLE SURVIVAL OVERNIGHT TRIP

- Small groups, supervised by rescue team instructors
- Orientation to the jungle environment, plants, animals, Mayan history
- Safe machete use & practice
- Shelter making & jungle hammock use
- Procuring food & water in the jungle – local lunch & dinner
- Intro to knot tying, seat/chest harness, belay skills

DAY 2 - 8 HOURS:

RETURN FROM JUNGLE AFTER SUNRISE

- Clean up from jungle
- Debriefing & essay
- ½ hour

INTRODUCTION TO MEDICAL TRAINING

- Intro to wilderness medicine & rescue
- Medical, wilderness, and village care aspects in Belize
- Concepts vs. Cookbooks & improvisation
- What saves lives & limbs
- Research projects
- 1 hour

THE HUMAN BODY

- “Big 3” organ system review
- Concepts - perfusion, compensation, progression, protection responses
- Problems - swelling, ischemia, mental status change
- 1 hour

PERSONAL SAFETY, SCENE SAFETY, RISK/BENEFIT

- Threats to your safety, disease, injury, emotional stress
- Vaccinations
- Body Substance Isolation
- Scene evaluation & stabilization
- Risk/benefit analysis and the choices you must make
- 1 hour

LUNCH

PATIENT PACKAGING & BASIC MOVEMENT, PART 1

- Concept of cervical spine injury & immobilization
- Stokes, SKED, & improvised immobilization
- Transporting the patient in spinal immobilization
- Hands on practice & short local movement exercises (Sibun)
- 3 hours

DINNER

KNOT REVIEW & PATIENT PACKAGING, PART 2

- Hands on practice & short local night movement exercises (Sibun)
- 2 hours

DAY 3 – 8 HOURS:

PATIENT ASSESSMENT - INTRODUCTION

- Safety review
- Mechanism of injury, general impression, & triage
- Well-Sick-About To Die & The 60-Second Physician methodology
- Introduction to the primary survey
- Mental Status & AVPU
- C-spine protection
- ABCDE methodology
- 1 hour

PATIENT ASSESSMENT – AIRWAY & BREATHING WITH INTERVENTIONS

- Anatomy & physiology
- Assessment of airway & breathing status
- Obstruction
- Oxygen administration
- Nasal & oral airways, suction & positioning
- Pocket mask & BVM
- Cricothyroidotomy
- Hands on practice (Cric, Airway/suction, mask/BVM stations) (Sibun)
- 2 hours

PATIENT ASSESSMENT, PART 3

- Circulation, pulses, locating major bleeding, CPR
- Control of major bleeding
- Disability & rapid neurologic exam, interventions
- Exposure, when/when not
- Hands on practice (Sibun)
- 1 hour

LUNCH

PATIENT ASSESSMENT, PART 4

- Secondary survey, purpose and timing
- Taking pulse, respirations, skin condition & temperature
- SAMPLE history
- Hands on practice (Sibun)
- 1 hour

BASIC WATER/RIVER RESCUE & WATER OPERATIONS SKILLS

- River/swift-water dynamics & rescue methodology
- Throw bag use
- Swimming with clothing/boots/gear, improvised flotation, self rescue
- Spinal immobilization flotation
- 3 hours

DINNER

BASIC RESCUE OPERATIONS

- The nature of search & rescue, case studies
- Basic rescue operations organization & leadership
- The medical component of SAR operations
- Rescuer rehabilitation & recovery
- 2 hours

PLANNING TIME

- Planning for tomorrow's field exercise
- Belay practice

DAY 4 - 8 HOURS:

PATIENT ASSESSMENT, PART 5

- Hasty Exam
- Confined Space Exam
- Low Visibility Exam
- Integration of assessment
- Hands on practice (Sibun)
- 1 hour

INTRODUCTION TO TRAUMA

- General nature of trauma problems
- Response times
- Contributing factors
- Multiple injuries
- Imperfect & improvised solutions
- Pain management
- 1 hour

ORTHOPEDIC TRAUMA, PART 1

- Anatomy & physiology
- General principles of orthopedic care
- Fractures, dislocations, strains, sprains
- Assessment, movement, & "Better/Worse" methodology
- RICES
- Pain management
- Principles of splints, casts, & immobilization
- 1 hour

ORTHOPEDIC TRAUMA, PART 2

- Head, chest, & upper extremity fractures, etc.
- Reduction & immobilization
- Reassessment
- Hands on practice (Sibun)
- ½ hour

ORTHOPEDIC TRAUMA, PART 3

- Pelvis & lower extremity fractures, etc.
- Reduction & immobilization
- Reassessment
- Hands on practice (Sibun)
- ½ hour

LUNCH

FIELD EXERCISE & SKILLS ASSESSMENT

- Cave rescue scenario (Ellen's Cave), field practice making improvised splints & litters, small group practical testing on patient assessment and ABCDE interventions, return in time for late dinner (19:00), 6+ hours

DAY 5 – 8 HOURS:

CIRCULATION, BLEEDING, & SHOCK

- Pump/Pipe/Fluid model
- Internal/External bleeding
- Types of shock
- Recognizing Early/Late/Dying shock
- Treatment
- Hands on practice (Sibun)
- 1 hour

HEAD & SPINE INJURIES, PART 1

- Anatomy & physiology
- Neurological examination
- Open & closed head injuries
- Triage & evacuation decisions
- C-spine clearance protocol & practice
- Hands on practice (Sibun)
- 1 hour

CHEST & ABDOMINAL TRAUMA

- Anatomy & physiology
- Assessment
- Open/Closed & Blunt/Penetrating injuries

- Pneumo-hemothorax & needle decompression
- Impaled objects
- Triage & evacuation decisions
- Treatment
- Hands on practice (Sibun)
- 1 hour

INTRO TO PHARMACOLOGY & MED ADMINISTRATION

- Basics of medications, safety, storage, dosing
- PO, SL, IM, IV administration
- Hands on practice (Sibun)
- 1 hour

LUNCH

SOFT TISSUE INJURIES, PART 1

- Anatomy & physiology
- Infection & Tetanus
- Amputations, bites, & impaled objects
- Burns
- Wound cleaning & bandaging
- Closures with tapes, glues
- Hands on practice (Sibun)
- 1 hour

SOFT TISSUE INJURIES, PART 2

- Local anesthesia
- Closures with staples, sutures
- Hands on practice (Sibun)
- 1 - 2 hours

DINNER

PHOTO SHOW OF COMMON & UNUSUAL INJURIES & SITUATIONS

PLANNING TIME

- Planning for tomorrow's field exercise
- Belay practice

DAY 6 – 8+ HOURS

FIELD EXERCISE – Cave rescue scenarios (Footprint Cave) with moulaged patients, patient assessment, c-spine management, ortho injuries, and moderate carry out - includes skills check off, Mayan artifacts tour, 8 hours +, field lunch, off after clean up & essay

DAY 7 - *** DAY OFF ***** Various Activities Per Student Choice**

DAY 8 – 8 HOURS:

CARDIAC EMERGENCIES

- Anatomy & physiology
- Assessment
- Chest pain – angina, infarction, failure
- Chest pain protocol & medications Oxygen, ASA, Nitro, evacuation
- 1 ½ hours

RESPIRATORY EMERGENCIES

- Anatomy & physiology
- Assessment
- Asthma
- Pneumonia
- Hyperventilation
- Asthma protocol & medications, Oxygen, Albuterol, Epi, evacuation
- 1 ½ hours

FLUID THERAPY PART 1

- Why fluid resuscitation
- Anatomy & physiology
- Routes & methods
- Equipment
- Proctoclysis
- Dermoclysis
- 1 hour

LUNCH

FLUID THERAPY - PART 2

- Equipment
- Intravenous therapy
- Hands on practice (Sibun)
- 1 hour

ALLERGIC REACTIONS, ANAPHYLAXIS, BITES, STINGS, & POISONING

- Allergic reactions, anaphylaxis protocol & medications, Oxygen, Albuterol, Epinephrine, Benedryl, Antivenin, evacuation
- Snakebite & insect bite management
- Contact dermatitis, skin irritations, poisoning
- 2 hours

PLANNING TIME

- Planning for tonight's field exercise

DINNER

NIGHT FIELD EXERCISE – After dinner scenarios with moulaged patients, patient assessment, c-spine management, ortho injuries, soft tissue injury, IV's, and moderate carry out - includes skills check off – 2+ hours

DAY 9 – 8 HOURS:

ABDOMINAL & URO/GENITAL EMERGENCIES

- Anatomy & physiology
- Assessment
- Organ system based problems
- Triage & evacuation decisions
- ½ hour

NEUROLOGIC EMERGENCIES

- Anatomy & physiology
- Assessment
- Stroke
- Seizures
- Meningitis
- Triage & evacuation
- ½ hour

COMMON SIMPLE EMERGENCIES

- 20+ common problems and simple solutions
- Typical common village health problems
- 1 hour

METABOLIC EMERGENCIES

- Anatomy & physiology
- Assessment
- Hypoglycemia
- Hyperglycemia
- Thyroid & other disease
- Prevention
- Oral Glucose
- Assisting with insulin injections
- 1 hour

ENVIRONMENTAL EMERGENCIES

- Hypothermia & cold
- Drowning & diving
- Lightning
- 1 hour

LUNCH

DROWNING & DIVING EMERGENCIES

- Anatomy & physiology
- Assessment
- Near drowning
- Decompression sickness & gas embolism
- Treatment
- ½ hour

EENT EMERGENCIES

- Anatomy & physiology
- Assessment tools
- Treatment
- 1 hour

DENTAL EMERGENCIES

- Anatomy & physiology
- Assessment tools
- Treatment & improvised therapies
- Practice
- 1 hour

DINNER

TROPICAL DERMATOLOGY

- Common tropical skin problems
- Assessment & simple lab tests
- Treatments
- 1 hour

DAY 10 – 8 HOURS:

TROPICAL INFECTIOUS DISEASES

- Malaria
- Dengue
- Parasites
- Assessment & diagnosis
- Treatment
- 2 hours

DISASTER RESPONSE & OPERATIONS, PART 1

- Preplanning & initial response
- Common problems
- Public health issues
- Practical water purification, sanitation, vector control
- Case studies
- 2 hours

LUNCH

ORAL SKILLS TESTING & PLANNING TIME

- Oral testing, knot testing
- Planning for tomorrow's field exercise

DINNER

BUFFER TIME - PRN USE

DAY 11 – 8+ HOURS:

FINAL PRACTICAL EXERCISES & SCENARIOS FIELD EXERCISE – Early start scenarios with moulaged patients, patient assessment, c-spine management, ortho injuries, soft tissue injury, IV's, medical emergencies, and moderate carry out - includes skills check off – 8+ hours, essay after return

GRADUATION DINNER & PARTY!

DAY 12 – DEPARTURE DAY:

Departure or optional extra days as desired