





# Draft - Minimum Guidelines and Scope of Practice for Wilderness First Responder (WFR)

## Core Skills

### Patient Assessment and BLS

- Evaluate the scene and assess for safety and causes, emphasizing personal and team protection.
- Perform an Initial Assessment/Primary Survey to identify and treat life threats.
  - Respiratory System
    - Manually open, maintain and protect an airway with standard BLS techniques and the recovery position.
    - Provide adequate ventilations by mouth to mask.
  - Circulatory System
    - Assess for pulse and signs of life, administer chest compressions, use AED, understand start/stop considerations for CPR in the remote context.
    - Control serious bleeding with well-aimed direct pressure, pressure bandage or tourniquet.
  - Nervous System
    - Assess LOC/LOR, identify a potential mechanism for spine injury, protect the spine and minimize movement.
    - Monitor and maintain airway control and breathing for people with an impaired LOC/LOR.
- Perform a Secondary Survey/Focused History and Physical Exam
  - Perform a physical exam to identify obvious injuries or abnormalities.
  - Measure and monitor vital signs (LOC/LOR, HR, RR, Skin Signs).
  - Obtain a patient history (SAMPLE).
  - Monitor a patient for changes over time.
  - Document findings, ongoing assessments and treatments in writing.
  - Deliver a concise, complete and clear verbal patient report.
- Care for immobilized patients for hours or days including: assistance with urination and defecation or diapering, massage, bed sore and pulmonary embolus prevention, maintaining core temperature, emotional support and hydration.
- Plan and conduct evacuation or initiate contact with outside resources.
- Elective skills
  - BP with sphygmomanometer and stethoscope
  - Infant CPR
  - AED (automatic external defibrillator)

### Circulatory System

- Know common wilderness causes of shock (vomiting/diarrhea; bleeding).
- Recognize signs, symptoms and vital sign patterns of low volume shock (hypovolemic), low pressure shock (cardiogenic or pump failure), and low resistance shock (neurogenic) and an acute stress reaction.
- Initiate appropriate treatment
  - Oral fluids for patients with normal mental status.
  - Stabilize injuries.
  - Control external bleeding with well-aimed direct pressure, pressure/clot enhancing bandage or tourniquet.
  - Protecting from adverse environmental conditions.
- Decide on need and urgency of evacuation. Consider ability to stop and restore fluid loss, responsiveness to treatment and the trend in vital signs.

### Acute Coronary Syndrome

- Recognize signs and symptoms.
- Initiate appropriate treatment
  - Stop activity.
  - Support patient with their personal medications (e.g. aspirin and prescribed nitro).
  - Initiate evacuation.

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## Respiratory System

- Know the most common causes of respiratory distress and respiratory failure (asthma, airway obstruction, trauma).
- Recognize signs and symptoms of respiratory distress and respiratory failure (asthma, airway obstruction, trauma).
- Recognize signs and symptoms of hyperventilation.
- Recognize chest trauma.
  - Assess for and recognize chest and lung injury.
- Initiate appropriate treatment to include:
  - Maintain appropriate and comfortable position.
  - Maintain patent airway and support ventilation.
  - Assist patient with their personal medications (e.g. prescribed inhaler).
  - Stabilize/support the injured area.
  - Seal an open chest wound.
- Decide on need and urgency of evacuation. Consider trend in respiratory status, presence of abnormal mental status or skin color, and worsening symptoms despite treatment.
- Elective skills
  - Assess lung sounds with stethoscope for presence v absence, clear v noise, wheezes and crackles.
  - Medical oxygen (including appropriate delivery devices e.g., cannula or mask; airway management devices e.g. OPA, NPA, and PPV; and Mouth-to-mouth, mouth-to-mask or BVM ventilation as needed.)

## Nervous System

Traumatic causes of abnormal mental status

- Recognize signs and symptoms of traumatic brain injury, including:
  - Alteration of mental status
  - Loss of consciousness
  - Confusion, disorientation
  - Persistent fatigue, light sensitivity
- Recognize signs and symptoms of serious head injury with increased intracranial pressure (ICP).
- Initiate appropriate treatment.
  - Protect the airway.
  - Protect the spine.
  - Protect the patient from environmental extremes.
  - Monitor the patient for changes in mental status.

Non-traumatic causes of abnormal mental status

- Know common causes of abnormal mental status (e.g. trauma, extremes of temperature, inadequate oxygen, low blood sugar, seizure, stroke/CVA, toxins).
- Recognize abnormal mental status.
- Initiate appropriate treatment.
  - Oral sugar
  - Cooling in the presence of heat stroke
  - External warming in the presence of mild hypothermia
  - Ventilation for a hypoxic patient
  - Protect the patient (airway, spine, environmental extremes)
- Decide on need and urgency of evacuation. High risk problems include persistently altered mental status/disorientation/decreased level of consciousness, no improvement despite treatment, signs of increased ICP.

## Trauma

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## Spine Injury

- Recognize a high risk mechanism of injury for spine.
  - Fall associated with loss of consciousness
  - Trauma resulting from high velocity impact (e.g., MVA, climbing falls, high speed skier/biker)
  - Falls from greater than 3 ft (1 meter)
  - Landing on head or buttocks (axial loading)
- Recognize signs and symptoms of possible spine injury.
  - Spine tenderness and pain
  - Loss or impaired motor or sensory function
  - Unconsciousness or abnormal mental state
- Initiate appropriate treatment.
  - Stabilize the spine with hands or adjuncts (e.g. improvised or commercial c-collar).
  - Rolls, lifts and extrication as needed to facilitate patient examination and protection
  - Selective spine protocol (CSR, NEXUS or modified NEXUS criteria)
  - Stabilization/protection on a litter, vacuum splint or backboard (or protected on the ground) for obvious spine injuries or spines that cannot be cleared of potential injury.
- Decide on need and urgency of evacuation. High risk problems include s/s of spine or spinal cord injury.
- Elective skill
  - Improvised litters or stretchers

## Soft Tissue Injury

### Wounds

- Recognize life-threatening bleeding.
- Initiate appropriate treatment.
  - Control bleeding with well-aimed direct pressure, pressure/clot enhancing bandage or tourniquet.
  - Tourniquets should not be released if the patient is in shock or there is a complete amputation. In other situations a release attempt within 2 hours of application in a stable patient is acceptable.
- Recognize simple versus high risk wounds (e.g. grossly contaminated, marine, crushing, open joint spaces, animal bites).
- Initiate appropriate treatment.
  - Clean wounds by removing debris scrubbing and irrigating (potable water under pressure, dilute povidone-iodine solution or other agents).
  - Bandage wounds.
  - Manage blisters, splinters and fishhook injuries (prevention and treatment).
  - Manage impaled objects (more than a fishhook or splinter).
    - Remove airway obstructions.
    - Remove objects impaled from limbs only if unable to stabilize, will easily fall out, prevents transport or unable to control bleeding because of the object.
  - Manage amputations.

### Infections

- Recognize signs and symptoms of local versus systemic infection.
- Initiate appropriate treatment for local versus systemic infection.
  - For local infections: warm compresses, promote drainage, monitor
  - For systemic infections: warm compresses, promote drainage, monitor and evacuate
- Prevention: MRSA awareness, hygiene

### Burns

- Recognize superficial, partial and full-thickness burns.
  - Assess depth.
  - Approximate percent of body surface area involved.
  - Identify high risk areas (e.g. palms and soles, face/airway, genitals).
- Initiate appropriate treatment.

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- Cool and protect with clean, non-adherent bandage.
- Decide on need and urgency of evacuation. Most burns are evacuated due to patient comfort, inability to travel or participate or lack of dressing.
- Prevention: for sunburn and spilled hot water burns.

## Musculoskeletal Injuries

- Recognize signs and symptoms of musculoskeletal injury
- Differentiate between stable and unstable injuries.
  - Inability to use
  - Angulated
  - Feels unstable
  - Persistent distal ischemia
- Recognize signs and symptoms of high risk problems associated with musculoskeletal injuries.
  - Fractures of the femur or pelvis
  - Open fractures
  - Persistently impaired CSM
  - Involvement with a critical system
- Initiate appropriate treatment.
  - Treat stable injuries using RICE and a brace/tape as needed.
  - Treat unstable injuries with:
    - Gentle traction into position for angulated long bones
    - Splints that provide adequate stabilization, are comfortable for extended care situations and allow for ongoing monitoring of perfusion
    - Wound care for open fractures
  - Treat dislocations with:
    - Reduction of shoulder, patella, obvious digit and jaw dislocations.
    - In the case of impaired CSM for any dislocation use traction and reposition to improve CSM and comfort.
- Decide on need and urgency of evacuation. High risk problems include open fractures, volume shock and altered CSM secondary to an injury.
- Elective skill:
  - Traction splints, improvised or commercial, for mid-shaft femur fractures.

## Environmental Medicine

### Heat Illness

- Recognize signs and symptoms of heat exhaustion/dehydration, hyponatremia and heat stroke
- Initiate appropriate treatment
  - Heat exhaustion/dehydration
    - Oral fluids and electrolytes
    - Evacuate if not improving
  - Heat stroke
    - Aggressive, immediate cooling
    - Evacuate
  - Hyponatremia
    - Consider fluid restriction or replacing salt with foods or a salt-based solution.
    - Evacuate
- Prevention: Identify predisposing environmental conditions and prevention strategies
- Decide on need and urgency of evacuation. Evac heat stroke. Consider evacuation if unable to manage fluid status or persistent altered mental status.

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## Hypothermia

- Recognize signs and symptoms of mild and severe hypothermia.
- Initiate appropriate treatment
  - Mild hypothermia
    - Oral fluid, calories, protect from the environment
    - Evacuate if not improving
  - Severe hypothermia
    - Prevent heat loss (hypo wrap with added heat)
    - Handle gently, evacuate
    - Avoid chest compressions
- Prevention: Identify predisposing environmental conditions and prevention strategies
- Decide on need and urgency of evacuation. High risk problems include severe hypothermia or inability to stabilize temperature.

## Local Cold Injury (Frostbite and Non-Freezing Cold Injury)

- Recognize signs and symptoms of frostbite and non-freezing cold injury
- Initiate appropriate treatment
  - If not frozen, warm the injury
  - Field thawing only if minimal risk of refreezing
  - If frozen, ideally thaw in a warm water bath (99-102°F). Practically this may need to be skin to skin.
  - Protect from re-freeze, do not use radiant heat or massage.
- Prevention: identify predisposing environmental conditions and prevention strategies
- Decide on need and urgency of evacuation. Consider extent of injury, ability to use the injury or to protect from re-freeze.

## Altitude

- Recognize signs and symptoms of Acute Mountain Sickness (AMS)
- Recognize signs and symptoms of HACE and HAPE
- Recognize patients who need to stop ascent and acclimatize or descend/evacuate.
- Initiate appropriate treatment
  - Stop ascent if symptomatic
  - Descend if no improvement
  - Descend immediately in presence of shortness of breath (HAPE) and ataxia and/or mental status changes (HACE)
- Understand current recommendations for medications for prevention and treatment of altitude illness.
- Decide on need and urgency of evacuation. High risk problems include altitude illness with shortness of breath at rest on mild exertion (HAPE) and ataxia and/or mental status changes (HACE) or any patient with AMS who is not acclimatizing.
- Prevention: identify predisposing environmental conditions and prevention strategies

## Lightning

- Know the common mechanisms of lightning injury and common presentation of injury (cardiovascular, neurological, burns)
- Initiate appropriate treatment including reverse triage.
  - Treat what you find
- Decide on need and urgency of evacuation.
- Prevention: Recognize high risk weather conditions and prevention strategies
  - Have a lightning plan, know local weather patterns, leave the scene and/or seek adequate shelter,

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## Submersion - Drowning

- Initiate appropriate treatment
  - Respiratory support
  - Spine injury potential
  - Hypothermia
- Prevention: recognize high risk conditions and prevention strategies with an emphasis on personal safety when traveling or planning rescue
- Decide on need and urgency of evacuation. High risk problems include loss of consciousness or persistent respiratory distress.

## Backcountry Medical Problems

A WFR needs to be familiar with a range of medical problems (flu-like, respiratory, diabetes, cardiac, altered mental status, urinary tract infection (UTI), vaginitis, testicular pain) which can present in remote circumstances. However, the scope of practice for a WFR remains prevent, identify, initiate reasonable and prudent field management and identify red flag signs and symptoms necessitating evacuation for potentially life-threatening problems including changes in level of consciousness, chest pain, shortness of breath and abdominal pain.

### Flu-like illness, N/V/D, Fever, Cough/URI

- Recognize signs and symptoms of Flu-like illness
- Initiate appropriate treatment
  - Treat symptomatically. Focus on hydration.
- Prevention: Understand the role of camp hygiene (handwashing, kitchen sanitation food preparation and water disinfection)
- Decide on need and urgency of evacuation. Identify red flag evacuation criteria:
  - Vomiting and diarrhea (Evacuation: blood, fever, tenderness, dehydration)
  - Fever (Evacuation: abnormal mental state, headache, persistent high fever)
  - Cough/URI (Evacuation: respiratory distress, fever, coughing up colored phlegm)

### Abdominal Pain

- Recognize signs and symptoms
- Initiate appropriate treatment
- Decide on need and urgency of evacuation. Identify red flag evacuation criteria:
  - Abdominal pain: (persistent local tenderness, fever, persistent vomiting, getting worse over 12 hrs, any noticeable blood in stool, urine, or vomit, signs and symptoms pregnancy, peritoneal signs)

### Allergy

- Recognize signs and symptoms of local and mild allergic reactions
- Initiate appropriate treatment
  - Treat local reactions with cool compresses, topical corticosteroid
  - Treat mild allergic reactions with oral antihistamine

### Anaphylaxis

- Recognize s/s of anaphylaxis
  - Treat anaphylaxis with epinephrine oral antihistamine and evacuation.
- Decide on need and urgency of evacuation

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## Genito-Urinary

- Recognize signs and symptoms of vaginitis (in females), UTI, and testicular pain (in males).
- Initiate appropriate treatment
  - Treat vaginitis symptomatically with OTC medications
  - Treat UTI with hydration
- Decide on need and urgency of evacuation. Consider effectiveness of treatment.
- Prevention: Identify predisposing conditions and prevention strategies

## Dental

- Recognize signs and symptoms lost crown/fillings, broken teeth, avulsed teeth and dental infections.
- Initiate appropriate treatment
  - Dental hygiene
  - Covering lost fillings, broken crowns
  - Attempt to preserve avulsed teeth
- Decide on need and urgency of evacuation. Decisions are usually made on patient comfort.

## Diabetes

- Recognize signs and symptoms of hypoglycemia and hyperglycemia
- Initiate appropriate treatment
  - Treat all diabetic emergencies with a change in LOC/LOR with oral sugar while maintaining a patent airway and until a blood sugar has been determined.
- Decide on need and urgency of evacuation. High risk problems include:
  - Any person who is unable to maintain blood sugar within their normal range.
  - Any person with altered mental status that does not respond to administration of glucose.
  - Any diabetic with an underlying infection and a fever

## Eyes and Ears

- Recognize signs and symptoms of eye problems
- Initiate appropriate treatment
  - Irrigation and gentle removal for objects in eye
  - Cool compresses and dark glasses for snowblindness
  - Craft improvised sunglasses for traumatic eye injury or snowblindness.
  - Evacuate visual problems more than blurring, persistent irritation.
- Recognize objects in the ear, ear canal infections and changes in ability to hear.
- Decide on need and urgency of evacuation.

## Poison Ivy, Oak, Sumac

- Recognize signs and symptoms of urushiol reactions
- Initiate appropriate treatment
  - Symptomatic treatment.

## Sunburn

- Initiate appropriate treatment
  - Treat as a superficial burn
- Prevention: Understand the role of UV barriers; sunscreen and clothing.

## Motion sickness

- Initiate appropriate treatment
- Prevention: Understand predisposing environmental conditions and prevention strategies

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## Toxins

### Poisoning

- Understand general principles of ingested, inhaled and absorbed poison management and CO poisoning
- Prevention: label substances, identify plants, avoid stoves, lanterns and other CO sources in poorly ventilated spaces.
- Initiate appropriate treatment:
  - Ingested Poisons: if poison is non-corrosive, non-petroleum based and the patient is fully responsive induce vomiting. Otherwise dilute with water (If normal LOR, patient can swallow).
  - Inhaled Poisons: (commonly CO, occasionally other gasses e.g. volcanic fumes) Scene safety. Remove from exposure. administer O<sub>2</sub>, if available.
  - Absorbed Poisons: remove contaminated clothing. Flush area with water and wash with soap.
- Decide on need and urgency of evacuation. High risk problems include altered LOC/LOR or signs of respiratory distress.

### Snake bite

- Initiate appropriate treatment
  - Immobilize the limb
  - Compression wraps, which are controversial, according to local guidelines.
  - Avoid unproven or discredited treatments that may harm (ice, incision and suction, electricity, tourniquets, compression, meat tenderizer, etc)
  - Transport to a physician/hospital
  - Monitor for signs and symptoms of envenomation
- Decide on need and urgency of evacuation. High risk problems include any s/s of envenomation.
- Prevention: identify common human behaviors that are factors in snakebite incidents.

### Arthropods (insects, arachnids e.g. scorpions, spiders)

- Initiate Appropriate treatment
  - Symptomatic treatment including wound care.
  - Tick removal
- Evacuate symptomatic scorpion stings to medical care and possible antivenin administration
- Decide on need and urgency of evacuation: Evacuate if rash, fever, headache appear secondary to a bite.
- 
- Prevention: Understand the role of clothing, netting, repellents, insecticides in prevention of disease transmission.

## Medical Legal

- Understand the following legal concepts as they apply to wilderness medicine
  - Duty to Act and Good Samaritan Laws
  - Scope of practice and standards of practice
  - Consent and confidentiality
  - Understand the concepts of certification, licensure, and protocols
- Understand the legal implications of a non-licensed provider possessing and administering medications.
- Understand the function of written medical protocols and guidance from a medical advisor.
- Medication Administration
  - Understand the legal aspects of medication administration by laypeople in a remote context.
  - Understand the concepts of right drug, reason, route, dose, and patient.
  - A WFR should not be making decisions on whether a patient should or should not take their personal prescription medications (unless it's an obvious situation of abuse or harm). A WFR may assist trip participants in the administration of prescription medications and may offer OTC medications for adults to make their own decision according to the package label.
  - The possession and administration of epinephrine by laypeople is a complex issue. Support for laypeople using epinephrine for anaphylaxis amongst jurisdictions, including from country to country, varies considerably. It is important to encourage students to become familiar with any specific

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regulations in this regard and to know implications. Organizations should be strongly encouraged to seek advice from a lawyer and/or guidance from a person acting as a medical advisor before deciding to initiate a policy that includes the emergency use of injectable epinephrine

## Elective Topics

Electives are skills and knowledge within the WFR Scope of practice, that can be included or excluded at the discretion of the provider and course sponsor to meet specific needs of the student and the context in which they will use their WFR

## SAR Fundamentals

- Understand fundamental concepts of search and rescue, ICS, and evacuation plans

## SCUBA Diving Injury

- Know the physiology of SCUBA and breathing a gas under pressure.
- Know how and why pulmonary over pressure problems and decompression sickness occur
- Recognize the common signs and symptoms including joint pain, paresthesias, limb or facial weakness or any evidence of critical system problems following SCUBA diving
- Initiate treat to include:
  - Stabilization of critical system problems
  - Provide supplement high flow oxygen when available
  - Contact DAN if possible (Divers Alert Network: 919-684-9111)
- Decide on the need and urgency of evacuation:

## Mental Health

- Recognize a possible mental health issue.
- Recognize signs of stress in participants and colleagues.
- Perform a complete patient assessment to rule out/not miss physical causes
- Decide on need and urgency of evacuation. High risk problems include inability to manage the mental health problem in the field and if the patient appears to be a danger to self or others.

## Toxins: Marine

- Initiate appropriate treatment
  - Treat Nematocysts (jelly fish, corals, anemones)
    - Saltwater rinse to remove loose nematocysts, soak in alcohol or vinegar (first test a small area of the sting for adverse effects), scrape off remaining nematocysts.
  - Treat Marine Spine Injury:
    - Soak in hot water until pain relieved or 30-90 minutes, standard wound care.
  - Evac to supportive care
    - If pain persists, the rash worsens, a feeling of overall illness develops, a red streak develops between swollen lymph nodes and the sting, or if either area becomes red, warm and tender.