

HEALTH THREAT BRIEF
for
SOLDIERS DEPLOYING TO BOSNIA

Prepared by
DEPUTY CHIEF OF STAFF FOR OPERATIONS
U.S. ARMY CENTER FOR HEALTH PROMOTION & PREVENTIVE MEDICINE
Aberdeen Proving Ground, Maryland

Revised October 1996

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

DTIC QUALITY INSPECTED 2

19970409 021

CONTENTS

PURPOSE	Slide 3
BOSNIA OVERVIEW	Slide 4
HEALTH THREAT OVERVIEW	Slide 5
WATER PRECAUTIONS	Slide 6
FOOD PRECAUTIONS	Slide 7
INFECTIOUS HEPATITIS (VIRAL HEPATITIS A)	Slide 8
AVOIDING DISEASE & INJURIES FROM HAZARDOUS ANIMALS, PLANTS, & INSECTS .	Slide 9
AVOIDING DISEASE & INJURIES TRANSMITTED BY RODENTS	Slide 10
AVOIDING HOT WEATHER INJURIES	Slide 11
AVOIDING COLD WEATHER INJURIES	Slide 13
AVOIDING DISEASES CAUSED BY INSECTS & TICKS	Slide 15
LEISHMANIASIS	Slide 18
EXAMPLES OF INSECTS THAT TRANSMIT DISEASE	Slide 19
AVOIDING DISEASES CAUSED BY OTHER PEOPLE	Slide 20
MANAGING AND REDUCING STRESS	Slide 21
AVOIDING DISEASE & INJURIES CAUSED BY ENVIRONMENTAL POLLUTION	Slide 22
AVOIDING DISEASE & INJURY FROM CHANGE IN ALTITUDE AND TIME ZONE	Slide 23
ADDITIONAL PERSONAL PROTECTIVE MEASURES	Slide 24
ADDITIONAL PERSONAL PROTECTIVE MEASURES -- FEMALE SOLDIERS	Slide 26

PURPOSE

- Provide information for medical health threat briefings to soldiers who are deploying to Bosnia.
- Health threat briefings are required for all personnel deploying to Bosnia.
- The information provided here reflects the most current information available at the time of publication. The countermeasures provided here will minimize or eliminate disease and non-battle injuries. Disregarding these basic countermeasures will impact on health, the health of fellow service members, and jeopardize current military operations.

BOSNIA OVERVIEW

- Bosnia-Herzegovina is slightly larger than Tennessee. The country is primarily mountainous with several peaks exceeding 6,250 feet elevation and is subject to earthquakes.
- Health risks of military importance are primarily caused by extremes of heat and cold, poor food and water sanitation, and absence of public health services. Fighting has destroyed or damaged several cities, resulting in limited access to food, water, and sanitation services. Local water supplies are targets for destruction or contamination. Diseases of military importance in Bosnia include food/water- borne diseases; insect/tick/mite and animal-borne diseases; and person-to-person contagious diseases.
- Living and sanitation conditions in Bosnia have worsened since fighting began in 1992. Homes have been damaged or destroyed by fighting and many farms and food processing facilities have been destroyed. Mass movements of refugees aggravate poor sanitation and environmental conditions.

HEALTH THREAT OVERVIEW

- Health threats can change as a result of weather conditions, natural disaster, war, or disease outbreak
- Health threats can become widespread with movement of displaced people and animals
- Between 37,000 - 47,000 troops from over 30 countries will be participating in operations in or around Bosnia. U.S. forces may be exposed to a variety of cultures, languages, religions, and customs as well as diseases not usually found in the U.S. or Bosnia.

READ AND FOLLOW GUIDELINES IN

A SOLDIER'S GUIDE TO STAYING HEALTHY IN BOSNIA

A guide for all personnel deploying to Bosnia

A LEADER'S GUIDE TO STAYING HEALTHY IN BOSNIA

A guide for Commander's, senior NCO's, and other unit leaders

Local reproduction of this briefing and other "Staying Healthy" publications is authorized.
Obtain these publications by calling the

U.S. Army Center for Health Promotion & Preventive Medicine
DSN 584-2488 / COM (410) 671-2488

or fax request to DSN 584-8492 / COM (410) 671-8492

WATER PRECAUTIONS

ALL PERSONNEL WILL USE THE FOLLOWING BASIC WATER PRECAUTIONS TO AVOID STOMACH/INTESTINAL DISEASE (i.e., resulting in diarrhea, stomach ache):

- Only consume water from U.S. military approved sources.
- Do not use local water (including ice cubes) for drinking or cooking.
- Ensure all bottled water supplies are inspected by either Preventive Medicine or Veterinary personnel -- Bottled water does not guarantee purity. Avoid storing water in direct sunlight.
- If local water must be used, disinfect using one of the following methods:
 - Calcium hypochlorite at 5.0 ppm after 30 minutes
 - Chlor-Floc™ or Iodine tablets as per label instructions
 - Rolling boil for 5-10 minutes
 - Add 2-4 drops ordinary chlorine per quart of water and wait 30 minutes
- Lakes, rivers, and streams are likely to be contaminated. Avoid unnecessary bathing, swimming, and wading.

**REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY**

FOOD PRECAUTIONS

ALL PERSONNEL WILL USE THE FOLLOWING BASIC FOOD PRECAUTIONS TO AVOID DISEASE (i.e., hepatitis):

- Wash hands before eating.
- Only consume food and ice from U.S. military approved sources.
- Do not consume any food in any local establishment or from street vendors unless approved by on site U.S. military Preventive Medicine or Veterinary personnel.
- Keep hot foods hot (140°F or above) and cold foods cold (40°F or below).
- Follow waste disposal procedures identified by Field Sanitation Team members and FM 21-10-1.
- If local food must be used, select foods such as breads and other baked goods, fruits grown on trees that have thick peels (washed with safe water), and foods that have been boiled (rice, vegetables, etc.).

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

INFECTIOUS HEPATITIS (VIRAL HEPATITIS A)

- While *infectious hepatitis* is seldom fatal, it can cause soldiers to be incapacitated for two weeks to one month or longer. This disease is highly communicable (contagious). It is transmitted from soldier to soldier through:
 - **The Fecal-Oral Route:** Eating, drinking, or otherwise putting hands in/around mouth after using the latrine or handling contaminated materials. Countermeasure: Educate soldiers on the importance of good personal hygiene (wash hands before/after using latrine, before eating, after handling dust, dirt, mud).
 - **Contaminated Water or Food:** Consuming non-approved food or water. Countermeasure: Ensure soldiers are aware of importance of eating/drinking only from approved sources. Ensure food preparers practice good personal hygiene.
- Field sanitation teams must ensure special emphasis is placed on proper disposal of feces and handwashing devices are provided at all latrines and dining areas.

(Source: AMEDD Center & School Medical Lessons Learned, Lesson #70, Infectious Hepatitis (Viral Hepatitis A))

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING DISEASE & INJURIES FROM HAZARDOUS ANIMALS, PLANTS, AND INSECTS

- Minimize contact with all animals -- alive or dead -- especially rodents. Cats, dogs, and other wild animals may carry rabies and other diseases.
 - Avoid animal mascots.
 - Follow personal protective measures when handling or disposing animals, livestock, raw meats, or unpasteurized dairy products.
- Venomous snakes are common and aggressive when disturbed. Centipedes, scorpions, and spiders can be found throughout the region.
 - Do not put hands into dark or concealed areas.
 - Wear long sleeves and gloves when working in infested areas.
 - Inspect clothing, shoes, bedding, and latrines before use.
 - Inspect and clear areas before touching, leaning, sitting, or laying on anything.
- Many plants and trees are hazardous to humans, causing illness, injury, or skin irritation if touched, and/or may be poisonous if eaten.

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING DISEASE & INJURIES TRANSMITTED BY RODENTS

- *Hemorrhagic Fever with Renal Syndrome (HFRS)* is a disease transmitted primarily by inhaling dust contaminated with infected rodent droppings or saliva.
- Rodents should not be tolerated in the unit area.
 - Maintain a high state of sanitation throughout the unit area. Discourage rodent populations by following waste disposal procedures.
 - Seal openings 1/4-inch or greater.
 - Avoid inhaling dust when clearing or cleaning previously unoccupied areas. Mist these areas with water prior to sweeping. When possible, disinfect areas using 3 oz of liquid bleach per 1 gal of water.
 - Promptly remove dead rodents from the area. Use disposable gloves or plastic bags over hands when handling any dead animal, placing the dead rodent/animal into a plastic bag prior to disposal. Follow instructions from Preventive Medicine personnel for safe disposal of dead rodents or rodent droppings.
 - Eliminate food storage and consumption in living areas.
 - Seek medical attention for soldiers who have been bitten or scratched by a rodent or animal, or if a soldier experiences difficulty breathing or flu-like symptoms.

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING HOT WEATHER INJURIES

- A significant threat of hot weather injury exists throughout the year in Bosnia. Minimize the effects of hot weather by:
 - Drinking plenty of fluids (monitor urine color -- it should be the color of weak lemonade). Thirst is not an accurate indication of the body's need for water. Commanders and leaders must enforce water discipline.
 - Identify soldiers with previous heat injuries; use the buddy system.
 - Wear uniform properly: tuck pant leg into boots/sleeves down; wear natural fiber clothing (cotton) next to skin for increased ventilation.
 - Minimize injuries from sunlight by wearing sunglasses to reduce impaired vision or headaches from glare; use unscented sunblock covering exposed skin, face, and neck; use unscented lip balm.
 - Soldiers on guard on other outside duties should avoid standing in direct sunlight for long periods.
 - Follow work/rest cycles and acclimatization guidance. Training programs for soldiers who are climatically or physically unseasoned to hot environments should be limited in intensity and time.

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING HOT WEATHER INJURIES (continued)

- **HEAT INJURIES CAN KILL.** Seek immediate medical attention for heat injuries (heat cramps, heat exhaustion, heat stroke).
- It is imperative that soldiers who are susceptible to heat injury be identified:
 - Soldiers with previous heat injuries
 - Soldiers who have diarrhea or sunburn
 - Soldiers who have consumed alcohol
 - Soldiers who are dehydrated or fatigued
 - Soldiers who are in poor physical condition
 - Soldiers using certain drugs (i.e., cold or anti-diarrheal medicines such as doxycycline.)
- Heat injury victims may experience heavy sweating, no sweating, extreme thirst, dizziness, cramps, headache, nausea, seizures, weak/rapid pulse, or unconsciousness.

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING COLD WEATHER INJURIES

- A significant threat of cold injuries exists in Bosnia during the winter months.
- Avoid cold weather injuries by:
 - Using the buddy system; identify soldiers with previous cold injuries
 - Dressing in layers to avoid overheating
 - Drinking liquids (preferably hot/warm) to maintain urine the color of weak lemonade
 - Keep clothing clean and dry; change socks and underwear frequently
 - Increasing food (preferably hot/warm) intake
 - Using sunglasses, scarf, and unscented lip balm, sunscreen, and skin moisturizers
 - Never sleeping inside a closed vehicle or tent while a heater is on without ensuring adequate ventilation; carry extra warm clothing and sleeping bags if traveling by vehicle away from unit site

NOTE: Carbon Monoxide (CO) poisoning occurs when stoves or heaters are used in poorly ventilated spaces or if soldiers sleep in vehicles without ventilation. Ensure living areas are well ventilated and do not sleep in vehicles with motor running.

CO POISONING CAN KILL

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING COLD WEATHER INJURIES (continued)

- **COLD INJURIES CAN KILL!** Units deploying to cold weather regions should ensure soldiers are trained on basic winter skills and cold weather survival, including practicing wearing cold weather clothing and equipment.
- Identify soldiers who are susceptible to cold injury:
 - Soldiers who are poorly conditioned, dehydrated, fatigued, or poorly nourished
 - Soldiers who have consumed alcohol or who smoke
 - Soldiers whose movements are restricted (in foxholes or crew compartments) while exposed to cold environments
- Ensure immediate treatment for soldiers showing any signs or symptoms of cold injury:
 - Prevent further exposure
 - Remove wet, constrictive clothing
 - Initiate CPR, if required
 - Rewarm by covering with blankets, sleeping bags, body-to-body contact
 - Do not rewarm a frostbite injury if it could refreeze during evacuation
 - Do not rewarm frostbitten feet if victim must walk for medical treatment
 - Do not rewarm injuries over open flames
 - Evacuate for medical treatment (foot injuries by litter)
 - Do not allow injury to refreeze during evacuation

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING DISEASES CAUSED BY INSECTS & TICKS

- A significant risk of disease caused by insects and ticks exists in Bosnia including:
 - *Malaria* and *dengue* from mosquitoes
 - *Sand fly fever* and *leishmaniasis* from sand flies
 - *Typhus* from fleas
 - *Encephalitis* from ticks

- Minimize the threat of disease by using the DoD Insect Repellent System and bednets -- even if you don't think you're being bitten. Some insects, especially sand flies, are tiny and silent -- you can't hear them and will not feel them biting. Sand flies cause *sand fly fever* and *leishmaniasis*, a potentially serious problem in Bosnia

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING DISEASES CAUSED BY INSECTS & TICKS (continued)

DOD INSECT REPELLENT SYSTEM



=
*Maximum
Protection*

permethrin on
uniform

DEET on
skin

properly worn
uniform

- Treat uniform with permethrin, preferably prior to deployment, and allow to dry before wearing (once the permethrin has dried, treated clothing can be worn in wet conditions).
- Apply DEET cream (NSN 6840-01-284-3982) to exposed skin (1 application lasts 6-12 hours).
- Wear uniform properly to minimize exposed skin.

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING DISEASES CAUSED BY INSECTS & TICKS (continued)

- A properly worn uniform means:
 - Sleeves rolled down
 - Pants tucked into boots
 - Undershirt tucked in
- Treat uniforms with permethrin according to label instructions.
 - Individual Dynamic Absorption (IDA) kit (NSN 6840-01-345-0237) (best method -- good for LIFE of uniform).
 - Aerosol spray-can method (NSN 6840-02-278-1336) (reapply after 6th wash).

NOTE: Do not apply permethrin to skin -- it is for clothing use only.

- Use bednets (insect bar). Treat them with permethrin when possible.
 - Spray outside surface -- while it is laying on the ground.
 - One aerosol can treats two bednets.
 - Use poles to prevent bednets from draping on skin; tuck bednets under bedding.
- Remember -- Many mosquitoes and sand flies are active at night. Using the DoD Insect Repellent System is **SAFE, EFFECTIVE, and CRUCIAL.**

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY



Slide 18

LEISHMANIASIS

- *Leishmaniasis* occurs in Bosnia and is transmitted by sand flies (silent, painless, nighttime biters). Preferred biting sites are unprotected ears and ankles.
- This is a serious disease causing severe skin sores and/or organ damage.
- Treatment is very difficult, requiring MEDEVAC.
- Countermeasures to prevent *leishmaniasis*:
 - Wear permethrin-treated uniforms properly.
 - Minimize skin exposure between dusk and dawn (nightfall and sunup).
 - Wear socks.
 - Use DEET on neck, ears, and other exposed skin.
 - Use bednets treated with permethrin.

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

EXAMPLES OF INSECTS THAT TRANSMIT DISEASE

	COMMON NAME	DISEASES	APPROXIMATE SIZE	OTHER COMMON NAMES
	Sand Fly Sand Flies	Leishmaniasis Sand Fly Fever	1.5 to 4.0 mm	
	Louse Lice	Typhus Relapsing Fever	2.5 to 3.5 mm	cootie

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING DISEASES CAUSED BY OTHER PEOPLE

- **AVOID ALL SEXUAL CONTACT**
 - Properly used condoms offer some protection from sexually transmitted diseases (*HIV/AIDS, gonorrhea, syphilis, hepatitis B, etc.*), but it is not 100% protection.
 - Avoidance of sexual contact is clearly the best choice.

- Reduce the chances of diseases (*flu, meningitis, tuberculosis, colds, diphtheria, etc.*) that are transmitted from person-to-person by:
 - Avoiding contact with local national and overcrowding in living areas
 - Sleeping head-to-toe
 - Not coughing or sneezing toward others

- Bathe and wash hands regularly. Wash hands before eating and after using the latrine.

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

MANAGING AND REDUCING STRESS

- Separation anxiety, continuous operations, death and dying, and the observation of human suffering will intensify stress levels.
- Minimize stress and fatigue by:
 - Ensuring all personal, family, and financial issues are resolved before deploying
 - Maintaining physical fitness
 - Applying personal protective measures to avoid disease and injury
 - Staying informed
 - Sleeping when the mission and safety permits
- Avoid alcohol. Even small amounts of alcohol can:
 - Contribute to jet lag, dehydration, and depression
 - Increase susceptibility to heat or cold injuries
 - Decrease physical and mental readiness
- Seek help from Combat Stress Teams or Chaplains.

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING DISEASE & INJURIES CAUSED BY ENVIRONMENTAL POLLUTION

- Soil, water, and air pollution is a problem in the FRY. Industrial and farming operations have contaminated the soil, water, and air with heavy metals, insecticides, and industrial wastes.
- Soldiers can avoid injury or illness from pollutants by:
 - Using gloves at all times when working with dirt and dusts (i.e., erecting tents, clearing roadways, etc.)
 - Washing exposed skin thoroughly after working in dirt or dust
 - Avoiding contact with lakes, rivers, or streams. If the tactical situation requires entering these or other local bodies of water, cover all exposed skin, dry vigorously, and change clothing after exposure
- Personnel should be watchful for unexploded ordnance from previous combat.
- Use appropriate personal protective measures when exposed to blowing dust or sand; do not use contact lenses.

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

AVOIDING DISEASE & INJURY FROM CHANGE IN ALTITUDE AND TIME ZONE

- Regional elevations higher than 8,000 feet, can cause *altitude illness*, also known as *mountain sickness*, and can lead to decreased sleep, and decreased physical and mental work capability. Risk of cold injury, heat injury, and solar UV radiation are all increased at high elevations.
- Soldiers can reduce risk of injuries and illness caused by high elevations by:
 - Allowing adequate adjustment to elevations above 8,200 feet by a 2-4 day stay at lower elevation (6,500 - 8,200 feet) followed by increase in elevation (not to exceed 980 feet per day)
 - Descending below 8,200 feet for sleeping following day climbs
 - Remaining well hydrated; individual water requirements are greater at higher altitudes; and avoiding alcohol
 - Protecting skin (sunscreen), lips (lip balm), and eyes (sunglasses) from UV radiation
- Soldiers can reduce the physical and mental stress caused by time zone changes by taking adequate rest periods; sleeping whenever the mission and safety permits; drinking plenty of fluids; not skipping meals; avoiding alcohol; and maintaining physical fitness.

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY

ADDITIONAL PERSONAL PROTECTIVE MEASURES

- Take personal responsibility for your health; actively know and use personal protective measures.
- Minimize injuries by ensuring that safety, hearing, and optical protection, water consumption, work/rest cycles, and stress management measures are followed.
- Ensure all DoD prescribed immunizations and medications are updated and will remain current while deployed.
- Take all DoD prescribed immunizations and medications given by medical personnel before, during, and after deployment.
- Ensure post-deployment (redeployment) checkups are scheduled and complied with.
- Wash hands with soap and water before eating, handling food or kitchen utensils, and after using latrines.
- Do not use scented soaps, deodorants, or other scented health care products.
- Dry thoroughly using antifungal powder on the feet.

**REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY**

Slide 25

ADDITIONAL PERSONAL PROTECTIVE MEASURES

- Keep clothing, footwear, and feet clean and dry.
- Avoid skin contact with unfamiliar vegetation.
- Look carefully for snakes or venomous insects. Shake out boots, clothing, and bedding before use.
- Get adequate sleep/rest, ensure proper diet, and drink water frequently.
- Reduce problems related to sun exposure by using sunglasses, sunscreen lotions, and lip protection (remember -- sun reflection off snow can cause sunburn).
- Minimize cold weather injuries by layering clothing and reducing exposure to elements.
- Pack items for safety, health, and hygiene (spare eyeglasses, batteries for hearing aid, ample supplies of prescribed medications, sanitary items).

**REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY**

Slide 26

ADDITIONAL PERSONAL PROTECTIVE MEASURES -- FEMALE SOLDIERS

- Bring an adequate supply of sanitary products.
- If you are currently taking birth control pills, continue taking them in the same manner; ensure that you have at least a 6-month supply on hand.
- Avoid douching and/or use of perfumed or deodorant feminine hygiene products.
- Drink extra fluids -- even when it is not hot. Winter dehydration due to dry air can cause problems and heat injuries may occur even in cold weather.
- Try to use the latrines frequently and avoid retention. Avoiding the latrines and holding urine leads to urinary infections.
- Wash the genital area daily; if a shower or bathing facility is unavailable, use non-perfumed baby wipes or a sponge bath.
- Pregnant soldiers will not deploy.
 - If a soldier believes she is pregnant before or during deployment -- ensure appropriate testing is accomplished and notify medical personnel immediately. Notify physician prior to taking any pre-deployment medications, prophylactics, or immunizations.

REPORT ALL INJURIES AND ILLNESSES TO
LOCAL OR UNIT U.S. MEDICAL AUTHORITIES IMMEDIATELY