

U.S. Army Center for Health Promotion and Preventive Medicine

A SOLDIER'S GUIDE TO STAYING HEALTHY IN HISPANIOLA: HAITI AND THE DOMINICAN REPUBLIC

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Table of Contents

	Page
INTRODUCTION.....	1
HISPANIOLA OVERVIEW.....	2
HISPANIOLA RISK ASSESSMENT.....	2
VECTOR-BORNE DISEASES	3
FOODBORNE AND WATERBORNE DISEASES	3
WATER-CONTACT DISEASES AND SKIN DISEASES.....	4
ANIMAL-CONTACT DISEASES	4
DANGEROUS ANIMALS AND PLANTS.....	5
CONTAGIOUS AND SEXUALLY TRANSMITTED DISEASES	6
HOT AND COLD WEATHER INJURIES	6
TOXIC INDUSTRIAL CHEMICALS AND MATERIALS.....	6
FIELD SANITATION TEAM.....	7
HIGH ELEVATIONS	7
HEARING PROTECTION	7
ORAL HEALTH	7
PRE-DEPLOYMENT HEALTH INFORMATION	8
INFORMATION ABOUT YOUR HEALTH CARE WHILE DEPLOYED	8
POST-DEPLOYMENT HEALTH INFORMATION.....	8

INTRODUCTION

This country-specific guide should be used in conjunction with [GTA 08-05-062, Guide to Staying Healthy](#), and is intended to provide information that can help reduce your risk of Disease and Non-battle Injuries (DNBI) when deployed. This health threat and countermeasure information is based on the most current data available from U.S. Department of Defense medical agencies at the time of production. In addition to the information in this guide, you should also receive force health protection, health threat, and preventive medicine countermeasures training/briefings prior to and, as required, throughout the length of your deployment.

HISPANIOLA OVERVIEW

Hispaniola is the second largest island in the Caribbean Sea and includes the countries of [Haiti](#) (the western one-third of the island) and the [Dominican Republic](#) (the eastern two-thirds of the island). Five mountain ranges cover approximately 70 percent of the land surface, with fertile valleys, semidesert plains, and tropical rain forests interspersed throughout. The borders of Hispaniola include the 80-mile-wide Mona Passage, which separates the island from Puerto Rico in the east; the Caribbean Sea in the south; the 50-mile-wide Windward Passage, which separates the island from Cuba in the west; and the Atlantic Ocean in the north. The elevation ranges from 10,410 feet above sea level at Pico Duarte, in the central mountain range of the Dominican Republic, to 141 feet below sea level at the inland, saltwater Lake Enriquillo, located near the southern border of Haiti and the Dominican Republic. The climate is tropical with an average annual temperature along the coasts of 78° to 81° F with little temperature variation year-round. The mountains are significantly cooler (61° to 68° F) with frost occurring frequently at elevations above 1,300 feet during the cool season. Snow is possible in the highest elevations. Relative humidity remains constant at about 80 percent. Rainfall is heaviest May through November. Average annual rainfall varies from 20 inches in northwestern Haiti to 100 inches in the northeastern part of the Dominican Republic. Flash flooding is a growing problem due to deforestation and erosion. Streams and river crossings can become treacherous with flash floods common at the onset and latter part of the rainy season. An average of eight hurricanes per year strike the Caribbean region between July and November. Earthquakes can occur frequently in the Haitian Highlands and trigger numerous rockfalls and landslides, but damage is usually slight. Destructive earthquakes occur mainly along the Atlantic coast and the northern coast of the southern Haitian Peninsula.

HISPANIOLA RISK ASSESSMENT

Based on a combination of all major infectious diseases that occur in a country, an overall country risk level is assigned as low, intermediate, high, or highest risk. Hispaniola is HIGH RISK for infectious diseases. Environmental contamination may present short- and long- term health risks to personnel deployed to Hispaniola.

The greatest short-term health risks are associated with consumption of water contaminated with raw sewage or runoff containing fecal pathogens.

The greatest long-term health risks are associated with chronic ingestion of lead (Dominican Republic only).

This guide discusses specific disease and environmental risks and ways to eliminate or lessen those risks.

VECTOR-BORNE DISEASES

DISEASE RISKS

- [Dengue fever](#), a serious disease that is contracted from the bite of a mosquito carrying the virus.
- [Malaria](#), a serious disease that is contracted from the bite of a mosquito carrying the parasite.

Other diseases of lesser risk that are caused by insect bites exist. These diseases include [leishmaniasis](#) from sand flies. There may be other diseases spread by various insects and ticks. Your local medical authority will determine if these diseases or other vector-borne diseases are a threat in your specific location and provide appropriate countermeasures.

PREVENTION

- There is medicine you must take to help prevent malaria. Take your malaria prevention pills when directed to do so. This is CRITICAL. Normally, you will begin taking medication before arriving in the area, while in the area, and after returning home.
- When deployed to this region, use the [DOD Insect Repellent System](#) detailed in [GTA 08-05-062](#) to reduce your risk of acquiring a vector-borne disease.
- Wear [permethrin](#)-treated uniforms with trousers tucked into boots, sleeves rolled down, and undershirt tucked into trousers. Wear N-diethyl-meta-toluamide (DEET) on exposed skin.
- When deployed to this region, [sleep under a permethrin-treated bed net](#) to repel insects and further reduce risks of vector-borne diseases.
- When using both DEET and sunscreen products, apply sunscreen to the skin first. After 30 minutes to an hour, apply the DEET. This allows the sunscreen time to penetrate and bind to the skin first.

FOOD-BORNE AND WATER-BORNE DISEASES

DISEASE RISKS

- [Bacterial and protozoal diarrhea](#) (travelers' diarrhea) are food- or water-borne diseases. They are contracted when you eat contaminated food or drink contaminated water, ice or milk. The risk of contracting diarrhea exists year-round.
- [Hepatitis A](#) is a food- or water-borne disease that can make you sick for a month or more. Infection also may occur through direct fecal-oral transmission under conditions of poor hygiene and sanitation. Receiving the hepatitis vaccine will lessen your risk of contracting the disease.
- [Typhoid/paratyphoid fever is a serious illness that](#) one can carry and give to others without getting sick. Receiving the typhoid vaccine can eliminate the risk of contracting the disease.

Other diseases of potential military importance to forces deployed to this region include [brucellosis](#), [cholera](#) and [hepatitis E](#), all acquired by consuming contaminated food, water, and dairy products. Recurrent algal blooms in Hispaniola coastal waters result in contamination of reef fish (especially larger species such as snapper, grouper, amberjack, eel, sea bass, barracuda, and Spanish mackerel) with neurotoxins that cause [ciguatera](#) poisoning. Symptoms can be severe and last for as long as several months. Cooking does not destroy the toxin.

PREVENTION

- Assume all non-approved food, ice, and water is contaminated. You should not drink local tap water, fountain drinks, or ice cubes. Do not eat any food or drink any water or a beverage (including bottled water) that has not been approved by the U.S. military as these may be contaminated. Even a one-time consumption of these foods or water may cause severe illness.
- See [GTA 08-05-062](#) for appropriate countermeasures.

WATER-CONTACT DISEASES AND SKIN INFECTIONS

DISEASE RISKS

Water-contact diseases are most often acquired by swimming or wading in contaminated water. The water-contact disease of greatest risk is [leptospirosis](#). There is also a risk of [schistosomiasis](#). Leptospirosis is caused by bacteria, and schistosomiasis is caused by parasitic worms. Skin irritations and infections, such as athlete's foot and ringworm, are also common medical threats during any deployment and are commonly caused by fungi that thrive in moist conditions.

PREVENTION

- Do not swim or wade in water that has not been treated with chlorine; if you must enter untreated water, wear protective clothing and footwear.
- Never go barefoot.
- Clean your skin and clothing after wading or swimming in freshwater ponds or streams.
- To prevent skin infections, maintain clean, dry skin.
- See [GTA 08-05-062](#) for additional countermeasure information.

ANIMAL-CONTACT DISEASES

DISEASE RISKS

Diseases contracted through contact with animals that are of potential military significance include [rabies](#), [anthrax](#) and [Q fever](#). They are serious illnesses that you contract from being bitten by an infected animal (rabies), touching or eating infected animals (anthrax), or inhaling dust that contains the organisms that cause the disease (Q fever, anthrax). Cats, dogs, bats and the mongoose are the main carriers of rabies, but any animal can be infected with rabies. Cattle, sheep and goats are the main carriers of anthrax and Q fever.

PREVENTION

- Avoid contact with all animals.
- If bitten, seek medical attention immediately.
- Keep living quarters free of rodents, and stay clear of buildings infested with rodents.
- Always check dug-in fighting positions for potentially dangerous animals.
- Clean your skin and clothing after contact with animals or dust.

DANGEROUS PLANTS AND ANIMALS

RISKS

- Only a few species of venomous snakes live on the island of Hispaniola. These snakes have only mildly toxic venom. Bites from these tree-living vine snakes will produce stinging pain at the bite site.
- Centipedes and scorpions that live on the island can inflict painful bites and stings, but none are known to be fatal to humans. Several species of black widow spiders, which have potentially deadly venom, are present in Hispaniola. Fire ants attack in stinging swarms when their nest mounds are disturbed. These creatures are likely to be found around buildings, tents, and bunkers.
- Coastal waters contain stinging jellyfish, venomous sea urchins, and cone shells, as well as moray eels, rays, sharks, and fish with venomous spines.
- There are many large tarantulas on the island. Although their venom is not dangerous, they do have fine, barbed hairs that they shed when disturbed causing skin, eye, and nose irritation.
- A large toad species, common on the island, squirts a milky venom when handled or disturbed that can cause intense pain, temporary blindness, and inflammation.
- Some regional plants have thorns, stinging hairs, or toxic or caustic resins that may puncture the skin or introduce poison into the skin causing skin irritation, rashes or infections.
- Contact with the smoke from the burning of these plants can also cause skin rashes and damage to your lungs.
- Some regional plants may cause systemic poisoning if leaves, berries, flowers, or other plant parts are chewed or swallowed. Symptoms include dizziness, vomiting, irregular heartbeat, and delirium or hallucinations.

PREVENTION

- Consider any snake encountered as a threat, and do not handle. Avoid contact with all wildlife.
- Seek immediate medical attention if bitten or stung by any animal or insect; untreated bites may cause serious illness or death within 1 hour.
- Do not handle or disturb insects or their nesting structures. Contact preventive medicine personnel for control measures.
- Do not pull leeches off. This can leave the mouthparts in the wound, leading to continued bleeding and possible infection. Seek medical attention for proper removal.
- If possible, avoid sleeping on the ground.
- Shake out boots, bedding, and clothing prior to use, and never walk barefoot.

- Avoid skin contact with plants when possible.
Clean your clothing with soap and water after contact with animals or harmful plants.

CONTAGIOUS AND SEXUALLY TRANSMITTED DISEASES

There is a risk of being exposed to the bacteria that causes [tuberculosis](#) (TB). Breathing in the bacteria that someone coughed or sneezed into the air spreads TB. Being exposed to the bacteria will cause a positive skin test even if you do not become sick. If you have a positive skin test, you may still be treated even if you have no symptoms. Soldiers are also at risk of contracting sexually transmitted diseases ([STDs](#)) such as [gonorrhea](#), [chlamydia](#), human immunodeficiency virus ([HIV](#))/[acquired immune deficiency syndrome \(AIDS\)](#) and [hepatitis B](#). HIV/AIDS and hepatitis B are potentially fatal STDs that can also be passed by sharing needles. Though the immediate impact of HIV/AIDS and hepatitis B on an operation is limited, the long-term impact on your individual health is great.

PREVENTION

- There is a vaccine for hepatitis B but not for any other STD.
- **Anyone deployed to the region should not have unprotected sex and should not share needles.**
- Those deployed should see [GTA 08-05-062](#) for appropriate countermeasures.

HOT AND COLD WEATHER INJURIES

Heat injuries are possible when deployed to this region, especially during the early phase of deployment; acclimatization is critical. Individual and unit countermeasures are extremely important. Cold injuries can also occur in the mountainous areas of this region. The effects of cold weather are more severe in high mountainous areas due to reduced oxygen and lower air pressure. When deploying to the mountainous areas in this region, check with your unit on the requirement for packing the extended cold weather clothing system. See [GTA 08-05-062](#) for appropriate countermeasures.

TOXIC INDUSTRIAL CHEMICALS AND MATERIALS

When deployed, you may face health risks from industrial chemicals and materials as a result of activities by terrorists or warring parties; accidents related to improper design, maintenance, or operation of indigenous industrial facilities; inadvertent exposure to toxic waste materials in the environment; or improper handling or disposal of hazardous material with which our own forces deploy. The degree of health risks depends upon many factors. Consult your medical authority for additional information.

FIELD SANITATION TEAM

Each company-sized unit has a Field Sanitation Team (FST) whose members are trained (40-hour course) and fully equipped according to [AR 40-5](#), [FM 4-25.12](#), and [FORSCOM REG 700-2](#). Know who the members of your FST are, and know how they can assist in preventing medical threats to your health. Become familiar with FST equipment and training.

HIGH ELEVATIONS

- Military operations occurring at elevations over 6,000 feet can be dangerous due to low levels of oxygen. Serious illness or death can result if you increase your elevation rapidly without allowing for acclimatization. Remain well hydrated; you need more fluids at higher altitudes.
- Symptoms of mountain sickness include headache, nausea, vomiting, dizziness, fatigue, irritability, and coughing. Seek medical attention immediately if you experience any of these symptoms.
- Pyridostigmine bromide tablets may increase the chance of dizziness or fainting during the first 24 hours at high altitude if you are not acclimatized.
- When wearing mission-oriented protective posture (MOPP) gear at higher altitudes, you may require more time and concentration to perform assigned tasks.
- For appropriate countermeasures during high altitude operations, see [GTA 08-05-062](#) and [GTA 08-05-060, A Soldier's Guide to Staying Healthy at High Elevations](#).

HEARING PROTECTION

It is essential that you use properly fitted [hearing protection](#) during military operations. Exposure to high-intensity noise may cause hearing loss. Good hearing is essential to mission success. If you are a dismounted soldier, the [Combat Arms Earplug](#) (NSN 6515-01-466-2710) will protect you from the impact noise of weapons fire while only slightly interfering with voice communications and detection of combat sounds such as vehicle noise, footfalls in leaves, and the closing of a rifle bolt. While not as effective as the Combat Arms Earplug in preserving your ability to hear important mission-related sounds, noise muffs or standard earplugs are very effective at preventing noise-induced injury. If you are a member of vehicle or helicopter crews, your combat vehicle crew or aircrew helmets have built-in hearing protectors.

ORAL HEALTH

[Dental disease](#) is a common problem during deployments because it is not easy to take care of your mouth. You should deploy with toothbrush, dental floss, and fluoride toothpaste. You should brush your teeth twice a day and floss your teeth once a day. This is the best way to prevent gum disease, trench mouth and tooth decay. In difficult tactical environments, teeth should be brushed at least once a day. Seek medical attention immediately at the onset of any dental problems. You are more vulnerable to other diseases when your mouth is not healthy.

PRE-DEPLOYMENT HEALTH INFORMATION

- [Complete the Pre-Deployment Health Assessment \(DD FORM 2795\)](#) to assess your state of health before deployment and to assist health care providers in identifying your medical needs and providing present and future medical care to you.
- You will not have access to your health care record during the deployment. The Adult Preventive and Chronic Care Flowsheet ([DD FORM 2766](#)) will be used as your deployment health record. This document will include information on all your immunizations, any medications you are currently taking, and any ongoing medical problems that you may have. When you go through readiness processing, ensure that all appropriate information is documented on your DD FORM 2766. When you return home, this information will be placed in your regular health record.

INFORMATION ABOUT YOUR HEALTH CARE WHILE DEPLOYED

- It is important that you know where to seek health care while deployed. This may or may not be through the same channels as your home station. Ask your chain of command for more information.
- While deployed, you must maintain your health and seek care whenever an illness or injury affects your work. Your unit is depending on you. It is always better to seek care early so your problems can be documented appropriately and taken care of immediately. When problems are caught early, they are usually easier to treat.

POST-DEPLOYMENT HEALTH INFORMATION

- [Complete the Post-Deployment Health Assessment \(DD FORM 2796\)](#) to assess your health after deployment and to assist health care providers in identifying your medical needs and providing present and future medical care to you.
- If you become sick after you return home, tell your doctor that you were deployed.
- Complete malaria medications as directed, and receive follow-on medical care/tests as directed.

Contact your Preventive Medicine or Medical Support Unit for more information.



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