

Medical Force Protection: Bahamas

Medical Force Protection countermeasures required before, during, and after deployment to the “area” are as follows:

Major Threats

Diarrhea, respiratory diseases, injuries, dengue fever, other arthropod-borne infections, sexually transmitted diseases, heat injury, and limited risk of leptospirosis and Chaga’s disease. Most of the various island water systems are supposedly safe for drinking, however, presume local water sources are not safe for drinking until cleared by US authorities.

Requirements before Deployment

1. **Before Deploying report to Medical to:**
 - a. Ensure your Immunizations are up to date, specific immunizations needed for area:
Hepatitis A, Typhoid, Yellow fever, Tetanus (Td), MMR, and Influenza.
2. **Malaria Chemoprophylaxis: Not required.**
3. **Get HIV testing if not done in the past 12 months.**
4. **Make sure you have or are issued from unit supply: DEET, permethrin, bednets/poles, sunscreen and lip balm. Treat utility uniform and bednet with permethrin.**

Requirements during Deployment

1. Consume food, water, and ice only from US-approved sources; **"Boil it, cook it, peel it, or forget it"**.
2. Involve preventive medicine personnel with troop campsite selection.
3. Practice good personal hygiene, hand-washing, and waste disposal.
4. Avoid sexual contact. If sexually active, use condoms.
5. Use DEET and other personal protective measures against insects and other arthropod-borne diseases. Personal protective measures include but are not limited to proper wear of uniform, use of bed nets, and daily “buddy checks” in tick and mite infested areas.
6. Minimize non-battle injuries by ensuring safety measures are followed. Precautions include hearing and eye protection, enough water consumption, suitable work/rest cycles, acclimatization to environment and stress management.
7. Eliminate food/waste sources that attract pests in living areas.
8. Avoid contact with animals and hazardous plants.

Requirements after Deployment

1. Receive preventive medicine debriefing after deployment.
2. Seek medical care immediately if ill, especially with fever.
3. Get HIV and PPD testing as required by your medical department or Task Force Surgeon.

BAHAMAS
VECTOR RISK ASSESSMENT PROFILE
(VECTRAP)

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1. GEOGRAPHY: **Area** - 13,934 sq. km (5380 sq. mi.), or slightly larger than New Jersey and Connecticut combined. **Cities** - **Capital** is Nassau, New Providence **Other Cities** include Freeport and Grand Bahama Islands. **Terrain** - Flat. **Climate** - Tropical.

2. VECTOR-BORNE DISEASES:

a. **Malaria**: The Bahamas have been malaria-free for several years.

b. **Dengue fever**: (3 - 14 days) Risk period/Distribution: Presumably year-round in coastal and lowland urban areas where populations of the mosquito vector are present. *Aedes aegypti* can be found on almost all the islands but has been eliminated from Bermuda.

Remarks: Widespread in the region, regular outbreaks occur. Nearly all of the larger islands reported cases of dengue fever during the late 1980s, and recent outbreaks have occurred on Aruba, the **Bahamas**, Guadeloupe, and Trinidad. Dengue virus serotypes 1, 2, and 4 circulated widely throughout the Caribbean region during the 1980s (dengue 2 predominating), and cases of hemorrhagic dengue were reported annually from 1985 through 1990.

c. **St. Louis encephalitis** (SLE): In the Bahamas, potential SLE vectors occur, but the disease has not been reported.

3. DISEASE VECTOR INFORMATION:

a. The Bahamas are a group of islands that are part of the West Indies and are bound by the North Atlantic Ocean. The climate is tropical marine; moderated by warm waters of the Gulf Stream. The terrain is long, flat, coral formations with some low, rounded hills. It is subject to hurricanes and other tropical storms.

b. **Dengue fever** transmission/vector Ecology: Transmitted by the bite of an infective *Aedes* mosquito (usually *Ae. aegypti*, a peridomestic container breeding species with a limited flight range).

4. DISEASE AND VECTOR CONTROL PROGRAMS:

a. **Prevention and Control**: The conscientious use of personal protective measures will help to reduce the risk of many vector-borne diseases. The most important personal protection measures include the use of DEET insect repellent on exposed skin, wearing permethrin-treated uniforms, and wearing these uniforms properly. The use of DEET 33% lotion (2 oz. tubes: NSN 6840-01-284-3982)

during daylight and evening/night hours is recommended for protection against a variety of arthropods including mosquitoes, sand flies, other biting flies, fleas, ticks and mites. Uniforms should be treated with 0.5% permethrin aerosol clothing repellent (NSN 6840-01-278-1336), per label instructions.

NOTE: This spray is only to be applied to trousers and blouse, not to socks, undergarments or covers. Reducing exposed skin (e.g., rolling shirt sleeves down, buttoning collar of blouse, blousing trousers) will provide fewer opportunities for blood-feeding insects and other arthropods. Additional protection from mosquitoes and other biting flies can be accomplished by the use of screened eating and sleeping quarters, and by limiting the amount of outside activity during the evening/night hours when possible. Bednets (insect bar [netting]: NSN 7210-00-266-9736) may be treated with permethrin for additional protection.

b. The most important element of an *Aedes aegypti* control program is SOURCE REDUCTION. Eliminating or covering all water holding containers in areas close to human habitation will greatly reduce *A. aegypti* populations. Alternatively, containers may be emptied of water at least once a week to interrupt mosquito breeding. Sand or mortar can be used to fill tree holes and rock holes near encampments.

5. Important References:

Contingency Pest Management Pocket Guide - Fourth Edition. Technical Information Memorandum (TIM) 24. Available from the Defense Pest Management Information Analysis Center (DPMIAC) (DSN: 295-7479 COMM: (301) 295-7479). Best source for information on vector control equipment, supplies, and use in contingency situations.

Control of Communicable Diseases Manual - Sixteenth Edition. 1995. Edited by A. S. Benenson. Available to government agencies through the Government Printing Office. Published by the American Public Health Association. Excellent source of information on communicable diseases.

Medical Environmental Disease Intelligence and Countermeasures - (MEDIC). September 1997. Available on CD-ROM from Armed Forces Medical Intelligence Center, Fort Detrick, Frederick, MD 21702-5004. A comprehensive medical intelligence product that includes portions of the references listed above and a wealth of additional preventive medicine information.

Internet Sites- Additional information regarding the current status of vector-borne diseases in this and other countries may be found by subscribing to various medical information sites on the internet. At the Centers of Disease Control and Prevention home page subscriptions can be made to the Morbidity and Mortality Weekly Report (MMWR) and the Journal of Emerging Infectious Diseases. The address is www.cdc.gov. The World Health Organization Weekly Epidemiology Report (WHO-WER) can be subscribed to at www.who.int/wer. The web site for PROMED is www.promedmail.org:8080/promed/promed.folder.home.

Although PROMED is not peer reviewed, it is timely and contains potentially useful information. The CDC and WHO reports are peer reviewed. Information on venomous arthropods such as scorpions and spiders as well as snakes, fish and other land animals can be found at the International Venom and Toxin Database website at www.uq.edu.au/~ddbfr/. Information on anti-venom sources can also be found at that site. Information on Poisonings, Bites and Envenomization as well as poison control resources can be found at www.invivo.net/bg/poison2.html.