



Medical Force Protection: Trinidad and Tobago

Medical Force Protection countermeasures required before, during, and after deployment to Trinidad and Tobago are as follows:

Major Threats

Diarrhea, respiratory diseases, injuries, dengue fever, leptospirosis, Chaga's disease, other arthropod-borne infections, sexually transmitted diseases, heat injury, and industrial pollution. **Presume local water sources are not safe for drinking.**

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), and Influenza.**
 - b. If you have not been immunized against Hepatitis A (two dose series over 6 months) get an injection of Immunoglobulin with the initial Hepatitis A dose.
2. **Malaria Chemoprophylaxis: Not required.**
3. **Get HIV testing if not done in the past 12 months.**
4. **Complete attached Pre-Deployment Screening form and turn into your Medical Section.**
5. **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. Continue malaria chemoprophylaxis.
7. 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.
8. Eliminate food/waste sources that attract pests in living areas.
9. Avoid contact with animals and hazardous plants.
10. **Leptospirosis Prophylaxis: Doxycycline 200 mg/weekly.**

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.

VECTOR RISK ASSESSMENT PROFILE (VECTRAP): Trinidad and Tobago

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1. GEOGRAPHY: Area of 10,991 sq. km (4,244 sq mi); about three times the size of Washington D.C. **Cities - Capital** - Port of Spain. **Terrain** - Mountainous. **Climate** - Tropical.

2. VECTOR-BORNE DISEASES:

a. **Malaria:** Indigenous cases of *P. vivax* malaria were reported during 1991, 1992, and 1995.

b. **Dengue fever:** In 1996 the World Health Organization and the Pan American Health Organization reported an outbreak with 3,000 suspect cases and 300 laboratory confirmed, mostly dengue viral serotype 1 and 2, in Trinidad and Tobago. Dengue risk is year-round in coastal and lowland urban areas where populations of the mosquito vector are present. Once acquired, dengue would cause a serious loss of combat effectiveness.

c. **Venezuelan equine encephalomyelitis (VEE):** From 1978 through 1987, approximately 65 people contracted VEE in Barbados, and St. Vincent.

d. **Leptospirosis** is unevenly distributed year-round throughout the island; risk is associated with rural environments without piped water and contact with livestock.

3. DISEASE VECTOR INFORMATION:

a. The mosquito, *Aedes aegypti*, is the vector of dengue Fever. It breeds in both natural and artificial containers. Abundant year round. A daylight feeder, biting about the ankles. Rests indoors. *Ae. aegypti* is known to be resistant to the insecticides DDT, Dieldrin, Lindane, Malathion and temephos.

b. *Anopheles albimanus* is the only potential malaria vector. It breeds in fresh and brackish water, avoiding marshes but preferring pools, borrow pits, and slow-moving streams. Crepuscular but will feed at all hours of the day and night. Rests outdoors in shaded areas.

c. Venezuelan equine Encephalomyelitis is vectored by several species of mosquitoes, including both fresh (*C. morsitans* and *C. quinquefasciatus*) and brackish water (*Aedes sollicitans* and *Ae. taeniorhynchus*) breeders, these zoonotic agents usually circulate erratically with only occasional incidental human infections.

d. Leptospirosis appears to be carried by the Marine Toad, *Bufo marinus*.

4. DISEASE AND VECTOR CONTROL PROGRAMS:

a. **Prevention & 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.

VECTOR RISK ASSESSMENT PROFILE (VECTRAP): Trinidad and Tobago (continued)

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.

c. Expanded Vector Control Recommendations are available upon request.

5. IMPORTANT REFERENCES:

Contingency Pest Management Pocket Guide Technical Information Memorandum(TIM)24. Available from the Defense Pest Management Information Analysis Center (DPMIAC) www.afpmb.org/pubs/tims/ (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-Edited by James Chin. Seventeenth Ed. 2000. 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). January 2002. 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 <http://www.promedmail.org/>. 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 <http://www.kingsnake.com/toxinology/>. 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.

USERS OF THIS VECTRAPH: Please notify NDVECC Jacksonville, or the appropriate NEPMU, if you acquire any medical entomology information that can be used to update this VECTRAPH.

CUSTOMER SURVEY: In order to improve our VECTRAPHs we would like your opinions on the quality and quantity of information contained in them. Please take time to fill out the survey which is contained as an attachment and Fax or e-mail your response back to us. Thank you for your cooperation.

ADDITIONAL INFORMATION ON DISEASE VECTOR SURVEYS, CONTROL AND SPECIMEN ID's WILL BE PROVIDED UPON REQUEST.