



Force Health Protection: Haiti

Haiti has been assessed as a **HIGH-RISK** country for infectious diseases. Without force health protection measures, mission effectiveness will be seriously jeopardized.

Major Threats

Local food and water sources are contaminated with bacteria, parasites and viruses to which most US service members have little or no immunity. Diarrheal disease can be expected to temporarily incapacitate a very high percentage of personnel (up to 100%) if local food, water, or ice is consumed. Raw sewage, industrial wastes, agrochemicals, and salt-water intrusion also may contaminate water. Dengue fever is widespread and may affect as many as 11-50% of US personnel in the absence of personal protective measures. Haiti has the most widespread HIV/AIDS epidemic in the Americas, affecting all segments of the population. Heterosexual contact is the predominant mode of transmission. The following illnesses are of military concern (in order of greatest health threat):

Foodborne And Waterborne Diseases	Diarrhea - bacterial, Hepatitis A, Diarrhea - protozoal, Typhoid / paratyphoid fever
Vector-borne Diseases	Dengue fever, Malaria
Sexually Transmitted Diseases	HIV/AIDS, Gonorrhea/Chlamydia
Water-contact Diseases	Leptospirosis

Requirements before Deployment

1. Involve appropriate Preventive Medicine (PM) personnel in planning. Conduct a Health Threat Assessment that includes endemic disease, injuries, industrial toxins, climatic extremes and the countermeasures to be taken for each.
2. Ensure routine immunizations are current: MMR, Polio, Tetanus booster, Typhoid, Hepatitis A.
3. Meningococcal vaccine: NOT REQUIRED
4. Influenza vaccine should be current.
5. Yellow Fever vaccine: Certificate is REQUIRED ONLY if traveling from an infected area.
6. Bio-warfare Immunizations (Anthrax, Smallpox): as directed per higher authority (deployment orders, JTF).
7. Malaria Chemoprophylaxis: Risk in all areas of Haiti. Although the predominant malarial parasite in Haiti is *P.falciparum*, chloroquine resistance has not been reported. The recommended regimens are chloroquine OR doxycycline. Must include Primaquine terminal prophylaxis with all regimens. (see "Requirements after deployment")
 - a. *Chloroquine*: 500 mg/week. Begin 2 weeks prior to entering Haiti, and continue until 4 weeks after departure.
 - b. *Doxycycline*: 100 mg/day. Begin 2 weeks prior to entering Haiti, and continue until 4 weeks after departure.
 - c. Alternative regimen: *Mefloquine*: 250 mg/week. Begin 2 weeks prior to entering Haiti, and continue until 4 weeks after departure.
8. Get HIV testing if not done in the past 12 months.
9. Make sure you have or are issued from unit supply: DEET, permethrin, bednets/poles, sunscreen and lip balm. Spray utility uniforms (at least 2 per deployer) and bednets with permethrin.
10. Complete pre-deployment health assessment (DD Form 2795) per NEHC TM 6490.00-1

(<http://www-nehc.med.navy.mil/prevmed/epi/depsurv.htm>) The form can be downloaded from the website:
http://amsa.army.mil/deploy_surv/DD2795_Pre_Deploy.pdf*



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.
9. Conduct DNBI surveillance per NEHC TM 6490.00-1 (<http://www-nehc.med.navy.mil/downloads/prevmed/weeklydnbi.pdf>)

Requirements after Deployment

1. Conduct post-deployment preventive medicine briefing.
2. Complete post-deployment health assessment (PDHA). Complete form DD 2796 per NEHC TM 6490.00-1 (<http://www-nehc.med.navy.mil/prevmed/epi/depsurv.htm>). The form can be downloaded from the website: http://amsa.army.mil/deploy_surv/DD2796_Post_Deploy.pdf*
3. Malaria terminal prophylaxis: Primaquine is recommended as an additional post-exposure prophylaxis because of relapsing malaria (*P.vivax*). The dose is 15 mg **or** 30mg[†] base per day beginning on day of departure for 14 days, taken concurrently with any malaria regimen described above. Ensure normal G-6 PD status before prescribing Primaquine.
4. Seek medical care immediately if ill, especially with fever.
5. Conduct TST (PPD) testing 3-12 months after redeployment.
6. HIV testing within twelve months if not completed as part of the PDHA.

[†]The updated CDC recommendation (CDC Health Information or International Travel 2003-2004) is primaquine 30 mg/day for 14 days. This change is based on cases of relapsing malaria in SE Asia and Somalia among patients who were compliant with the 15 mg regimen. Individual providers can determine the Primaquine dose on a case-by-case basis. Consult Preventive Medicine or Infectious Disease specialists if more guidance is needed.

*Mail completed original copy of DD 2795 and 2796 to: Army Medical Surveillance Activity, Building T-20, Room 213 (Attn: Deployment Surveillance), 6900 Georgia Ave, N.W., Washington D.C. 20307-5001

Climate

Haiti has a generally semiarid climate. Haiti's annual rainfall occurs during two rainy seasons--April through June and August through October. Annual rainfall varies from 500 mm (20 in) in the northwest to more than 2,540 mm (100 in) in the south and east. On the plains, the mean annual temperature is 27°C (81°F), while in the mountains, the mean annual temperature drops to 16°C (61°F). Seasonal temperature variation is around 4°C (8°F). Frost frequently occurs above 400 meters (1,312 ft) elevation during the cool season. An average of 8 hurricanes a year strike the Caribbean region between July and November. In September 1998, the eye of Hurricane Georges passed north of Port-au-Prince over Haiti's main agricultural areas (the Artibonite Valley). The hurricane caused extensive damage to local water treatment and distribution infrastructure.

Environmental Contamination

Haiti is the poorest and most densely populated country in the western hemisphere, frequently marred by political violence. The country depends heavily on subsistence agriculture. Besides agriculture, major industries in Haiti include sugar refineries and textile mills. Most facilities are concentrated in the major cities, including Port-au-Prince, Cap Haitien, and Baintet. The Ministry of the Environment is the main agency dedicated to environmental issues in Haiti. It is under-funded, under-manned, and lacks standards or regulations to deal with sanitation issues that are considered some of the worst in the world. Although several nongovernmental organizations have assisted the government of Haiti in creating an initial set of environmental regulations and standards, to date, no regulatory framework has been formulated.

Air Contamination

The lack of an extensive industrial infrastructure in Haiti results in few air contamination issues. Localized air contamination may occur near specific industrial facilities or urban areas, mainly from vehicle emissions. Due to severe deforestation, the majority of energy consumed in Haiti comes from charcoal. Coal smoke in dwellings has resulted in respiratory problems, particularly in children. In addition, since most areas lack refuse collection services, garbage is routinely burned in Haiti, contributing to airborne contamination. Detailed information on specific airborne contaminants is unavailable, however; air contamination in Haiti generally presents a low risk to human health.

Food Contamination

Consumption of food contaminated with fecal pathogens is a concern in Haiti and may cause a variety of acute enteric infections (See the Infectious Disease Risk Assessment for further details). Vegetables grown in soils fertilized with raw sewage and human excrement (a common practice) may be contaminated with fecal pathogens. However, Haiti is one of the few countries where agricultural pesticides are not widely used; therefore, pesticide contamination is rare. Ackee, a fruit common to Haiti used for food and medicinal purposes, is toxic if eaten before it is completely ripe, and may cause respiratory paralysis and death. In 2001, more than 100 cases of poisoning were confirmed and more than 50 people died as a result of eating unripe ackee. Similar outbreaks have occurred previously, according to the Haitian Minister of Public Health and the Pan American Health Organization.

Seasonal algal blooms in Haitian coastal waters result in contamination of shellfish and reef fish such as amberjack, barracuda, grouper, and snapper with neurotoxins. Consumption of contaminated fish and shellfish may cause ciguatera fish poisoning or paralytic shellfish poisoning (PSP). The acute health effects of ciguatera fish poisoning and PSP generally include nausea, diarrhea, vomiting, abdominal pain, muscular aches, inversion of hot and cold temperature sensations, and tingling and numbness of the lips and tongue. These symptoms may persist for up to several months. In severe cases, respiratory paralysis and death may occur. Cooking does not destroy the algal neurotoxins. In 1995, seven members of the US-led multinational force became ill with ciguatera fish poisoning after consuming amberjack procured from a Haitian fisherman.

Soil Contamination

Specific information on soil contamination is unavailable for Haiti. In general, soil contamination is localized to specific areas surrounding industrial facilities and waste disposal sites. Even in such areas, significant exposure to contaminants in soil is unlikely in the absence of wind-blown dust, active digging, or migration of contaminants from soil into ground water. As a result, soil contamination usually presents a low risk to human health.

Water Contamination

Haiti is ranked one of the worst in the world by the United Nations and other groups for water supply and water quality. Less than half of Haiti's population has access to clean drinking water and sanitation; only 2 of the nation's 30 original natural reservoirs remain. The water and sewer systems in Haiti were constructed mainly by the United States in the 1930s; this aging infrastructure has not been properly maintained nor upgraded to meet the needs of the growing population. Pollution of water resources is a significant problem. Contamination of surface water and shallow ground water aquifers is common throughout the country. Raw sewage and household and industrial wastes contaminate water sources. Consumption of water contaminated with raw sewage or runoff containing fecal pathogens may cause a variety of acute enteric infections. See the [Infectious Disease Risk Assessment](#) for further details. The waters of the Port-au-Prince Bay contain large amounts of garbage as well as petroleum and human waste. Eighteen wells drawing from mountain springs used as a main source of water for Port-au-Prince reportedly are contaminated with raw sewage. Two of the springs near Petionville have outhouses within 4 meters of the springheads. With the absence of refuse collection services, many Haitians put their household wastes out during heavy rains so it will be carried away by runoff, further contaminating water sources.

Pipeline distribution systems contribute to contamination because of breaks in the lines caused by residents illegally tapping into the system. No municipal sewage collection or treatment system exists in Haiti, and waste often flows into gutters, streams, and storm drains contaminating surface water and coastal areas. The major drainage canal serving the capital runs to the Bay of Port-au-Prince via Cite Soliel and is reportedly a site of illegal dumping. In December 1996 five waste oil fires were reported where the residents of Cite Soleil claim the Electricite d'Haiti power plant dumped its waste oil.



Haiti's mountainous topography is displayed by the peaks that rise behind Kalico Beach, near Port-au-Prince. Much of the country's forests have been cleared for wood and farmland. Without trees to hold the soil in place, silt washes down the mountainsides, threatening the tropical reefs that surround the country.

Health Care System, Threatened by Lawlessness

Anti-government demonstrations demanding the removal of President Jean-Bertrand Aristide have severely degraded the country's health care system, limiting operations at numerous health care facilities and severely restricting access to care. Physicians protesting the lack of security went on strike. Many deserted public hospitals, leaving patients without health care. Private hospitals continue to function and provide an alternative source of care if patients can afford to pay for the services. However, these facilities have limited bed capacity and cannot cope with current demand. The larger private hospitals in the Port-au-Prince area have 40 to 80 beds each, an insufficient number to compensate for the more than 800 beds no longer available at the major public hospitals. For citizens without the means to pay for private hospital services, no alternatives exist. In addition, private hospitals, previously considered immune from the violence, have increasingly experienced violent acts against patients and physicians. Two major public hospitals in Port-au-Prince are barely functioning because of reduced staff and fewer patients. Medical personnel are striking due to security fears and lack of salary payments. Moreover, patients are avoiding hospitals because they fear for their own safety while being treated at the hospitals. As of 5 February, the United States Agency for International Development (USAID) described the problems affecting emergency health care in Port-au-Prince as follows: The Hospital of the University of the State of Haiti (HUEH - Hospital de l' Universite d' Etat d' Haiti), the only public hospital in the capital with 24-hour emergency surgical services, had only 4 percent of its 880 beds occupied. Many hospital sections remained completely closed or were functioning under deplorable conditions, such as malfunctioning medical equipment, spoiled vaccines, electrical outages, and no running water. Only a few physicians and other staff were available, mostly interns. Isaie Jeanty, a maternity hospital and the second largest public hospital in the capital, was barely functioning at less than 10 percent of its 78-bed operational capacity.

Hospitals outside of Port-au-Prince are facing similar difficulties. Physicians and staff often have difficulties getting to work because of street disturbances. Hinche: Anti-Aristide demonstrators marched into a local hospital and seized the corpse of a 13 year-old boy who had died after being shot by pro-government chimeres. Miragoane: The city's only hospital closed after the medical staff and patients evacuated the building when the Pro-Lavalas OPS (popular organizations) ransacked St. Therese Hospital in search of an opposition member who was admitted to the hospital after Pro-Lavalas OPS attacked and severely burned him. St. Marc: During a violent confrontation between pro-government gangs and anti-government protestors, a local hospital allegedly was attacked. In addition to disruptions of medical care at hospitals and other medical facilities, HUMINT reporting indicates that road barricades, fuel shortages, transportation disruptions, and security concerns are curtailing the delivery of critical medical supplies and other health care services. Without outside intervention, Haiti's already fragile health care infrastructure will collapse under the disruptive influence of various anti- and pro-Aristide demonstrations, widespread lawlessness, medical personnel strikes, and increasing medical supply and equipment shortages.

Intermediate and Low Risk Diseases:

These diseases also warrant force protection emphasis. They are less likely to degrade operations because they generally affect smaller numbers of personnel, or cause mild symptoms. Other intermediate and low risk diseases are those assessed to be present at unknown levels that, under conditions favorable for transmission, could degrade operations.

	Intermediate Risk	Low Risk
Food and Waterborne Diseases	Brucellosis, Diarrhea-cholera	Hepatitis E
Vector-borne Diseases	Anthrax-cutaneous, Q-fever, Rabies	Eastern equine encephalitis, Leishmaniasis-cutaneous, St. Louis encephalitis
Sexually Transmitted Diseases	Hepatitis B	
Respiratory and Water Contact Diseases	Tuberculosis	Schistosomiasis, Meningococcal meningitis

Population Statistics:

Population:

- 7,527,817

(note: estimates for this country explicitly take into account the effects of excess mortality due to AIDS; this can result in lower life expectancy, higher infant mortality and death rates, lower population and growth rates, and changes in the distribution of population by age and sex than would otherwise be expected (July 2003 est.))

Age structure:

- 0-14 years: 42.7% (male 1,637,853; female 1,575,893)
- 15-64 years: 53.6% (male 1,962,975; female 2,073,353)
- 65 years and over: 3.7% (male 131,784; female 145,959) (2003 est.)

Median age:

- Total: 17.9 years
- Male: 17.4 years
- Female: 18.5 years (2002)

Population growth rate:

- 1.67% (2003 est.)

Birth rate:

- 34.06 births/1,000 population (2003 est.)

Death rate:

- 13.36 deaths/1,000 population (2003 est.)

Net migration rate:

- -4.03 migrant(s)/1,000 population (2003 est.)

Infant mortality rate:

- Total: 76.01 deaths/1,000 live births

HIV/AIDS - adult prevalence rate:

- 6.1% (2001 est.)

Life expectancy:

- Total 51.6 years (2003 estimate)
- Female 52.9 years (2003 estimate)
- Male 50.4 years (2003 estimate)

Infant mortality rate 76 deaths per 1,000 live births (2003 estimate)

Population per physician 15,064 people (1999)

Population per hospital bed 1,400 people (1996)

Addendum: Statistics from the refugee crisis Nov 1991-Apr 1992, Naval Base Guantanamo Bay, Cuba

- Outpatient visits: dermatologic (9/1000/week) and respiratory (6/1000/week) highest volume
- Admissions: most often to ensure compliance with medication regimens, for: fever/malaria, otitis media, URI, viral syndromes, active TB, measles, pneumonia, varicella, cellulitis/abscess, filariasis
- Deaths: two-one ruptured ectopic pregnancy, one stillborn infant
- Outbreaks: two-one measles, one varicella; MMR vaccination implementation provided adequate control
- Births: twenty two live infants born
- Malaria: 18-48% positive smears in febrile patients, all responded well to chloroquine
- Syphilis: 5% seropositive in persons 15 years old or greater-suggestive active or previous infection
- HIV 7% seropositive in persons 15 years old or greater
- TB: 5% pulmonary TB with approximately 30% of these with active infection, isoniazid resistance identified
- Camp population: 3000-12,000
- Injuries to shipboard personnel included abrasions, dehydration, skin infections

Health Status of Haitian Migrants-U.S. Naval Base, Guantanamo Bay, Cuba, November 1991-April 1992, MMWR Weekly, February 26, 1993/ 42(07); 138-140.

VECTOR RISK ASSESSMENT PROFILE (VECTRAP): Haiti

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1. GEOGRAPHY and CLIMATE: Area of 27,750 sq. km (10,714 sq. mi.), or about the size of Maryland. **Cities - Capital** is Port-au-Prince; **Other cities** - Cap-Haitian (65,000). **Terrain** is 75% mountainous. **Climate** is warm, semiarid. Two rainy seasons occur -- April through June and August through October. Rainfall varies from 100 inches in the north to 54 inches in Port-au-Prince.

2. VECTOR-BORNE DISEASES:

a. **Malaria:** Year-round and countrywide (including some urban areas) at elevations under 500 meters elevation (occasional foci may occur at elevations above 500 meters). Peak transmission occurs from September through January, with a secondary peak from April through June. Distribution tends to be focally endemic associated with vector breeding sites. Malaria constitutes a major public health problem in Haiti. The annual number of reported cases is probably an underestimate of the actual total. *Plasmodium falciparum* usually accounts for more than 99 percent of all reported cases; most of the remainder is attributed to *P. malariae*. Prior to the mid-1960s, both *P. vivax* and *P. malariae* infections were more common. Major epidemics have occurred subsequent to hurricanes. Drug-resistant strains of falciparum malaria have not been confirmed from Haiti, and reports of alleged reduced sensitivity to chloroquine remain unconfirmed. The risk of acquiring malaria is considered high without the proper chemoprophylaxis and could result in a serious loss of combat effectiveness.

b. **Dengue fever:** Dengue is endemic countrywide, but primarily in coastal urban areas. Risk is year-round, and elevated from April through September. Recent incidence data are not available. Cases are probably *significantly* under-reported because of a lack of surveillance and laboratory diagnostic capabilities. Dengue virus serotypes 1, 2, and 4 have circulated in the general region during the 1980s and early 1990s. The current risk of epidemic outbreaks is high. An outbreak of dengue among military personnel could cause a serious loss of combat effectiveness.

c. **Viral Encephalitides:** vectored by several species of mosquitoes, these zoonotic agents usually circulate erratically with only occasional incidental human infections. **Eastern equine and St. Louis encephalitis (EEE and SLE)** may occur; absence of incidence data on these diseases may be due to lack of laboratory diagnostic capabilities.

Outbreaks of **EEE** have occurred in the neighboring Dominican Republic, and **SLE** virus has been isolated from mosquitoes in Haiti. Potential vectors include *Culex* and *Aedes* species mosquitoes whose larvae are found in a wide variety of habitats from permanent pools to artificial containers, with some tolerant of brackish water, and others, particularly *Culex quinquefasciatus*, are found in highly polluted water.

d. **Filariasis**, caused by *Wuchereria bancrofti*, is found in most regions of the country. Focally endemic in coastal areas, primarily in the north and around the Gulf of La Gonave. During the early 1990's, infection rates of up to 17 and 35 percent were reported from Limbe and Leogane, respectively. Recent surveillance around Leogane indicated an infection rate of 70%.

Filariasis caused by *Mansonella ozzardi* is found along the coastal regions of southern Haiti (infection rates of 31 to 91 percent reported). Because transmission appears related to chronic exposure to infected vectors, the risk of military personnel acquiring filariasis is moderate to low - particularly if personal preventive measures are used.

3. DISEASE VECTOR INFORMATION:

a. *Anopheles albimanus* is the primary malaria vector. It breeds in partially sunlit pools that are often turbid and associated with emergent vegetation. It is a crepuscular feeder; period of greatest activity is 1800-2200hrs. Predominantly exophilic, but it may come indoors to feed. Opportunistic feeder that rests indoors or outdoors.

VECTOR RISK ASSESSMENT PROFILE (VECTRAP): Haiti (continued)

b. *Aedes aegypti* is the mosquito vector of dengue. This is a peridomestic mosquito that prefers to breed in artificial containers near human habitations. It is diurnally (i.e., daytime) active and feeds indoors or out, often biting around the neck or ankles. It typically rests indoors after feeding.

c. The vector of filariasis, caused by *W. bancrofti*, is the mosquito *Culex quinquefasciatus*. Larvae of this species are tolerant of heavily polluted water. *C. quinquefasciatus* will breed readily in highly organic water such as that found in latrines, septic tanks, open gutters, roadside ditches, etc. Appears to be the dominant mosquito species in many urban areas.

The vector of *M. ozzardi* is a biting midge, *Culicoides furens*. This species is a very small fly that breeds in salt marshes and is a vicious biter of humans.

4. POTENTIALLY HAZARDOUS ANIMALS

a. Centipedes, scorpions, tarantulas, and black and brown recluse spiders.

5. DISEASE AND VECTOR CONTROL PROGRAMS:

a. Malaria chemoprophylaxis should be mandatory. Consult the Navy Environmental Preventive Medicine Unit #2 in Norfolk, VA (COMM: 757-444-7671; DSN: 564-7671; FAX: 757-444-1191; PLAD: NAVENPVNTMEDU TWO NORFOLK VA) for the current recommendations for chemoprophylaxis.

b. **Yellow fever** immunizations should be current.

c. 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.

d. 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.

e. *Aedes aegypti* and *Anopheles albimanus* have been reported resistant to the insecticides DDT, Dieldrin, and Lindane.

f. The malaria vector, *An. albimanus*, is not as affected by repellents as other species. Nevertheless, DEET will lower biting rates.

g. Expanded Vector Control Recommendations are available upon request.

VECTOR RISK ASSESSMENT PROFILE (VECTRAP): Haiti (continued)**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 VECTRAP: Please notify NDVECC Jacksonville, or the appropriate NEPMU, if you acquire any medical entomology information that can be used to update this VECTRAP.

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