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Medical Force Protection: Argentina

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

Major Threats

Food or Waterborne Disease: Sanitation varies with location but is typically below US a standard including major urban areas. Local food and water may be contaminated with bacteria, viruses and parasites. **Presume local water sources are not safe for drinking.** Risks include Diarrheal diseases (viruses, Shigella, *e.coli*, Campylobacter and salmonella) and hepatitis A. Argentina reportedly has the highest incidence in the world of disease caused by E. coli O157:H7. Campylobacter spp. is an important cause of diarrheal illness among US military personnel after port visits in the region. Strains **resistant** to the standard therapeutic agents **TMP/SMX** and **fluoroquinolones** have been reported. Typhoid/paratyphoid fever, Brucellosis and hepatitis E occur sporadically.
Vector-Borne Disease: Dengue fever, leishmaniasis and malaria are transmitted at low levels year round. Arthropod vectors are of greatest concern during the warmer months OCT-MAY. Dengue fever is found in the northern urban regions including Buenos Aires. Malaria occurs mostly in rural regions below 1200 meters. The primary strain is P. vivax which accounts for 99% of the cases. No drug resistance has been reported.
Water-Contact Disease: Leptospirosis poses a threat to troops directly exposed to bodies of water such as lakes, streams and irrigated fields. The organism is found throughout the country including urban areas.
Soil-Contact Disease: Argentinean hemorrhagic fever and Hantavirus pulmonary syndrome occur year round. Infrequent or sporadic numbers of personnel exposed to dust or aerosols in rodent-infested areas could develop symptomatic infection.
Sexually Transmitted Disease: Gonorrhea, chlamydia, hepatitis B and HIV are present in Argentina.
Respiratory Disease: Tuberculosis is sporadic and can be found throughout the country.
Animal Contact Disease: Rabies (primarily from stray dogs), Q fever and anthrax occur sporadically.

Requirements before Deployment

1. **Before Deploying report to Medical to:**
   a. Ensure routine immunizations for deployable personnel are up to date: **MMR, Polio, Hepatitis A, Tetanus (Td), Typhoid, Influenza and Yellow fever.**
2. **Malaria Chemoprophylaxis:** Risk in rural areas near the Bolivian border (lowlands of Salta and Jujuy Provinces) and along the border with Paraguay (lowlands of Misiones and Corrientes Provinces). **Begin if exposure anticipated. Recommended regimens follow:**
   a. Chloroquine (approved in flight status): 500mg per week starting 2 weeks before entering risk area. Must continue until 4 weeks after leaving risk area. **OR**
   b. Mefloquine (Non-aviators only): 250 mg per week starting 2 weeks before entering risk area. Must continue until 4 weeks after leaving risk area. **OR**
   c. Doxycycline (approved in flight status): 100 mg per day starting 2 weeks before entering risk area. Must continue until 4 weeks after leaving risk area.
   d. Must include Primaquine terminal prophylaxis (see "Requirements after deployment")
3. **HIV, PPD (Tuberculin Skin Test), G-6-PD** testing should be up to date.
4. **Obtain Adequate Personal Protective Supplies:** DEET anti-arthropod skin lotion must be issued and used by all personnel. Permethrin treatment is highly recommended for all field uniforms and bed nets. Sunscreen, lip balm, and hearing protection should be used as needed.
5. **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. Deploy appropriate Preventive Medicine personnel and equipment.
2. Consume food, water, and ice only from US-approved sources; **"Boil it, cook it, peel it, or forget it"**.
3. Involve preventive medicine personnel with troop campsite selection.
4. Operate messing facilities in accordance with service directives. Ensure hand-washing facilities near messing facilities.
5. Operate latrine facilities in accordance with service directives. Ensure hand-washing facilities near latrine facilities.
6. Practice good personal hygiene, hand-washing, and waste disposal.
7. Avoid sexual contact. If sexually active, use condoms.
8. 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.
9. Continue malaria chemoprophylaxis. Command supervision necessary to ensure accountability for anti-malarial medications.

10. Perform vector surveillance and control as needed, particularly during rainy months when mosquito vectors breed.
11. Conduct DNBI surveillance per NEHC TM 6490.00-1 (http://www-nehc.med.navy.mil/downloads/prevmed/weeklydnbi.pdf)
12. Minimize non-battle injuries by ensuring safety measures are followed. Precautions include hearing and eye protection, adequate water consumption, suitable work/rest cycles, and acclimatization to environment and stress management.
13. Eliminate food/waste sources that attract pests in living areas.
14. Avoid contact with animals and hazardous plants.
15. Consider **Acetazolamide (Diamox) 250 mg every 6 – 12 hours** for 1 – 2 days before ascent and continued for 48 hours **if traveling to elevations >2,500 meters**.

Requirements after Deployment

1. If malaria chemoprophylaxis initiated then continue chemoprophylaxis as described above.
2. If performing malaria chemoprophylaxis: begin **terminal prophylaxis** (for both chemoprophylaxis regimens): **Primaquine** 15 mg per day for 14 days starting on day of departure from Argentina. **G6PD status must be determined prior to starting Primaquine.**
3. Receive preventive medicine debriefing after deployment.
4. Seek medical care immediately if ill, especially with fever.
5. Get HIV and PPD testing as required by your medical department or Task Force Surgeon.
6. **Complete post-deployment health assessment (DD Form 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

* 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

Vector Risk Assessment Profile (VECTRAP): Argentina

VECTOR RISK ASSESSMENT PROFILE *(VECTRAP):* ARGENTINA

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1. GEOGRAPHY: **Area** - 2,771,300 sq. km (1.1 million sq. mi.); about the size of the U.S. east of the Mississippi River. **Cities - *Capital*** - Buenos Aires (metropolitan area pop. 10.5 million) ***Other major cities*** - Cordoba, Rosario, La Plata, Mendoza. **Terrain** - Varied. Climate is varied, predominantly temperate. Argentina shares land borders with Bolivia, Brazil, Chile, Paraguay and Uruguay. The Atlantic and the Antarctic oceans bound it. Its topography ranges from subtropical lowlands in the north to the towering Andes Mountains in the West and the bleak, windswept Patagonian Steppe and Tierra del Fuego in the South. The climate ranges from hot in the north to cold and rainy in the south. In the heartland are the rich temperate plains known as the pampas.

2. VECTOR-BORNE DISEASES:

a. **Malaria**: is present only in the rural areas of the extreme northwestern corner of the country bordering Bolivia, Province of Salta: Depts. of Santa Victoria, Iruya, Oran; Province of Jujuy: Depts. of San Martin, Ledesma, Santa Barbara, and San Pedro. *Plasmodium vivax* is the major species reported. The risk of acquiring malaria is considered moderate without proper chemoprophylaxis and would result in serious loss of combat effectiveness. Transmission occurs below 1200 meters from DEC - MAY. **Remarks:** Focally endemic at low to moderate levels. Officially reported case totals during the late 1980's and early 1990's have varied from about 675 to about 1,670, with *Plasmodium vivax* accounting for nearly all cases. Occasional cases caused by *P. falciparum* (none drug-resistant) or *P. malariae* also occur. Plasmodium falciparum accounts for only 0% to 0.4% of cases. Chloroquine resistant P. falciparum is NOT reported.

The endemic area is limited to the north: Iruya, Oran, San Martin, Tartagal, Victoria (Jujuy) and Ledesma, San Pedro and Santa Barbara (Salta) Misiones and Corrientes. The peak incidence occurs during October through May. Most cases for 1993 to 1994 were reported from Rio Negro.

567 cases were reported in 1982; 535 in 1983; 437 in 1984; 774 in 1985; 2,000 in 1986 (including 751 imported cases); 1,521 in 1987; 666 in 1988; 1,620 in 1989; 1,660 in 1990. 803 cases were reported in 1991; 643 in 1992; 758 in 1993 (430 of these imported); 947 in 1994 (523 of these imported) - including only 1 P. falciparum; 1,065 in 1995; 2,048 in 1996; 592 in 1997; 174 in 1999; 393 in 2000.

Three fatal cases were reported in 1992; 1 in 1993.

The principal vectors are Anopheles darlingi and An. punctipennis.

b. ARBOVIRAL FEVERS, **Dengue fever:** Mosquito-vectored (usually Aedes aegypti, a peridomestic container-breeding species with a limited flight range). Endemic status is unclear, but risk may exist in the northeastern lowlands adjacent to Paraguay. (Outbreaks attributed to dengue viral serotype 1 occurred during 1989 in areas of Paraguay bordering Formosa Province of Argentina.) Also, a late 1980's report indicated that 8 percent of sera from inhabitants of Posadas, Misiones Province were antibody positive for a flavivirus--a group that includes dengue fever viruses. Indigenous cases of dengue were reported in 1905, 1911 and 1916 in the north (Chaco, Corrientes, Formosa and Misiones Provinces). The last major dengue outbreak (15,000 cases - none hemorrhagic) in Argentina was recorded in Entre Rios Province during 1916. It was estimated at the time that 85% of the populations along the Uruguay and Parana Rivers were infected.

A subsequent outbreak was reported in 1926, involving the Mesopotamia Region and Rosario City. No additional outbreaks were reported during 1927 to 1996. Four imported cases and 19 indigenous cases (in Salta Province) were confirmed in 1997. 494 indigenous cases were detected during 1997 to 1999- 378 of these during an outbreak in the summer of 1998. A total of 818 suspected cases (none characterized as dengue hemorrhagic fever) were reported in 1998 - most from Tartagal, with additional cases in Salvador Mazza, Salta Capital, Oran, General Mosconi, Embarcacion, Araguay, Colonia Santa Rosa, Santa Victoria Este and El Galpon. Three cases (0 DHF, 0 fatal) were officially reported during 1999; 1,700 (0 DHF, 0 fatal) in 2000; 11 (0 DHF) in 2001; 234 (0 DHF, 0 fatal) in 2002. Rates per 100,000: 5.3 in 2000; 0.7 in 2002. 85 imported cases were reported in Buenos Aires during December 1999 to March 2000. **Rocky**

Mountain Spotted fever: A cluster of 4 pediatric cases was reported from Jujuy Province during 1993 to 1994. Four percent of asymptomatic subjects in Saladillo (Jujuy) are seropositive.
The presumed local vector is Amblyomma cajenne

VECTOR RISK ASSESSMENT PROFILE *(VECTRAP):* ARGENTINA (continued)

c. Arboviral Encephalitides are vectored by several species of mosquitoes. These zoonotic agents usually circulate erratically with only occasional accidental human infections. **St. Louis encephalitis** (SLE) has been reported and is widely distributed in Argentina, but human infection is rare. Single cases were confirmed in 1964, 1968. The next cases (two) were confirmed in 1971; and a subsequent case (nonfatal) was reported in Cordoba in 2002. 21% of persons in Formosa Province were seropositive in 1995; 32% in 1997. The viral agents for **Western** (WEE) and **Venezuelan** (VEE) **equine encephalitis** have been isolated from mosquitoes. Epizootics of **Eastern equine encephalitis** (EEE) and WEE have occurred and serological evidence of human infection with VEE and EEE has been detected in Corrientes and Chaco Provinces. The disease is reported from Buenos Aires. The principal vector is Aedes (Ochlerotatus) taeniorhynchus). Additional vectors include Culex nigripalpus, C. caudelli, C. spissipes and C. taeniopus.

Other arboviral fevers: Recent serosurveys in Sante Fe Province found evidence of human infection by several viral agents in the **Bunyamwera** super group, but their relationship to any clinical illness remains uncertain.

d. **Argentine hemorrhagic fever** (AHF): A potentially fatal disease, AHF is caused by inhalation of an aerosolized arenavirus (Junin virus), presumably via dust contaminated with rodent excreta. Transmission may also occur by contact with infective cricetid rodents (primarily *Calomys musculinus*). AHF is focally enzootic in small rodents in the moist Pampas region of east central Argentina (northwest Buenos Aires, southeast Cordoba, southern Sante Fe, and eastern La Pampa Provinces). Highest rodent reservoir populations are associated with weedy borders (e.g., roadsides and fencelines) of cultivated areas of corn and other grains. Most cases occur from April through July. This disease is limited to Argentina. Most cases occur in Cordoba, Buenos Aires and Santa Fe provinces. The endemic area increased from approximately 10,000 sq. km. in 1955, to 150,000 sq. km. in 1985.

Disease peaks during late summer to fall and primarily affects individuals engaged in harvesting corn.

250 cases were reported in 1958; 1,125 in 1959; 400 in 1960; 800 in 1961; 380 in 1962; 680 in 1963; 3,375 in 1964; 125 in 1965; 675 in 1966; 1,275 in 1967; 240 in 1968; 1,950 in 1969; 1,760 in 1970.

1,125 cases were reported in 1971; 900 in 1972; 1,375 in 1973; 1,300 in 1974; 250 in 1975; 675 in 1976; 1,500 in 1977; 750 in 1978; 500 in 1979; 375 in 1980.

600 cases were reported in 1981; 500 in 1982; 480 in 1983; 500 in 1984; 740 in 1985; 875 in 1986; 700 in 1987; 675 in 1988; 200 in 1989; 1,240 in 1990.

1,260 cases were reported in 1991; 240 in 1992; 200 in 1993; 125 in 1994 (62 from Santa Fe); 125 in 1995; 125 in 1996.

The local reservoir is Calomys musculinus (7.9% of Calomys in endemic areas are seropositive).

e. **Hantavirus**: In November 1996, Pan American Health Organization, Regional Office for the Americas and the World Health Organization reported an outbreak of Hantavirus Pulmonary Syndrome in El Bolson, Argentina. This is a wooded village in the Andes 1,100 miles southwest of Buenos Aires. It was also reported in San Carlos de Bariloche, a mountain resort. Both are in the Rio Nergo Province. There are 17 confirmed cases in Rio Negro and nine deaths as of early 1997. In April 1999 there were two confirmed deaths due to hantavirus infection. The country's first case was confirmed in El Bolson (Rio Negro Province) in 1995. Retrospective analysis suggests that this disease was already present in Argentina as early as 1987.

Cases have been described in Oran (Salta Province), the central region between Buenos Aires and Santa Fe, and the southern area (Rio Negro, etc) bordering the Andes. Seroprevalence rates were 1.0% (Bolson, 1996) to 8.7% in these areas.

A total of 108 cases (48 fatal) were reported to September 1997; 142 to March 1998 (ages 4 to 71 years; approximately 62 fatal); 320 to December 2000.

72 cases were reported during 1991 to 1996 (ages 14 to 71 years, with a male/female ratio of 3/2) - including 31 cases in Salta; 24 in Rio Negro (17 of these in 1996); 9 in Chubut; 7 in Buenos Aires; and 1 in Santa Fe.

An outbreak of 18 cases (including 4 physicians) was reported in Rio Negro during 1996.

Four cases were confirmed in southern Argentina (Rio Negro, Chubut and Neuquen provinces) during 1997.

17.9% of Indians in the Salta area have been found seropositive toward Sin Nombre virus.

6.3% of healthy humans and 10.2% of rodents in the Salta area (Oran and San Martin Departments) are seropositive (1997).

Man-to-man transmission was documented during an outbreak in Southern Argentina in 1996.

The local reservoirs and viral strains are as follows:

Central region: Rice rat (Oligoryzomys flavescens) - Lechiguanas virus; grass field mouse (Akodon azarae); dark field mouse (Bolomys obscurus)

Northwest region: Long-tailed rice rat (Oligoryzomys longicaudatus) - Oran virus and Andes virus; O. chacoensis; "raton variodo"(Akodon varius).

VECTOR RISK ASSESSMENT PROFILE *(VECTRAP):* ARGENTINA (continued)

Southwest region: Long-tailed rice rat (Oligoryzomys longicaudatus) - Andes virus. Antibody has also been detected in Abothrix longipilis and Loxodontomys micropus in this area.
Human disease is caused by Andes virus.
A virus referred to as HU39694 has also been implicated in human disease - reservoir unknown.

f. **Tick-borne rickettsioses** (reportedly documented from unspecified northeastern areas); Endemic **Typhus (Murine Typhus)** and **Leishmaniasis** are all present at low levels of endemicity in the warmer rural and jungle areas in the North. The risk of acquiring these diseases is considered low. Endemic Typhus and tick-borne rickettsiosis would cause a reduction in combat effectiveness.

g. **Triatomid bugs vector Chagas' disease (American trypanosomiasis)** (family: Reduviidae). It may occur from 22 to 45 degrees south latitude and from the Andes east to the coast. It is highly endemic in rural areas, particularly in north central regions, but also is present in Buenos Aires. Risk is highest during late spring -- November and December. Incidence reportedly declined but the endemic area increased during the late 1980's, with an estimated 2.6 million Argentines infected as of late 1990. Some cases may be transfusion acquired.

h. **Leishmaniasis:** Sporadic cases are reported in Salta and Jujuy. 38% of persons in northeastern Salta Province are seropositive (1990). 224 cases were reported in 1990; 144 in 1991; 155 in 1992; 159 in 1993; 129 in 1994 (73 of these from Salta). An outbreak (102 cases) was reported in Tartagal City (Salta) in 1993. Leishmania (Viannia) braziliensis has been identified as an agent of cutaneous leishmaniaisis in Santiago del Estero (Northern Province). L. intermedia is implicated as the vector in Salta Province.

i. **Leptosprosis:** An outbreak in Buenos Aires in 1976 (10 cases) followed swimming in a drainage canal contaminated by pigs. Most cases are reported from Greater Buenos Aires. The mean incidence is 1.2/100,000.
276 cases were diagnosed in the Greater Buenos Aires area during 1990 to 1999 - 43 of these characterized by pneumonia. Twelve serovars were identified in human infection during the 1970's, with most cases due to serovars bratislava, icterohaemorrhagiae and butembo. 41% of infections during 1984 to 1994 were due to Leptospira interrogans canicola. A waterborne outbreak of leptospirosis (12 confirmed and 2 suspicious cases) was reported in Santa Fe in 1998. 49 cases were reported in Santa Fe during January to May 2001. The principal hosts in this country are rats, pigs and dogs. 25% to 40% of rats and 10% to 60% of dogs in Buenos Aires are seropositive - most often toward L. interrogans canicola and L. i. pyrogenes. Antibody toward serovars pomona, hebdomadis group, pyrogenes, tarassovi, and canicola has been demonstrated in healthy horses.

j. **American trypanosomiasis**: The disease is most common north of 45 degrees S. (59.5% of the country). As of 1993, highest seropositivity rates (military recruits) are reported in Chaco, Salta, Santiago del Estero, San Luis, La Rioja, Formosa and Catamarca.

2,640,000 persons are infested.

0.75% to 3.5% of infections are congenital.

5% to 20% of urban blood donors are seropositive.
37.7% of Indians living in the Gran Chaco (Salta) are seropositive (1998).
10.1% of military recruits were seropositive during 1965 to 1969; 5.8% in 1981; 1.9% in 1993.
1.95% of school children in Jujuy are seropositive.
4,283 cases were reported in 1991; 181 in 1992; 108 in 1993.
178 cases were reported in 1994 (including 80 from Santiago del Estero).
846 congenital infections were estimated for 1993.
135 cases of congenital infection were reported in 1994 (including 75 from Santa Fe).
A total of 1,136 congenital infections were estimated for the period 1994 to 2001.

890 fatal cases were reported in 1986; 644 in 1998.

The local vector is Triatoma infestans. Tr. guasayana and Tr. sordida have been identified as zoonotic vectors.

VECTOR RISK ASSESSMENT PROFILE *(VECTRAP):* ARGENTINA (continued)

3. DISEASE VECTOR INFORMATION:

a. Malaria is transmitted by the bite of an infective mosquito (*Anopheles* species). Vector species include *An. pseudopunctipennis* (larval habitats include stream edges and seepage areas, especially those exposed to the sun and containing algae) in northwestern areas, and *An. darlingi* (larval habitats include marshes, lagoons, and ponds) in northeastern areas. Both species will feed on humans indoors.

b. The mosquito *Aedes aegypti* is the only potential vector of Dengue Fever. However, recent introduction of *Ae. albopictus* could provide an alternative vector. *Ae. albopictus* is considered a secondary vector of dengue in Asia. Its habits are similar to *Ae. aegypti* but it tends to prefer used or discarded tires for breeding. *Aedes aegypti* 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 reduviid bug *Triatoma infestans* is the only significant vector of Chagas' disease in Argentina. It transmits the disease through its contaminated feces; the bug habitually defecates on the host's skin while feeding. This may lead to inoculation through the bite puncture, abrasions of the skin, or even the mucous membrane of the mouth, either by direct contact or rubbing or scratching. It can be highly domestic, remaining in crevices by day and coming out at night to feed. *Triatoma infestans* may ingest a blood meal in ten to thirty minutes.

d. The flea, *Xenopsylla cheopis*, is the principal vector of Endemic Typhus (Murine Typhus). It will often leave its warm-blooded host to wander into bedding material. Inoculation of murine typhus to man from the rodent reservoir occurs by rubbing flea feces or crushed fleas into the bite puncture site.

e. The sand flies, *Lutzomyia* spp., are the vectors of Leishmaniasis.

3. 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 shirtsleeves 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. Prevention of tick bites includes avoiding tick infested areas when feasible, mandating personal protection measures, clearing campsites of tall grasses and other low vegetation, and spraying area with an appropriate acaricide (always read and follow label

instructions). Use the buddy system to search total body area every 3-4 hours for attached ticks. Prompt removal of attached ticks may prevent disease transmission.

VECTOR RISK ASSESSMENT PROFILE *(VECTRAP):* ARGENTINA (continued)

f. Because the breeding habitats of most sand fly species are not easily identified, not easily accessible, or unknown, control strategies focus mainly on adult sand flies. Spraying residual insecticides on buildings, (including screening on portals of entry) animal shelters, and other adult resting sites can control Peridomestic sand fly species. Area chemical control of sylvan sand fly species is impractical. Personal protective measures will reduce sand fly bites and environmental modification (e.g., clearing forests, eliminating rodent burrows/breeding sites, relocating domestic animals away from human dwellings) has been used to reduce local sand fly populations.

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

CUSTOMER SURVEY: In order to improve our VECTRAPS 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.