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Final
Edition

Pacific Health Bulletin

Route To:

Navy Environmental & Preventive Medicine Unit No. Six Edition

December 1994

Operation Safe Haven: SITREP from Panama

On 10 September, a seven-member Navy Preventive Medicine Team consisting of personnel from NEPMU's 5 and 6, DVECC's Jacksonville and Alameda, and NEHC, arrived in Panama to take part in Operation Safe Haven. The team left on short notice to support Southern Command forces in Panama handling Cuban migrants arriving from Guantanamo Bay. This SITREP relates some of the early

accomplishments and excitement, "warts and all!"

Upon arrival, we were greeted by HMC(AW) Cadorette, Senior Medical Department Representative of Rodman Naval Station. Berthing had been arranged and he also had a vehicle for us, provided by US Army Medical Department Activity (USA MEDDAC) Panama Preventive Medicine (PM).

Our initial week was spent organizing and touching base with various medical units in order to better define our role in this operation. Migrant Camp 1 was operational prior to our arrival, with USA MEDDAC providing PM support. We set up shop in the U.S. Air Force's (USAF) 5th Air Transportable Hospital (ATH) and assimilated

into our team a USAF Bio-Environmental Engineering Officer, a USAF Public Health Officer, and four USAF technicians.

We are under the direct cognizance of the USARASO Surgeon, who is the JTF Surgeon. We work closely with USA MEDDAC and have assumed responsibility for PM within the four migrant camps and the U.S. military cadre areas. LCDR Lluberas, MSC, USN, is the PM Team Leader. The USAF Bio-Environmental team is in charge of water testing and waste disposal. The Navy PM team members and USAF Public Health assets are responsible for food service sanitation, communicable disease tracking, habitability inspections, and limited entomologic support (trapping and larviciding).

Joint Task Force Safe Haven's mission is to provide a place for Cuban migrants to live in while preparing for possible

Continued on page 2

Plague — outbreak in India

In August 1994, cases of both bubonic and pneumonic plague were reported from areas of Southcentral, Southwestern and Northern India. By the end of September, plague outbreaks had been reported in the cities of Surat, Calcutta, Bombay and Delhi, leading to concern for the safety of international travelers to India. The methods of transmission, symptoms and prevention of plague were reported in depth in the December 1993 issue of the Pacific Health Bulletin; however, in light of recent developments, this article once again briefly reviews these issues and a few newer ones.

Continued on page 4

Atlantic and Pacific Health Bulletins will consolidate

This will be the last issue of the Pacific Health Bulletin as you know it! Beginning in 1995, the Atlantic and Pacific Health Bulletins will consolidate into one quarterly publication.

Each of the four EPMUs will be responsible for generating one of the quarterly bulletins. In any case, information from all EPMUs will be included in each quarterly publication.

Please feel free to contact any of the EPMUs with suggestions, comments or articles for submission.

M.J. Shim, M.A., Head, Training Department,
Editor, NEPMU-6 Pacific Health Bulletin

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immigration to the U.S. and to relieve pressure on Guantanamo (GITMO) camps. There are two migrant camps administered by the Army (Camps 1 and 4), one by the Air Force (Camp 2) and one the Navy (Camp 3). The camps are basically of the same



The needs of families and children were not forgotten. Tents were erected which served as the church (L) and school (R).

design, built to house 2500 migrants each. They are 17-acre GP tent cities built with a community design having a church, school, athletic fields, medical clinic (BAS), barber shop and theater/stage area. Communal facilities include showers, wash sinks, latrines and a large dining facility. Meals for the migrants are catered, trucked in from Panama City and inspected prior to shipment by USA MEDDAC PM. At Camp 4, a fixed dining facility is being built and a contractor will prepare meals on site. Construction and planning of the camps was done with the help and approval of the Department of Engineering and Housing (DEH) USARSO; DEH contracts out most of the construction to Panama firms. Mosquito control at the camps is also performed by the DEH.

The camps are organized into 10 "blocks" of 250 migrants with an appointed "Consejal". The Consejals represent the blocks at meetings with camp officials and help assign work parties to keep the camps clean.

Some camps have up to 60 migrant medical professionals who want to help. The International Rescue Committee (IRC) is organizing these professionals in the camps. The migrants are helping establish which medical professionals will cover the

blocks and others who will assist at the aid stations. We are working with the IRC, USA MEDDAC, and the migrant medical professionals to establish preventive medicine training and STD clinical outreach. They will be doing contact interviews and referrals of the migrants.

In general, the migrants are in good spirits and are determined to get to the United States. The only complaints they've expressed are that meal portions are small and that women feel intimidated by the large numbers of single males in the camps. The migrants claim the camps here are much better than those in GITMO because they are less crowded, more spacious, and the food is more palatable. There have been a few hunger strikes and a few escapes, but these have been minor incidents.



Still under construction, this site is the 5th ATH where the Preventive Medicine Office was located.

U. S. forces live in tents next to the fence separating the migrant camps. We have our own shower and dining facility. Onsite recreational activities are limited, but due to the proximity of U.S. bases, there are many activities available. For R&R purposes,



The author (HM1 Bish) is collecting insects from the CDC light traps which were set the previous evening

most camps provide billeting on base for personnel on their day off (six days on/one off).

The Navy team was berthed in open bay steel buildings at Rodman for the first three weeks in country. Cots were provided and a separate shower building was available. Due to the spartan conditions and shape of the buildings, they were dubbed the "dog kennels". The team then moved out to tents behind the 5th ATH and within eight feet of the Camp 4 fence. Within a week or so electricity and showers were hooked up making the tents more tolerable. We share our tents with the psychiatry staff of the ATH. Some say this was fate, other say it was planned. Anyway, we get free counseling out of the deal.

There have been many trying episodes in the construction of the camps. "Be flexible" and "Adapt to the situation" are the



Water trucks line up to empty their cargo. One of the main storage blivets can be seen in the foreground.

watchwords of this mission. The camps were not fully constructed when military and migrants moved in, which led to many inconveniences. Luckily, there were no major PM problems encountered. The only trouble areas have been in feces disposal and how to deal with Africanized honey bees. Another area of concern has been the availability of water. A potential PM threat is posed by an outbreak of dengue fever (types I and II) in Panama City which has risen to almost 300 cases over the past month.



This water well turned out to be a dry hole.

Dengue vectors have not been found at the camps, and we are continuing to monitor the situation.

Water is being trucked in on flatbeds with 3,000 gallon blivets (bladders). They are in turn used to fill 20,000 gallon blivets that are attached to a PVC pipe system which is to have in-line chlorinators installed. The original plan was to have the bladder system hooked up to four wells which were to provide the 180,000 gallons of water being used per day. Unfortunately, several wells turned out to be dry and older wells are being opened. It appears the water volume provided by four wells will need to be supplemented by trucked water due to demand exceeding predicted supply. The access road to the camps has deteriorated from truck traffic and truck maintenance is costly so getting the wells on line has become a necessity.

Rain has been a plague to the operation. Panama's tropical climate and rainy season

provide daily deluges that turn the camps into muddy hell. To alleviate this, hundreds of thousands of tons of aggregate have been trucked in to fill low spots and to provide solid ground in naturally soft areas. Standing water remains a problem in most camps. Camp 3, the Navy camp, has a perched water table with an artesian spring flowing through the middle of it. The western edge of the camp was once a swamp with a small pond and had to be drained. To date, Camp 3 needs more drainage and fill. Camp 4 has not only a standing water problem, but is in a flash flood zone. A stream flows through two sets of culverts, one under a berm that forms the road to the front gate, and one that travels under a second berm located in the ATH cadre area. When it rains the berms



A Camp 1 artist painted this sign on the information booth in honor of singer and special camp visitor Willy Chirino.

act as dams and large amounts of water back up. On one occasion the water rose to the five foot level in the Camp 4 cadre tents and the Port-o-Johns floated away. There has been some improvement but flooding still occurs. Personnel resorted to hanging their clothes and personal goods above the high water mark. Standing water in Camp 4 became a breeding ground for mosquitos and had to be treated with larvicide briquettes. As you can expect, everyone, especially those in Camp 4, are hoping for an early dry season.

Human waste disposal originally was not a problem because the camps had contracted Port-o-Johns and they were and are being cleaned daily. The funding of Port-o-Johns for 10,000 people became an issue. A less costly alternative was needed. Without consulting PM, a rectangular steel tank, 4x3x18 foot, 12 seater was developed. The tank has two ports on the top, outside the wooden structure, to allow contractors to suck the contents out. Due to the combination of low ground, torrential rains, and the inability of the contractor's trucks to handle the volume of waste, a mess ensued. First, they filled and then the rains made them overflow. Soon, flies began to breed and then the contractors failed to show. After a change of contractors, pumping resumed but due to the design it was impossible to suck the tanks clean. More Port-o-Johns were brought in and the decision was made to go strictly to Port-o-Johns. It is safe to say that almost every



Flooding near JTF Headquarters shows that rain was a problem. This bridge is about ten feet above the stream bed.

Continued on page 8

Plague, continued from page 1**Transmission and Symptoms**

Plague is caused by the gram negative bacterium, *Yersinia pestis*, which is carried by rodents and transmitted by the bite of infected fleas. Rabbits, hares, domestic cats and other carnivores can also become infected with plague, which may then be transmitted to humans by inhalation of aerosolized sputum from an animal with plague pneumonia, or by handling infected animal tissues.

Symptoms of flea-borne or "bubonic" plague typically occur within 2-7 days following the bite of an infected flea and may include fever, chills, headache, myalgias, prostration, and nausea, as well as painful swelling and suppuration of inguinal, cervical or axillary lymph nodes. Although suppurative material from these infected nodes or "buboes" can be infective, this form of plague is not otherwise transmitted directly from human to human. However, at any point during the course of the disease, bacteria may invade the bloodstream, resulting in "septicemic" plague and secondary infection of other organs, including the lungs and meninges. Pulmonary involvement is particularly significant since aerosolized droplets of sputum are highly infectious and, when inhaled, can result in cases of primary plague pneumonia, or "pneumonic" plague. Untreated pneumonic plague has a mortality rate of nearly 100%, and, due to its high infectivity, can result in devastating epidemics.

Prevention

Prevention strategies involve reducing the likelihood of flea bites and/or exposure to people or animals infected with the pneumonic form of the disease. To reduce the risk of contracting flea-borne plague, persons working in field conditions in endemic areas should be advised to apply insect repellent to their ankles and legs. Repellents and/or insecticides should also be applied to outer clothing and bedding materials. Camping should be avoided in areas near rodent burrows, and sick or dead animals should never be handled. If the risk of plague exposure is high, prophylactic antibiotics may be prescribed: recommended prophylactic regimens include doxycycline 100 mg BID or tetracycline 500 mg QID for adults and sulfamethoxazole 40 mg/kg/day for children under the age of 9. Plague vaccine does not provide reliable protection against the disease and is not recommended.

Disposition of**Suspected Plague Patients and Close Contacts**

Although the overall risk of infection is low, travellers to plague endemic areas should be advised to immediately report to a physician any febrile illness including episodes beginning within 7 days of leaving the area. All suspected plague patients should be hospitalized for appropriate diagnostic studies including blood and sputum cultures, serum antibody determinations, chest x-ray, and cultures of aspirates from affected lymph nodes. Prompt antibiotic therapy

can reduce overall plague mortality from 60-100% to 10-15%. Streptomycin is the drug of choice, but gentamicin, chloramphenicol and tetracyclines are also effective. For patients with bubonic plague, if there is no cough and chest x-ray is negative, drainage/secretion precautions are indicated for 3 days following initiation of therapy. For patients with the pneumonic form of the disease, strict isolation with airborne spread precautions is required until 3 full days of antibiotic therapy have been completed and there has been a favorable clinical response. Luggage and personal effects present minimal to no risk of plague transmission.

Close contacts of pneumonic plague cases, including all face-to-face contacts, household members, and persons sharing an enclosed space with a pneumonic plague patient should receive prophylactic antibiotic treatment using tetracycline 15-30 mg/kg or sulfonamides 40 mg/kg daily in four divided doses for 1 week, and should be placed under surveillance for 7 days. Household contacts of bubonic plague cases should also receive prophylactic antibiotics.

Close contacts refusing chemoprophylaxis should be placed in strict isolation for 7 days.

Infected Ships

Plague is a quarantinable disease. If a case of pneumonic plague exists on board ship, health authorities are authorized to place all shipboard personnel in isolation for a period of six days dating from the time of last exposure. If rodent plague exists on a ship, the ship will be deratted, and if necessary, placed in quarantine to prevent the escape of infected animals. Ships or aircraft without suspected or active plague cases or just transiting through plague infected countries are not quarantined.

Shipboard rodent infestation can be prevented by appropriate storage and disposal of food and garbage (refer to NAVMED P-5010 Ch 1, NAVSUP P-486 Ch 6, and NAVSUP P-421 Ch 1), and proper use of ratguards while in port. Ships are required to undergo periodic rodent inspections and maintain current deratting certificates in accordance with International Health Regulations.

Additional antibiotic dosing information for prophylaxis and treatment of plague can be obtained from the CDC by calling 404-332-4565 and requesting document number 351513 or from NEPMU-6.

CDR B.A. Schibly, MC, USN, Preventive Medicine Resident, Uniformed Services University of the Health Sciences, Bethesda, MD

“

***Plague vaccine does not
provide reliable protection
against the disease and is
not recommended.***

”

E ho‘opiha i ka mākālua i hakahaka.

***Fill the hole from which the plant was removed.
Find something to replace that which has been taken away.***

-‘Ōlelō No‘eau

Thirty-sixth Navy Occupational Health and Preventive Medicine Workshop

04 - 10 March 1995, Hampton, Virginia

Call for Poster Session Presentations

(deadline for submission to NEHC is 20 Jan 95)

Further information and abstract submission forms can be requested from NEHC. Point of contact is Ms. Laura Weis, (804) 444-7575 x471.

Additional Workshop information is available from:

HMCS L.C. Cattley (NEHC-04B)
Navy Environmental Health Center
2510 Walmer AVE
Norfolk, VA 23513-2617
COMM: (804) 444-7575 x461
DSN: 564-7575 x461

Sponsored by:

Navy Environmental Health Center, Norfolk, VA



OHPEG: A Guide to assess occupational health programs

In early September, a working group of Navy Occupational Health Nurses convened at NEPMU-5, San Diego to design a guide to be used by Occupational Health (OH) professionals. This guide will help facilitate dialogue between knowledgeable consultants, inspectors and command personnel to assess OH programs and provide recommendations for improvements.

The Occupational Health Program Evaluation Guide (OHPEG) was developed to provide a standardized tool to measure program effectiveness. The guide is NOT intended to be used as a self-evaluation tool to determine program status. The elements are not all inclusive of comprehensive occupational health programs, but serve as a trigger to the qualified consultant or inspector.

The OHPEG will be reviewed annually by individuals who are currently consulting or augmenting inspection teams for occupational health. New programs will be added as needed, providing the occupational professional consistent direction based on current regulations.

For further information concerning OHPEG, please contact Lois Moody, Occupational Health Nurse Consultant, NEPMU-5, San Diego, CA, COMM/DSN (619) 556-7070/526-7070.

A.E. Steckel, COHN, Occupational Health Nurse Consultant, NEPMU-6 NAVOSH Department

From the S. E. A.



Marine Corps Institute offers ROWPU course

In the April 1994 issue, I mentioned the U.S. Army's many correspondence course offerings, and of course, the U.S. Marine Corps has their own catalog. The Marine Corps Institute offers a Reverse Osmosis Water Purification Unit (ROWPU) correspondence course which may be of professional interest to you. The course provides instruction on operation and maintenance under both normal and unusual conditions. It comes with a user-friendly text and should take about twenty-two study hours to complete.

To order courses from MCI, your command will need to send a letterhead request to the following address, requesting a course catalog, order forms, and an "assigned RUC" (their version of a UIC) for tracking purposes. The catalog also includes listings related to warfare, occupational specialties, and amphibious warfare operations.

**Deputy Director
Marine Corps Institute
Arlington, VA 22222-0001
1(800)MCI-USMC (DSN)288-4175**

HMCS B. Supalla, USN, Senior Enlisted Advisor

Human Plague in U.S.A. 1944-1994

The recent outbreak of pneumonic plague in Gujarat State, India has attracted considerable media attention. It is not generally known to both the health and lay community that plague was introduced into California in the early 20th Century and that zoonotic plague persists west of the Mississippi. CDC has recently (MMWR: 242-243, 1994) reported on plague trends over the past 50 years. During this period, 362 cases were reported, predominantly in four western states (Arizona, California, Colorado, and New Mexico). One of the ten cases reported in 1993 was primary pneumonic plague. The number of plague cases and reporting states has increased each decade. From 1943-1953, there were nine cases reported from three states. During 1984-1993, there were 127 cases from 13 states.

*This short announcement is reprinted from
Tropical Medicine and Hygiene News, October 1994, Vol. 43, No. 5, p. 156.*

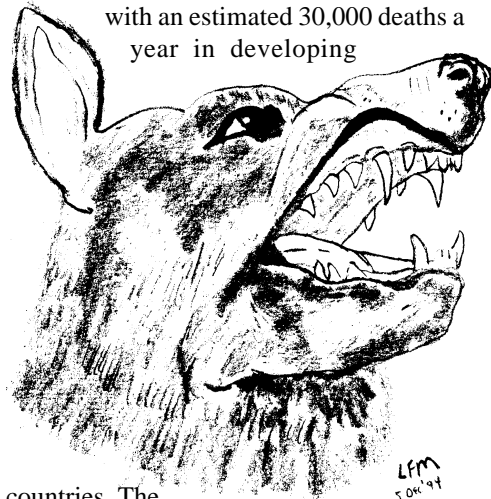
Rabies — clinical guidance and prevention

Rabies is a viral encephalitis that all mammals, including man, are susceptible to. The very mention of the word conjures up frightening images of infected mammals “gone mad”, displaying the classic tell-tale symptoms of the disease including foaming at the mouth, and erratic, unpredictable behavior such as biting and slashing at other animals, people and even inanimate objects.

Background

It is not known how long rabies has been in existence, but a description of rabid animals is found in the pre-Mosaic code of ancient Mesopotamia written nearly 4,000 years ago. Early settlers in North America had good reason to fear this dreaded disease where an encounter with an infected animal almost always meant certain death.

The disease is endemic world-wide, with an estimated 30,000 deaths a year in developing



countries. The only rabies-free areas at the present time are the Hawaiian Islands, Guam, Australia, New Zealand, New Guinea, Japan, Sweden, Taiwan, the Pacific Islands, the U.K., Ireland, mainland Norway, Portugal, some of the West Indies, and the Atlantic Islands. Many rabies-free countries have strict quarantine rules. Be advised if you are transferring to a rabies-free area and bringing a cat or dog, your pet may be subject to quarantine for 4-6 months at considerable expense.

In the United States, rabies is primarily transmitted by wild animals and is known as sylvatic rabies. Animals most frequently infected and implicated in transmission are raccoons, skunks, foxes, bats, coyotes,

bobcats, and wolves. Dogs and cats as well as livestock are also prone to infection. It has now reached epizootic proportions in the raccoon population. Squirrels, chipmunks, rabbits, gerbils, hamsters, rats and mice are rarely infected and their bites seldom, if ever, require rabies prophylaxis. In developing countries, the primary reservoir is the dog and the disease is known as urban or canine rabies.

The incubation period is 2 to 8 weeks but can be as short as 5 days or as long as a year depending on the site and severity of the wound and the amount of virus introduced. An infected animal can usually spread rabies for approximately 3 to 10 days before showing clinical signs of the disease.

Mode of transmission is from the infectious saliva of a rabid animal through a bite, scratch or licking a cut or open wound. Airborne transmission has been demonstrated in caves where infected bats were roosting, but this is rare. Once the virus has made contact with nerve tissue it undergoes an incubation period and then travels along a neural pathway toward the central nervous system. Once there it begins to actively replicate within the grey matter, eventually passing along the autonomic nervous system to the salivary glands, adrenal medulla, kidney, brain and heart. Invasion of the salivary glands perpetuates further spread of the disease. In this way, the rabies virus is continually spread among carnivorous animals.

Clinical Aspects and Symptoms

Two major clinical aspects of the disease are seen. The first, which occurs less frequently, is known as “dumb” or paralytic rabies, so named because the victim is unable to speak because of pharyngeal paralysis. Symptoms include fever, headache and numbness at the site of the bite. This is followed by pain, flaccid paralysis and sensory abnormalities, usually most severe at the bite site. Death results from paralysis of the respiratory and swallowing muscles. Animals displaying these symptoms often appear to be non-threatening, helpless and in need of assistance, thus inviting unwary good samaritans to expose themselves to infection.

The second, more commonly seen clinical

feature, is the familiar “furious” rabies which has three stages. The first stage, known as the prodrome, begins with nonspecific symptoms that usually last from one to four days. Characteristically there is a high fever with headaches, nausea, vomiting, malaise, sore throat, fatigability, anorexia,

“The only rabies-free

areas include

the Hawaiian Islands,

Guam, Japan,

Australia, New Zealand...”

nonproductive cough, depression and restlessness. There are also abnormal sensations of pain, tingling, and burning at and near the site of exposure. The second stage, called encephalitic, is signalled by periods of excessive restlessness, increasing to uncontrollable excitement and great agitation and movement. Confusion, hallucinations, combativeness, bizarre behavior, aberrations of thought, muscle spasms, abnormal posturing, seizures, and localized paralysis are all further signs of deterioration. These symptoms are similar to other viral encephalitides and are not sufficient for a specific diagnosis of rabies. During this stage the patient’s temperature may rise to 105°F. Lucid periods dwindle until mental aberration becomes more pronounced and of longer duration.

Hypersensitivity to bright light, loud noise, and touch is a common manifestation. Pupils are irregular and dilated. There is increased lacrimation, salivation and perspiration. Animals in this stage are the most dangerous as they wander around biting at anything they may encounter. The third and final stage, dysfunction, is marked by double vision, facial paralysis and difficulty with swallowing. Foaming at the mouth results from increased salivation, coupled with excruciatingly painful muscle spasms during swallowing. This is followed by complete paralysis. Hydrophobia (fear of water), a result of this painful swallowing

Rabies, Continued from page 6

reflex causes the patient to avoid water in spite of extreme thirst. From this point on, a coma usually ensues rapidly and the respiratory system becomes involved. Death often results from respiratory or cardiac failure. It should be emphasized that once symptoms of rabies begin, treatment will be symptomatic only. There is no known treatment and death is inevitable.

Prevention

Preventive measures include:

1. Pet owners should be educated on the importance of vaccinating their pets against rabies and on the restriction of their pets' wanderings to minimize contact with wildlife.

2. Avoid contact with wildlife, stray cats, dogs, and local animals such as monkeys kept as pets, especially in developing countries.

3. It is recommended that all ships and special forces operating in rabies-endemic areas should have rabies vaccine and rabies immune globulin available for use in case of animal-inflicted bites and wounds.

4. If bitten, thoroughly cleanse and flush the wound, and seek medical attention immediately. Tetanus prophylaxis and antibacterial treatment should be administered as necessary. No sutures or wound closure should be attempted. Rabies immune globulin and vaccine should be administered IAW NAVMEDCOMINST 6220.4, depending on the circumstances of the bite. An animal bite report should be filled out and given to the appropriate preventive medicine department for follow-up. A DAR is required when rabies vaccine is used and should be sent to the cognizant EPMU.

5. All veterinarians, wildlife conservation personnel, park rangers in enzootic areas, staff of quarantine kennels, laboratory and field personnel working with rabies, and long term travelers to endemic areas should receive pre-exposure immunization.

HM1 L. Maranzana, Preventive Medicine
Technician, Epidemiology Department

Results of HIV/STD survey in WESTPAC

Human immunodeficiency virus (HIV) infection is increasing rapidly in Southeast Asia and Thailand, and US military personnel have become infected with HIV while on liberty in this area. To assess current levels of sexually transmitted disease (STD) and HIV risk-taking behaviors in US military personnel, a survey was conducted among US military participating in the May 1994 Operation Cobra Gold in Thailand. Although the survey was also given to Army and Air Force members, this preliminary report deals only with US Navy and US Marine Corps personnel. Responses were compared with those of a similar group of US Navy and US Marine Corps persons who had six days of liberty in Pattaya Beach, Thailand in 1993.

Questionnaires were passed out to personnel onboard a ship as it returned from Thailand. The questionnaires were anonymous and returned to the medical department representatives onboard the ship. Four hundred sixty-seven sailors and Marines returned questionnaires. Responders were all male; approximately 76% were ages 17–24, 85% were of a rank E-5 or below, and 69.2% were single. Of all the respondents, 17.6% reported a previous STD prior to this liberty visit to Thailand. About 50% of the all embarked personnel responded to this questionnaire. Among the Navy and Marine Corps personnel, at least one sexual contact was reported by 76% of respondents. This figure was not significantly different from the 73% reporting sexual activity in 1993. However, 54% reported three or more sexual contacts during this liberty port visit compared to only 26% in 1993. During Operation Cobra Gold 94, the average duration of liberty was 9 days which may partially explain why this group had more sexual contacts than the

1993 comparison group which had 6 days of liberty. Alcohol consumption prior to sexual contact was reported by 71% of respondents.

Condoms were used "always" by 61% of respondents, an increase from 55% in 1993, while 3% of those having sexual contact reported they "never" used condoms. Of all the respondents, 79% said they knew that the risk of HIV was high in Thailand without using condoms and 8% reported they did not know the risk. This is an improvement from 12% stating they did not know the risk in 1993. Ninety-one per cent of respondents felt they were properly informed of the HIV risk in Thailand.

Condom breakage was reported by about 38% of individuals having sex 1–2 times and about 64% of persons having sex 7 or more times. Analysis of these data shows that the respondents report condom breakage more frequently than it may actually occur. It has been theorized that Sailors and Marines report condom failure rather than admit that they failed to take a simple step to protect themselves. Although some breakage can be expected if condoms are stored at high temperatures, used with petroleum based lubricants or subjected to other unfavorable conditions, condoms do provide a high degree of protection from HIV and other sexually transmitted diseases.

Although a high proportion of Sailors and Marines stated they understood the HIV risk in Thailand, these preliminary results indicate this knowledge has not led to significant reductions in STD/HIV risk-taking behavior. Obviously, we need more effective approaches of getting the word out to the troops. The challenge is there, and it is terribly important.

LCDR Laurel A. May, MC, USN,
Epidemiologist, Head, Epidemiology
Department

E kaupē aku no i ka hoe a kō mai.

Put forward the paddle and draw it back.

Go on with the task that is started and finish it.

-‘Ōlelō No‘eau

Consider safety when purchasing toys

Santa is making his list and checking it twice. What better advice for any holiday gift list: check it twice to make sure the toys are safe and age-appropriate. OSHA states that people deserve a safe place to work. A child's work is play and they also deserve a safe place with safe "tools". According to the Consumer Product Safety Committee (CPSC), over 100,000 people are treated annually for injuries involving toys (95% are children under the age of 15) and under a 1969 law, the CPSC can ban potentially hazardous toys. Although responsible toy manufacturers have established voluntary safety standards, unsafe toys do make their way to the store shelves, and there may be a delay before they are banned and removed or recalled. Responsibility for toy safety rests with parents or guardians.

The following are some tips on selecting safe toys for children:

1. Read the label. Use the age recommendation label as a guide to select safe and age-appropriate toys. For example, children under the age of three should not have toys with parts small enough to swallow. Most of the 20+ toy-related fatalities reported in recent years involved choking. Although current laws ban new toys with parts small enough to be put in the mouth for children under three, it's a good idea to perform a simple test. With one hand, touch the tip of your thumb to the tip of your index finger to create a circle. If the toy can pass through the circle, a baby can swallow it.
2. Look for labels such as "Flame retardant/Flame resistant" fabrics and "Washable/Hygienic materials" on stuffed toys and dolls.
3. Look for durable, high-quality toys that will not break with normal use.



Sharps Protection

It is just as important to supervise children at play and teach them safety rules as it is to select safe toys. Toys with sharp glass, metal edges, or with sharp points or prongs are prohibited by law for children under eight years of age. Propelled objects and projectiles, such as toy rockets, can injure eyes. Any arrows or darts for children should have secure cork or suction cup tips.

Workplace Hazards

Toys with long cords or strings can wrap around the necks of children under three, causing strangulation. Never hang toys with strings in cribs or playpens where children can become entangled. Infants' crib gyms should be taken down once the child can pull itself up on its hands and knees.

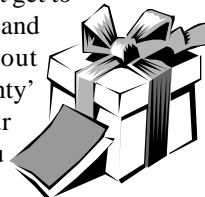
Lead Hazards

The federal government has now placed severe limitations on the amount of lead in toy paint. However, if you're giving a young child a treasured toy from your own childhood, be aware that it may contain an unsafe amount of lead paint.

Hearing Conservation

Loud noises not only get on parents' nerves, they can cause hearing loss in children. Toy caps and other noise-making guns are required to carry the warning "Do not get closer than one foot to the ear. Do not use indoors." Explain to your children why they should heed these warnings.

Any toy product can be dangerous if misused. A toy may be safe for an older child, but dangerous for a younger one. Chemistry sets or toys with small pieces intended for older children should be stored where youngsters can't get to them. Check your list and think twice. Find out which toys are 'naughty' or 'nice'. Keep your children safe and you won't be sorry!



**W.F. Johnson, CHCM; NEPMU-6 NAVOSH
Department and BUMED Regional Safety
Manager**

Safe Haven, Continued from page 3

Port-o-John in Panama is in the camps and more are being shipped in from as far away as the U.S. As soon as the Port-o-Johns come in the tank ones are going to be phased out.

The other visible problem was Africanized honey bees that come in swarms to the dining facilities. They are attracted by what we affectionately call "bug juice" (drink mix), which contains sugar. One camp found out the hard way by placing their juice dispensers inside a mess tent with one open door. In a few days there were hundreds of bees inside. Placing the juice in a screened dining facility kept bees out effectively. Yes, they go after garbage too, so we started having a serious problem at all the camps. The solution was to carefully tape strips of Vapona onto the bottom of the lids. Within a few days the bee problem was gone.

Overall, Operation Safe Haven is going extremely well for PM with no serious problems or disease outbreaks. It has been a good experience for those who have not participated in any joint field exercises because we have a good mix of responsibilities and also have had positive interactions with the other forces (USA, USAF) involved.

**HM1 M.E. Bish, Preventive Medicine
Technician, Operation Safe Haven (NEPMU-6)**

JTF Safe Haven — Postscript:

Operation Safe Haven continues. By the end of November 1994, the following members of JTF's Safe Haven PM team returned home:

HMC T. McMillan, NEPMU-6
HM1 M. Bish, NEPMU-6
A1C T. Riley, USAF, Barksdale AFB
A1C C. Blackman, USAF, Minot AFB

Nine other members of the PM team remain in Panama supporting the Operation.

CIHL CHAT

ORGANIC VAPOR MONITORS

Organic vapor monitors (OVM) such as the 3M 3500 and 3M 3520, are widely used to sample organic vapors in the workplace. These devices measure time-averaged concentrations of organic vapors using the principle of gas diffusion rather than a mechanical sampling



pump. They are convenient, compact, lightweight, and contain no moving parts. In fact, their manufacturers claim that they are better than conventional pump and charcoal tube sampling because they are just as accurate and there is less to go wrong. However, if OVM's are to be used *in place of* a pump and charcoal tube, it is important that the OVM's be properly validated for accuracy and precision for the concentrations and conditions expected during sampling. Validation ensures the accuracy of the obtained exposure data.

Manufacturers of OVMs have published sampling guides listing parameters and recommendations for many common organic solvents. These parameters, which include sampling rate and recommended sampling period, are determined individually and experimentally by exposing the OVM's to known concentrations of pure solvent. The solvent is collected on the OVM by the process of diffusion. The amount collected is then compared with the concentration in the experimental atmosphere and a sampling rate is derived using a mathematical model. The concentration is monitored using a parallel pump and charcoal tube sampling system.

One of the assumptions made in this model

is that the rate of solvent uptake is linear and independent of the concentration of the solvent in the air or on the monitor. Actually, the rate of uptake decreases with increasing exposure, and may not be constant over the entire sampling time. As a result, the amount of material collected may be less than the amount calculated, resulting in a lower estimate of exposure.

Another assumption is that the rate of uptake of a solvent is not affected by the presence and/or concentration of other organic compounds in the atmosphere sampled. However, in a two-compound atmosphere, such as toluene and trichloroethylene, there can be active competition for adsorption sites on the OVM, which will result in a variation in sampling rates from those determined in individual toluene and trichloroethylene atmosphere experiments. This effect is related to the capacity of OVM for the two compounds, and varies with the specific concentrations of the two compounds. In atmospheres where more than two organic solvents exist, this effect is more complex and more difficult to predict. Most of the sampling done for organic solvents is collected in atmospheres where many different organic compounds exist.

If you are using OVMs exclusively, that is, in place of conventional pump and charcoal sampling, it is important that the manufacturer's validation data for the OVM specify conditions, including the conditions of the atmosphere you are sampling. This is necessary so that your data are "interpolated" with respect to the manufacturer's calibrated ranges of exposure data rather than "extrapolated." If you are unsure that such data exist, we recommend that you also collect at least one charcoal tube sample along with your set of OVMs so that the data obtained can be compared.

OVMs are useful in many air sampling situations. If the manufacturer lists sampling parameters and conditions for a solvent or organic which we analyze using conventional tube sampling, it can probably be collected and analyzed by our laboratory. However, the one exception to this is methyl ethyl ketone (2-butanone), or MEK. We have never been able to obtain a sample recovery over 50% on OVMs under laboratory conditions, and therefore, we do

not recommend OVMs for sampling MEK.

Another situation where OVMs cannot be used is in the sampling of aerosols, such as paint spraying and water mist operations. OVMs can only be used to sample organic and solvent vapors. If paint, solvent, or water is sprayed on the OVM's membrane, the diffusion characteristics will be altered and the published sampling rates will no longer be valid.

A minor problem has been observed when 3M OVMs are shipped to our laboratory. Sometimes, one of the two ports on the OVM's closure cap is found open when the monitors are unpacked. To help prevent this spontaneous opening, first snap the closure cap in place then cover the ports prior to shipment.



If you have any questions regarding the use of OVMs, please contact our CIHL at COMM/DSN (808) 474-4428/474-4428, or COMM/DSN FAX (808) 474-2071/

474-2071.

R. Ishikawa, PhD, CIH, Head, CIHL Department

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**NEPMU-6
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Tropical medicine training for deployable physicians

Almost 300 cases of malaria occurred among US Army and Marine Corps personnel during and following Operation Restore Hope in Somalia. Additionally, there were 210 cases of malaria (Somalia excluded) reported among US Navy and Marine Corps personnel between February 1988 and May 1993. These recent cases from Africa and the current operations in the Caribbean continue to emphasize the need for optimal Navy medical readiness to support forward-deployed forces. However, the current military tropical medicine short-courses do not train enough doctors.

To address this issue, a tri-service working group was formed in June 1993 and tasked to review short-course tropical medicine training conducted by the Armed Services and to make recommendations for improvements. One early positive outcome of the Interservice Training Review Organization Committee (ITRO) has been a review by the Navy to determine who should be **required** to attend short course tropical medicine training.

BUMED has recently formalized tropical medicine training as a part of overall medical readiness training, by requiring that 15 per cent of claimancy 18 medical officers, i.e.

those assigned to fleet hospitals, casualty receiving and treatment ships, hospital ships, the Fleet Marine Force, and Medical Mobilization Augmentation Readiness Teams (MMART), receive short course tropical medicine training (BUMEDINST 6440.5A, Medical Augmentation Program, 19 April 94).

BUMED is currently conducting a "bottom-up" type review to determine tropical medicine training requirements among the Navy Medical Corps. Extending this valuable training to more medical officers may be a potential result of this review. We'll keep our readers informed.

Currently there are several military short courses in tropical medicine available.

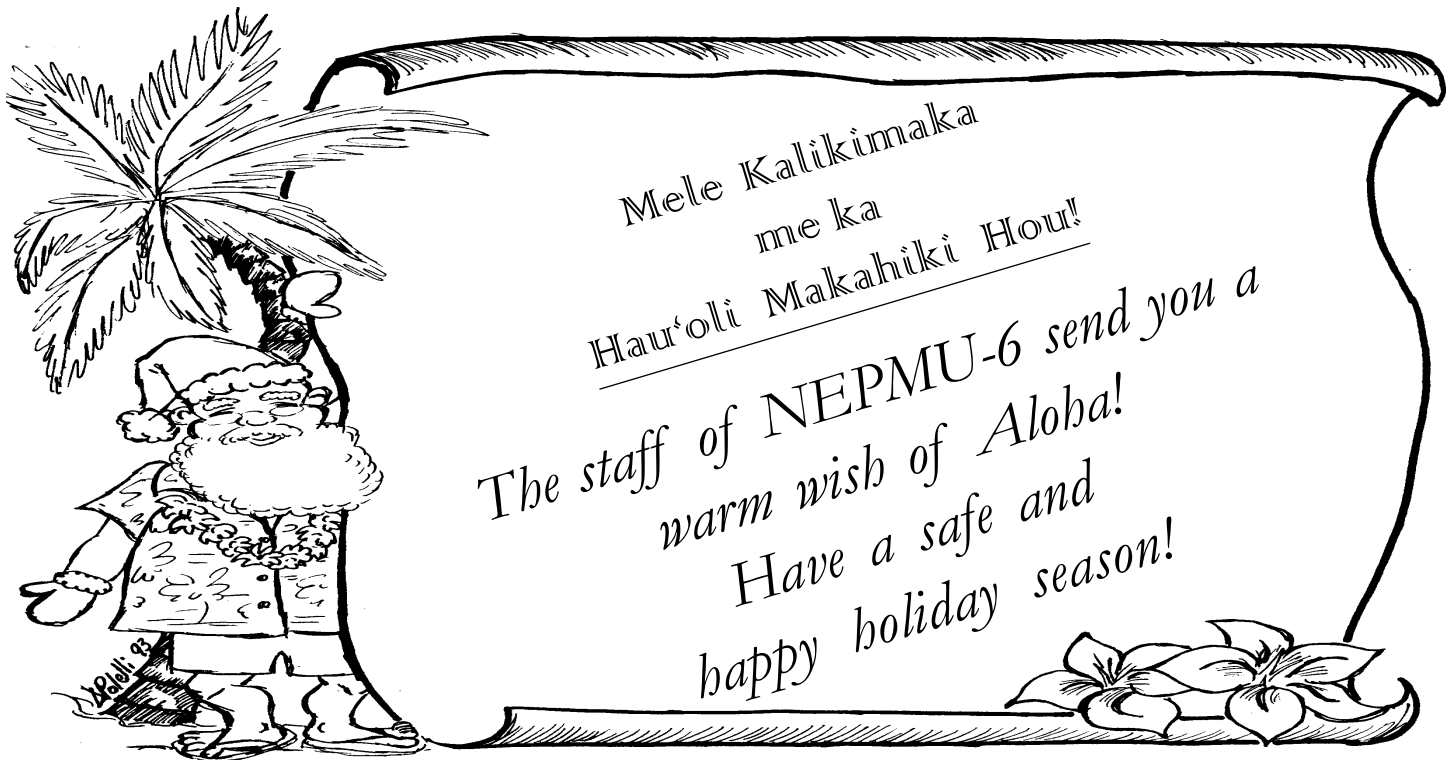
—The Naval School of Health Sciences (NSHS), Bethesda, conducts a six-week tropical medicine course titled "Medicine in the Tropics" (CIN: B-6A-1001) in San Juan, Puerto Rico. The course is conducted quarterly in January, April, July, and October. The point of contact is LCDR Gregory J. Martin, MC, USN, (809) 758-7575, ext 5677.

—The U.S. Air Force conducts a two-week "Global Medicine Course" at Brooks Air Force Base, San Antonio, Texas. This course is usually conducted only once a year in January or February. The point of contact is LTCOL Mary E. Gabriel, MC, USAF, (210) 536-2844 (DSN 240-2844).

—The U.S. Army, through the Walter Reed Army Institute of Research (WRAIR) in Washington, DC, conducts a six-week tropical medicine course each year beginning in July. The point of contact is LTCOL Bonnie Smoak, MC, USA, (202) 782-1334 (DSN 662-1334).

Predeployment briefings and other operationally-specific classes are offered at the NEPMUs and the Marine Corps Field Medical Service School Course for Medical Department Officers. If you have any questions regarding tropical medicine training, please feel free to contact us.

CAPT H.J. Beecham III, MC, USN, Infectious Disease Physician





BUGBYTES

Items of Entomologic interest compiled by
LCDR (Sel) S.E. Cope, MSC, USN, Entomologist

Mosquitoes DO NOT transmit HIV

One of the most frequently-asked questions of entomologists, epidemiologists and other preventive medicine personnel is “**Can I get HIV from mosquitoes?**” Media releases concerning the possibility that mosquitoes may transmit the Human Immunodeficiency Virus (HIV), the virus that causes AIDS, were common when the disease was first recognized and the subject is still addressed today by tabloids and other forms of journalism.

Research conducted by the National Centers for Disease Control and Prevention (CDC) clearly demonstrates that HIV is not transmitted by mosquitoes or any other biting arthropod. The evidence against mosquito transmission was summarized in a recent edition of the magazine *Wing Beats* by Dr. Wayne Crans from Rutgers University (*Wing Beats*, Vol. 5, No. 1 Spring 1994). Among other interesting facts, Dr. Crans states that an uninfected (HIV-) person would have to be bitten by 10 million mosquitoes that had begun feeding on an HIV infected carrier to receive a single unit of HIV (one virus particle) from contaminated mosquito mouthparts. This article is clearly written and highly recommended reading.

Vector-borne disease war continues

Are we losing the war against vector-borne diseases? Perhaps so. In 1990, the World Health Organization estimated that half a billion people, or one person in ten, were suffering from tropical diseases. For the following vector-borne diseases, the World Health Organization figures for people infected are given with number at risk in parentheses.

Lymphatic filariasis	90 million (900 million)
Onchocerciasis	17 million (90 million)
Chagas' Disease	16-18 million (90 million)
Leishmaniasis	12 million (350 million)
African Sleeping Sickness	25,000 (50 million)

The numbers for malaria are even more staggering: 270 million people infected and 2.1 billion - half the world's population - at risk.

Fighting tropical diseases is extremely difficult for a number of reasons. Most infected people live in countries with less than US\$400 per capita income per year, where governments spend an average of only US\$4 per person per year on health care. Second, the parasites and insect vectors are constantly developing resistance to drugs and control measures. Finally, when people move to seek work, land and food (or, more recently, to flee wars or natural disasters), they may be exposed to tropical diseases to which they have no resistance. They can also carry diseases from one area to another. (*TDR News* 31, 1990).

Skin contamination may cause pesticide related illness

Although pesticides can enter the body in several ways, skin contamination is the number one cause of pesticide-related illness. Clothing can keep pesticides away from the skin, however, that same clothing can become a source of contamination if pesticides aren't laundered out after each wearing. The following general guidelines for care of pesticide-soiled clothing are based on findings from many research studies in the United States. When laundering pesticide-soiled clothing, remember...

- **READ** the pesticide label for specific information on laundering.
- **PRE-RINSE** clothing prior to washing.
- **WASH** with machine settings at **HOT** water temperature, **FULL** water level and **NORMAL** wash cycle.
- **RE-WASH** several times, if necessary.
- Wash only **A FEW** garments at a time, using lots of water and detergent.
- Wash **SEPARATELY** from family laundry.
- **LAUNDER CLOTHING DAILY** when applying pesticide daily.
- **RINSE MACHINE** thoroughly with an empty load after laundering.
- **LINE DRY** to avoid contaminating the dryer.

Laundering pesticide-contaminated clothing correctly must be an important part of any pest management operation. For further information, including more detailed laundering recommendations, contact the Entomology Department at NEPMU-6. (Adapted from *Laundering Pesticide-Soiled Clothing* published by The North Carolina Agricultural Extension Service).

Mosquitoes spread arboviruses

Several mosquito-borne viruses are capable of causing human disease in the United States. Although these viruses usually cause sporadic disease in humans and/or animals, they can cause severe epidemics and epizootics. During 1993, health departments from 20 states reported 78 cases of arboviral (= ARthropod-BORNE VIRus) encephalitis in humans to CDC. Fifty-five were cases of California encephalitis from 11 states: Florida (1), Illinois and Indiana (2 each), Iowa (6), Minnesota (3), Mississippi (1 fatal), Missouri (1 fatal), North Carolina (3), Ohio (6), West Virginia (13), and Wisconsin (17). Patients ranged in age from 5 months to 22 years (mean: 7 years).

St. Louis encephalitis accounted for 18 cases in five states: Texas (7), Florida (5), California (3), Illinois (2), and Colorado (1). Five human cases of eastern equine encephalomyelitis were reported from Michigan (2, 1 fatal), Mississippi (1), Florida (1), and Rhode Island (1 fatal).

Remember: the BEST way to prevent arthropod-borne diseases is to avoid the bite. Consult your preventive medicine specialists for the latest information on personal protection in the field. For copies of any of the above articles, or further information on any of the topics, contact the Entomology Department, NEPMU-6.

Welcome Aboard!

LT J.T. Evans, MSC, USN, NAVHOSP Camp Pendleton, CA
LCDR David Y. Shiraishi, MSC, USN, USS SIMON LAKE (AS-33)

Fair Winds and Following Seas!

HMC Robert A. Robinson, 2ND MAW, Medical, Cherry Point, NC
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HM1 John R. Weigel, USS OGDEN (LPD-5)
CDR(Sel) William R. Stover, MSC, USN, PRESINSURV, Little Creek, VA



Answers to:

WESTPAC WILLIE'S MEDICAL MYSTERIES

From NEPMU-5s
October 1994 PHB

1. *Plasmodium falciparum*
2. *Plasmodium falciparum*
3. Drug-resistance 4. Vivax 5. False
6. OPNAVINST 5100.19B
7. Annually 8. (a) 9. (f) 10. True

Pau!

NEPMU-5

San Diego, CA
Hours of operation: 0700-1630
Comm/DSN (619) 556-7070 / 526-7070
FAX: Comm/DSN (619) 556-7071 / 526-7071
nepmu5@wrair-emh1.army.mil
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Pearl Harbor, HI
Hours of operation: 0700-1630
Comm/DSN (808) 471-9505 / 471-9505
FAX: Comm/DSN (808) 474-9361 / 474-9361
nepmu6@hq.pacom.mil
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Officer in Charge

J. Escamilla, CAPT, MSC, USN

Editor

M. J. Shim

Graphics Editor

J. R. Weigel, HM1, USN

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