

Fleet Public Health

Navy Environmental Health Center, Norfolk, VA



Navy Environmental and Preventive Medicine

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Vol. 2, No. 3, July 1997

NEPMU-5 San Diego, CA Edition

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From the OIC of NEPMU 5...

“Recruits to Battle Colds with Cleanliness,” this was the headline in a recent Navy Times story. The story furnished an account of the recent success Preventive Medicine Division, Naval Hospital, Great Lakes has experienced with its “Operation Stop Cough” at Naval Training Center (NTC), Great Lakes, IL.

Through the energy and leadership of LCDR Margaret Ryan, MC, USN, “Operation Stop Cough” has provided a revalidation of what can be accom-

plished through primary prevention. During the winter of 1995-1996, the clinic serving recruits at Great Lakes had an average of 500 visits per week to sick call due to upper respiratory illness. During the winter of 1996-1997 respiratory illness visits fell to 200 to 300 per week. What caused this dramatic reduction? A paradigm shift.

A paradigm is the way an individual perceives, understands, and interprets the surrounding world. If a change in thinking or perception occurs this is called a paradigm shift. The Preventive Medicine Division helped change the paradigm concerning how

personal actions might effect disease transmission.

At NTC, there is now an emphasis on cleanliness and specifically hand washing. Recruits are being told to wash their hands regularly and leaders in recruit training have been told to allow time for routine hand washing. Recruits are instructed on hand washing techniques by medical staff when they arrive, and their recruit drill instructors are supposed to reinforce that training throughout boot camp.

Additionally, the paradigm for inspections has changed. Previously for a sink to be considered inspection-ready

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Cocci Awareness

Coccidioidomycosis, commonly known as Valley fever or San Joaquin Valley fever, is caused by *Coccidioides immitis*, a dimorphic fungus that grows in the topsoil layers in semiarid areas of the Western Hemisphere (United States, Mexico, and parts of Central and South America). Coccidioidomycosis (“cocci”) cases in the southwestern U.S. have increased sharply over the last 7 years. Disease ranges from subclinical respiratory illness to disseminated infection with myriad manifestations and potentially fatal outcome. Early diagnosis and treatment, once the diagnosis is suspected, is easy. Nonetheless, the average length of illness in healthy individuals is over one month; patients

with disseminated disease may require medical retirement and life-long medication. Even for the majority of patients who do not disseminate, costs attendant to lost work time and outpatient medication are exorbitant. In the civilian sector, *C. immitis* infections in Kern County (CA) alone accounted for approximately \$45M in direct costs of hospitalizations and outpatient care in the interval 1991-1993.

For instructive purposes, we review a case of disseminated disease recently referred to Naval Medical Center, San Diego.

Case 1

A 24 year-old black male presented with complaints of cough, dyspnea on exertion, 10 pound weight

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it was required to be clean and dry. As a result, many recruits did not touch the sinks. Now sinks are only required to be clean. These are just a few of the changes the Preventive Medicine Division has encouraged.

The NTC story provides another example that active primary prevention pays dividends by keeping sailors in training, reducing lost time, reducing health care costs, and improving the health of a population. We all need to consider our paradigms and how they might be shifted to create opportunities for primary prevention and health promotion.

The process of downsizing, capitated health care resources, business process reengineering, and other forces can seem like heavy waves relentlessly rolling over a rocky shoal. Some people will look at these formidable external forces and become disillusioned and disoriented, just as if in a heavy squall. We in the prevention communities of Navy health care need to look for opportunities to change paradigms just as LCDR Ryan and the Preventive Medicine Division have done with the recruit environment.

Now is the time for Preventive Medicine Technicians, Independent Duty Hospital Corpsmen, medical department officers, and civilian employees in the preventive medicine and occupational health disciplines to help identify potential areas for paradigm shifts. Look at your environment, your ship, hospital, station, or activity. Put on your "thinking cap." Get back to basics. As CAPT Buck (CO, NEHC) says, "See individuals, think populations." Ask yourself, "If I could change some basic perceptions, are their opportunities to reduce injuries and illness? Are they primary prevention opportunities?"

Instead of looking at the heavy waves of change with dread. Let us all remember the skills and abilities we possess as preventive medicine professionals. We can look to the waves of change as opportunities and think, Surfs Up!

Let's go surfing!

CAPT Jim Beddard, MSC, USN
OIC, NEPMU5

From the S.E.L.

We recently celebrated the Hospital Corps 99th birthday, which means we have about 10 months in order to prepare for the 100th birthday. I take great pride in telling people I am a hospital corpsman. There are many special people representing us, from our past, present, and the future. My hope is that we all pay attention to this upcoming celebration, take pride in the value we bring to the Navy, and shine for all to see. I end with the Hospital Corpsman Pledge, we all took on the day of our graduation. Read it, find the commitment you made, strive to reach a bit farther, share it with someone else. To all of our shipmates at sea, and on foreign shores we depend on you to keep the watch. You make us proud!!!

Hospital Corpsman's Pledge

I solemnly pledge myself before God and these witnesses to practice faithfully all of my duties as a member of the Hospital Corps. I hold the care of the sick and injured to be a privilege and a sacred trust and will assist the Medical Officer with loyalty and honesty. I will not knowingly permit harm to come to any patient. I will hold all personal matters pertaining to private lives of patients in strict confidence. I dedicate my heart, mind and strength to the work before me. I shall do all within my power to show in myself an example of all that is honorable and good throughout my naval career.

HMC Suzanne Black,
Senior Enlisted Leader, NEPMU-5

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Cocci Awareness

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loss and chest and back pain of 6 months' duration. He reported symptoms that began while he was stationed at Edwards Air Force Base in the Mojave Desert. At another institution, the patient was found to have a left lower lobe infiltrate on chest roentgenogram and fever to 40.4 degrees C. He was empirically treated for community-acquired pneumonia with sequential courses of erythromycin, amoxicillin, augmentin, and azithromycin over 2 months, without clinical improvement. Several weeks after the last course of antibiotics, most symptoms resolved but chest pain persisted. Coccidioid serologies were obtained revealing positive immunoglobulin G and immunoglobulin M, as well as a complement fixation titer for *C. immitis* positive at 1:2. Titers rising to 1:64 were recorded at subsequent clinic visits. Despite these findings suggestive of dissemination, no further workup or antifungal therapy had been implemented.

Upon referral to our facility, the patient underwent computerized tomography and magnetic resonance imaging of the thorax. A pre-vertebral abscess was found extending from the T2-T3 vertebral disc to the T10 vertebral body, along with

erosive changes of vertebral bodies T3-T6, encroachment of the left T5-T6 foramen, and gadolinium enhancement in the T12 vertebral body. Bone scan and gallium scan showed increased uptake in the mid-thoracic spine, left posteromedial mediastinum, and left fifth rib. A definitive diagnosis was established with culture of *C. immitis* from sputum, and the patient was prescribed parenteral amphotericin. The patient defervesced, stabilized his weight, recovered his appetite, and experienced resolution of chest and back pain. He is currently maintained on alternate day dosing with amphotericin and is being medically retired.

Discussion

Awareness of the cocci problem may be most acute at the referral medical centers for the region, where the most severe cases are sent for remediation. Dust storms, archaeological excavations, and specific climatic conditions (e.g., severe drought followed by heavy rains) have been implicated in cocci outbreaks. Recently, an outbreak was associated with the seismic activity of the January 1994 Northridge earthquake. The concentration of military bases in endemic areas and the mobility of military personnel suggest a heightened potential for case presentations elsewhere, and a need for elevated diagnostic suspicion on the part of military physicians worldwide.

Clinically, azole drugs are revolutionizing therapy for cocci, making uncomplicated cases easier to treat. Nevertheless, infection unsuspected and undiagnosed may disseminate, as in our described case, with associated morbidity and costs. **Primary Prevention:** To increase public and provider awareness of the cocci threat, on-site targeted lectures (with CME offering) are being delivered to outlying Navy and Marine Corps clinics. **Secondary Prevention:** To increase physician/provider competence in cocci case management, on-site clinics and video teleconferencing with infectious disease specialists at NMCS D are being arranged. A Navy case registry is being established for improved case ascertainment and analysis of environmental, behavioral, and host risk factors for infection in high-risk geographical areas. Those interested in finding out more about the delivery of cocci awareness to outlying facilities may contact the Epidemiology Department at NEPMU5; e-mail us at nepmu5@nepmu5.med.navy.mil (or phone DSN 526-7070).

CAPT Pat Olson

Epidemiology Department, NEPMU-5

Olson PE, et al. "Coccidioidomycosis in California: regional outbreak, global diagnostic challenge." *Military Medicine* 1995; 160:304-308.

Schneider E, et al. "A coccidioidomycosis outbreak following the Northridge, Calif, earthquake." *JAMA* 1997; 277:904-908.

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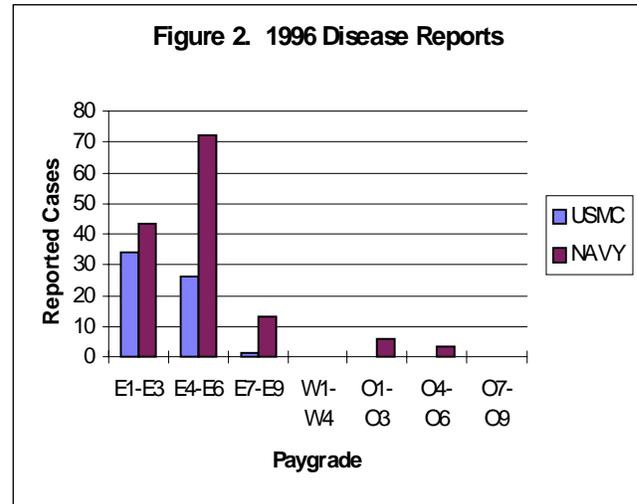
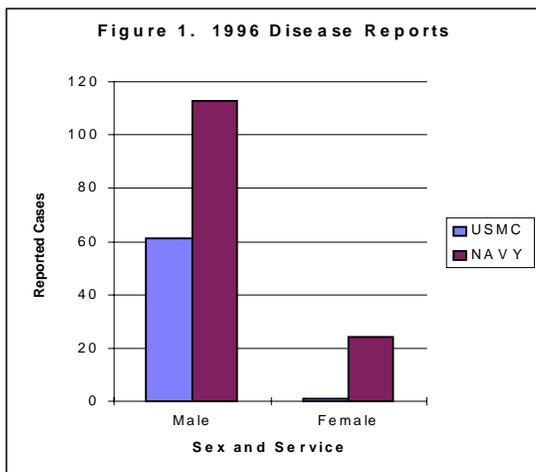
Review of 1996 Disease Alert Reports

INTRODUCTION:

This report summarizes the Disease Alert Reports (DARs) received by NEPMU-5 from medical activities within its area of responsibility (AOR) for calendar year 1996. The AOR of NEPMU-5 extends from 100° to 150° west longitude which includes the western United States, Alaska, and northwest Mexico. DARs are required to be submitted on all active duty Navy and Marine Corps personnel with reportable diseases, but are not routinely required to be submitted on military dependents and retirees. DARs for deployed personnel diagnosed with a reportable disease are forwarded to the NEPMU whose AOR includes the location where the condition was diagnosed and treated.

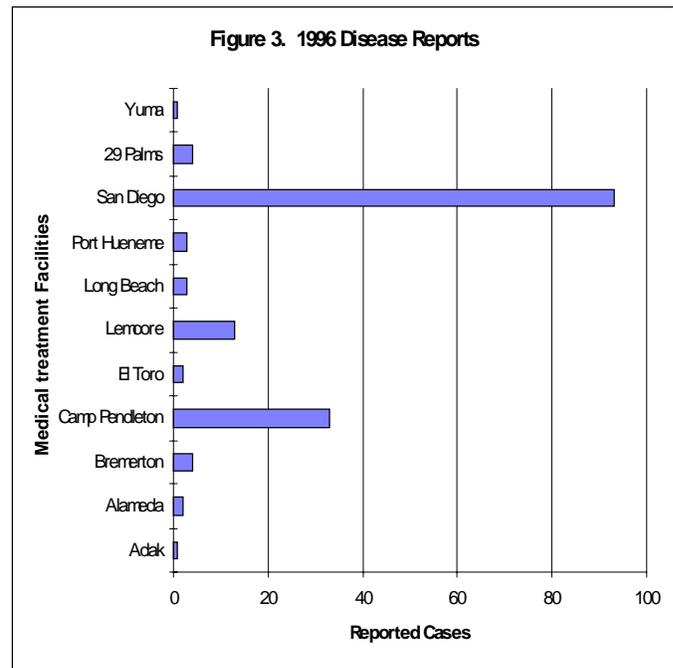
The Disease Alert Report system exists to quickly and efficiently provide essential medical information to disease control consultants. This enables them to recommend measures to minimize the impact of communicable diseases on Navy and Marine Corps operations, and to protect the health of military personnel and the communities in which they live and work. The system is also used to initiate or review control measures based on changes in disease trend or distribution.

The new instruction implementing the Disease Alert Report system took effect during this reporting period. BUMEDINST 6220.12 replaced NAVMEDCOMINST 6220.2A on 19 APR 96. Three changes of note include the removal of the diagnosis of Varicella as a reportable disease, eliminating the requirement to routinely report non active duty cases, and not including disease report data on Army, Air Force, or Coast Guard personnel who are not attached to Navy or Marine Corps commands (Disease reports on Army, Air Force, and Coast Guard personnel treated in Naval Medical facilities are forwarded to their respective medical command to be included in their surveillance systems).



DEMOGRAPHICS:

During 1996, 199 DARs were ported to NEPMU-5 on active duty personnel. Two thirds of the cases were Sailors, one third were Marines (see Figures 1 and 2 for details on sex and paygrade). The average age was 26.8 years, with a range from 18 to 56 years. The percentage of cases reported from each location is shown in Figure 3.



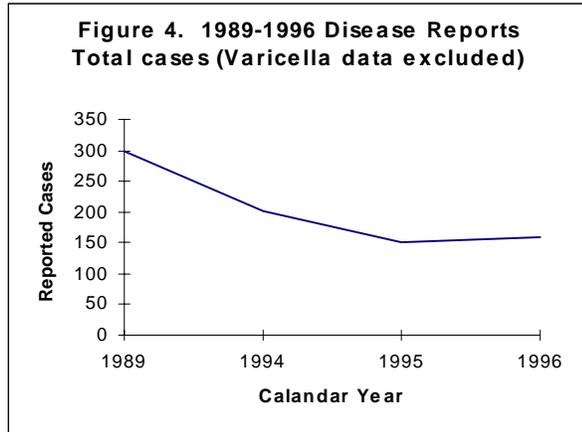
RESULTS:

Active duty DARs submitted to NEPMU-5 for calendar year 1996 does not include the 88 DARs submitted for other health care beneficiaries (dependents and retirees) or the 40 Varicella cases

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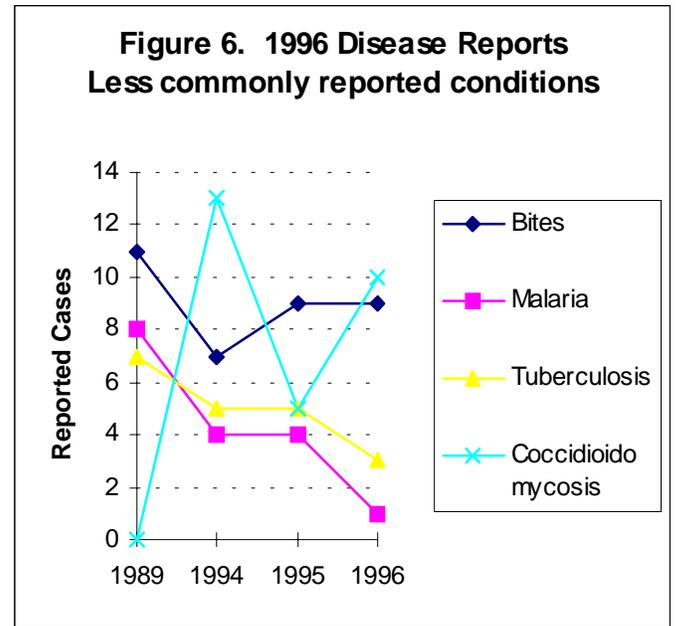
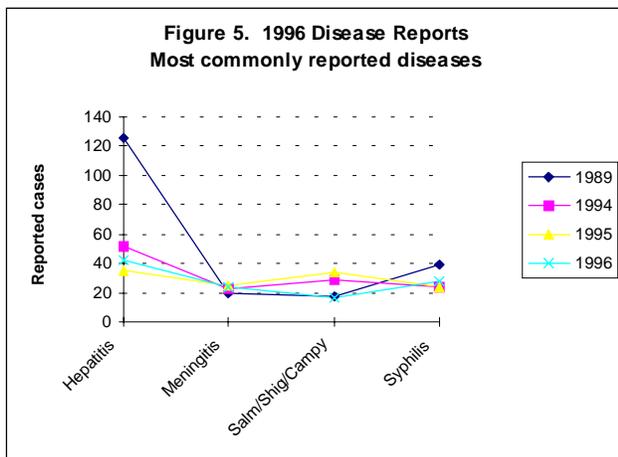
...1996 Disease Alert Reports Continued from p.4

reported before the current instruction was adopted. The most common diagnosis, hepatitis, included 26 cases of hepatitis A, 12 cases of hepatitis B, and four cases of hepatitis C. The miscellaneous category includes eight cases of Lyme disease, two cases of food poisoning, and one case each of Lymphogranuloma venereum (LGV), Herpes Zoster, Chancroid, and Dengue..



This year's results with those from 1989, 1994, and 1995. Since the reporting of Varicella is no longer required, annual totals are listed without Varicella data for trend evaluation. The general trend of reportable diseases appears to be steady after a substantial decline between 1989 and 1995 (Figure 4).

Figure 5. illustrates trends of the most commonly reported diseases: Hepatitis, meningitis, syphilis, and the gastrointestinal diseases. Except for a considerable decrease in the number of hepatitis cases between 1989 and 1994, the number of each of the other diseases consistent over the time period presented.



Trends of some of the less commonly reported conditions are shown in Figure 6. Tuberculosis and Malaria appear to be declining in number in the NEPMU-5 AOR. The total number of bites reported annually has remained steady. Additional scrutiny of the year's nine reported bites shows three black widow spider bites, on bat bite, and one scorpion sting among Marines, and three dog bites among Sailors. This suggests that Marines are at increased risk to be bitten by non-domesticated animals and arthropods, probably relating to their field training activities. Also, most of the 1996 Giardia cases were among Marines. Five Marine and two Sailor cases were reported, and one of the Navy cases was a relapse (initially treated in 1994). As with animal bites, the greater number of cases of giardiasis among Marines is probably related to the time they spend in field training exercises.

The mycosis endemic to arid and semiarid areas of the southwestern United States deserves mention. Twice as many Coccidioidomycosis cases were reported in 1996 than in 1995. Of the 10 cases reported in 1996, nine were Navy and one was a Marine. All cases were stationed in endemic areas: four in Lemoore (located in the San Joaquin valley), five in the San Diego area, and one in Twentynine Palms.

DISCUSSION:

The DAR reporting system can be an important surveillance tool. It depends on timely submission of reports by Medical Department personnel. Since it is a passive reporting system, it is subject to incomplete reporting because of the indifference of medical personnel to the usefulness of the information, the desire of physicians and patients to conceal conditions perceived to carry a social or administrative stigma, or inexact diagnoses. Accordingly, this data does

..1996 Disease Alert Reports **Continued from p.5**

not represent the full picture, and conclusions drawn from it must be made with this in mind.

Preventive strategies exist for 76% (121/159) of the conditions reported for 1996. Marines should be educated that their field activities place them at increased risk for animal bites and stings, and giardiasis. Navy providers need to have an increased index of suspicion for coccidioidomycosis, if they are practicing in an endemic area.

Preventive strategies include proper food handling, water discipline, and personal hygiene to eliminate most cases of gastrointestinal diseases, hepatitis A, food poisoning, and giardiasis. Diligent employment of personal protective measures (malaria and Lyme disease), use of antibiotic prophylaxis (malaria), and a heavy dose of common sense (animal/snake bites) could sharply reduce many of those conditions. Safe sexual practices can reduce many hepatitis B and sexually transmitted disease cases. Vaccines should be used to prevent measles and mumps, and may be useful in certain high risk populations for Varicella, hepatitis A, and hepatitis B. DAR surveillance data needs to be made easily available so all medical personnel can identify, develop, and improve preventive medical practices.

LCDR J.LaMar, GPM Resident, USUHS,
HMC D. Pickins, HM2 McCabe,
Epidemiology Department, NEPMU-5

Navy Disease Reporting System

The automated Navy Disease Reporting System (NDRS) has begun implementation. Sometime in August a revision should be available on the NEHC Homepage and at the NEPMUs. The present version can still be used and disseminated since the revision is very similar to the present program. Also, a BUMED message should come out in August endorsing this new product. The revision of the Disease Alert Report instruction should be completed and sent to BUMED by the end of the year for approval. It will incorporate the NDRS and make it the program of choice for disease reporting.

CDR S. Hooker, MC
Preventive Medicine Directorate,
NEHC

MEDIC Update

Packets have been sent to the preventive medicine departments of all Naval hospitals and major clinics with a copy of the MEDIC CD-ROM and an application to open a Defense Intelligence Agency (DIA) account. If you received this packet, please take a few minutes to complete this application so you can begin receiving the MEDIC on a regular basis every 6 months.

If you did not receive a packet, please contact the epidemiology department of your area NEPMU or download an application from the NEHC Homepage at <http://ehc40.med.navy.mil>

CDR S. Hooker, MC
Preventive Medicine Directorate
NEHC

Customer Evaluation of Preventive Medicine Directorate

As one of our highest priorities, the Preventive Medicine Directorate at Navy Environmental Health Center (NEHC) has chosen to do an annual customer evaluation of our products and services. This will allow us to measure how well we were addressing the needs of our customers and to track our progress. This report summarizes our initial evaluation.

A questionnaire was developed internally for this assessment. It was made available to approximately 50 PMTs, 50 EHOs, 40 entomologists, and 30 epidemiologists. The questionnaire included queries regarding accessibility and courteousness of staff as well as timeliness and quality of assistance. Scope, types and understanding of products and services were also evaluated. 50 questionnaires were completed and returned.

Average scores for the categories with numerical responses were as follows (higher the score the better the performance. 1=poor, 2=fair, 3=average, 4=good, 5=excellent):

Category	Mean	Mode
Understanding of our products & services	3.980	4
Quality of our products and services	4.184	4
Timeliness of our products and services	4.229	4
Scope of our products and services	4.234	4
Accessibility of our staff	4.417	5
Courteousness of our staff	4.571	5

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Customer Eval...Prev Med Direct. Continued from p. 6

Written criticisms indicated concerns about resources, customer awareness of products and services, and responsiveness to customer needs. Since this evaluation serves as a baseline, it is difficult to assess how well we are doing. As evaluations are done in the future, there will be a more accurate measurement of customer satisfaction. The comments received offer more immediate value than the numerical scores. The Directorate can establish concrete actions to address some of the comments. In this way, we can hold ourselves accountable to each other and to our customers.

**HM1 Couch & CDR Steve Hooker MC, USN
Preventive Medicine Directorate,
Navy Environmental Health Center (NEHC)**

Treating Starched Uniforms with Permethrin

Permethrin is an insect and tick repellent which can be used to treat clothing to prevent bites by these arthropods. It is available in several forms: an aerosol spray for individual treatment of uniforms (NSN 6840-01-278-1136); as a liquid concentrate in a kit designed to treat uniforms individually (NSN 6840-01-345-0237), and in liquid concentrate form for mass treatment of uniforms, tentage, and other materials by medical personnel (NSN 6840-01-334-2666). When used in conjunction with the skin repellent DEET (NSN 6840-01-284-3982), it is highly effective in preventing vector-borne disease transmission. Rumors continue to circulate that permethrin treatment should not be done on uniforms which have been starched. Some people seem to think that the starch will inhibit binding of permethrin to the fabric. **THIS IS NOT TRUE!**

Experiments conducted at the Army's Natick Research, Development and Training Center in Massachusetts showed just the opposite. Prior treatment of uniforms with starch actually **IMPROVED** retention of permethrin by the fabric. After fifty washings, uniforms which had been starched only once at the beginning of the test retained five times as much permethrin as uniforms which had never been starched. Uniforms which were starched twice during a 50 wash-cycle test retained almost half the originally applied permethrin, compared to less than 10% by unstarched uniforms. There is no evidence to indicate that starching of uniforms adversely affects the ability to treat uniforms with this highly effective repellent.

**LCDR Barry Annis
Navy Environmental Health Center**

“DEEP FREEZE”

Environmental health

For the past three years I have had the distinct pleasure of going TAD to the “Ice” to perform an Environmental Health Survey. “The Ice” is an affectionate term used by those who are stationed in Antarctica for Operation Deep Freeze. As part of the NEPMU 6 Area of Responsibility, Deep Freeze became a routine survey for the EHO several years ago. When I was first called upon to visit the Ice I was stationed at my last duty station. I was asked to visit Deep Freeze at the request of the Naval Support Force Antarctica and the National Science Foundation. This began my yearly pilgrimage to the Ice.

The voyage to the Ice begins at L.A. airport, where you catch a 12 hour flight to Auckland, New Zealand, then a short flight to Christchurch, NZ to check in with the Naval Antarctica Support Unit. In “Cheech”, as it is called, you receive your issue of Extremely Cold Weather Gear (ECW) that is required for everyone traveling to the Ice. Next you board a C-130 Hercules, specially equipped for cold weather travel, for a 7-8 hour ride to McMurdo Station, Antarctica. You actually land on an ice runway or skiway that is located on McMurdo Sound on about 100-120 inches of solid ice. Your introduction to the Ice can vary from a clear day to one that has zero visibility and blistering cold winds that immediately chill your bones. Your ECW comes in handy upon your arrival and throughout your stay.

There is one central location at McMurdo Station where the majority of about 1,100 people work and live. Along with McMurdo there are several other locations that are occupied, including the South Pole Station.

Food service is the major area looked at during these visits. The majority of the food is prepared in one central chow hall at McMurdo, which produces about 1,100-1,200 meals per meal period, including breakfast, lunch, dinner, and mid-rats. Three other sites have cooking facilities to support the small number of personnel that work on-site. The only other facility that serves a large number of personnel is

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<http://ehc40.med.navy.mil>

The NEHC Homepage has recently added some important new products and services. We encourage you to take a look.

...DEEP FREEZE

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the South Pole Station, which feeds about 100-120 people per meal. The personnel that do the food preparations are all civilian contractors from Denver, CO. The civilian contractor has changed hands each of the three years that I have been there. Over my three visits, I have seen a marked improvement in the overall sanitation of the galley, although the physical structure of the building needs repair and is not in the best shape for food preparation. Continuity built in by revisiting this facility has paid dividends through marked consistent improvement.

One of the highlights of the trip is a visit to the bottom of the earth, the geographical South Pole. This is a 3 hour flight from McMurdo and is usually a turnaround flight because of the limited berthing on station. My first trip was an "all-nighter" because the return flight never left McMurdo. On arrival the ambient temperature was -32° F, with the wind-chill factor added making it a bone chilling -88° F. The South Pole sits on a 9,000 ft thick ice plateau; therefore you may start feeling a little altitude sickness after arriving there. I did. There I inspected the food service facility and the potable water plant. The galley is a kitchen-sized facility about what you would expect to find in a small restaurant or a Wardroom setting. Food handling procedures are basic, but somewhat modified to adapt to the environment. All cold storage is kept outside in a geodesic dome where the ambient temperature is a whopping -27° F. There is no need for a freezer box with this type of accommodations!

The potable water at the pole is made from melting snow. The snow is dumped into a trough, melted, heated, treated and stored. The water plant is a conglomeration of two types of plants rolled into one. It was designed on-station to meet their unique needs. While at the pole I have had the opportunity to visit the actual geographical South Pole and "walk around the world".

Overall, the visits to the Ice have been "a Job and an Adventure". I have learned from a professional standpoint that continuity built into an operation contributes greatly to a positive outcome. Although a new set of eyes is always good, the same pair of eyes, when the employee base is changing frequently, is a stable way of determining progress. I have seen progressive improvement over the years there and am now a firm believer that if handling procedures and basic sanitation are in place and enforced, food service facilities only can stand to get better with time regardless of the physical structure. Of course the adventure is a once-in-a-lifetime and I have been fortunate enough to repeat it several times. The adventure however will come to a close soon since the Navy will no longer be a part of the Antarctica Program after 1997. The units that support this program will be decommissioning and civilian contractors will be taking their place.

LCDR Jeffrey T. Evans, MSC, USN

Environmental Health Department, NEPMU-6

Disease Alert Reports of Venomous Spider Bites

This year there has been some confusion on Disease Alert Reports (DAR's) for "Venomous spider bites ICD-9-CM E905.1". A majority are just superficial wounds that end up with secondary infections, while others truly represent envenomation. The question also arises if it was a bite from a venomous spider that has some medical importance or if it was just a spider bite that became infected. Either way, it has a significant impact on combat readiness due to hospitalization for antibiotic therapy. My question is: Are we reporting all spider bites as E905.1 irregardless of the spider?

With the lack of information reported by the individual affected and specimen collection techniques, it becomes difficult to determine the appropriate diagnosis. This is when we turn to the ICD-9-CM for proper classification. The ICD-9-CM code E905.1 refers to the Black Widow, Brown and Tarantula (venomous).

The Black widow spider, *Lactrodectus mactans*, is perhaps the best known venomous spider in the world. It is located throughout the United States (except Alaska) and in southern Canada. The female is approximately twice the size of the male and is the only one that can envenomate humans. The toxin that is released by the black widow is associated with a neurotoxin. The classical symptomatology of the black widow bite is initially a pinprick sensation that may be followed by minimal local swelling and redness. Sometimes the bite is not felt, especially if the individual is working when the bite occurs. From fifteen minutes to one hour after the bite has occurred a dull cramping pain develops in the area of the bite and gradually spreads to include the entire body. Usually pain develops in the chest following upper extremity bites or in the abdomen following lower extremity bites. The abdomen becomes boardlike, and the patient may complain of severe cramping pain. Other associated symptoms include dizziness, restlessness, ptosis, nausea, vomiting, headache, pruritis, dyspnea, conjunctivitis, profuse sweating, weakness difficulty in speaking, anxiety, and cramping in all muscle groups. The patient may be hypertensive and show electrocardiographic changes similar to those produced by digitalis. Adult symptoms generally abate after several hours and for the most part disappear in 2 to 3 days.

Brown spiders are also known as *Laxosceles reclusa* (Brown recluse). They can be found in the South Central United States, especially in Missouri, Arkansas, Louisiana, Eastern Texas and Oklahoma. However they have been reported in several large cities outside this range. There are several species of *Laxosceles*, but only three of these are found in the United States. The toxin released with the brown spider is associated with a cytotoxin. The symptoms of a brown recluse bite are both local and systemic. Initially the patient may notice some burning pain in the area of the bite. Some patients do not notice the initial bite at all. Pain usually develops within one to two hours, and a white area of

Continued on p. 9

DARs... Spider Bites**Continued from p. 8**

vasoconstriction begins to surround the bite. A bleb then forms in the center of this area and an erythematous ring on the periphery. The lesion at this stage resembles a bull's eye. The bleb darkens and necroses over the next several hours, and the necrotic area continues to spread slowly, gravitationally, involving skin and subcutaneous fat. Systemic symptoms include fever, chills, rash, petechiae, nausea, vomiting, malaise, and weakness. Hemolysis, thrombocytopenia, shock, jaundice, renal failure, hemorrhage, and pulmonary edema are the usual signs of severe envenomation.

Several other spiders can cause envenomations but are uncommon in this country. Some of these spiders are large and quite aggressive; most are imported to this country either intentionally or as stowaways on cargo ships. Tarantulas, wandering spiders, funnel web spiders, pallid spiders, and crab spiders are a few of the imported venomous spiders. Many of these spiders can cause envenomation similar to that of the brown recluse spider, and some produce neurotoxin.

With this in mind we need to refer back to our original question and ask: Are we doing the correct reporting or are we being a bit conservative?

HM2 MCCABE
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Fleet Health Development

Beyond the year 2000

The new century is just around the corner, and we must meet it and the challenges it will bring with a new focus and fresh ideas for maintaining and improving fleet health. Traditionally, the epidemiology departments of the NEPMUs have responded to infectious disease threats. Outbreak investigation, disease surveillance, predeployment briefs and other education to prevent a myriad of infectious diseases are all familiar roles. These are valid functions, but are they enough for today's (and tomorrow's) Navy and Marine Corps?

We know that we are in the throes of a global tobacco epidemic, with three million tobacco related deaths world wide each year, yet our troops smoke at a higher rate than civilian counterparts. We have seen the impact that can be made in reducing the prevalence of cardiovascular disease deaths by modifying lifestyle with diet and exercise. The military has long been a leader in advocating exercise, and in making exercise regimens themselves safer. However, concomitant dietary changes in mess halls and galleys are only now being instituted.

Fifty to sixty per cent of domestic violence victims are also rape victims. Although some 85% of rape victims do not report to the police, the FBI estimates a sexual assault occurs every five minutes. (Interestingly, 15% of male Navy recruits admit to sexually assaulting someone prior to entering the Navy.) The Navy began the Rape and Sexual Assault System (RASAS) in 1995, to track trends and enhance prevention efforts.

Alcohol (and other substance) abuse is regularly associated with motor vehicle accidents, domestic violence, sexual assault, and other behavioral problems. Stress continues to affect quality of life and productivity. Suicide takes an annual toll of our shipmates (30 a year in the Marine corps alone), with virtually no change in the numbers from year to year.

We know also that Wellness Works! Reduced health care costs, increased productivity, reduced attrition, and greater military readiness are worthy goals for all preventive medicine professionals. Maximizing vigorous, health life spans and compressing morbidity to a brief period at the end of the span can only have positive outcomes.

With the foregoing in mind, can we afford to keep our narrow focus? If not, what should we be doing differently? As Navy health and prevention professionals, we can and MUST set a personal example in our own lifestyles. We can do surveillance for "red flags"; indicators of risky behaviors and diseases of lifestyle. We can design, implement and evaluate programs that encourage healthier lives for our troops. As you have guessed by now, none of these concepts are new, but are well established in the Health Promotion arena. The tools of epidemiology — outbreak investigation, surveillance and program evaluation—can be honed to carve out our new niche in the future of fleet health. As the "Epicenter" for Population Based Medicine, we can move aggressively in this direction to the benefit of all.

CAPT. E. K. Ledbetter, MC USN

Special Assistant for Fleet Health Development, NEPMU-5

Ps-s-s-s t

5-a-day of fruits or veggies.....form a major component of a healthy diet.



Continued next column

Someone tell the cook!

Prevention of Arthropod transmitted Illnesses

U.S. military personnel have excellent protection available to them for prevention of diseases transmitted by arthropods (mosquitoes, flies, ticks ...). Our system of personal protective measures (PPM) is highly effective if utilized properly. It includes minimizing skin exposure, treating uniforms with permethrin, applying DEET cream to exposed skin, and using permethrin-treated bednets when sleeping, even if during the day. In combating malaria, we add chemoprophylaxis, usually with doxycycline or mefloquine, because adding that modality to PPM is even more effective in preventing this potentially lethal disease.

All too often, however, our system fails because it is not applied correctly. These failures can occur at many points. On occasion, our medical intelligence leads us astray by not providing a full picture of threats which will be encountered in a region. For example, not appreciating the presence of vivax malaria can lead to neglecting terminal prophylaxis with primaquine. Cases of malaria after returning from the operational region may result. Sometimes, but fortunately quite infrequently, deploying personnel get incomplete or erroneous information about disease countermeasures (PPM plus immunizations, chemoprophylaxis, and any other form of protection) from those whose responsibility it is to prepare them. In cases of short-notice departures, this can happen because of inadequate time for thorough preparation. It can also happen because the medical briefer has gaps in his or her knowledge or lacks appreciation of a condition. By far the most frequent breakdown, however, is poor compliance on the part of the deployed individual with the recommended disease countermeasures. This is especially likely to happen if the command does not place a high priority on disease countermeasures. The best intelligence, the most thorough briefing and preparation, and the finest equipment available cannot prevent disease if the command does not enforce, or for some other reason the individual in the field does not comply with, the recommendations for prevention.

Two recent incidents illustrate this problem. First, an individual entered a part of Southeast Asia which is known to harbor malaria. This person initially complied with PPM and chemoprophylaxis recommendations, but stopped taking doxycycline after about 6 days for an unknown reason (apparently not because of side effects) and also failed to maintain full PPMs. Not surprisingly, a case of falciparum malaria developed. Fortunately, treatment was started promptly and a full recovery followed. The moral of the short story is: "If you want to tempt fate and experience one of the most severe infectious diseases we know of, just let your guard down on PPMs or stop taking your recommended chemoprophylaxis."

Another individual, this time in Indonesia, spent several months in the field. He took malaria chemoprophylaxis

appropriately, slept under a bednet, and applied DEET cream often during the day. Unfortunately the individual did not appreciate the importance of utilizing ALL arms of our protective system, and he had used no form of permethrin uniform treatment. A crucial step was left out, and a severe case of dengue fever resulted. Dengue can be fatal if dengue hemorrhagic fever or dengue shock syndrome develops. Fortunately this individual recovered fully, although his platelet count dipped to a dangerously low level during the course of his hospitalization.

Our system of personal protective measures is not a menu from which to choose only one or two items. Maximum protection from arthropod-transmitted diseases requires the application of ALL available measures. In the case of malaria, chemoprophylaxis must usually be added to PPMs as well. Wearing the uniform with sleeves and trousers full length may be unpleasant in hot and humid conditions, but goes a long way toward preventing arthropod bites. Wearing a treated uniform is essential. At least three methods of treatment are available. Factory impregnation is permanent, but such uniforms are not yet widely available. Spraying uniforms with a high pressure sprayer is also permanent, but requires equipment not available everywhere. Treating uniforms with the permethrin aerosol can (NSN 6840-01-278-1336) lasts about six washings, is more universally available, and can be done by the individual. Applying 33% DEET cream (NSN 6840-01-284-3982) to exposed skin several times a day (2 to 4 times or more, depending on factors such as sweating and precipitation) adds additional needed protection. Bednets, if not factory impregnated, can also be sprayed with the aerosol, using the last quarter of the can after the uniform has been treated. Proper use of bednets includes suspending the net from the cot poles by the attached ties, tucking in under edges of bedding all around, and avoiding skin contact with the net.

Keep in mind that, while malaria is primarily a dusk / evening / nighttime threat, there are few if any places in the world where malaria is the only arthropod-borne disease. Usually, there are also day biters which can transmit dangerous agents, such as dengue, other arboviruses, and leishmania. Maintaining a 24-hour-a-day posture to prevent arthropod biting is critical.

It can be difficult to convince some individuals and some commands of the importance of using all available countermeasures for preventing arthropod-transmitted diseases. However, as the two brief cases above point out, it is of great importance that medical personnel succeed in doing so. Lives and missions are clearly at stake.

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Continued next column

Phoning it in: not always the Best Idea...

It's summertime and as more and more folks are traveling by automobile to their favorite vacation destinations (off to camp, see relatives, back to school, etc.) It's a great time to remind drivers to use cellular communications responsibly and safely. The hotel and airline industries are reporting that the 1997 summer season could be the most heavily traveled summer within the last 50 years. With the continued increase in the popularity of cellular telephone use by traveling consumers, nine out of ten people polled by the Gallup organization say their cellular phone makes them personally feel more safe and secure. In fact, two-thirds of cellular telephone subscribers bought their phones for safety and security reasons.

Every day we hear from customers using their phones to call for assistance in the event of a breakdown or other personal emergency, contact police and other emergency personnel, report drunk drivers, auto accidents and criminal activity and make efficient use of time when held up in traffic; said Deborah J. Ravetta, regional vice president/market manager for Ameritech Cellular Services in Farmington Hills.

More than 500,000 emergency calls to 9-1-1 are made each month from cellular phones, according to the Cellular Telecommunications Industry Association. In Michigan, the Michigan State Police Metropolitan Regional Dispatch Center reports that in one month period, more than 67 percent of the 40,000 9-1-1 calls they received from southeastern Michigan originated from cellular phones.

There are many nationally recognized cellular safety programs, including the Cellular Patrol, where local police departments use donated phones to help combat neighborhood crime and The National Cellular SafeTalk Center, an independent not-for-profit educational organization offering safe driving classes to high school students and business car fleets drivers.

However, drivers should be aware that there is a recognized problem when mixing cellular phone use in a moving vehicle that requires a great deal of concentration; especially at speed, in heavy traffic, or in inclement weather. Statistics are showing that drivers are **FOUR TIMES** more likely to be involved in a mishap while using your phone as opposed to a driver who isn't. Driving a motor vehicle at 65 miles per hour equates to traveling approximately 100 feet a second! Your **FULL** attention needs to be focused on this vice a friendly chat on the phone.

Following are some safe driving tips suggested by Ameritech Cellular Services for talking and driving safely:

1. Safe driving is your first priority. Always buckle up, keep your hands on the wheel and your eyes on the road.

2. Make sure that your phone is positioned where it is easy to see and easy to reach. Be familiar with the operation of your phone, so that you're comfortable using it on the road.

3. Use a hands-free microphone while driving. Make sure your phone is dealer-installed to get the best possible sound quality.

4. Use the speed dialing feature to program in frequently called numbers. Then you can make a call by touching only one or two buttons. Most phones will store up to 99 numbers.

5. When dialing manually without the speed dialing feature, dial only when stopped. If you can't stop, or pull over, dial a few digits, then survey traffic before completing the call. (Better yet, have a passenger dial, if possible.)

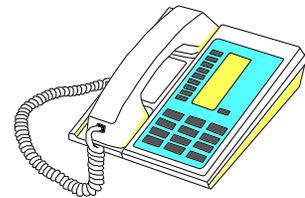
6. Never take notes while driving. Pull off the road to jot something down. If it's a phone number, many mobile phones have an electronic scratch-pad that allows you to key in a new number while having a conversation.

7. Let your wireless network's voice mail pick up your calls when it's inconvenient or unsafe to answer the car phone. You can even use your voice mail to leave yourself reminders.

8. If available from your service, use the voice activated dialing feature - VoiceSelect to place a call so you don't have to dial. Simply say the name, such as "home;" or "office;" to be immediately connected to personal directory listings.

9. Be a Good Samaritan. Dialing 911 is a free call for cellular subscribers; use it to report crimes in progress or other potentially life-threatening emergencies, accidents, or drunk driving.

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Guidelines for prospective Authors

You are strongly encouraged to submit articles for publication in the Fleet Public Health. In addition, your thoughts and ideas about its content, scope, appearance, usefulness, and level of material; e.g., too complex, not complex enough, are of value.

For those who submit articles, it would be helpful if you would adhere the following guidelines:

1. After obtaining your OIC's approval, submit the article to the appropriate editor in an electronic format.

A. October	NEPMU-6	Pearl Harbor, HI
B. January	NEPMU-7	Sigonella, IT
C. April	NEPMU-2	Norfolk, VA
D. July	NEPMU-5	San Diego, CA

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New Respirator Testing and Certification Requirement

In June 1995, the National Institute for Occupational Safety and Health (NIOSH) published a new regulation in the Federal Register for certifying air-purifying particulate respirators. This rule updated the particulate filter certification requirements contained in 30 CFR 11 which have been rendered outdated due to new research, testing, and manufacturing technology.

Under the new rule, only certifications of non-powered, air-purifying, particulate filter respirators are affected resulting in nine new classes of filters. According to NIOSH, powered, air-purifying particulate filter respirators will be addressed in a future revision to Part 84. The remaining portions of Part 11 are incorporated into Part 84 without change. This limited revision provides for certification tests using worst-case penetrating aerosol (i.e. an aerosol that produces maximum filter penetration) so that the new certified filters can be used against any size of particulate in

the workplace. It should be noted that the Occupational Safety and Health Administration (OSHA) or other regulatory agencies have the authority to but have not yet set a use deadline for filters approved under the old rule and purchased before 10 July 1998. OSHA is currently revising its respirator use standard (29 CFR 1910.134) and is allowing the continued use of particulate filter respirators under the old NIOSH standard.

As of 10 July 1995, NIOSH no longer accepts applications for new approvals or for extension of approvals under Part 11 regulations. This means that all nonpowered, air-purifying, particulate filter respirators approved under Part 84 must meet the new performance standard. A 3-year grace period (until 10 July 1998) is permitted by the new rule to provide time for manufacturers to have new respirators approved and manufactured to meet demand.

New Filter Classes

As mentioned earlier, the new certification regulation provides for nine classes of filters (three levels of filter efficiency, each with three categories of resistance to filter efficiency degradation. The three levels of filter efficiency are 95%, 99%, and 99.97%. While the three categories of resistance to filter degradation are labeled N (Not resistant to oil), R (Resistant to oil), and P (oil Proof) (see Table 1 below).

Continued next column

Table 1.
Description of Filter Classes Certified Under 42 CFR 84

Class of Filter	Efficiency	Type of Contaminant	Filter Use Limitations
<u>N-Series</u>			
N100	99.97	Solid and water-based particulates (i.e. non-oil aerosols)	Nonspecific (recommend 8 hours for dirty work places having high aerosol concentrations)
N99	99		
N95	95		
<u>R-Series</u>			
R100	99.97	Any(all aerosols)	One work-shift (8 hours)
R99	99		
R95	95		
<u>P-Series</u>			
P100	99.97	Any(all aerosols)	Nonspecific (limited by consideration of hygiene, damage, and breathing resistance)
P99	99		
P95	95		

How would this Impact the Navy's Respiratory Protection Program?

To date, the Navy has not issued an official policy on this new requirement probably because OSHA has not revised its respirator use standard. Looking ahead, however, we see this change significantly impacting the Navy's respirator program. Specifically:

- * Workplace reassessment will be needed for oil aerosol presence and matching new respirators to applications.
- * Written respirator program and enforcement policies will need to be updated.

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New Respirator Testing and Cert....Continued from p.12

- * Change to training and fit-testing programs.
- * Change in particulate filter selection criteria;
- * New respirators product numbers (possibly NSNs as well) and NIOSH approval numbers;
- * Inventory transition for centralized issue points who purchase and maintain stock of respirators; and
- * Transition requires time and planning.

Should You Start Buying Newly Approved Respirators?

As stated earlier, the Navy has yet to issue a "use policy." Technically, since OSHA has not revised its respirator use standard, it would not be a good idea to start switching to the respirators approved under the new NIOSH standard. However, keep in mind that the three-year transition period given to the manufacturers will expire on 10 July 1998 and OSHA is already in the process of revising its respirator use standard. As a matter of fact, respirators approved under the new standard are already on the market and it is just a matter of time before the Navy's supply system will start stocking them. So, it's not too early to start planning now for this impending change. Talk to your servicing industrial hygienist if you have any questions on

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TANDEM THRUST '97

Much has already been written about preventive medicine support to the combined American-Australian exercise, Tandem Thrust-97 in Queensland, Australia. The success of the NEPMU-6 Forward Deployed Lab in diagnosing several cases of Ross River fever has been especially noteworthy. However, NEPMU-5 personnel also had the opportunity to provide field support to a group of sailors who really were the first-in and the last-out: the SeaBees.

Naval Beach Group 1 (NBG1) and its subordinate command Amphibious Construction Battalion 1 (ACB1) were tasked with the challenging job of establishing a wilderness camp capable of supporting 600 personnel in the nearly trackless jungle of the Shoalwater Bay Training area. The 100-man advanced party arrived in Australia and moved into the tropical forest with their organic support equipment nearly a month before the larger Marine units landed. During the first three weeks, these skilled sailors built decked tents, shower facilities, a large mess deck, a reverse osmosis water purification unit, a recreation hall with basketball and volleyball courts, and even a field chapel. During these operations, the SeaBees experienced the usual hazards of heat

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this new standard. At NEPMU-5, the Industrial Hygiene Department can be reached at (619)556-7079 through 7081 or DSN 526-7079 through 81.

If you want to know more about this new standard, NIOSH created a users guide to help you understand 42 CFR 84 and to provide guidance in selecting and using the new particulate respirators. To obtain a copy of the user's guide, as well as other NIOSH documents, call 1-800-35-NIOSH or their home page on the World Wide Web at <http://www.cdc.gov/niosh/homepage.html>.

LCDR Alfonso B. Villamora, MSC, USNR

Head, Industrial Hygiene Department, NEMPU-5

References:

- 1 A Respiratory Protective Devices, Federal Register, (8 June 1995) pp. 30336-30398
- 2 NIOSH Guide to the Selection and Use of Particulate Respirators Certified Under 42 CFR 84", U.S Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, NIOSH, DHHS (NIOSH) Pub. No. 96-101, January 1996.

stress, field sanitation and physical accidents, but they were also exposed to significant risks from vector-borne disease and highly venomous snakes. To help address these health risks, an entomologist and a PMT from NEPMU-5 deployed with ACB-1's advanced party.

NEPMU-5 was involved with preparation for field operations even before the actual deployment. With help from the 1st Medical Battalion, over 600 uniforms and mosquito nets were treated with permethrin insect repellent. A pre-deployment blood draw was performed in cooperation with EPMU-6 to assess the risk of arboviral disease, and several preventive medicine lectures were provided to SeaBee personnel. The most challenging work, however, started upon arrival in Australia.

NEPMU-5 personnel soon found that SeaBees are well-versed in field sanitation. Burn-out latrines were built soon after arrival and strict compliance with field sanitation measures was emphasized. In fact, the SeaBees' hand-washing facilities became the envy of every unit within the training area. Unsuccessful attempts to prevent the theft of the hand washing stations were implemented, but at least one facility wound up in an Australian camp. It can only be hoped that our allies will benefit from this receipt of American technology.

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TANDEM THRUST '97

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All aspects of preventive medicine were monitored by NEPMU-5 personnel, including water quality and food sanitation, but the most time consuming part of the exercise was the control of vector-borne disease. Vector control was essential in the moist jungle environment which provided ideal conditions for mosquitoes and other vectors. Several endemic diseases were spread by mosquito vectors, with Ross River Fever being the most prevalent. This non-fatal viral illness can result in debilitating arthritis in the hands, knees, and feet, and may last for months, even years. Initial surveillance indicated high populations of the common vector, *Culex annulirostris*, near the billeting tents on one side of the camp. The application of residual sprays by back pack sprayers was tried, but the area was too large to cover adequately. Truck-mounted ULV sprays using resmethrin were eventually used and did appear to have good effectiveness for brief periods after dusk. Trapping results indicated the continued presence of large number of mosquitoes, but the sprays reduced mosquito numbers during the hours of peak human activity in the evening. Combined with indoor tent sprays and residual insecticide applications, these ULV sprays eventually resulted in significant reductions in the vector populations and, thus, decreased disease risk.

After the wilderness camp was constructed, the SeaBees performed several offload operations from MSC ships, including a simulated ship-to-shore fuel transfer from several miles at sea. The two-month operation finally ended with a retrograde operation out of the port of Gladstone for which the NEPMU-5 entomologist served as the agricultural inspector and liaison with the USDA.

Tandem Thrust '97 presented several unique challenges for preventive medicine personnel. Units which operate in the same area in the future should consider bringing a small hydraulic sprayer to allow for more complete barrier treatments. Also, it should be noted that the fly baits which are in the stock system do not appear to work well against the filth flies in eastern Australia; some other means of fly control such as sugar-baited residuals should be utilized by units deployed to northern Queensland.

The SeaBees often deploy to dangerous situations throughout the world, sometimes without organic preventive medicine assets. Tandem Thrust '97 indicated that these units sometimes have a need for augmented preventive medicine expertise, especially in the field of vector control. ACB-1 deployed to the exercise area weeks before the Marine Corps units tasked with their medical support arrived in Australia, and the SeaBees were dependent solely on the medical assets which they brought with them. The augmentation of NEPMU-5 personnel to ACB-1 resulted in no food or water-borne illnesses, and only one confirmed case of Ross River Fever in an area which anecdotally and historically has numerous cases of this disease in deployed military units. Obviously, this relationship between NEPMUs and the

Typhoid Vaccine:

I'M SO CONFUSED

Who? What? And When?

These questions come up all the time now that the new vaccines have come out. Maybe this will help clear up some of the confusion.

1. Who? What units are required to receive typhoid vaccines?

a. Those who are assigned to a deploying unit (i.e. Ship, FMF etc.) or deploying to a highly typhoid endemic area. (See your (MEDIC) CD ROM or Call your local NAVENPVNTMEDU.

b. Alert Forces: Those personnel in receipt of orders to a ship, squadron, Naval Mobile Construction Battalion, the Fleet Marine Corps Expeditionary Forces, Special Boat Unit, Special Operations Unit, Embassy, or Consulate Duty.

c. Medical Department personnel with MMART, MAP, Fleet Hospital or hospital ship assignments.

2. What? Which typhoid do I use?

a. The oral typhoid (Ty21a) is a live attenuated bacteria vaccine (Berna Products 6505-01-324-6964). The primary and booster dose series consist of 4 doses (one capsule taken by mouth with a cool beverage, every other day). Ty21a provides 5 years of immunity at a cost of approximately \$2.95 per 4 dose regimen. The unused doses must remain refrigerated until used. This regimen costs little, but compliance may be an issue.

b. The injectable acellular typhoid vaccine (ViCPS) (Connaught Labs 6505-01-385-6328), is an acceptable alternative, but for a much shorter duration (2 years), at a cost of \$7.20 a dose.

NOTE: The old two-dose basic series, heat-phenol inactivated typhoid vaccine (Wyeth Labs 6505-01-225-9301) causes significantly more adverse reactions, while providing immunity for 3 years. This old vaccine has recently been removed from AMALs and should NOT be reordered once your current supplies are depleted.

3. When? How often is it administered?

Vaccine	Initial Dose	Booster Dose	Booster Interval
Ty21a	1 Cap PO QOD x 4	Repeat Initial	O 5 yr.
ViCPS	0.5 ml IM	0.5 ml IM	Q 2 yr.

Interchangeability. Per ACIP, it is acceptable to use either oral Ty21a or injectable Vi as a booster dose in persons previous immunized with old injectable Wyeth typhoid vaccine.

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Guidelines for Prospective Authors

2. Use either a disk or an attachment to an e-mail.
3. Microsoft Word or WordPerfect are the preferred text formats. Use an edition **prior to** the '97 versio of either.
4. If your article has tables or other graphics, please submit those in a separate file or attachment
 - A. The preferred format for graphics is bitmap(.bmp) TIFF or GIFF
 - B. For tables, the preferred format is Microsoft Excel.
 - C. Avoid using vertical & horizontal lines within a table.
 - D. Photographs can be used if a negative is provided.
 - E. Include the last nam(e) of the author(s), the first initials or name(s) and rank(s) and their organization and department.
5. Write the text of your article using Times New Roman, 10pt font.
 - A. Single spaced
 - B. No bold, underline or italics, unless these are properly used, such as in article or book titles in referenes, Latin words, etc.
 - C. Do not indent paragraphs, the publishing program will do that.
 - D. As a rule, the less formatting, the better. You may wish to send a hard copy of the finished article, as it should appear.
6. Any questions about submissions, or comments about the newsletter, may be directed to:

Ms. Barbara Zimmer, Publishing Editor, Fleet Public Health, : (619)556-9026, DSN 526-9026
 bszimmer@nepmu5.med.navy.mil
 FAX; (619)556-/DSN 526-7071



Medical Management of Biological Casualties Course Available

Norfolk, VA - The Navy Environmental Health Center is sponsoring the live, interactive, CME, CEU accredited satellite course, "Medical Management of Biological Casualties." Medical defense against biological warfare is an area of study for military health care providers which does not apply readily to the day to day mission of caring for patients in peacetime. However, the threat of biological warfare is real. The possibility of biological agents being used by foreign governments during war or by terrorist groups against civilian populations is more likely now than at any point in our history.

Military health care providers need to be proficient in recognizing and treating casualties of biological agents. This live, interactive videoconference will educate health care professionals about the potential problem of biological warfare and terrorism.

The faculty for this course consists of Dr. William Atkinson, MD, MPH, from the Centers for Disease Control and Prevention and numerous experts from the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID).

The course consists of three modules, each 3.5 hours long. The modules will be presented sequentially on the

following dates: 16, 18, and 19 September 1997 from 1200 - 1630. Category 1 CME and CEU credits have been applied for through the U.S. Army Office of the Surgeon General. Attendance at all three sessions is required to obtain CMEs/CEUs.

The target audience for this course is: military physicians, physician assistants, nurse practitioners, nurses, environmental health officers, and hospital corpsmen (particularly Independent Duty Corpsmen and Preventive Medicine Technicians.) If you would like to present this course at your command contact HMC Shuck or Ms. Diana Canals at telephone DSN 864-5514/5509 or commercial (757)363-5514/5509, FAX(757)445-6060, or via e-mail at shuckj@ehc50.med.navy.mil or canalsd@ehc50.med.navy.mil.

Contact: HMC Judith A. Shuck USN
 Telephone:(757)363-5590, Fax: (757)444-1345



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NEPMU-2

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Fair Winds and Following Seas!

NEPMU-2

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