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"Force Health Protection"

NAVAL MEDICAL SURVEILLANCE REPORT

N M S R

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Data in the NMSR are provisional, based on reports and other sources of data available to the Navy Environmental Health Center. Notifiable conditions are classified by date of report. Only cases submitted as confirmed are included.

From the Preventive Medicine Director

CAPT Bruce K. Bohnker, MC, USN(FS)

I have now been the Director of Preventive Medicine at NEHC for one very full and exciting year. I had envisioned the April-June 2002 period to be a "breather" after the move to Portsmouth and NEHC workshop. Alas, that view was overcome by events, though mostly to the benefit of our people and programs.

Several personnel changes are worth noting. We were pleased to welcome CDR (JG) Alexis Rump, MC from the Federal German Navy, who will be our German Exchange officer until December. He brings his expertise in toxicology and diving medicine and has a busy schedule planned for his tour. HM2 Collin Bowman was hand picked to support JTF 160 operations in Guantanamo Bay, Cuba. He is enjoying sunny days and beautiful diving, also doing a little PMT work at times I am told. HMC Andrea Wiley was rewarded for her hard work by reassignment to the Administrative Support directorate, where she will continue to contribute in many ways. We also note the transition of CDR Jerry Mothershead and CAPT Jim Beddard to life after Navy active service. Though they were assigned to the Plans and Operations directorate, they passed through our spaces enough to almost be members of the directorate.

A number of significant events occurred relating to Navy Preventive Medicine. First, the reorganization of the Bureau of Medicine and Surgery has elevated the NEHC Commanding Officer within the organization structure and enhanced the influence and visibility of Preventive Medicine across Navy Medicine. I expect the full implications will continue to be clarified. We have been coordinating with the Navy Medical Information Management

Command (NMIMC) for a web-based Disease, Non-Battle Injury (DNBI) submission tool that is maturing nicely. We expect to be working on the "beta" testing during August and September with HMC Fred Gutermuth taking the lead. CDR Michael Mann has been busy with the West Nile Virus Surveillance Plan, as well as updating the USPHS Derat Seal roster in cooperation with HM1 Isaiah Corbin. CDR Mark Malakooti hosted the Navy Epidemiology Board (NEB) in June, which worked to clarify a number of preventive medicine topics. Mr. Bob Odette has been busy with shipboard water sanitation matters including meeting with the Royal Navy and NAVSEA representatives. Ms. Lea Gilchrist and I attended the SAMS Configuration Control Board (CCB) in Norfolk that added the Population Health Naval Service (PHNS) and PC-MATRIX functionality to that shipboard program. I also attended the Armed Forces Epidemiology Board (AFEB) meeting in May in Washington DC which discussed sickle cell testing and chemical/biological warfare agent surveillance; a lot of front burner topics in the Navy Preventive Medicine world.

We celebrate the accomplishment of Ms. Becky Washburn with her oral and poster presentations at the Recruit and Trainee Healthcare Symposium 2002 in April. We look forward to the Force Health Protection Conference in August where we have several presenters. Ms. Tamara Telfair will present a poster on Navy and Marine Corps Tuberculosis Surveillance. CAPT Jim McGinnis will lecture on Malaria and Lyme Disease in the Navy and Marine Corps based on NDRS data.

All in all, this should be another busy quarter. Please take care of one another and be safe out there.

Naval Medical Surveillance Report

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**Medical Event Reports, 2000 and 2001
From the Area of Responsibility of
Navy Environmental and Preventive Medicine Unit No. 2**

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Abstract

The number and rate of reportable diseases submitted by commands in Navy Environmental and Preventive Medicine Unit No. 2's (NEPMU-2) area of responsibility (North America east from the Mississippi River, Central and South America and Iceland) are presented and discussed. Disease reports are vital in the disease prevention process, which begins with knowing if an increased rate of disease exists and its extent including where and why it has occurred. These questions are answered by gathering data from all area commands and analyzing and passing back that information to the original reporters. To succeed in preventing disease, strong leadership, innovative thinking and collaboration among different stakeholders are required. This investment in resources will return great dividends: A hyper-fit force ready to take on increased mission capabilities.

Medical Event Reports 2000 and 2001

One of the goals of the NEPMU-2 Epidemiology Department is to provide timely feedback to users of the Naval Disease Reporting System (NDRS). These reports will be posted quarterly on our website (http://www-nehc.med.navy.mil/nepmu2/nepmu2_index.htm) to allow

commands in our Area of Responsibility (AOR) to view the data. Data from NDRS is a tool for Operational Commanders to determine their deployment readiness in terms of disease incidence. For calendar year (CY) 2000 and 2001, approximately 83% of medical shore commands and 17% of the medical surface commands in our AOR used the NDRS to report these events. However, because of the smaller number of personnel, the ships' medical departments send individuals to the shore facilities, and thus the reports are added in with the shore commands.

The ultimate goal is 100% reporting. Once complete reporting is assured, the report numbers can be expected to stabilize. Preventive medicine interventions can then be evaluated, as the rates and number of cases for targeted diseases should decline.

The following is a compilation of data provided by units in the Commander in Chief, U.S. Atlantic Fleet (CINCLANTFLT) AOR for CY 2000 and 2001. Table 1 provides the total numbers collected by CY. Table 2 shows the disease rates for selected reportable events. (Rates were calculated by dividing the total reports by the estimated active duty population in the NEPMU-2 AOR (271,572) and multiplying by 100,000.)

Table 1: Active Duty Confirmed Reports		
Medical Event	CY 2000 Totals	CY 2001 Totals
Animal Bite	26	25
Bites, Venomous Animal	1	2
Campylobacteriosis	1	5
Chlamydia	2088	2256
Cold Injury - Hypothermia	0	1
Cryptosporidiosis	0	3
Dengue Fever (Specify Type)	0	2
Ehrlichiosis	0	1
Encephalitis (Specify Type If Known)	0	2
E. Coli 0157:H7 Infection	0	2
Giardiasis	2	4
Gonorrhea	498	504
Granuloma Inguinale	1	0
Heat Exhaustion	2	8
Heat Stroke	1	2
Hepatitis A - Acute, Symptomatic	1	1
Hepatitis B - Acute, Symptomatic	11	14
Hepatitis C - Acute, Symptomatic	8	8
Hepatitis Not specified	2	0
Influenza (Confirmed)	0	10
Lyme Disease	5	7
Malaria, Falciparum	1	1
Malaria, Unspecified	2	1
Malaria, Vivax	1	1
Meningitis, Aseptic, Viral	4	11
Meningitis, Bacterial	0	1
Meningococcal Meningitis	0	2
Meningococemia	1	4
Occupational Exposure To Blood-Borne Pathogen	12	1
Rocky Mountain Spotted Fever	4	0
Salmonellosis	4	6
Shigellosis	0	1
Streptococcal Disease, Gp A	3	6
Syphilis, Latent	6	4
Syphilis, Primary/Secondary	7	14
TB Active Pulmonary	0	6
TB Abscess Spinal Cord	1	0
Urethritis (Non-Gonococcal)	318	181
Vaccine Related Adverse Event	1	0
Varicella (Chicken Pox, Active Duty Only)	13	17
Any Unusual Occurrence Not Listed	0	9
Total Reports:	3026	3121

Table 2: Medical Event Reports Highlights NEPMU-2 (Active Duty Only)		
	Rates per 100,000 population	
	2000	2001
Sexually Transmitted Diseases		
Chlamydia	768.9	830.7
Gonorrhea	183.4	185.6
Urethritis (Non-Gonococcal)	117.1	66.6
Syphilis (All Stages)	4.8	6.6
Vector Borne Diseases, Zoonoses, and Animal Bites		
Animal Bites	9.9	9.9
Dengue Fever	0.0	0.7
Ehrlichiosis	0.0	0.4
Lyme Disease	1.8	2.6
Malaria	1.5	1.1
Rocky Mountain Spotted Fever	1.5	0.0
Enteric Diseases		
Campylobacteriosis	0.4	1.8
Cryptosporidiosis	0.0	1.1
E. Coli 0157:H7 Infection	0.0	0.7
Giardiasis	0.7	1.5
Salmonellosis	1.5	2.2
Shigellosis	0.0	0.4
Other Communicable Diseases		
Viral Hepatitis (All Types)	8.1	8.5
Meningitis (Bacterial & Viral)	1.8	6.6
Tuberculosis Disease	0.4	2.2
Varicella (Chicken Pox)	4.8	6.3

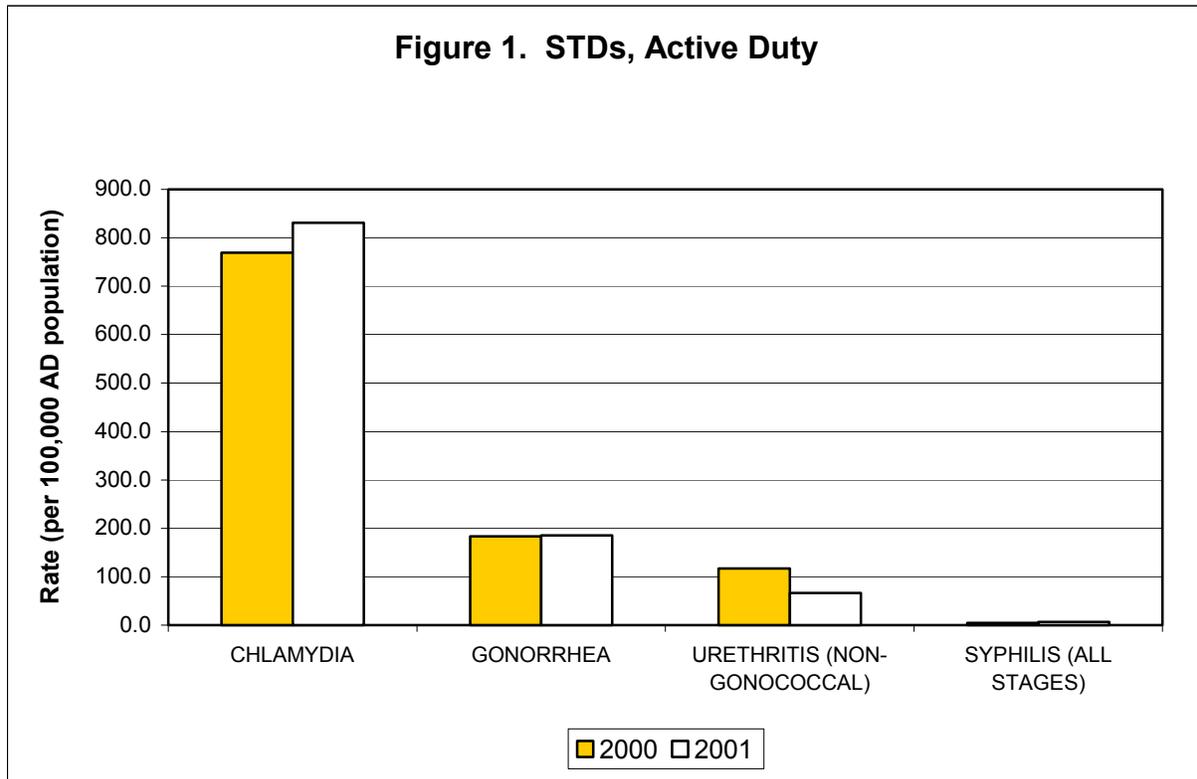
Sexually Transmitted Diseases: For CY 2000 and 2001, respectively, 96% and 95% of the confirmed reports for active duty were Sexually Transmitted Diseases (STDs). Figure 1 pictorially shows the rates listed in Table 2. These high numbers likely reflect both an increased awareness that these diseases are reportable, as well as the continued expansion of STD screening programs. STDs can lead to chronic pelvic pain and infertility, and can facilitate the transmission of HIV, which is a fatal disease with no cure. Because of these enormous health consequences, STDs cause decreased mission readiness. STDs may cause emotional and family disturbances due to the stigma of the diseases; this too will lead to mission de-gradation. Screening

for, treatment of, and education of the patients regarding STDs are vital elements in decreasing this cause of morbidity in the Navy and Marine Corps.

Reporting of STDs is important to gain control of this group of diseases. By regularly reporting, the actual numbers of cases can be determined. Then prevention efforts can be designed and implemented and continually monitored by the use of STD reports. Again, if the prevention actions are effective, the number of STD reports can be expected to decline. When comparing the two years, both chlamydia rates and syphilis rates increased. Again, this may signify increased reporting awareness; however,

continued surveillance is important. Gonorrhea rates in the Navy appear to have remained unchanged, while non-gonococcal urethritis rates decreased dramatically.

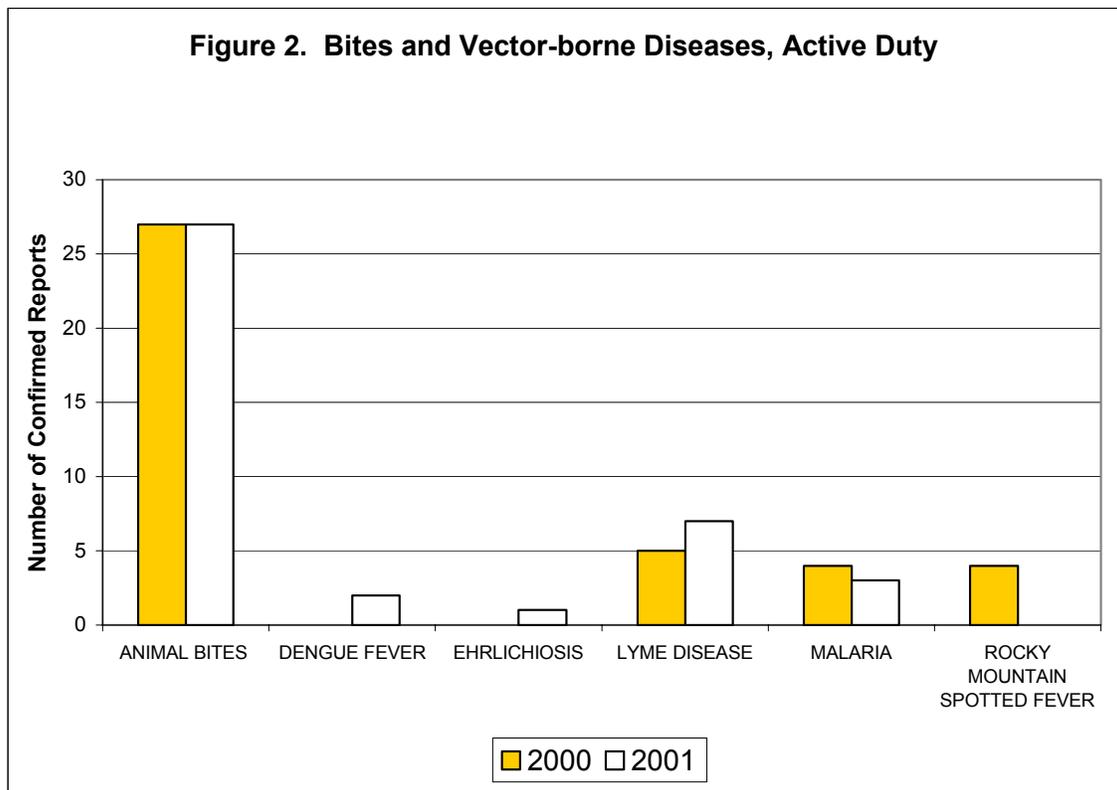
Future reports on the website will take a more detailed look at STD in the Navy & Marine Corps by looking at these rates by gender and State.



Animal Bites: The number of animal bites has remained unchanged (Figure 2). Most reported bites were for known pets, so Human Rabies Immune Globulin injection was not necessary. It is important to keep in mind that any wild or unknown domestic animal has the potential to transmit rabies. Although rabies in humans in the U.S. is rare, there are approximately 7,500-10,000 annual reports of rabid animals, mostly in wild mammals. Reinforcement of the policy “do not play with the animals” should be continued, particularly in deploying forces. For more information about rabies in animals and humans, visit the following website: <http://www.cdc.gov/ncidod/dvrd/kidsrabies>.

Vector-borne Diseases: Less than 1% of reported events for CY 2000 and 2001 were

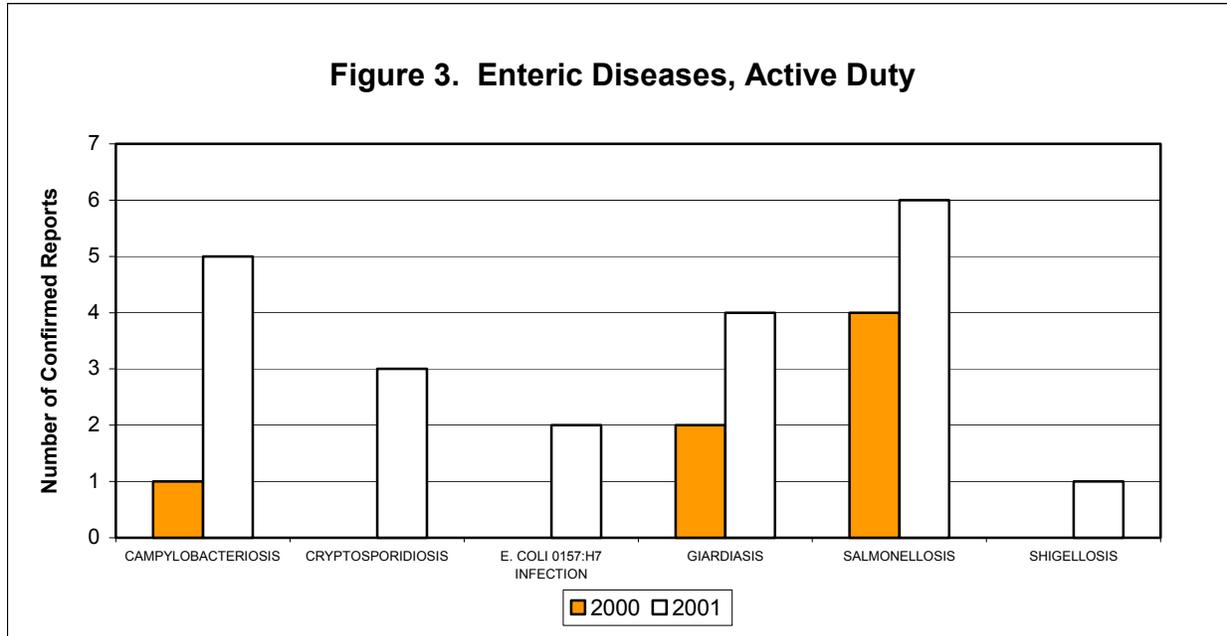
for vector-borne diseases (Figure 2). These diseases, which include Dengue, Lyme Disease, Rocky Mountain Spotted Fever and Malaria, are rare in the U.S. All of these diseases are preventable through precautions known as “personal protective measures”- use of DEET (N,N-diethyl-m-toluamide, an active ingredient in insect repellants), wearing long sleeves and long pants, avoiding being outside at heavy biting times such as dusk and dawn. Although a Lyme Disease vaccine exists (though recently taken off the market because of low demand) and Malaria chemoprophylaxis is available, most vector-borne diseases cannot be prevented by vaccine or a daily or weekly pill. Therefore, the most reliable way to prevent them is the use of personal protective measures.



Enteric Diseases: Few reports were obtained on enteric diseases (Figure 3). Most cases of enteric diseases are viral in origin and of short-duration. Thus, patients are less likely to seek medical attention and diagnosis. However, the low numbers may also indicate troops are following Force Health Protection measures, which emphasize food/water awareness when deploying to other countries. These measures include washing hands with soap and water, drinking only bottled or boiled water or carbonated beverages, avoiding

tap water and ice from local foreign restaurants, and eating only thoroughly cooked food or fruits and vegetables you have peeled yourself.

As with other communicable diseases, most enteric illnesses are not life threatening, but can cause significant mission degradation if large numbers of a unit are sick and thus incapacitated at one time. Therefore, monitoring for these illnesses keeps us on guard to prevent Foodborne outbreaks and is a vital component of preventive medicine.



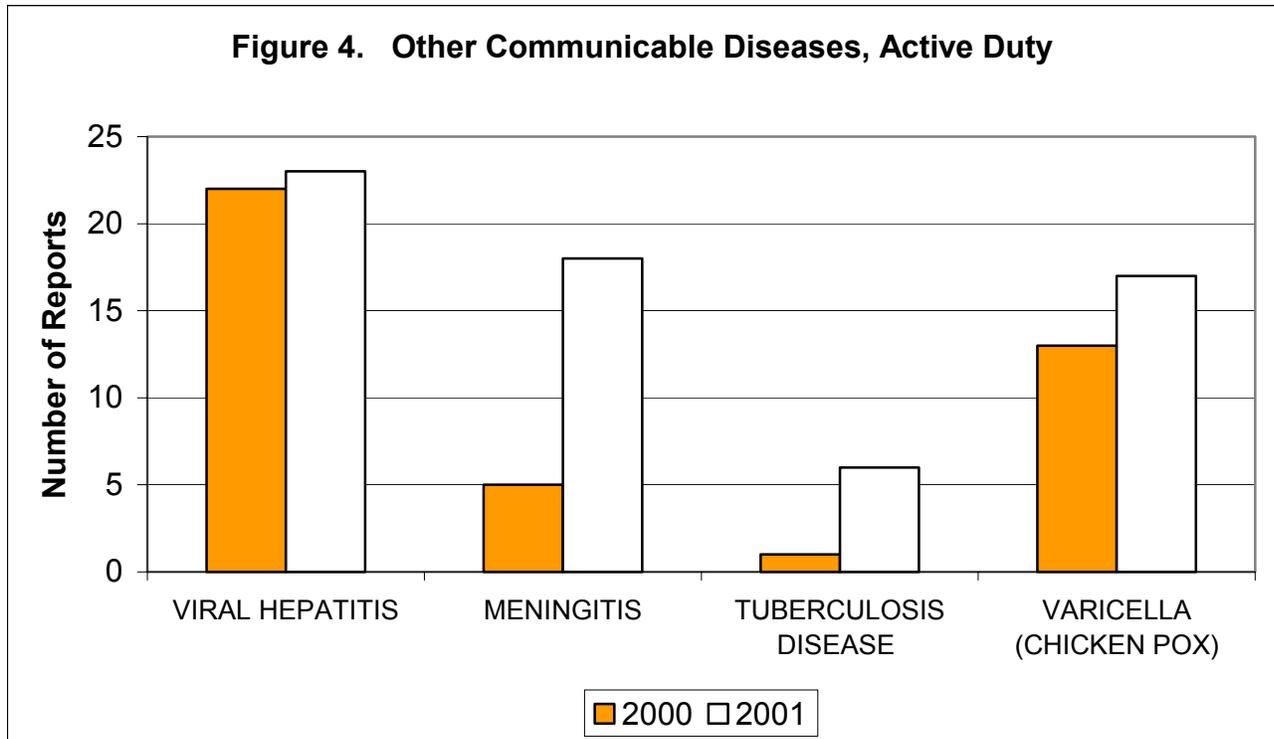
Other Communicable Diseases:

Hepatitis (all types): The number of viral Hepatitis cases remained unchanged from CY 2000 and 2001 (Figure 4). Of all the cases reported, 50-60% were confirmed as Hepatitis B. Although reported cases of acute Hepatitis B have decreased in the U.S. civilian population during this past decade, case numbers have remained unchanged in the U.S. Navy population. However, the U.S. Navy is well below the civilian Healthy People 2010 goal of 15-24 cases/100,000. There was only one Hepatitis A case reported in 2000 and 2001. Numbers are expected to be low as the Hepatitis A vaccination is mandatory for all active duty Navy/Marine Corps members.

Meningitis: Most cases of Meningitis in both CY 2000 & 2001 were due to viral infections (i.e. aseptic Meningitis). Viral Meningitis is generally less severe and resolves without specific treatment, while bacterial Meningitis

can be quite severe and may result in brain damage, hearing loss, or learning disability. For bacterial Meningitis, it is also important to know which type of bacteria is causing the meningitis because antibiotics can prevent some types from spreading and infecting other people. Before the 1990s, *Haemophilus influenzae* type b (Hib) was the leading cause of bacterial Meningitis, but new vaccines being given to all children as part of their routine immunizations have reduced the occurrence of invasive disease due to *H. influenzae*. Today, *Streptococcus pneumoniae* and *Neisseria meningitidis* are the leading causes of bacterial Meningitis. Two cases of Meningococcal Meningitis occurred in 2001. This computes to a rate of 0.73/100,000, which compares to the U.S. average of 0.87/100,000. Neither case had received the Meningococcal vaccine.

To learn more about meningococcal disease, please go to the following website:
http://www.cdc.gov/epo/dih/ddm/sset_men.htm.



Tuberculosis: Active pulmonary Tuberculosis (TB) disease increased from 2000 to 2001. However, compared to the U.S. rate (6.4 cases/100,000), the U.S. Navy community rate is low. This is due to the successful Navy TB control program that calls for annual testing of those in operational units who are at increased risk of exposure and the annual reporting that is required.

Varicella (Chicken pox): Varicella is not a nationally notifiable disease; however, in the U.S. Navy, Varicella is a reportable event in an active duty member. The number of active duty Varicella cases increased between 2000 and 2001. There were no deaths. The disease is highly infectious and requires patients to be isolated from the general public for at least 5 days after the rash appears; therefore, although Varicella has a low fatality rate, the lost work-days is substantial and can lead to degraded mission readiness. A live Varicella vaccine has been available in the U.S. since 1995, and currently Navy/Marine Corps standards require personnel to receive the 2-dose series or have a past history of Chicken

pox. Continued surveillance on this disease will be important to monitor the impact of this vaccination program.

Summary: Medical event reporting continues to be important to the mission readiness of the U.S. Navy, as monitoring closely for mission-degrading diseases and conditions can help identify conditions early. This early identification can lead to employment of quick preventive measures that can help prevent further spread of disease among the troops. Disease reports are vital in the prevention process, which begins with knowing how large the problem is and where and why they have occurred. These questions are answered by gathering data from all area commands and analyzing and passing back that information to the original reporters.

In this prevention process, strong leadership, innovative thinking, and collaboration among different stakeholders will be required. However, the additional investment will be negligible when compared with the likely return on the investment, which will include a healthier force and increased mission capabilities.

Marine Corps Disability Analysis: 1 June 1994 – 31 December 2000

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Editor's Note: Modified abstract from the Forty Second Navy Occupational Health and Preventive Medicine Workshop, Poster Presentation. A detailed slide presentation on a subset of this data can be found at <http://www.usmc-ccs.org/sfconf/readaheads.htm>.

Background: Disabilities have significant impact on readiness in the United States Marine Corps. Approximately 2,200 Marines, roughly equivalent to a Marine Expeditionary Unit, are annually reviewed and granted a disability rating by the Naval Council of Personnel Boards (NCPB), Washington, DC. This impact results in direct costs over \$300 million due to disability payments and material damage, and over \$17 million in lost training costs.

Objectives: 1. To calculate the Marine Corps annual disability prevalence rates for 1994 to 2000 from the Marine Corps Total Force System (MCTFS) and Total Force Data Warehouse (TFDW). 2. To characterize the disability prevalence rates by gender, pay grade, military occupational specialty (MOS), major Veterans Administration Schedule of Ratings and Disability (VASRD) categories, and major disability disposition categories.

Design: Hybrid retrospective cohort study.

Case Definition: All Marines entered in MCTFS/TFDW with a disability disposition code, and a physical evaluation board date from 1 June 1994 to 31 December 2000.

Main Outcome Measures: 1. To calculate Marine Corps annual prevalence disability rates per 1000 persons. 2. To characterize annual prevalence disability rates by gender, MOS, and pay grade. 3. To determine percentages of the distribution of Marine disability dispositions.

Results: Six and one-half years of USMC disabilities (N=17,561, 15,772 men and 1,789 women) were analyzed. The disability prevalence rates (per 1,000) are: CY1994 (men, 15; women, 25); CY1995 (men, 16;

women, 30); CY1996 (men, 14, women, 32); CY1997 (men, 20; women, 37); CY1998 (men, 14; women, 32); CY1999 (men, 13; women, 26); CY2000 (men, 12; women, 24). Prevalence rates (per 1000) varied over military occupational specialties: Infantry (men, 19), Artillery (men, 14); Motor Transport (men, 17; women, 36); Basic Marine Recruits with Enlistment Guarantee (men, 22; women, 70); Personnel/Administration (men, 14; women, 30); Military Police and Corrections (men, 12; women, 42). Enlisted rates were higher than officer rates. Musculoskeletal disabilities accounted for 53% of all disabilities, the greatest percentage of all major VASRD categories. Men and women were proportionately distributed equally across each of the nine major VASRD categories.

Military Relevance and Conclusions: This is the first comprehensive report using MCTFS/TFDW databases to determine and characterize disability rates by gender, pay grade, MOS, and major VASRD category. These findings demonstrate the capability of these databases to provide a basis for a comprehensive routine disability surveillance system for the Marine Corps. This data confirms that injuries remain a significant cause of morbidity in the Marine Corps across all MOSs, and particularly in Basic Marine Recruits. There are consistent and marked gender specific differences in disability rates overall and by MOS and pay grade. In order to better understand these descriptive findings, analytical epidemiologic studies should be instituted to further investigate disability risk factors. Injury prevention and control in the Marine Corps can be substantially improved by instituting a minimum basic data set for disability causality that is incorporated into MCTFS/TFDW. This would allow better tracking and understanding of disability risk factors and would guide future preventive interventions.

An Innovative Public Health Education Program For Malaria Prevention In Latin America: Leadership, Championship and Partnership

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Editor's Note: Abstract from the Forty Second Navy Occupational Health and Preventive Medicine Workshop, Poster Presentation.

The Preventive Medicine (PM) Directorate, Navy Environmental Health Center (NEHC), Norfolk, Virginia in support of the Naval Medical Research Center Detachment (NMRCD), with the championship of the U.S. Southern Command, embarked on a partnership project with Peru to develop an innovative public health education program for malaria prevention for their military and National Police. In 1999, the Peruvian government and NMRCD identified substantial numbers of military personnel at high risk for malaria due to deployment to endemic areas. The goal of the partnership was to champion public health education, adding it to vector surveillance and control as a priority prevention activity. The Peruvian Ministry of Health assisted in establishing guidelines for malaria prevention tailored to their special circumstances. The strategy focused on developing creative public health education materials that resonated positively with the military and national culture, thus engaging people's attention while delivering important prevention messages. The planning, development and production of these materials were performed by a leadership team of Peruvian military and civilian health care providers and a U.S. public health educator from the PM Directorate, NEHC. The underpinnings of this health education project were the

principles of risk communication, the transtheoretical stages of change model, and social marketing techniques incorporating three important phases of prevention: awareness, education and intervention. The team conducted needs assessments, intensive interviews, focus groups and site visits to various malaria endemic areas. It then developed educational materials and training modules in personal protection, environmental health, vector surveillance and control, and malaria chemoprophylaxis. When tested, the materials were well accepted across services and ranks. Most importantly, the troops were proactively involved, engaged, and assisted in crafting these materials. A strategic plan was submitted for integrating these materials into military training and education.

This poster display is designed to provide information on the work processes and the preliminary materials that were produced. The materials were comprehensive yet easy to understand, with information and components that responded to the troops' perceptions of the most effective means of conveying public health and risk information. Designed to fit the military culture, the tools included posters, wall and pocket calendars, an anti-malaria cadence call, video and audio tapes, puzzles, canned presentations and rotafolios (cloth charts for areas of high humidity without electricity).

NAVAL DISEASE REPORTING SYSTEM (NDRS)**SUMMARY OF 2002 DATA**

Tables 1 and 2 display the confirmed
Medical Event Reports (MERs) received at

Navy Environmental Health Center (NEHC) from 1
Jan to 30 Jun 2002.

Table 1. ACTIVE DUTY Reportable Medical Events, Navy & Marine Corps, Case Frequencies, 01 Jan – 30 Jun 2002								
Disease	Total	USN	USMC	Disease	Total	USN	USMC	
Amebiasis*	1	0	1	Lyme Disease	19	6	13	
Anthrax*	0	0	0	Malaria (specify type) *	0	0	0	
Biological warfare agent exposure	0	0	0	Measles*	0	0	0	
Bites, rabies vaccine & human rabies IG	14	5	9	Meningitis (aseptic, viral)	1	1	0	
Bites, venomous animal	1	1	0	Meningitis (bacterial other than Meningococcus)	0	0	0	
Botulism*	0	0	0	Meningococcal disease*	1	1	0	
Brucellosis	0	0	0	Mumps	0	0	0	
Campylobacteriosis*	2	2	0	Occupational exposure to blood borne pathogens	1	1	0	
Carbon Monoxide poisoning*	0	0	0	Onchocerciasis	0	0	0	
Chemical warfare agent exposure	0	0	0	Pertussis*	2	0	2	
Chlamydia	810	595	215	Plague*	0	0	0	
Cholera	0	0	0	Pneumococcal pneumonia	0	0	0	
Coccidioidomycosis	4	4	0	Poliomyelitis*	0	0	0	
Cold injuries	1	1	0	Psittacosis (Ornithosis)	0	0	0	
Cryptosporidiosis*	0	0	0	Q Fever*	0	0	0	
Cyclospora*	0	0	0	Rabies, clinical human*	0	0	0	
Dengue fever*	0	0	0	Relapsing fever	0	0	0	
Diphtheria	0	0	0	Rift Valley fever	0	0	0	
E. Coli 0157:H7 infection*	0	0	0	Rocky-Mountain Spotted Fever	0	0	0	
Ehrlichiosis	0	0	0	Rubella*	0	0	0	
Encephalitis*	0	0	0	Salmonellosis*	1	1	0	
Filariasis	1	0	1	Schistosomiasis	0	0	0	
Giardiasis	0	0	0	Shigellosis*	1	1	0	
Gonorrhea	197	146	51	Smallpox*	0	0	0	
Haemophilus influenza, type b	0	0	0	Streptococcal disease, Group A	3	3	0	
Hantavirus infection*	0	0	0	Syphilis	6	6	0	
Heat injuries	32	1	31	Tetanus	0	0	0	
Hemorrhagic fever*	0	0	0	Toxic shock syndrome	0	0	0	
Hepatitis, A (acute, symptomatic only)	0	0	0	Trichinosis	0	0	0	
Hepatitis, B (acute, symptomatic only)	5	3	2	Trypanosomiasis	0	0	0	
Hepatitis, C (acute, symptomatic only)	0	0	0	Tuberculosis, pulmonary active*	1	1	0	
Influenza (confirmed)	3	3	0	Tularemia*	0	0	0	
Lead poisoning	0	0	0	Typhoid fever*	0	0	0	
Legionellosis*	0	0	0	Typhus*	4	0	4	
Leishmaniasis	0	0	0	Urethritis (non gonococcal)	54	24	30	
Leprosy (Hansen's disease)	0	0	0	Varicella	2	2	0	
Leptospirosis*	0	0	0	Yellow fever	0	0	0	
Listeriosis	0	0	0					

*Reportable within 24 hours

NAVAL DISEASE REPORTING SYSTEM (NDRS) (cont)

Interested readers may calculate rates among active duty by dividing the frequencies by estimated mid-period strength of 381,765 for

USN and 172,927 for USMC. Table 1 shows active duty only. Table 2 shows non active duty beneficiaries.

Disease	Total	USN	USMC	Disease	Total	USN	USMC
Amebiasis*	0	0	0	Lyme Disease	5	4	1
Anthrax*	0	0	0	Malaria (specify type) *	0	0	0
Biological warfare agent exposure	0	0	0	Measles*	0	0	0
Bites, rabies vaccine & human rabies IG	45	33	12	Meningitis (aseptic, viral)	2	2	0
Bites, venomous animal	0	0	0	Meningitis (bacterial other than Meningococcus)	1	1	0
Botulism*	0	0	0	Meningococcal disease*	0	0	0
Brucellosis	0	0	0	Mumps	0	0	0
Campylobacteriosis*	5	4	1	Occupational exposure to blood borne pathogens	1	0	1
Carbon Monoxide poisoning*	5	5	0	Onchocerciasis	0	0	0
Chemical warfare agent exposure	0	0	0	Pertussis*	2	2	0
Chlamydia	212	175	37	Plague*	0	0	0
Cholera	0	0	0	Pneumococcal pneumonia	1	1	0
Coccidioidomycosis	3	3	0	Poliomyelitis*	0	0	0
Cold injuries	0	0	0	Psittacosis (Ornithosis)	0	0	0
Cryptosporidiosis*	1	1	0	Q Fever*	1	0	1
Cyclospora*	0	0	0	Rabies, clinical human*	0	0	0
Dengue fever*	0	0	0	Relapsing fever	0	0	0
Diphtheria	0	0	0	Rift Valley fever	0	0	0
E. Coli 0157:H7 infection*	0	0	0	Rocky-Mountain Spotted Fever	0	0	0
Ehrlichiosis	1	1	0	Rubella*	0	0	0
Encephalitis*	0	0	0	Salmonellosis*	5	4	1
Filariasis	0	0	0	Schistosomiasis	0	0	0
Giardiasis	1	1	0	Shigellosis*	8	8	0
Gonorrhea	28	25	3	Smallpox*	0	0	0
Haemophilus influenza, type b	0	0	0	Streptococcal disease, Group A	9	8	1
Hantavirus infection*	0	0	0	Syphilis	2	1	1
Heat injuries	0	0	0	Tetanus	0	0	0
Hemorrhagic fever*	0	0	0	Toxic shock syndrome	0	0	0
Hepatitis, A (acute, symptomatic only)	0	0	0	Trichinosis	0	0	0
Hepatitis, B (acute, symptomatic only)	2	1	1	Trypanosomiasis	0	0	0
Hepatitis, C (acute, symptomatic only)	2	2	0	Tuberculosis, pulmonary active*	3	3	0
Influenza (confirmed)	30	30	0	Tularemia*	0	0	0
Lead poisoning	1	1	0	Typhoid fever*	0	0	0
Legionellosis*	0	0	0	Typhus*	0	0	0
Leishmaniasis	0	0	0	Urethritis (non gonococcal)	1	0	1
Leprosy (Hansen's disease)	0	0	0	Yellow fever*	0	0	0
Leptospirosis*	0	0	0				
Listeriosis	0	0	0				

*Reportable within 24 hours

Active Syndromic Surveillance for Detecting the Covert Release of Bioterrorism Agents

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The release of biological agents of terrorism in a community is likely to be covert and may not result in large numbers of persons with similar symptoms presenting simultaneously for treatment at one location. To detect these agents such as anthrax, tularemia, and smallpox and to prepare a rapid response, a system for counting and analyzing disease syndromes was developed at the Naval Medical Center Portsmouth (NMCP), Virginia.

The system is an adaptation of the Navy Environmental Health Center's Rapidly Deployable Surveillance System (RDSS). The data collection tool is a modified Disease Non-Battle Injury Report form used in military deployments, and incorporates the same syndromes that are monitored at local civilian hospitals by the Commonwealth of Virginia's southeastern regional epidemiologist. Through the application of statistical analyses, syndrome counts that exceed their upper control limits are identified and investigated. Six specific syndromes are counted: fever, respiratory, gastrointestinal, ophthalmological, dermatological, and disorientation. Reporting sites were comprised of a total of 13 primary care portals in the Tidewater Virginia area including: NMCP Charette facility, Branch Medical Clinics, and Tricare Clinics. Any chief complaint meeting the syndrome definition by the patient seeking care was manually recorded on the form, which was then totaled at the end of the day. The information was then either collected in person by preventive medicine personnel (active surveillance) or directly entered into a spreadsheet at the clinic and transmitted electronically for statistical analysis. Each of the six syndromes was tracked for each clinic on a daily basis, including weekends. Using Microsoft Access™ and SPSS™ software, the

syndromes were analyzed and graphed as process run charts. Figure 1 is an example of a typical run chart.

The threshold for investigation of an unexpected increase in complaints was set at two sigma's above the mean. When an upper control limit (UCL) threshold is exceeded, an epidemiological investigation is triggered to determine the circumstances, cause(s), and/or nature of the spike. Because most biological warfare agents occur naturally somewhere in the world, epidemiological investigations can be the key in determining if a bioterrorist agent release has occurred.¹ Numerous factors must be considered when distinguishing between natural and intentional disease outbreaks. These factors include, but are not limited to: disease that is unusual for an age group, disease outbreaks of the same illness in a noncontiguous area, multiple simultaneous or serial epidemics of different diseases in the same population, a disease that is unusual for a geographic area or transmission season, etc.²

Upper control limit thresholds have been exceeded several times since deployment of this program on 17 October 2001 in the Tidewater area. To evaluate the validity of the threshold values, ANOVA statistical significance testing was conducted on the variance of the syndrome means. Furthermore, to verify the correlation between chief complaints and final diagnoses, a reliability study was performed indicating an accuracy of up to 95 percent. Fortunately, the epidemiological investigations triggered by these analyses have not pointed to agents of bioterrorism as the cause to any of the increases in syndromes detected. However, the surveillance program is proving valuable in identifying seasonal disease trends,

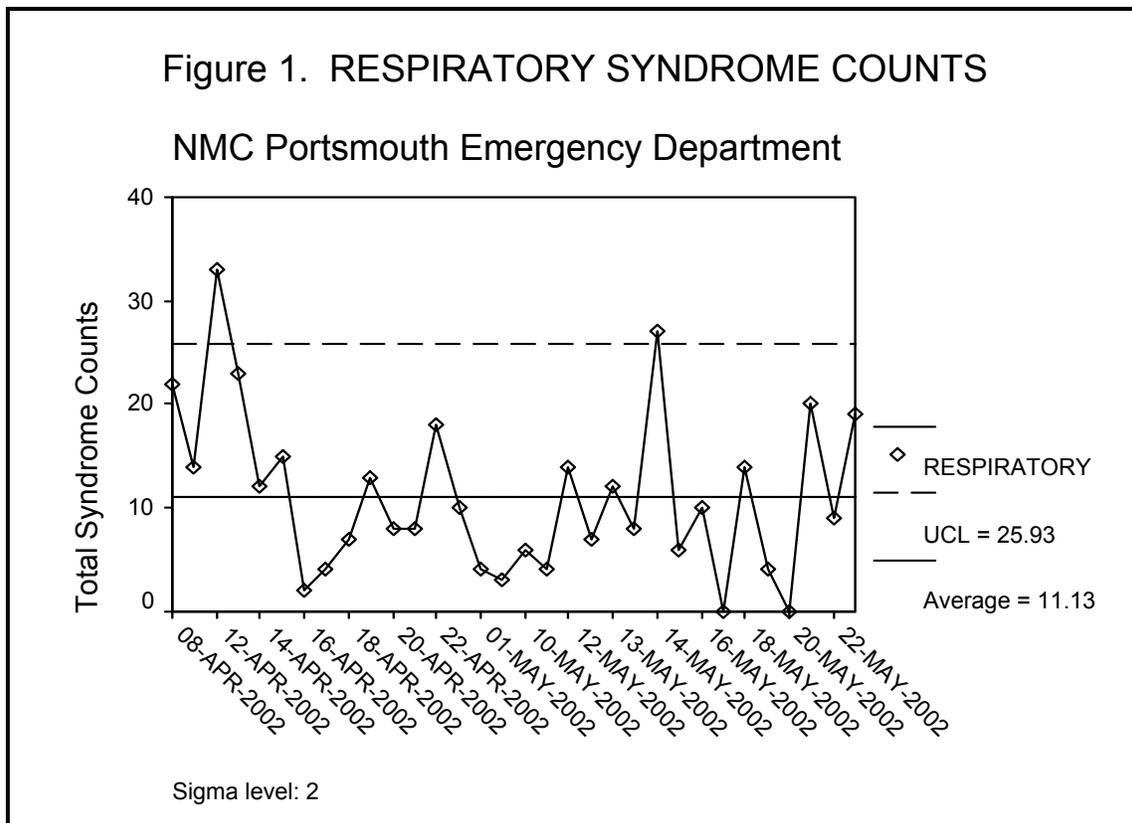
including the influenza outbreak in the Tidewater region of Virginia in January 2002. The active surveillance by preventive medicine personnel not only enhanced the success of syndrome reporting, but also had the synergistic effect of increased awareness of preventive medicine's roles among the medical staff and resulted in the improvement of routine Medical Event Reporting. The authors also partially attribute the continuity and longevity of this surveillance program to the determined effort to share the surveillance information through weekly reporting to all concerned parties and most importantly to the personnel who are directly responsible for contributing the data.

The major advantage of this system is that it provides a reliable picture of infectious disease syndrome activity within 24 hours of a clinic visit. Its disadvantage is that manual collection of surveillance data adds an additional step for the clinics involved and is labor intensive for preventive

medicine personnel. A number of capable automated systems are currently deployed in DoD activities and there are others under development, which would eliminate this added data collection step. However, they are limited by a significant time lag in daily syndrome counts due to delay in provider record close-out and other factors.³ Seeking to adopt an automated system, NMCP Preventive Medicine, with the assistance of NEHC, is comparing these systems with its manual process to determine if a reliable statistical correlation exists 24 hours after the clinic visit.

References:

1. Greenberg, et al., "Responding to Bioterrorism, Part 1. Recognition and Preparedness," Federal Practitioner, Vol.19, No.5, May 2002, 62-67.
2. Korpeter, et al, USAMRID's Medical Management of Biological Casualties Handbook. 4th Ed., Fort Detrick, MD: U.S. Army Medical Research Institute of Infectious Diseases (USAMRID);2001.
3. Sherman, et al., "Find the Epidemic!" Navy Medicine, Vol.93. No.3.May-June 2002.



New CDC Treatment Guidelines Critical to Preventing Health Consequences of Sexually Transmitted Diseases

Editor's Note: The 2002 Sexually Transmitted Disease (STD) Treatment Guideline may be viewed or downloaded from <http://www.cdc.gov/std/treatment/default.htm>. This article is a condensed version of the CDC summary.

The Centers for Disease Control and Prevention (CDC) has updated its national guidelines designed to help health care providers protect their patients from the health consequences that result from sexually transmitted diseases (STDs). *The 2002 Guidelines for the Treatment of Sexually Transmitted Diseases* integrate recommendations on the most effective treatment regimens, screening procedures and prevention strategies for STDs, which infect an estimated 15 million people each year in the United States. CDC revises the guidelines periodically, (approximately every four years) using a scientific evidence-based review process. This is the fifth CDC edition of the guidelines, which were first published in 1982.

Screening for Chlamydia Helps Protect Young Women from Infertility

CDC has expanded its recommendation for chlamydia screening among women. These new guidelines, advise health care providers to annually screen sexually active adolescent and young adult (up to 24 years-old) women, even if symptoms are not present, and to screen older women with a risk factor for chlamydia (a new partner or multiple sexual partners). Additionally, it is now recommended that all women with chlamydial infections be retested three to four months after treatment is completed.

This is the first time CDC has recommended retesting in the management of chlamydia. The new guidance was issued as a result of the high prevalence of chlamydia found in women who were diagnosed with the disease in the preceding several months, presumably as the result of reinfection.

Chlamydia is the most commonly reported infectious disease in the United States with

702,093 cases reported in 2000, and is asymptomatic in the majority of cases. Millions of cases go unrecognized, threatening the health of young women. If not diagnosed and treated effectively, chlamydia can have serious consequences. Reinfection with chlamydial infection is a key risk factor for pelvic inflammatory disease (PID). PID can damage the fallopian tubes, uterus and ovaries, and cause chronic pelvic pain. One in five women with PID also become infertile. Moreover, women infected with chlamydia are up to five times more likely to become infected with HIV, if exposed.

Historically, chlamydia prevalence is lower in areas with long-standing screening and treatment programs. CDC's new recommendation for retesting women diagnosed with chlamydia can help protect women from the long-term sequelae and reduce infertility in the United States.

CDC Recommends Alternative Gonorrhea Treatments in Wake of Increasing Drug Resistance in California

Gonorrhea is the second most common infectious disease reported to CDC, with nearly 360,000 cases in 2000. Drug-resistant strains are becoming increasingly common in the United States. Ciprofloxacin-resistant gonorrhea was found to be endemic to Hawaii in 2000, when CDC recommended that the state cease its use of fluoroquinolone antibiotics – ciprofloxacin, ofloxacin, and levofloxacin – for treating gonorrhea.

Now in the *2002 STD Treatment Guidelines*, CDC warns providers that ciprofloxacin-resistant strains have become so common on the west coast of the U.S. that the use of fluoroquinolone antibiotics to treat gonorrhea is inadvisable in California. This is the first time CDC has issued this guidance in the continental United States. The antibiotics cefixime and ceftriaxone are now recommended as first-line drugs to treat gonorrhea in Hawaii and California.

CDC made these new recommendations after examining data from the Gonococcal Isolate Surveillance Project (GISP), a CDC-sponsored surveillance system, which monitors drug resistance of gonorrhea. State and local public health officials must maintain the capacity to detect and monitor the prevalence of resistant strains, since prevalence can vary greatly by location. Data from local drug susceptibility testing are necessary to guide local treatment recommendations. To supplement GISP data, CDC requests that local and state public health professionals and health care providers report cases of gonorrhea that are resistant to any recommended antibiotics. CDC has recommended the use of fluoroquinolone antibiotics for the treatment of gonorrhea since 1993. Previously, penicillin and tetracycline were recommended, but widespread resistance rendered these drugs ineffective; treatment with tetracycline and penicillin was abandoned in 1985 and 1987 respectively. If not treated successfully, gonorrhea can cause PID, and facilitates HIV transmission.

Need for Expanded Risk Assessment and Screening Among Gay and Bisexual Men

Recent data have shown a higher frequency of unprotected sex and increased rates of syphilis and gonorrhea in many U.S. cities among men who have sex with men (MSM), many of whom are HIV infected. To highlight the critical need for health care providers to expand screening and treatment of STDs among MSM, the new guidelines include detailed recommendations for this high-risk population.

Health care providers are urged to assess the sexual risk for all male patients, including the gender of partners. For MSM patients who are sexually active, the guidelines recommend annual screening for STDs – HIV, chlamydia (anal, urethral), syphilis and gonorrhea (anal, pharyngeal, urethral) – and vaccination against hepatitis A and B. More frequent STD screening may be indicated for those who indicate having multiple anonymous partners or having sex in conjunction with illicit drug use.

Other Key Recommendations

Prevention of STDs – The guidelines encourage health care providers to focus on risk assessment and counseling in addition to the clinical aspects of STD control – screening and treatment. To assist providers with their prevention efforts, the clinical prevention guidelines have been expanded for 2002. Providers are encouraged to use client-centered counseling approaches tailored for each of their patients. To avoid the spread of STDs, the guidelines suggest patients should abstain from oral, vaginal or anal sex while under treatment. Patients who are sexually active should be counseled to be in a mutually monogamous relationship with an uninfected partner or use a condom during each sexual act.

The Use of Nonoxynol-9 (N-9) – Recent studies have found that frequent use of N-9, a spermicide contraceptive, can cause genital lesions (in the vagina) and, therefore, may increase the risk of HIV transmission. It has also been found to cause damage to the lining of the rectum, providing an entry point for HIV and other STDs. According to the guidelines, spermicides – especially those that contain N-9 – should not be used for STD prevention. Furthermore, N-9 lubricants should not be used during anal intercourse. While the level of N-9 used as a lubricant in condoms is much lower than the level found to be harmful, condoms lubricated with N-9 spermicide also are not recommended because they have a shorter shelf life, cost more and have been associated with urinary tract infections in women. However, previously purchased condoms with N-9 can be used, provided they have not passed their expiration date, since the protection provided by the condom against HIV outweighs the potential risk of N-9.

The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations.

Afloat Disease Non-Battle Injury (DNBI) Rates from Fifth Fleet

CAPT Bruce K. Bohnker, MC, USN(FS)

Improving medical surveillance of the Disease, Non-Battle Injury (DNBI) rates was incorporated into the Navy Environmental Health Center's (NEHC) strategic plan, and has been a focus area for the Preventive Medicine Directorate. DNBI reporting is completed as specified by the Chairman of the Joint Chiefs of Staff (CJCS) using syndromic categories to define units' "vital signs" for preventive medicine actions. Currently, afloat units from Commander Fifth Fleet in the Indian Ocean have been submitting weekly DNBI information using an EXCEL spreadsheet format. Those

reports have been analyzed by personnel from Worldwide NEHC, with CDR Scott Sherman, MC, USN from NEPMU-5, LCDR Christopher Claggett, MC, USN and LCDR Jack Beaujon, MSC, USN from NEPMU-7.

Figure 1 presents the reporting units by ship type and demonstrates the distribution of reporting units in the battle group. Figure 2 displays the person weeks by ship type, and demonstrates the population density on the aircraft carriers.

Figure 1: Reporting Units (%) By Ship Type (N=233)

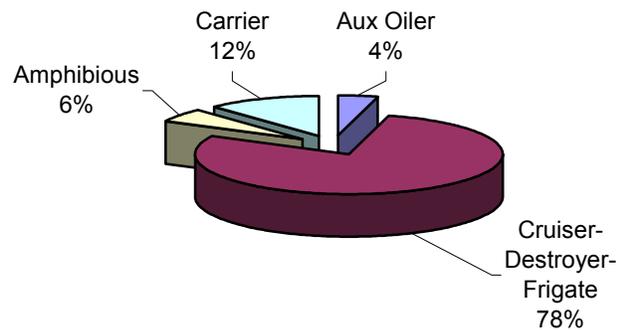


Figure 2: Person Weeks (%) by Ship Type (N=217,972)

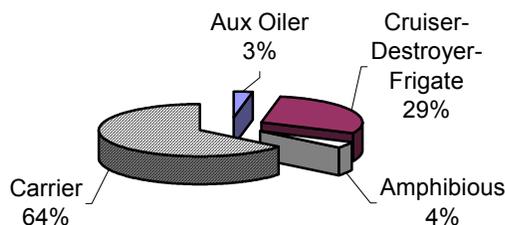


Figure 3 presents the leading causes for initial shipboard visits by CJCS categories,

noting the “other medical-surgical” is the leading category.

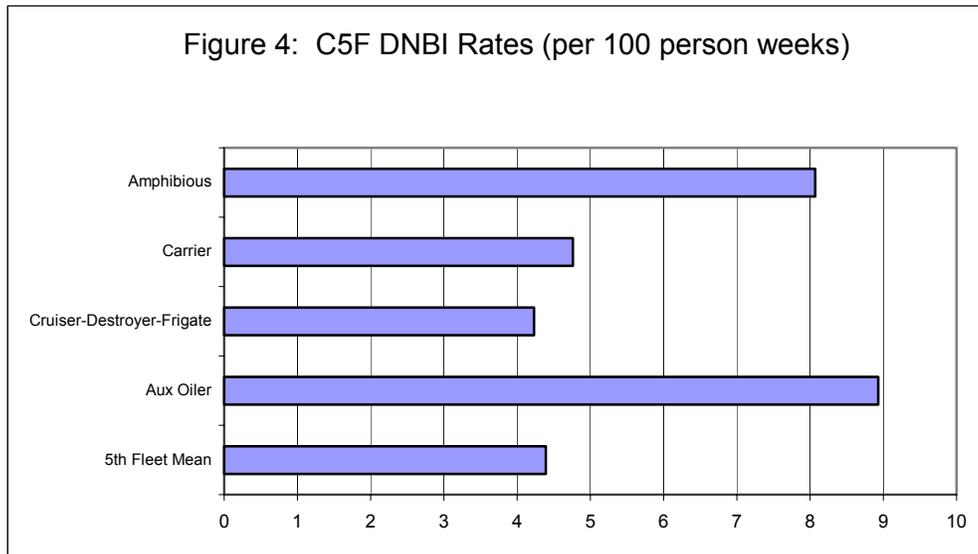
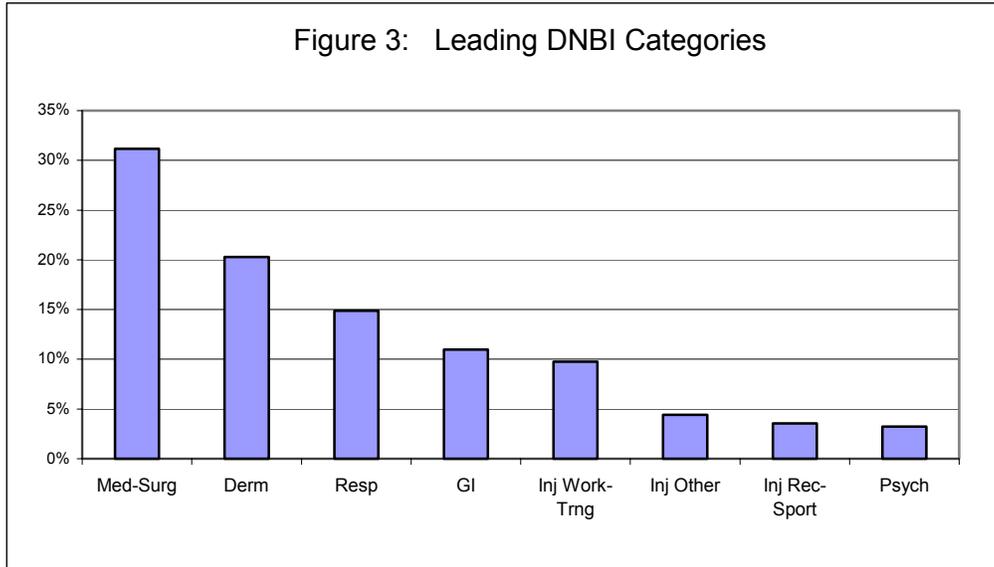


Figure 4 presents the mean rates of overall visits by ship type, and shows that the support and amphibious ships have higher rates than aircraft carriers and frigates/destroyers/cruisers. The reasons for this are not known, but should be considered when evaluating DNBI reporting from afloat units. NEHC preventive medicine staff is working with personnel from the Naval

Medical Information Management Center to develop a web-based DNBI reporting capability that would maintain the current spreadsheet process as an alternative. We are working to complete the “beta” test of that capability shortly, and are working to expand the reporting beyond present employment.

**ANNUAL TB REPORT FOR CY-2001
Active Duty Navy and Marine Corps**

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Per BUMEDINST 6224.8, all operational medical departments and military treatment facilities must prepare an "Annual Summary of Tuberculosis Screening" report, and send it to the cognizant NEPMU (Navy Environmental and Preventive Medicine Unit) by 15 February of each year. The NEPMUs collect and analyze the data, and in turn forward the reports to NEHC (Navy Environmental Health Center) by 01 April. This is separate from the urgent reporting of suspected and confirmed cases of tuberculosis disease, which are reportable conditions, and require submission of

Medical Event Reports via NDRS (Naval Disease Reporting System) according to BUMEDINST 6220.12A. The results of the CY-2001 tuberculosis screening program are presented in Tables 1 through 6: first the overall summary from each NEPMU, and then by Aircraft Carriers, Large Deck Amphibious Vessels, Marine Corps Units, and Major MTFs. A graphical presentation of Active TB case trends is also included (Figure 1). A detailed version of the document is located on the Preventive Medicine Directorate website at <http://www-nehc.med.navy.mil/prevmed/>

Table 1. Summary of 2001 Reports by NEPMUs

SHIP/ Station	Total Personnel	% Tested	New Reactors Identified	TST Conversion Rate (%)	Active Cases
NEPMU2	308743	65.9	3110	1.5	4
NEPMU5	129362	65.6	1284	1.5	13
NEPMU6	30351	84.6	453	1.8	0
NEPMU7	16381	42.1	107	1.6	0
TOTAL	484837	66.2	4954	1.5	17

Table 2. Summary of 2000 Reports by NEPMUs

SHIP/ Station	Total Personnel	% Tested	New Reactors Identified	TST Conversion Rate (%)	Active Cases
NEPMU2	294267	70.8	2441	1.2	3
NEPMU5	106819	81.4	1362	1.6	5
NEPMU6	36313	65.7	434	1.8	2
NEPMU7	13288	51.8	90	1.3	2
TOTAL	450687	72.3	4327	1.3	12

Table 3. Details of 2001 Reports received from Aircraft Carriers

SHIP	% Tested	New Reactors Identified	TST Conversion Rate (%)	Active Cases
USS CARL VINSON (CVN 70)/ 20993	109.3	25	0.8	0
USS CONSTELLATION (CV 64)/ 03364	74.9	3	0.1	0
USS DWIGHT D EISENHOWER (CVN 69)	71.7	5	0.2	0
USS ENTERPRISE (CVN 65)	Did not report			
USS GEORGE WASHINGTON (CVN 73)	84.8	26	1.0	0
USS HARRY S. TRUMAN (CVN 75)	112.1	2	0.1	0
USS JOHN C STENNIS (CVN 74) / 21847	94.2	6	0.2	0
USS JOHN F. KENNEDY (CV 67)	96.2	24	0.9	0
USS KITTY HAWK (CV 63)	92.3	6	0.2	0
USS NIMITZ (CVN 68)/ 03368	58.3	1	0.1	0
USS RONALD REAGAN (CVN 76)	33.7	2	0.4	0
USS THEODORE ROOSEVELT (CVN 71)	92.7	7	0.2	0
TOTAL	86.5	107	0.3	0

Table 4. Details of 2001 Reports received from Large Deck Amphibious Vessels

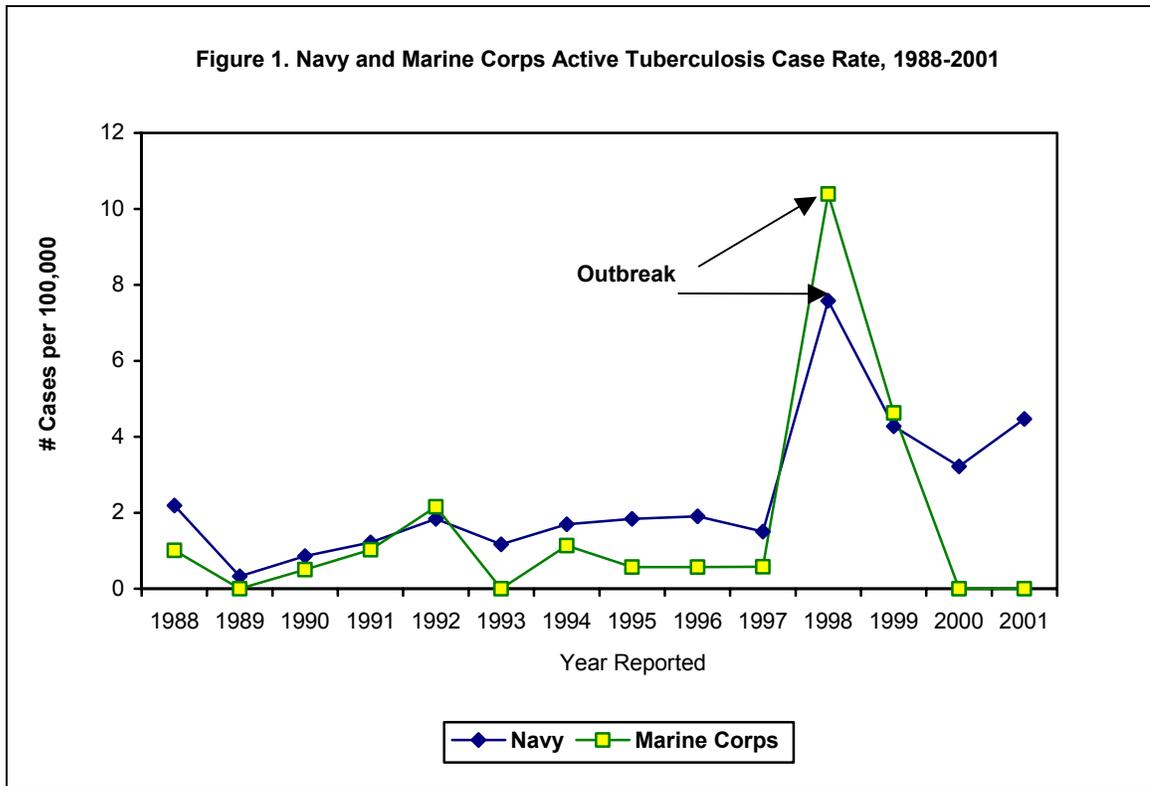
SHIP	% Tested	New Reactors Identified	TST Conversion Rate (%)	Active Cases
USS BATAAN (LHD 5)	Did not report			
USS BELLEAUWOOD (LHA 3)	96.0	16	1.5	0
USS BONHOMME RICHARD (LHD 6)	89.3	8	0.4	4
USS BOXER (LHD 4)/ 21808	83.0	4	0.5	0
USS ESSEX (LHD 2)	88.9	8	0.9	0
USS IWO JIMA (LHD 7)	80.6	11	1.2	0
USS KEARSARGE (LHD 3)	Did not report			
USS NASSAU (LHA 4)	70.2	4	0.5	0
USS PELELIU (LHA 5)/ 20748	122.0	23	1.7	0
USS SAIPAN (LHA 2)	Did not report			
USS TARAWA (LHA 1)/ 20550	72.8	0	0.0	0
USS WASP (LHD 1)	80.0	5	0.6	0
TOTAL	84.8	55	0.8	4

Table 5. Details of 2001 Reports received from Reporting Marine Corps Units

COMMAND REPORTING	% Tested	New Reactors Identified	TST Conversion Rate (%)	Active Cases
2ND FSSG, NC	84.9	69	1.4	0
2ND MARDIV, NC	106.0	145	1.2	0
2ND MAW, CHERRY POINT, NC	71.0	73	1.1	0
1ST MARDIV 29 PALMS / 48139	101.5	38	0.8	0
1ST MARDIV CAMP PEN. / 67448	85.6	117	1.3	0
1ST FSSG / 67446	84.6	17	0.6	0
3RD MAW / 46623	86.6	17	0.3	0
MARINE AIR GROUP 13 YUMA / 31055	56.3	13	1.0	0
MARINE MOUNTAIN WAREFARE TRN / 33610	71.5	1	0.5	0
TOTAL	87.3	490	1.0	0

Table 6. Details of 2001 Reports received from Major MTFs Navy Wide

COMMAND REPORTING	% Tested	New Reactors Identified	TST Conversion Rate (%)	Active Cases
NAVAL AMBULATORY CARE CENTER GROTON CT	11.1	11	0.9	0
NAVAL MEDICAL CENTER BETHESDA MD	92.0	163	4.5	0
NAVAL MEDICAL CENTER PORTSMOUTH, VA	41.7	35	2.1	0
NAVAL MEDICAL CENTER SAN DIEGO / 00259	42.3	13	1.0	5
NAVHOSP BEAUFORT, SC (NH STAFF)	43.9	7	1.6	0
NAVHOSP BREMERTON / 68095	11.5	22	6.0	0
NAVHOSP CAMP LEJEUNE NC	67.7	79	1.8	1
NAVHOSP CAMP PENDLETON / 68094	70.5	13	0.7	0
NAVHOSP CHARLESTON, SC	56.6	32	17.8	0
NAVHOSP CHERRY POINT, NC	Did not report			
NAVHOSP CORPUS CHRISTI, TX	50.8	23	1.9	0
NAVHOSP, GREAT LAKES	18.1	9	0.9	0
NAVHOSP GUANTANAMO BAY CUBA	26.6	3	1.5	0
NAVHOSP JACKSONVILLE, FL	47.4	23	0.5	0
NAVHOSP KEFLAVIK, ICELAND	Did not report			
NAVHOSP LEMOORE / 66095	27.7	13	0.7	0
NAVHOSP PENSACOLA, FL	33.9	34	0.8	0
NAVHOSP ROOSEVELT ROADS, PUERTO RICO	96.8	68	2.9	0
NAVHOSP TWENTY NINE PALMS / 36949	8.3	5	3.2	0
USNH GUAM	90.8	8	0.6	0
USNH NAPLES, ITALY	0.4	23	176.9	0
NAVHOSP OAK HARBOR / 66097	57.1	116	3.0	0
USNH OKINAWA, JAPAN	97.4	0	0.0	0
USNH ROTA, SPAIN	87.6	17	0.7	0
USNH SIGONELLA, ITALY	29.9	21	2.1	0
USNH YOKOSUKA, JAPAN	15.4	20	5.9	0
TOTAL	41.0	758	1.9	6



ANTHRAX VACCINE IMMUNIZATION PROGRAM (AVIP)

ANTHRAX VACCINE ADVERSE EVENT REPORTING SYSTEM (VAERS) UPDATE

Table 1 displays the total Anthrax VAERS reports submitted through 30 June 2002. The source of this data is the Army Medical

Surveillance Activity (AMSA). No new reports were submitted for this quarter.

Table 1. Cumulative Data (date 28 Aug 1998 – 30 Jun 2002)							
Service	VAERS Report		Classification			Systemic Reaction	Cum. Totals
	Required		Local Reaction				
	Yes	No	Mild	Moderate	Severe		
USA	13	106	14	23	13	69	119
USN	4	69	6	7	8	52	73
USAF	30	419	31	49	30	339	449
USMC	2	26	1	6	2	19	28
USCG	0	1	0	1	0	0	1

Excludes 4 ODS/DS VAERS Reports on Anthrax and Non-DoD Reports

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