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NAVAL MEDICAL SURVEILLANCE REPORT

N M S R

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From The Population Health Director

CAPT Bruce K Bohnker, MC, USN (FS)

As the fall foliage starts to appear in the trees of Hampton Roads, we can report many changes at NEHC. The first you may notice in the title above, since I have been designated the Director for Population Health. Effective 01 September 2002, the former Preventive Medicine and Health Promotion Directorates were combined under that new title, or perhaps better described as recombined in a "back-to-the future" realignment. We don't expect many changes in the day-to-day operations; CAPT Jim McGinnis will continue as the Deputy Director for Preventive Medicine and Ms. Lynn Klanchar will continue as the Deputy Director for Health Promotion. Still, the change will provide more staff interactions and project coordination in the "win-win" model. We are sad to see CAPT Robert Brawley and CAPT Deborah McKay transfer from NEHC, and will be challenged to maintain their high standards and expectations in the Health Promotions world. This is still an interesting development that brings many opportunities, including the Chief of Naval Operations - Admiral Vern Clark's number one initiative for 2002: Task Force for Excellence through Commitment to Education and Learning (EXCEL). Working with that initiative will allow us to take Population Health (Health Promotion and Preventive Medicine) down to the individual sailor.

Several personnel changes warrant noting. Ms. Tamara Telfair left to work toward a Ph.D. at the University of Florida in Pharmacy Health Care Administration. Before she left, she presented a poster at the U.S. Army sponsored Tri-Service Force Health Protection Conference in Baltimore, entitled: "Tuberculosis in the U.S. Navy and Marine Corps: A Two-Year Retrospective Analysis, 1999-2000." Ms. Telfair was our ORISE contract epidemiologist,

and we have been authorized to hire three more ORISE epidemiologists for the next year, which are in the selection process now. One will be working on injury surveillance coordinating with Headquarters Marine Corps; another will be working on laboratory surveillance as part of a Department of Defense Global Emerging Infection System (DoD GEIS) proposal; the third will be working to develop and mature the Navy Environmental Health Center's Epidemiology Center (NEHC "EPICENTER") as part of improved medical surveillance activities. We warmly welcome back HM2(SW) Collin Bowman from his arduous duty in Guantanamo Bay, Cuba (GTMO), in support of "Operation Enduring Freedom". We have shared many stories about duty at that isolated base.

A number of staff members have also made notable contributions. CAPT Jim McGinnis made presentations at the Force Health Protection Conference on Lyme Disease and Malaria based on analysis of Naval Disease Reporting System (NDRS) data. LT Rohini Suraj and Mr. Bob Odette have been putting the finishing touches on Chapter 6 of the Manual of Naval Preventive Medicine (P-5010). CDR Mark Malakooti, Ms. Asha Riegodedios, Ms. Becky Washburn and HM1(AW) Isaiah Corbin collaborated on a well-received poster on e-Health in Navy Preventive Medicine for the Navy Surgeon General's Conference. CAPT Robert Brawley, CDR Rick Stoermann, LT Erica Schwartz, Mr. Steve Heaston, and Ms. Lynn Wiederhold prepared an exceptional Fifth Annual Clinical Epidemiology Training Course (CETC) at the Naval Amphibious Base Little Creek, expanding our clinical epidemiology capabilities throughout Navy Medicine. We are excited with continuing efforts in the Population

Naval Medical Surveillance Report

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Views and opinions expressed are not necessarily those of the Department of the Navy

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Health area to develop processes to mine data for the medical treatment facilities in areas such as diabetes and asthma. CDR Michael Mann has been busy with the West Nile Virus Surveillance reporting, which has been a newsworthy topic of late. CDR Mark Malakooti, traveled to São Tome, West Africa, with entomologists from the Disease Vector Ecology Control Center Jacksonville, Florida to continue work on the São Tome malaria control program. He also traveled to Eritrea and Kenya as part of the U.S. Department of Defense HIV/AIDS Prevention Program in African militaries. I have been busy with a number of meetings and conferences, including completion of the CETC in July. I also attended discussions at the Naval Health Research Center on Medical Data Surveillance System (MDSS) in July, the Armed Forces Epidemiology Board in September, and served with Commander Joint Task Force Civil Support (CJTF-CS) for Exercise Blue Advance in a smallpox response scenario. Additionally, I was also invited to present at the Force Health Protection Conference on "Pulmonary Function Changes for Personnel in the Navy Asbestos Medical Surveillance Program."

We are getting more involved in ongoing development and maturation of the Centers for Disease Control and Department of Defense (CDC/DoD) Smallpox Response Plan. Please check our webpage at <http://www-nehc.med.navy.mil/prevmed/epi/Smallpox.htm>

[navy.mil/prevmed/epi/Smallpox.htm](http://www-nehc.med.navy.mil/prevmed/epi/Smallpox.htm) for the draft documents. We plan to include at least one session for the NEHC Workshop on Smallpox issues, along with many other topics. CAPT Jim McGinnis will again be the NEHC Workshop Director and is assembling the session chairmen for the workshop now, which will be 8-16 May 2003 in San Diego, California. Mark your calendar for that important meeting. HMC (SW/AW) Fred Gutermuth has been meeting with Second Fleet staff personnel to discuss the business rules for the proposed development of the web-based Disease Non-Battle Injury (DNBI) submission tool. We continue to work to incorporate DNBI reporting into fleet and Marine Corps exercises, as well as support ongoing efforts in Naval Forces Central Command.

Ms. Lea Gilchrist continues to work with the folks at the Space and Naval Warfare Systems Command (SPAWARSYSCOM) on the new modules for disease reporting and surveillance in SAMS (SNAP Automated Medical Systems). I would like to express my thanks to Ms. Nancy Branch, our office manager, who keeps me on track and ensures the timely quarterly production of the NMSR. We thank our customers for their articles, input and participation in efforts to deliver the best military health care to the troops who continue to defend the Constitution and our way of life.

Anthrax Vaccine Immunization Program (AVIP)

Anthrax Vaccine Adverse Event Reporting System (VAERS) Update

Table 1 displays the total Anthrax VAERS reports submitted through 30 September 2002. No new reports were submitted for this quarter.

The source of this data is the Army Medical Surveillance Activity (AMSA).

Table 1. Cumulative Data (date 28 Aug 1998 – 30 Sep 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							

**Abstract: U.S. Navy and Marine Corps Hearing Conservation Program, 1995-1999:
Mean Hearing Thresholds for Enlisted Personnel by Gender and Age Groups**

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*Editor's Note: Abstract from Mil Med 2002
Feb;167(2):132-5.*

This study presents mean hearing thresholds from a cross-sectional study of 68,632 monitoring audiograms submitted to the Navy Environmental Health Center from 1995 to 1999. Records included U.S. Navy and U.S. Marine Corps enlisted personnel (Navy men = 51,643; Navy women = 4,184; Marine Corps men = 12,251; Marine Corps women = 554). Mean hearing thresholds were calculated for age groups (17-24, 25-29, 30-34, 35-39, 40-44, 45-49, and 50 years and older), gender (male/female), and service (Navy/Marine Corps). Although hearing

thresholds worsened with increasing age, as expected, Navy and Marine Corps men have worse levels than Occupational Safety and Health Administration age-corrected values throughout most of their careers, whereas women were closer to the Occupational Safety and Health Administration values. Hearing thresholds in the Navy have not improved appreciably from historical reports. Threshold variability, as revealed by standard deviations, increased with age and paralleled threshold levels. This epidemiological information suggests that hearing conservation continues to be an important force health protection issue.

**Abstract: Navy Hearing Conservation Program:
Threshold Shifts in Enlisted Personnel, 1995-1999**

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*Editor's Note: Abstract from Mil Med 2002
Jan;167(1):48-52.*

This study presents audiometric information from 54,057 Navy enlisted personnel in the Navy and Marine Corps Hearing Conservation Program database from 1995 to 1999. The purpose was to compare current threshold shift patterns for Navy enlisted population with historical literature and review programmatic effectiveness issues. The data suggest that 82% of the population did not display significant threshold shift (STS) on the "annual" and "termination" audiograms, which

increased to 94% after the "follow-up 2" examination. Compared with historical data, STS rates were significantly lower for the most junior enlisted personnel (E1-E3) (odds ratio = 0.34, $p = 0.00$, 95% confidence interval = 0.30-0.39) but not significantly different for more senior enlisted personnel (odds ratio = 0.96, $p = 0.22$, 95% confidence interval = 0.90-1.03). STS rates did not appear to correlate with expected "high" and "low" noise exposure Navy enlisted occupations. This suggests further investigation to readdress the possible risk factors other than noise intensity/duration.

West Nile Virus Activity in the United States, 2002

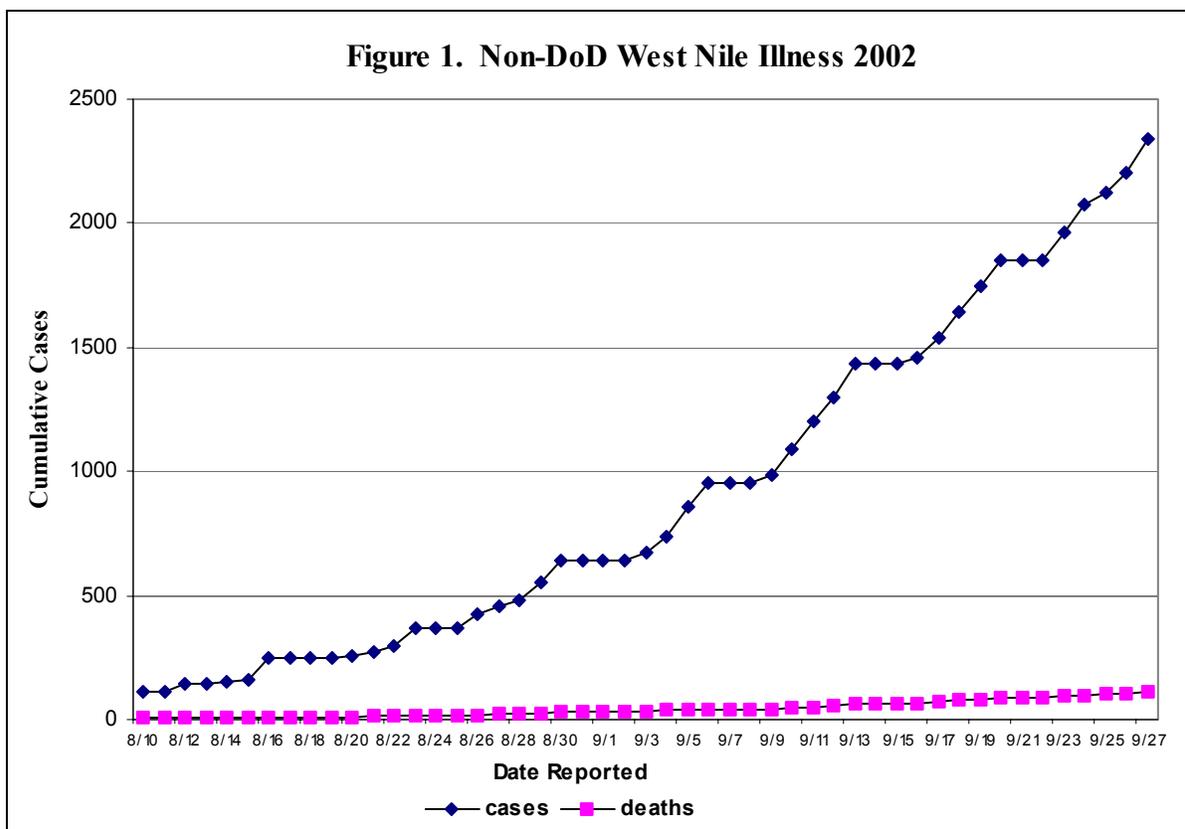
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Navy Environmental Health Center, Portsmouth, VA

The rapid spread of West Nile Virus (WNV) in calendar year 2002 exceeded most, if not all predictions. By the end of 2001, most biologists accepted that continued spread westward would eventually occur; few expected the drastic increase in distribution and impact on humans in 2002. Fortunately, as of mid-September we have had no military cases, possibly because we've done a great job of mosquito control, but more likely our young and healthy active duty military personnel remain asymptomatic even if infected.

Data from DoD vector surveillance efforts in 2002 show WNV presence on 22 military installations in 14 states and the District of Columbia. By mid-September, 75,320 mosquitoes in 8,105 "pools" had been submitted to U.S. Army Center of Health Promotion and Preventive Medicine (USACHPPM) - North for virus testing. Nine installations submitted a total of 230 WNV positive pools. Sixteen pools of

mosquitoes in the genus *Aedes* contained virus; the remainder were *Culex* species. Eighteen military bases have submitted a total of 51 WNV positive dead birds. Military horses are vaccinated, but one privately owned horse stabled on a military base has died of WNV infection.

These data generally mimic WNV activity in the surrounding areas, but human cases in our active duty and dependent populations remain absent. Human cases outside DoD have increased rapidly through August and early September. Figure 1 demonstrates the increasing number of civilian cases and deaths from WNV through mid-September. In over 2300 confirmed or probable WNV illnesses in 32 states, the case fatality rate is approximately 5%. Using data from states with higher numbers of reported WNV infections (Illinois, Missouri, Ohio, Louisiana, and Michigan) the following numbers or trends are evident:



- In Illinois, no fatalities have been reported in persons under age 60, and 76% of fatalities were in those age 75 or older. Males and females are infected in approximately equal numbers. Illness in those under age 30 is uncommon.
- In Louisiana, two of 11 fatalities were under 75; mean age (n=11) was 78.2. Cases of illness per 100,000 population age 75 or over are approximately equal to the cases per 100,000 under age 75.
- Data for 131 WNV illnesses in Michigan and 143 in Ohio show nearly identical

age trends. In Michigan, mean age of WNV patients is 58.2, and mean age of fatal infections (n=9) is 74.4. In Ohio, mean age for all WNV illnesses is 58.1; mean age with fatal outcome (n=7) is 76.7.

No data from any state indicate increased risk of WNV illness in the young or very young. For our relatively young, healthy active duty population, and their families, risk of severe illness from WNV infection remains very low.

West Nile Virus Infection and Laboratory Diagnosis

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Background

A recent medical evaluation and initial laboratory studies of a Marine from Cherry Point, North Carolina, raised suspicion for what would have been the first clinically significant presentation of West Nile Virus (WNV) infection in an active duty person. Clinical signs and symptoms, together with laboratory confirmations are important when making the diagnosis of WNV infection. The work-up for the Marine was appropriate given the natural spread of the WNV in animal and bird populations along the eastern shores of the United States. Accurate interpretation and reporting of laboratory data is paramount, so that the Line Command is provided correct information and can make appropriate responses to potential WNV infections. The laboratory results of active duty military personnel may be significantly different from civilians due to travel and immunization history.

WNV is a single-stranded Ribonucleic Acid (RNA) virus in the family *Flaviviridae*, genus *Flavivirus*, and is a member of the Japanese encephalitis virus serocomplex, which contains

several medically important viruses, including Japanese encephalitis, St. Louis encephalitis, Murray Valley encephalitis, and Kunjin virus; all are associated with human encephalitis.

Diagnosis of WNV infection is based on a high index of clinical suspicion and obtaining specific laboratory tests.

- WNV, or other arboviral diseases such as St. Louis encephalitis, should be strongly considered in adults ≥ 50 years who develop unexplained encephalitis or meningitis in summer or early fall.
- The local presence of WNV in animals and other human cases should further raise clinical suspicion.
- Obtaining a recent travel history is important in clinical decision-making.
- Severe neurological disease due to WNV infection has occurred in patients of all ages, and year-round transmission is possible in some areas. Therefore, WNV should be considered in all persons with unexplained encephalitis and meningitis.

Clinical Presentation

Mild WNV infections: Most WNV infections are mild and often may be clinically unapparent. Approximately 20% of those infected develop a mild illness (West Nile fever). The incubation period is thought to range from 3 to 14 days. Symptoms are generally present for 3 to 6 days. When presenting as a mild infection, reports from earlier outbreaks of WNV infection have described a febrile illness of sudden onset often accompanied by the following: malaise, headache, anorexia, myalgia, nausea, rash, vomiting, lymphadenopathy, and eye pain. The full clinical spectrum of West Nile fever as it presents in the United States has not been determined.

Severe WNV infections: Approximately 1 in 150 infections will result in severe neurological disease. The most significant risk factor for developing severe neurological disease is advanced age. Encephalitis is more commonly reported than meningitis. In recent outbreaks, the following symptoms occurred among patients hospitalized with severe disease: fever, gastrointestinal symptoms, weakness, and change in mental status. A minority of patients with severe disease developed a maculopapular rash or small red papules involving the neck, trunk, arms, or legs. Several patients experienced severe muscle weakness and flaccid paralysis. Neurological presentations included: ataxia and extrapyramidal signs, cranial nerve abnormalities, myelitis, optic neuritis, polyradiculitis, and seizures. Although not observed in recent outbreaks, myocarditis, pancreatitis, and fulminant hepatitis have been described.

Laboratory Diagnosis

The most efficient diagnostic method is detection of IgM antibody to WNV in serum or cerebral spinal fluid (CSF) collected within 8 days of illness onset using the IgM antibody capture enzyme-linked immunosorbent assay (MAC-ELISA). Since IgM antibody does not normally cross the blood-brain barrier, IgM antibody in CSF strongly suggests central nervous system infection.

The following is the minimal information required when submitting specimens to be tested (timing is very important in interpretation of results):

- Patient's name, address, age, and sex
- Physician's name, address, and telephone number
- Date of onset of patient's illness
- Type of specimen collected
- Date of specimen collection
- Clinical signs and symptoms of patient

Further information regarding specific state requirements for data collection and submission can be found in the links at the following website: http://www.cdc.gov/ncidod/dvbid/westnile/city_states.htm

Serological Studies: The close antigenic relationship of the flaviviruses, particularly those belonging to the Japanese encephalitis complex, accounts for many serologic cross-reactions observed in diagnostic evaluation. Positive IgG results to St. Louis Encephalitis (SLE) and WNV indicate a possible prior infection with one or more of these flaviviruses at some undetermined time. The Marine in question had positive IgG antibodies to WNV and SLE, indicating a possible prior infection.

Positive IgM results can be considered presumptive evidence of recent infection. The Marine had negative IgM results, making the likelihood of recent infection highly improbable. Convalescent sera can later be used to confirm acute infection if both the IgG and IgM antibody screening is positive for WNV. If both tests are positive, the data is considered presumptive evidence of recent infection with WNV or a closely related flavivirus such as SLE. Further testing of convalescent sera is necessary to confirm this diagnosis. There is no indication to obtain convalescent cerebrospinal fluid. This question was asked of two state health laboratories regarding the further evaluation of the Marine. (Trying to get an individual to undergo a lumbar puncture when he/she is well has the potential to do harm and does not provide the type of sample necessary for testing).

Further complicating the interpretation of serology studies is that sera of patients who have been recently vaccinated against related flaviviruses (e.g., yellow fever and/or Japanese encephalitis) may have positive IgG results in the initial screening due to cross-reactivity. Positive IgG results in this setting may be the result of effective immunization and not prior infection. Previous infection with another flavivirus (e.g., dengue fever and/or SLE) can also cause the initial IgG screening to have a positive titer. Recent blood transfusions can also produce positive screens, depending upon the infection history of the blood donor. The Marine in question had received yellow fever vaccine, and the North Carolina State Laboratory reported he had a prior infection with dengue fever.

In summary, preliminary laboratory data must be interpreted with caution, and correlated with the patient's clinical presentation and past medical, travel, transfusion, and vaccine history. (*NOTE: WNV IgM class antibody has also been shown to persist for over a year post-infection in some patients*). The laboratory concluded that the Marine did not have WNV infection, and the positive IgG titer was most likely due to cross-reactivity with his response to yellow fever immunization and prior dengue infection.

References:

<http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>

Preventive Health Assessment - Lessons Learned By Pilot Sites Released

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Preventive Health Assessment (PHA) was directed by the Chief of Naval Operations and Commandant of the Marine Corps for the purpose of consolidating medical, occupational health and risk screening services, medical record review, preventive counseling, and risk communication under the umbrella of an annual assessment for all active duty (AD) men and women. A NAVADMIN Message R 171426Z SEP 02 was recently released outlining some helpful processes and recommendations from Camp Lejeune, Pearl Harbor and Yokosuka on the lessons learned from their 6 month pilot period (Jan-Jun 02) for PHA implementation. Tips related to determining the recall process, identifying a command champion, and determining a documentation process were addressed. The message gives some specific useful directions. For example: Non-credentialed providers should use ADS (Automated Data System) code V70.5_2 (Periodical Preventive Exam) and E & M (Evaluation & Management) code 99211 when documenting a PHA visit. This was the second in a series of NAVADMIN messages since the OPNAVINST 6120.3 established the Navy and Marine Corps requirements for the PHA in Dec 01. There is a

one-year timeline for full implementation of the requirements of the instruction.

The OPNAV and NAVADMIN messages can be found on the Navy Environmental Health Center Health Promotion web pages at <http://www-nehc.med.navy.mil/hp/index.htm>; click on "Preventive Health Assessment". Also available at the site are a sampling of tools from various commands that are being used for PHA implementation. Commands are asked to utilize and improve upon pilot site experiences as they comply with the OPNAV.

Pilot Site points of contact are:

NH Camp Lejeune - Genice Beightol at

ghbeightol@nhlej.med.navy.mil

NH Yokosuka - Robert Sloan at

sloanra@nhyoko.med.navy.mil

NACC Pearl Harbor - LCDR Deb Deleo at

dadeleo@prl10.med.navy.mil

BUMED point of contact for PHA is CDR Donna Cain at dlcain@us.med.navy.mil

Please share any helpful locally developed tools and feedback to the NEHC point of contact, Steve Heaston at heastons@nehc.med.navy.mil.

Here are the PHA lessons learned contained in the latest NAVADMIN message:

a. Determine recall process

- Brief line commanders first to gain support.
- Options used for recall process include birth month, partnering with dental, completed during Physical Fitness Assessment (PFA) screening and physical exams.
- Use enrollment data from Composite Healthcare System (CHCS) to identify new AD members.
- Partnership with dental departments allows PHA to be done on check-in and on annual basis.
- Scheduling PHA appointments rather than accepting walk-in visits is a more efficient process.
- Through partnering with MTFs, operational units will more effectively meet requirements of OPNAVINST 6120.3.

b. Identify a command champion

- Successful implementation requires a local champion, and appropriate supporting policies and procedures for each Primary Care site.
- Use mandatory training opportunities to train staff about Force Health Protection and the purpose of PHA.
- Use the DD2766 (Adult Preventive and Chronic Care Flowsheet) PowerPoint training tool for educating staff to accurately fill in the adult flowsheet.

- All Primary Care Providers should be competent in clinical preventive services, risk assessment, and counseling.
- Patients are more likely to model healthy lifestyles when Primary Care Providers are good role models.

c. Determine documentation process.

- Provide education to staff about how and where to document the PHA visit.
- For the PHA to qualify as a medical visit, documentation on a SF600 must include date of treatment, name of clinic and facility, reason for visit, assessment of the patient, description of the interaction between patients and health care provider, disposition, and signature of the provider.
- SF600 overprints are helpful tools for counseling and standardized documentation.
- DD2766 is updated for clinical preventive services and medical readiness information.
- Date of the annual PHA is recorded on the DD2766 in section 7, row 1.
- Record date of PHA in SAMS database under physical exams.
- Use ADS code V70.5_2 (Periodical Preventive Exam) for PHA visit; use E & M code 99211 for non-credentialed providers.

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 Sep 2002.

Table 1. ACTIVE DUTY Reportable Medical Events, Navy & Marine Corps, Case Frequencies, 01 Jan - 30 Sep 2002							
Disease	Total	USN	USMC	Disease	Total	USN	USMC
Amebiasis*	1	0	1	Lyme Disease	18	5	13
Anthrax*	0	0	0	Malaria (specify type) *	3	2	1
Biological warfare agent exposure	0	0	0	Measles*	0	0	0
Bites, rabies vaccine & human rabies IG	12	7	5	Meningitis (aseptic, viral)	14	11	3
Bites, venomous animal	2	2	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*	8	6	2	Occupational exposure to blood borne pathogens	4	4	0
Carbon Monoxide poisoning*	0	0	0	Onchocerciasis	0	0	0
Chemical warfare agent exposure	0	0	0	Pertussis*	2	0	2
Chlamydia	1825	1172	653	Plague*	0	0	0
Cholera	0	0	0	Pneumococcal pneumonia	2	0	2
Coccidioidomycosis	7	6	1	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*	2	0	2	Rocky-Mountain Spotted Fever	1	1	0
Ehrlichiosis	0	0	0	Rubella*	0	0	0
Encephalitis*	1	1	0	Salmonellosis*	6	2	4
Filariasis	1	0	1	Schistosomiasis	1	1	0
Giardiasis	3	2	1	Shigellosis*	3	3	0
Gonorrhea	438	297	141	Smallpox*	0	0	0
Haemophilus influenza, type b	0	0	0	Streptococcal disease, Group A, invasive	10	3	7
Hantavirus infection*	0	0	0	Syphilis	10	9	1
Heat injuries	208	7	201	Tetanus	0	0	0
Hemorrhagic fever*	0	0	0	Toxic shock syndrome	0	0	0
Hepatitis, A (acute, symptomatic only)	0	0	0	Trichinosis	1	1	0
Hepatitis, B (acute, symptomatic only)	8	4	4	Trypanosomiasis	0	0	0
Hepatitis, C (acute, symptomatic only)	1	1	0	Tuberculosis, pulmonary active*	2	2	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)	123	57	66
Leprosy (Hansen's disease)	0	0	0	Varicella	5	3	2
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 382,811 for

USN and 172,192 for USMC. Table 1 shows active duty only. Table 2 shows beneficiaries, including civil service employees and reservists.

Table 2. BENEFICIARIES Reportable Medical Events, Navy & Marine Corps, Case Frequencies, 1 Jan – 30 Sep 2002

Disease	Total	USN	USMC	Disease	Total	USN	USMC
Amebiasis*	0	0	0	Lyme Disease	3	3	0
Anthrax*	0	0	0	Malaria (specify type) *	1	1	0
Biological warfare agent exposure	0	0	0	Measles*	0	0	0
Bites, rabies vaccine & human rabies IG	23	20	3	Meningitis (aseptic, viral)	8	7	1
Bites, venomous animal	0	0	0	Meningitis (bacterial other than Meningococcus)	0	0	0
Botulism*	0	0	0	Meningococcal disease*	2	2	0
Brucellosis	0	0	0	Mumps	1	0	1
Campylobacteriosis*	7	7	0	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*	4	4	0
Chlamydia	553	393	160	Plague*	0	0	0
Cholera	0	0	0	Pneumococcal pneumonia	1	1	0
Coccidioidomycosis	9	9	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*	1	1	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	1	1	0
Ehrlichiosis	0	0	0	Rubella*	0	0	0
Encephalitis*	0	0	0	Salmonellosis*	16	11	5
Filariasis	0	0	0	Schistosomiasis	0	0	0
Giardiasis	3	2	1	Shigellosis*	14	13	1
Gonorrhea	69	57	12	Smallpox*	0	0	0
Haemophilus influenza, type b	1	1	0	Streptococcal disease, Group A, invasive	14	11	3
Hantavirus infection*	0	0	0	Syphilis	5	3	2
Heat injuries	2	1	1	Tetanus	0	0	0
Hemorrhagic fever*	0	0	0	Toxic shock syndrome	0	0	0
Hepatitis, A (acute, symptomatic only)	1	0	1	Trichinosis	1	1	0
Hepatitis, B (acute, symptomatic only)	2	1	1	Trypanosomiasis	0	0	0
Hepatitis, C (acute, symptomatic only)	3	1	2	Tuberculosis, pulmonary active*	5	4	1
Influenza (confirmed)	32	32	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)	3	1	2
Leprosy (Hansen's disease)	0	0	0	Yellow fever*	0	0	0
Leptospirosis*	0	0	0				
Listeriosis	0	0	0				

*Reportable within 24 hours

DOEHRS - HC, A New Tool For Hearing Conservation Program Managers And Epidemiologists

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How does your command's Hearing Conservation Program (HCP) compare with similar commands? Which occupational codes are most closely associated with threshold shift? What is the mean hearing loss at 4000 Hz for a 45-year-old Marine Corps female? Objective answers to the first two questions are readily available by querying the Data Repository of the Defense Occupational and Environmental Health Readiness System - Hearing Conservation (DOEHRS-HC). The third question can be answered through an ad hoc query, which is available on a limited basis through the NEHC Hearing Conservation Team.

As of 30 July 2002, the DOEHRS Data Repository (DR) contained 76,503 civilian and 320,412 military audiograms for Navy and Marine Corps personnel tested since the deployment of DOEHRS in 1999. Most of these records are DD2215 reference and DD2216 monitoring audiograms conducted in support of the HCP. Virtually all medical surveillance hearing tests are now being captured by DOEHRS-HC, and will be available for query when uploaded via the internet at individual test stations throughout DoD.

Audiometric technicians and other occupational health personnel with a DOEHRS account can query the DR concerning any data originating from their own installation. Access to the entire database is restricted to DOEHRS-connected occupational and operational audiologists, who can interpret findings and help plan interventions when indicated. Performance is always judged in comparison to similar activities/organizations. Guidance to obtain/utilize data is posted at <http://www-nehc.med.navy.mil/occm/HPsubpage.htm>.

The following chart of actual active duty data demonstrates the utility of this tool. Note that in CY2001 the selected COMNAVIAIRLANT aircraft carrier had a lower STS (Significant Threshold Shift) rate than comparable groups, and a much lower no-show rate than average, suggesting that medical surveillance aspects of their HCP are in good shape. In 2002 this command stopped uploading data. What happened? Turnover in audio techs? Equipment problems? Neither - just extended deployment. Action taken was to forward this information to the regional audiologist to offer assistance.

Selected Hearing Conservation Data (Active Duty Only)

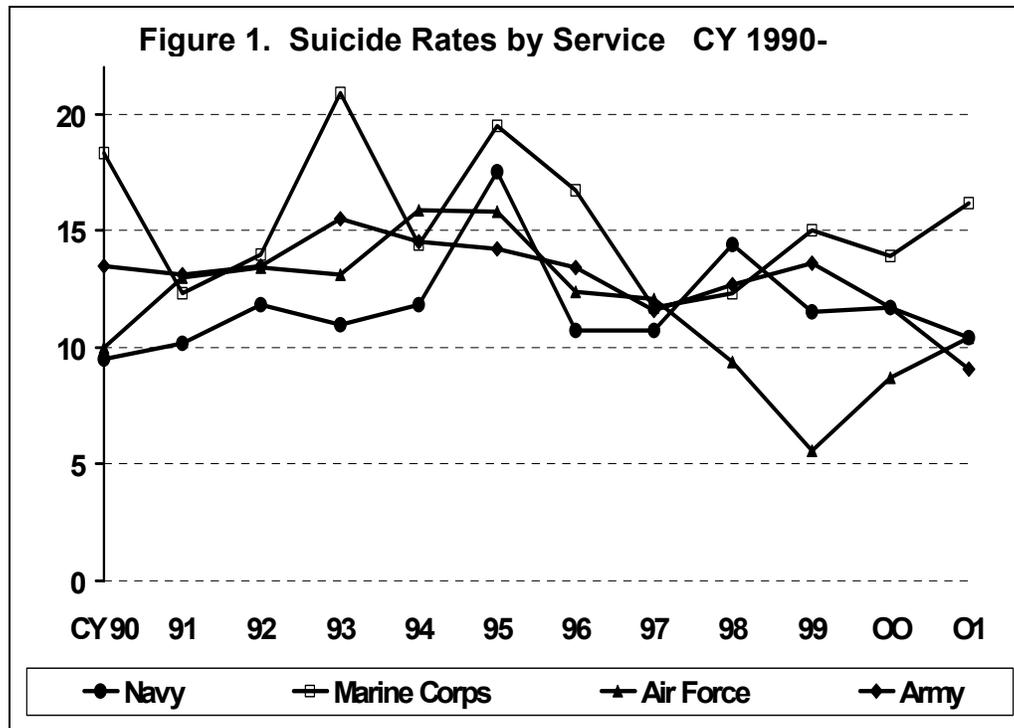
	<u>TIME FRAME</u>	<u>#PERIODIC</u>	<u>% w/STS</u>	<u>% NO-SHOW FU#1</u>
<u>CVN-XX</u>	JAN-DEC '01	1683	21.57%	36.36%
<u>AIRLANT</u>	JAN-DEC '01	8095	26.0%	54.06
<u>AIRPAC</u>	JAN-DEC '01	6065	22.89%	57.06
<u>NAVY</u>	JAN-DEC '01	78465	26.15%	55.21%
<u>USMC</u>	JAN-DEC '01	43192	29.30%	49.63%
<u>CVN-XX</u>	JAN-JULY '02	38	21.05%	62.5%

Suicide Prevention Initiatives in the Marine Corps

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For the past two decades, suicide has ranked as the second leading cause of death for Marines. Over the past ten years, the Marine Corps has averaged 15.4 suicides per 100,000 individuals¹. Since 1997, the Marine Corps suicide rate has gradually increased. It reached a peak rate of 16.2 per 100,000 in Calendar Year 2001 (CY-01), based on the suicides of 28 Marines. According to a Department of Defense (DoD)

study, Marines are more likely than the other branches of service to choose "think about hurting yourself or killing yourself" when given a list of coping strategies². Further, they are the least likely to perceive a need for mental health counseling. Figure 1 provides historical suicide data for the military services. The Marine Corps has, on average, the highest suicide rate of all U.S. Armed Forces.



In an effort to address the climbing rate of suicide, a focus was placed on prevention efforts. A significant effort was seen in January of 2001 when the Navy and Marine Corps distributed a new training package for suicide prevention, "Suicide Prevention: Taking Action, Saving Lives". This kit contains a video, facilitator's manual, and overhead transparencies. The training package was designed to standardize training throughout the fleet and can be used to meet the requirements for annual training. The 19-minute professionally produced video combines

narration and scenarios to illustrate practical ways to intervene with people at risk for suicide. This video was created for all hands, regardless of age or rank. The kit was mailed out to all Navy and Marine Corps units as well as to chaplains, medical clinics, and Family Services Centers.

While many chaplains and Marine Corps units utilized the video and transparencies from the kit and found it useful, several requests were made for new and alternative methods to conduct the required suicide prevention training. Specifically, the trainers wanted materials that were computer-

based and that provided more current data on suicide in the Marine Corps. To answer this need and further improve prevention efforts, the author created a CD ROM containing four Power Point presentations. Speaker notes were included to facilitate the training and to allow for trainers with differing levels of experience the ability to provide similar information. Also included were several graphs of historical suicide data in the Marine Corps (e.g. rates, rank breakdown, gender, race, location, method). The Power Point presentations were tailored to the expected audience; therefore, there are briefs for junior enlisted Marines, officers/ commanders, one generic brief, and one designed for clinicians. CD ROMs will be made available to chaplains, clinicians, and counselors and are slated for distribution in November 2002.

Given the "top-down" managerial style of the military services, it was felt that leadership involvement was necessary if the suicide prevention efforts were to prove effective. One such initiative was to partner the suicide prevention program with the Safety Program, owned by the Assistant Commandant of the Marine Corps (ACMC). Along these lines, the ACMC requested suicide prevention information to be included in the upcoming Safety Campaign

Plan 2002, released by the Commandant of the Marine Corps, General James L. Jones. The Campaign Plan is a 20-page booklet discussing safety initiatives and programs. Sixty-four thousand copies were recently printed and released to the Marine Corps. Suicide prevention was given its own category within on-duty and off-duty mishaps (e.g. on-duty ground, off-duty motor vehicle) and a reduction goal was established. The campaign plan provides historical suicide data and provides risk factor information. Future endeavors are listed, followed by an established goal of reducing suicides by five percent each fiscal year.

To keep suicide prevention information readily available, a pocket-sized prevention card was created as part of the campaign plan (Figure 2 and Figure 3). Two identical, perforated cards were added to the campaign plan booklet. Labeled as "Suicide Prevention Guide", the front of these cards have two headings: Key Risk Factors and Know Your Resources. The reverse side of the card provides practical information on how to handle suicidal behavior. The cards were designed to be detached from the booklet and placed on a desk or in a wallet for easy access.

In addition to the CD ROM and Safety Campaign Plan initiatives, a suicide prevention website was developed containing the information provided

Figure 2. Suicide Prevention Pocket Guide (Front)

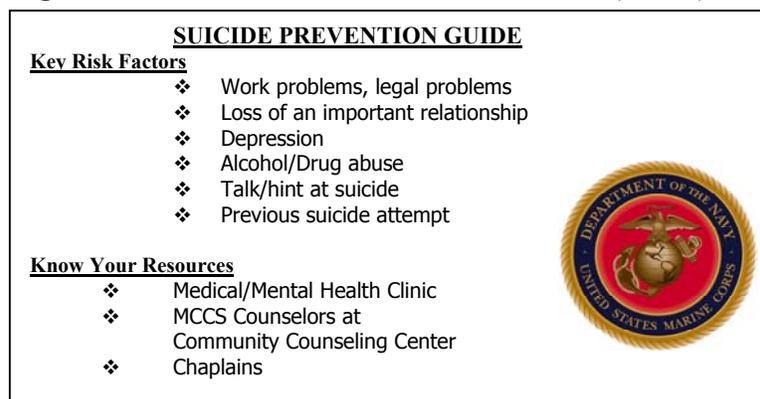
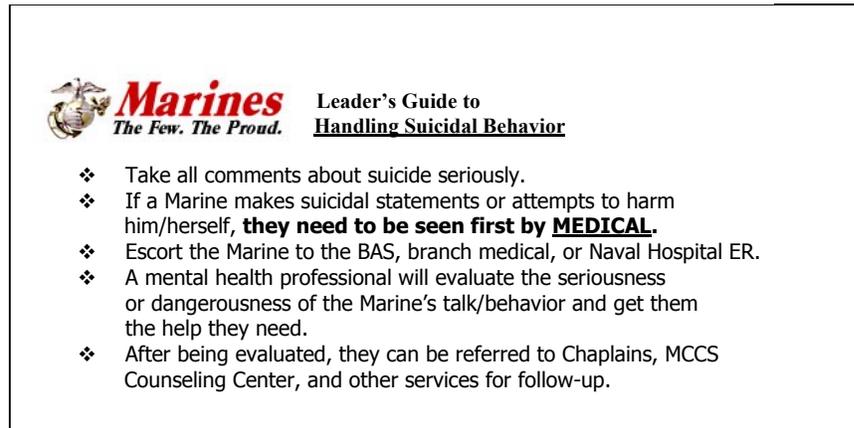


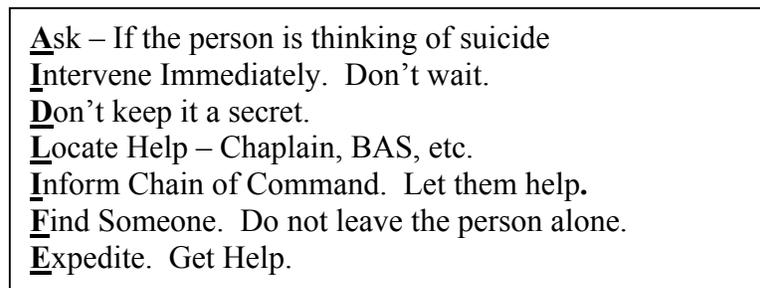
Figure 3. Suicide Prevention Pocket Guide (Back)



in the Suicide Prevention Training Kit. The website can be reached at the following address: <http://www.usmc-mccs.org/perssvc/prevent/suicide.asp>. Further, laminated suicide prevention cards are being created for each installation. The size of a business card, these reference cards will be tailored with installation-specific phone numbers such as chaplain, duty officer,

mental health clinic, and a 24-hour suicide hotline. The installation logo will be on the front along with the AID LIFE acronym (Figure 4), which provides steps to take should someone display suicidal tendencies. The cards will be placed at all medical clinics, counseling centers, chaplain offices, and recreational offices.

Figure 4. AID LIFE Acronym



At this time, the suicide rate for the Marine Corps is down 40% for the calendar year as compared to this same time last year. However, our suicide prevention program will not be a success as long as any Marine ends his or her life by suicide. Strong prevention efforts will continue to be critical elements in reducing suicides. The Marine Corps will continue to create new initiatives and encourage proactive leadership in the fight against suicide.

References:

1. Jones DE, Kennedy KR, Hawkes C, Hourani LA, Long MA, & Robbins DL. "Suicide Prevention in the Navy and Marine Corps: Applying the Public Health Model." Navy Medicine 92. 6:31-36, November-December 2001.
2. Bray, R. M. et al, (1999). 1998 Department of Defense Survey of Health Related Behaviors Among Military Personnel. Report No. RTI/7034/006-FR. <http://www.tricare.osd.mil/analysis/surveys/98survey/survey.html>

Options for Electronic Reporting of Medical Events

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It's said that what doesn't kill you will make you stronger. Starting with the challenge of Y2K compliance testing, and eventually moving to integration into SAMS 8.02.00, there's never been a dull moment in technical support of the Naval Disease Reporting System (NDRS), an electronic tool for the reporting of notifiable events. It's the importance of the mission of disease reporting and how it affects this country that makes the effort worthwhile.

NDRS History

NDRS is essentially a form face to a Microsoft Access® database, and a zip utility. Not very complicated, this simplicity belies the usefulness of the program. It's a small program, easily installed and configured, and is available for use free of charge. NDRS contains custom reports that make record-keeping simpler for the Preventive Medicine Technician (PMT), and it can log medical events that occur not only to active duty servicemen and women, but to retirees, dependents, civilian mariners, foreign military, cadets, contractors, midshipmen, and reserve forces as well. The data file uses a password to protect personally identifiable healthcare information (protected healthcare information (PHI)), designed long before the Health Insurance Portability & Accountability Act of 1996 (HIPAA) regulations were finalized. The format of the output data files lends itself to easy assimilation and analysis with more sophisticated tools. If NDRS was left to work in a vacuum, all would be well and fine. However, NDRS is rapidly becoming overcome by technology.

NDRS Challenges

The most significant problem with NDRS in the IT-21 (ISNS) (Information Technology - Integrated Shipboard Network Systems) certified world is the password-protected data files getting stripped and converted to meaningless text because of recommended email virus filters applied at the Exchange Server level. Simply, password-protected files aren't being allowed through the

firewall; they are being quarantined. Data submissions have dropped considerably since the establishment of this INFOSEC Information Assurance Vulnerability Alert (IAVA). Any site could be affected by this, but it's seen more frequently in the Pacific Rim and hospitals in Europe.

Other problems with NDRS include practical use of the tool. From the user's point of view, stand-alone NDRS is cumbersome because the PMT has to enter the patient's demographic information before the Medical Event Report (MER) can be completed. This consumes too much of the PMT's time. Better methods are being sought.

Solutions

Several solutions have been put into place to bypass the problems stated above. This includes File Transfer Protocol (FTP) transmission, web-enabled data transmission, and reporting through SAMS 8.02.00.

FTP Transmission: Fortunately NDRS has the capability to transmit reports via FTP in addition to e-mail, and this method is recommended for those affected by the quarantine problem. Anonymous FTP service is a potential security hole, but the FTP service in NDRS requires a login and password, plugging this hole. Copy this link into the address window of your browser for more details: http://www-nehc.med.navy.mil/prevmed/epi/FTP_info.htm.

Web-enabled Data Transmission: Another solution for data transmission is web-enabled transmission. The Preventive Medicine Directorate at NEHC has created a Navy Electronic Reporting Disease Web Page by which a PMT from anywhere in the world can connect and transmit their data files. The user will select their Area Of Responsibility from an image map, and attach the MER data file to the e-mail that pops up. The data file will go to both the cognizant Navy Environmental and Preventive Medicine Unit (NEPMU) and Navy Environmental

Health Center (NEHC), and it's hoped that this will help reduce data loss. The PMT can submit data from this page no matter where in the world they're stationed. For a closer look, copy this URL into the address window of your browser:

http://www-nehc.med.navy.mil/prevmed/epi/data_submit.htm.

SAMS 8.02.00: In 2000, the reporting modules of NDRS and Disease and Non-Battle Injury (DNBI) were proposed and accepted for integration into SAMS 8.02.00. There are numerous advantages to using SAMS 8.02.00 for MERs instead of stand-alone NDRS. The primary and foremost reason to use SAMS is ease of use. When SAMS is used for sick call visits, the entry of a reportable ICD-9 will bring up a prompt to complete a MER. There's even a shortcut button in the sick call record to go directly to the medical event reporting section, and the MER screens are already valued with the diagnosis and patient demographics from the sick call record. The PMT has to enter only three mandatory fields to complete the MER. With SAMS, all crew members are in the crew database, so no demographic information has to be entered. An advantage of using it on a ship is that SAMS is ISNS certified, and NDRS isn't. Additionally, the SAMS .sam file doesn't use a password, so it doesn't get caught in the email server virus filters. PHI is protected in SAMS by the use of an obscure .sam extension, which protects the data and at the same time it allows the file to get through the email filters. In SAMS, a single MER can be exported, unlike NDRS, where MERs were exported based on a specified time period. SAMS also maintains a log of what MERs have been finalized and what MERs have been exported. Copy this URL: <http://www-nehc.med.navy.mil/prevmed/epi/NDRS%20EZ%20WEB%20SHOW/index.htm> into the address window of your browser to go to a web show about using SAMS for medical event reporting.

One note about the new SAMS: A disadvantage at this time is the inability to enter records on anyone but active duty personnel. This will change with the 9.XX iteration of SAMS, but until that time, those sites using SAMS for active duty personnel would still have to enter beneficiaries into NDRS

to report. However, there are several other advantages to using SAMS for reporting. First, SAMS is designed for a network and it utilizes a site license, not a seat license. This means that a PMT can request an installation of SAMS to enable him to remotely pull up a list of the days' sick call visits and submit MERs based on this information. The PMT can be located in a more private location for counseling, where he can pull up the sick call record during the disease prevention counseling. SAMS is mandated for immunization tracking, so it should be in use in every medical treatment facility, and can be used by ship and shore alike. SAMS is certified for use on board ship and NDRS isn't, although NDRS is frequently installed on a stand-alone machine. The SAMS data files don't get hung up in the virus detection software like the NDRS .zip files. SAMS is supported by a cadre of professionals at SPAWAR who provide telephonic support, site visits, computer-based training modules, and hands-on in-person training sessions. SAMS is the software that the Navy is supporting in the development effort to become the Theater Medical Information Program-Joint (TMIP-J) software for medical visit documentation, and the PMT community should realize the advantages offered by this versatile software. Say goodbye to Disease Alert Reports (DARs), take NDRS off life support, and embrace the future of Navy Medicine.

Recommended Electronic Reporting Options for shore facilities:

- Navy Electronic Reporting Disease Database Web Page
- NDRS via zip files
- NDRS via FTP
- SAMS 8.02.00
- Data file via floppy disk transfer

Recommended Electronic Reporting Options for afloat vessels:

- SAMS 8.02.00
- Navy Electronic Reporting Disease Database Web Page
- NDRS via zip files
- NDRS via FTP
- Data file via floppy disk transfer

Hospitalization Rates Among Active Duty Navy and Marine Corps

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Hospitalizations reduce Force Readiness, through lost duty days or medical discharge due to severe illness. Routine surveillance of hospitalizations among active duty personnel is therefore of benefit to help guide public health programs and policies.

The Defense Medical Surveillance System (DMSS), operated by the Army Medical Surveillance Activity (AMSA) contains data on medical events (including hospitalizations and outpatient visits) occurring throughout the Department of Defense. The data presented in this report were obtained using Defense Medical Epidemiologic Database (DMED), a software

designed to provide remote access to DMSS (which can be downloaded from the AMSA website at http://amsa.army.mil/AMSA/amsa_home.htm). Figure 1 shows that hospitalization rates have decreased over time for the Navy and Marine Corps. Tables 1 and 2 show the top ten diagnoses for Navy and Marine Corps, respectively.

Mental health and pregnancy related diagnoses are a recurring theme for both services. The Marine Corps has more injury diagnoses in the top ten list than the Navy.

Figure 1. Hospitalization Rates by Service and Year, Active Duty, 1992-2001

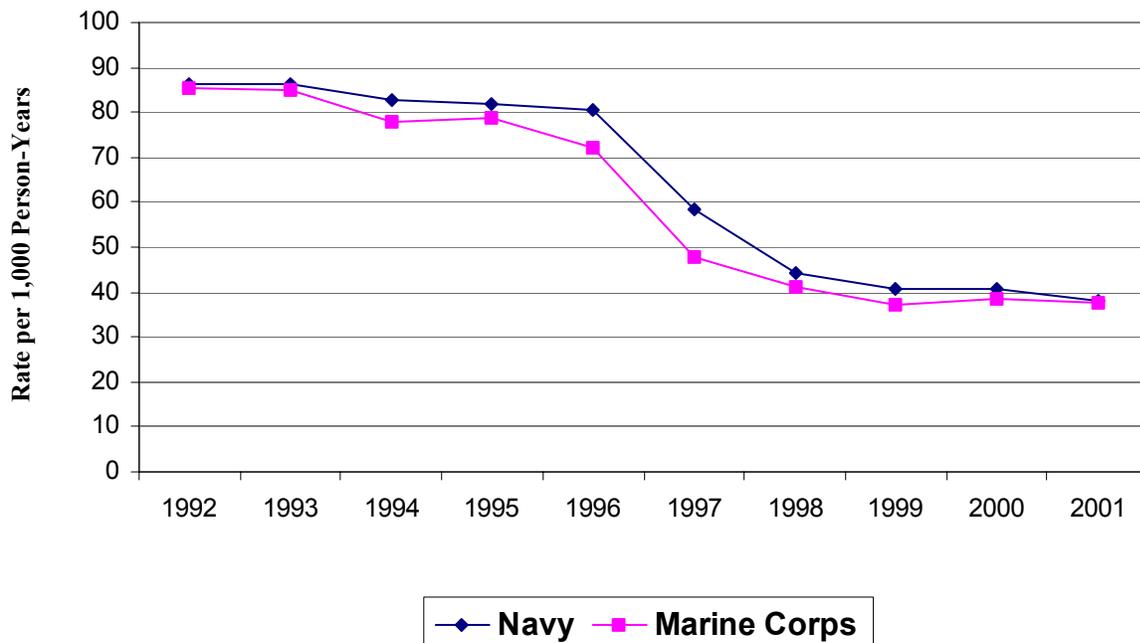


Table 1. Top Ten Diagnoses for Hospitalizations, Active Duty U.S. Navy, 2001

Diagnosis	Rate per 1,000 person-years
Trauma to Perineum and Vulva During Delivery	2.88
Adjustment Reaction	2.04
Personality Disorders	1.14
Other indications for Case Related to Labor and Delivery	1.01
Affective Psychoses	0.99
Intervertebral Disc Disorders	0.92
Acute Appendicitis	0.81
Abnormality of Forces of Labor	0.70
Internal Derangement of Knee	0.66
Symptoms Involving Respiratory System and Other Chest Symptoms	0.65

Table 2. Top Ten Diagnoses for Hospitalizations, Active Duty U.S. Marine Corps, 2001

Diagnosis	Rate per 1,000 person-years
Adjustment Reaction	2.43
Trauma to Perineum and Vulva During Delivery	1.46
Other Cellulites and Abscess	1.18
Acute Appendicitis	0.99
Internal Derangement of Knee	0.90
Other Derangement of Joint	0.84
Intervertebral Disc Disorders	0.78
Affective Psychoses	0.74
Fracture of Ankle	0.72
Pneumonia, Organism Unspecified	0.67

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Official Business