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VOL 4 NO 3

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

As I settle into my responsibilities as the Director for Preventive Medicine at NEHC, several topics have been "front burner" issues lately. The public health response for the potential threat of West Nile Virus throughout the Eastern United States has generated much activity, including the active support from the Navy Disease Vector Ecology and Control Center, Jacksonville, FL (DVECC JAX). We have been involved with medical surveillance, threat assessment and risk communication, including several medical situation reports on the topic that you may have seen. We have been working to update our roster for the Deratting/Exemption Certificate program, which NEHC PM manages for CDC and the Public Health Service according to the updated BUMEDINST 6250.14A. That program has been a historic Naval preventive medicine responsibility, though thankfully, rodent infestations are unusual today. We have also been working on the Navy Disease Reporting System (NDRS), a cornerstone of Deployment Medical Surveillance and Force Health Protection, which is presented in a separate article.

That program is likely to undergo significant changes in response to ongoing developments in information security and patient privacy concerns. Several personnel changes from the directorate warrant specific mention. HM1 Barbara Cooper is now HMC Cooper, though the gain of the USS Harry S. Truman is our loss. HM1 Andrea Wiley has been doubly blessed. First, she was selected for HMC, and also delivered a new baby boy. HMC (FMF) Allen Shores will PCS to NEPMU-7 in Sigonella. Finally, on a less happy note, Dr. Bob Morrow is leaving us to follow his family to Ohio, and we shall continue his efforts with Global Emerging Infection Surveillance (GEIS).

It now looks like our move to Portsmouth will happen in February 2002, so we are still waiting for telephone number assignments. Our email addresses should not change, and we shall put out new telephone numbers in our web site and a notice posted on Thursday Thoughts, the Preventive Medicine electronic newsletter that will link you to our phone book page of our web site. That move will be followed closely with the NEHC workshop in March, so we shall be busy after the New Year. We look forward to showing everybody our new office spaces during the Workshop.

Naval Medical Surveillance Report

Executive Editor:	CAPT B. Bohnker, MC, USN	Submissions and inquiries regarding content or material to be considered for publication should be directed to the Editor, Naval Medical Surveillance Report Navy Environmental Health Center, Preventive Medicine Directorate, 2510 Walmer Ave., Norfolk, VA 23513-2617. Guidelines for submissions are locatec at http://www-nehc.med.navy.mil/prevmed/epi/nmsrpage.htm or e-mail washburnb@nehc.med.navy.mil. To be added to the mailing list, contact the Navy Environmental Health Center at DSN 253-5603, Comm: (757) 462-5603.
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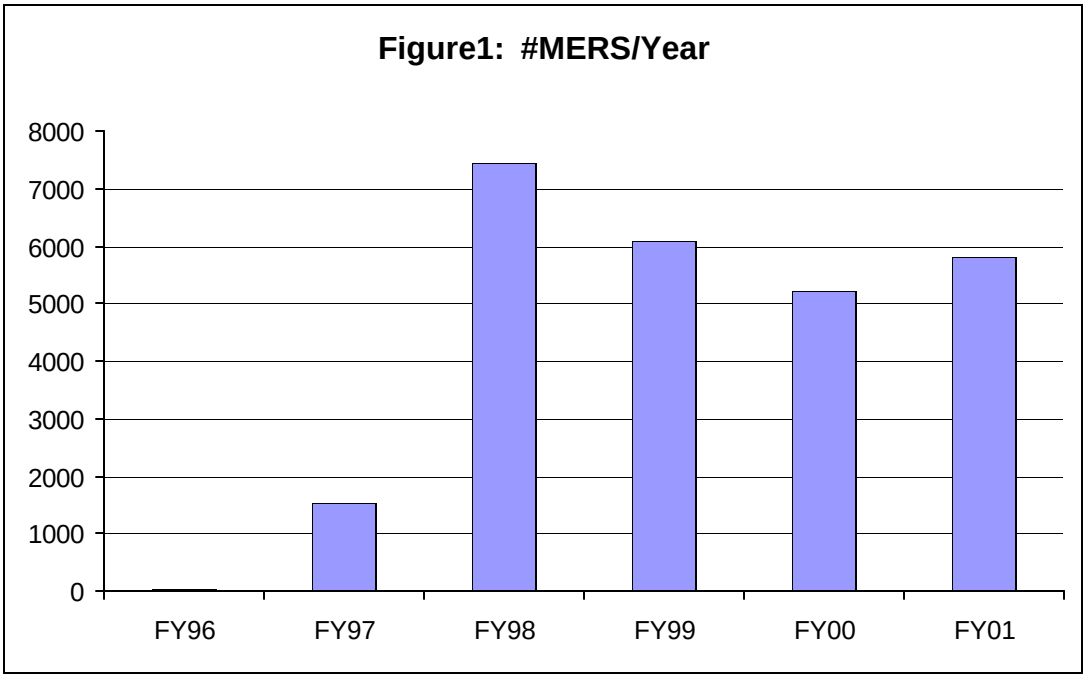
ANALYSIS OF DATA FROM NDRS

Naval Disease Reporting System: Historic Trends

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

One of my initial focus areas as the Director of Preventive Medicine has been the Naval Disease Reporting System (NDRS). Ongoing Medical Surveillance is a touchstone of Preventive Medicine, and NDRS is a critical component, so we have reviewed the information in that database. The basic demographics from the NDRS warrant some discussion, and will be presented in graphic form. **Figure 1** is the number of NDRS reports by calendar year since 1996 when the current computer program came on line. **Figure 2** presents the number of NDRS reports by quarter. These suggest that reporting has stabilized, though variability remains.



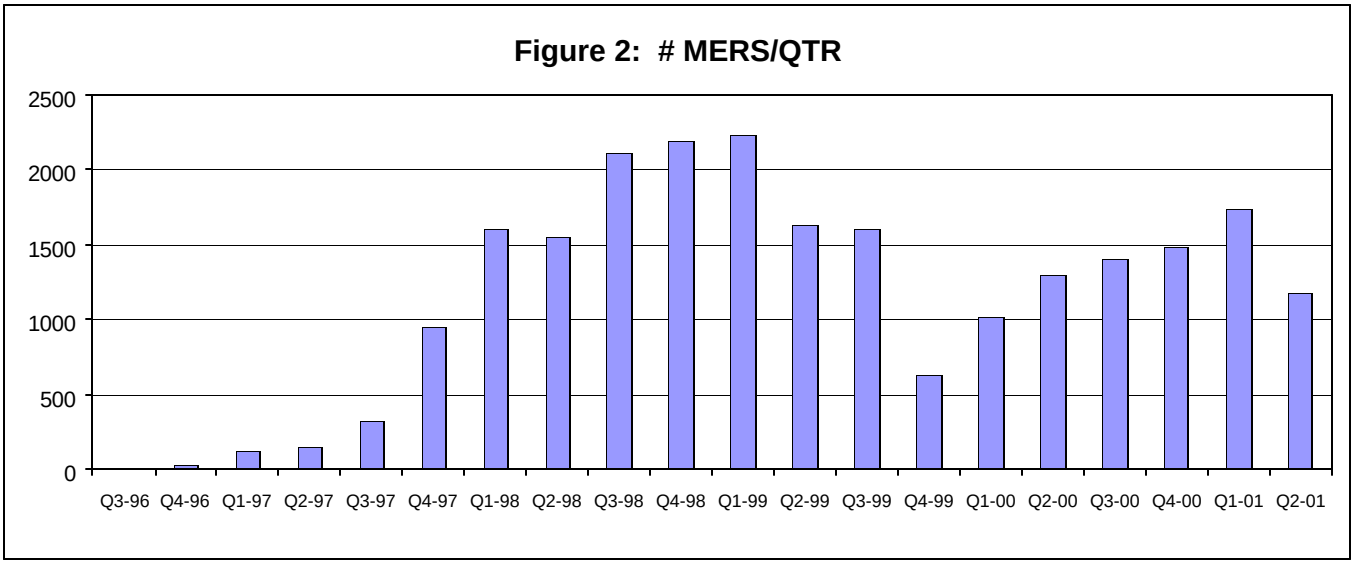


Figure 3 displays the 18 Medical Treatment Facilities (MTFs) producing the most NDRS reports, amounting to over 80% of the total. While the figures might be interpreted to conclude that these leading facilities have the greatest problems, we suspect they really have the better surveillance compliance. This suggests that other facilities are underreporting, which is an area of concern.

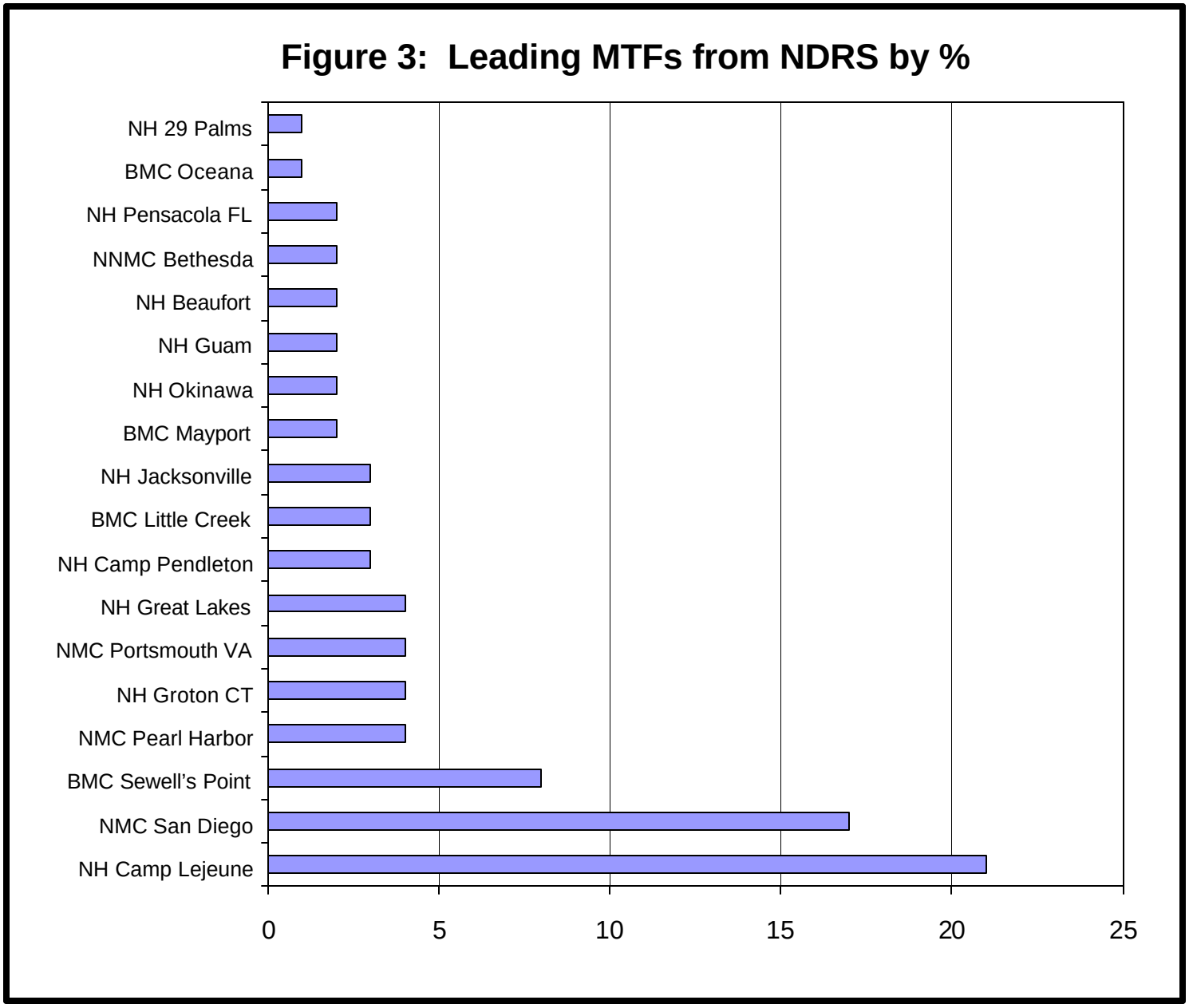
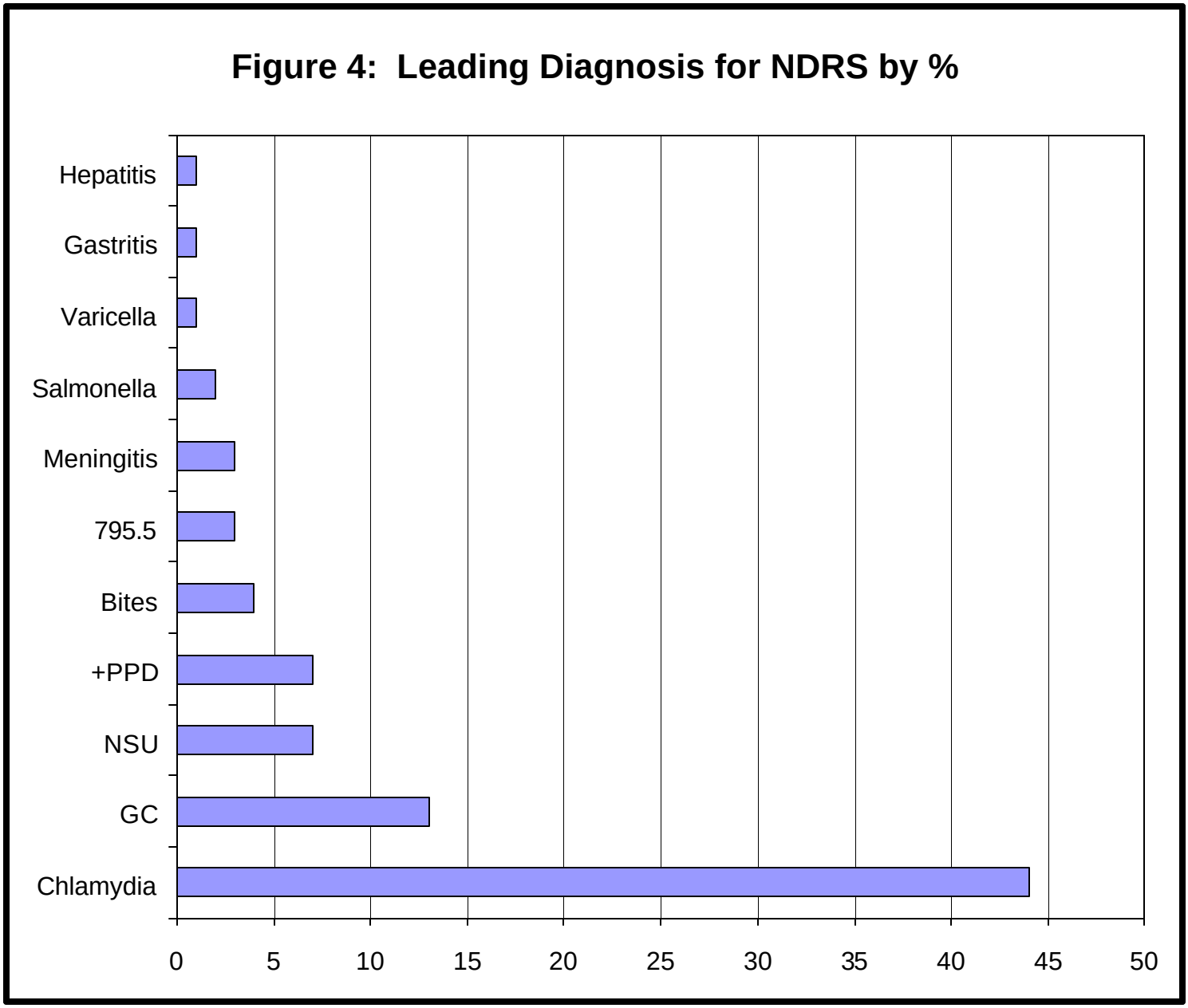


Figure 4 presents the leading diagnoses from NDRS, noting that sexually transmitted diseases provide the largest segment of the reports.



Our review of the overall NDRS program for medical event reporting has identified a number of areas for improvement. The original code used Access 97 as the data engine, and is experiencing difficulties meeting current requirements for computer security, patient privacy, and information management. The original code needed modification for Y2K compliance, and was designed to be used as a stand alone program. As designed, NDRS will not comply with IT-21 (ISNS) standards for use on local area networks (LANs). This failure to meet standards would limit NDRS installation on shipboard LANs. Concerns about computer security have limited information transfer as password protected zip files, since those files may transport "computer viruses," and INFOSEC recommends system administrators to routinely strip off password-protected files, converting the files to "quaranti.txt" files. In addition, the patient privacy issues related to the Health Information Portability and Accountability (HIPAA) law of 1996 are being finalized and may require additional modification of the data or data stream. The NDRS coding has been integrated into the SNAP Automated Medical System (SAMS) version 8.02 which will be released shortly. Look further into SAMS at its web site http://www.massolant.navy.mil/med-sys/sams.htm. Future versions of SAMS will use an 8 digit UIC identifier which will be problematic with current NDRS coding as NDRS is limited to importing only 5 digit UIC identifiers. Thus several areas related to NDRS warrant enhancement and remain front-burner issues for the Preventive Medicine Directorate.

Naval Disease Reporting System (1997-2000): Lyme Disease Reporting for Navy and Marine Corps

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Introduction

Lyme Disease is the most common vector borne disease in the United States. It is found in the eastern United States and collocated with a number of large Navy and Marine Corps operating bases as well as a large retiree population. Thus it has the potential to be a significant health threat for active duty personnel, family members and military retirees, and of interest to Navy Preventive Medicine.

Background

Lyme Disease is a tickborne, spirochetal illness, which in the eastern United States is caused by *Borrelia burgdorferi* and is transmitted by the bite of the tick *Ixodes scapularis* (also called *I. dammini*).[1] Lyme Disease cases in the Navy and Marine Corps were previously reported in the January to March 1999 issue of the Naval Medical Surveillance Report.[2] Its overall incidence in 1999 was reported by the Centers for Disease Control and Prevention as 6.0 cases per 100,000 in the U.S. population. The case definition for purposes of surveillance is the identification of an erythema migrans "bull's-eye" rash greater than or equal to 5 centimeters in diameter or at least one of the late manifestations of musculoskeletal, neurologic, or cardiovascular disease with laboratory confirmation of *B. burgdorferi* infection. Case numbers peak in the eastern U.S. in late spring and early summer, and this reflects the seasonal host-seeking activity of the infective nymphal-stage of the vector ticks.[3]

The localized erythema migrans rash occurs early in the infection (stage 1), and is followed within days or weeks by a disseminated infection that causes disorders of the nervous system, heart or particularly the joints (stage 2), and then subsequently, the disease progresses within weeks or months to late or persistent infection (stage 3). Diagnosis usually relies on the characteristic clinical findings; a history of tick bites in a part of the country where Lyme Disease is endemic, and an antibody response to *B. bergdorferi* by enzyme-linked immunosorbent assay (ELISA) and confirmatory testing by Western Blot. In the U.S., 20-30% of patients have a positive IgM titer response in the first several weeks of infection, followed by 70-

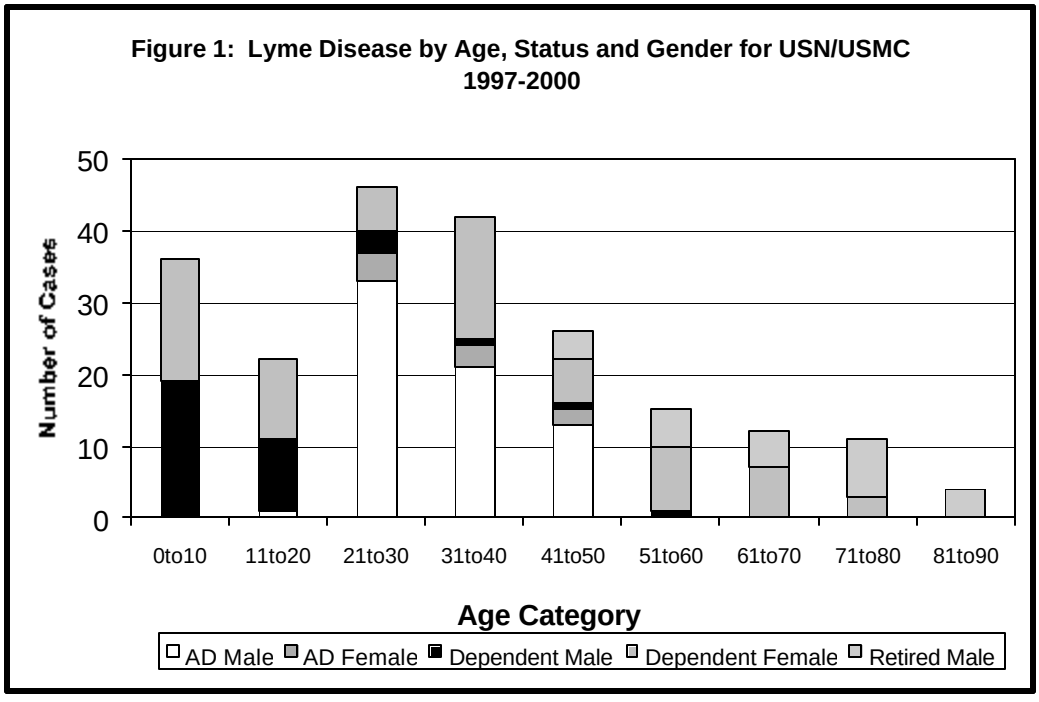
80% seroreactivity in two to four weeks, even after antibiotic treatment. The IgG titer is positive in the majority of cases after one month. Historically, the treatment of localized or disseminated Lyme Disease was oral doxycycline for 14 to 21 days for persons older than 8 years, except for pregnant women. The second-choice medication was oral amoxicillin for children and pregnant women. The third and fourth choice drugs were cefuroxime axetil and erythromycin respectively. A 2 to 4 week course of intravenous ceftriaxone was commonly given for patients with objective evidence of neurologic abnormalities. A satisfactory alternative was parenteral cefotaxime or penicillin G.[4]

Study Design and Data Collection

The Naval Disease Reporting System (NDRS) is a Microsoft ACCESS™ based system for submitting Medical Event Reports in the Navy and Marine Corps that has been used since 1996. The system is used to input information on reportable diseases at the medical treatment facility/operational medical department level, and transfer the information electronically in a password-protected file to the supporting Navy Environmental and Preventive Medicine Unit, and Navy Environmental Health Center. It is further transferred to the Army Medical Surveillance Activity (AMSA), which is the central Department of Defense repository for reportable diseases. Guidance for NDRS is provided in BUMEDINST 6220.12A, the Deployment Health Surveillance Technical Manual from the Navy Environmental Health Center, the Joint Chiefs of Staff Deployment Health Surveillance and Readiness memo, and the Army Medical Surveillance Activity Tri-Service Reportable Events publication.[5,6,7,8] The NDRS database is maintained by the Preventive Medicine Directorate, Navy Environmental Health Center, Norfolk VA, which provides public health and preventive medicine expertise for Navy Medicine. The database contains over 24,000 individual records on the 72 reportable medical diseases and illnesses specified by the Department of Defense, which includes Lyme Disease. We reviewed that database for records with an epidemiological event of Lyme Disease from January 1997 to December 2000, and exported selected information into a Microsoft EXCEL™ spreadsheet for further analysis. We chose to perform this analysis using descriptive methodologies rather than detailed statistical analysis since NDRS is a passive reporting system with multiple potential biases.

Results: The review identified 223 records of patients diagnosed with Lyme Disease. Four records lacked information on patient's date of birth and were omitted from the analysis shown in Figure 1. Age, gender and military status are characterized in Figure 1.

Figure 1: Lyme Disease by Age, Status and Gender for USN/USMC 1997-2000



Status of the personnel involved and presumed location of exposure are shown in Table 1. Interestingly, active duty personnel exceeded other personnel for cases from Maryland, North Carolina and Virginia while the opposite was evident in other locations.

TABLE 1. Lyme Disease: Distribution by Status and State Where Exposure Was Presumed to Occur for USN and USMC Jan 97 to Dec 00

State	AD	Dep	Ret	Other	Totals	Percent
Connecticut	19	67	17	2	105	47.1
Florida	1	1			2	0.9
Kentucky	1				1	0.4
Maryland	6	3	1		10	4.5
Minnesota	1				1	0.4
Mississippi	1	1			2	0.9
North Carolina	19	15		1	35	15.7
New Jersey	3	3			6	2.7
Pennsylvania			1		1	0.4
Rhode Island	6	10	5		21	9.4
South Carolina	2				2	0.9
Tennessee		1			1	0.4
Virginia	15	3	2		20	9.0
Unknown	7	7	1	1	16	7.2
Totals	**81**	**111**	**27**	**4**	**223**	**100.0**

Key: AD = Active Duty; Dep = Dependent; Ret = Retired

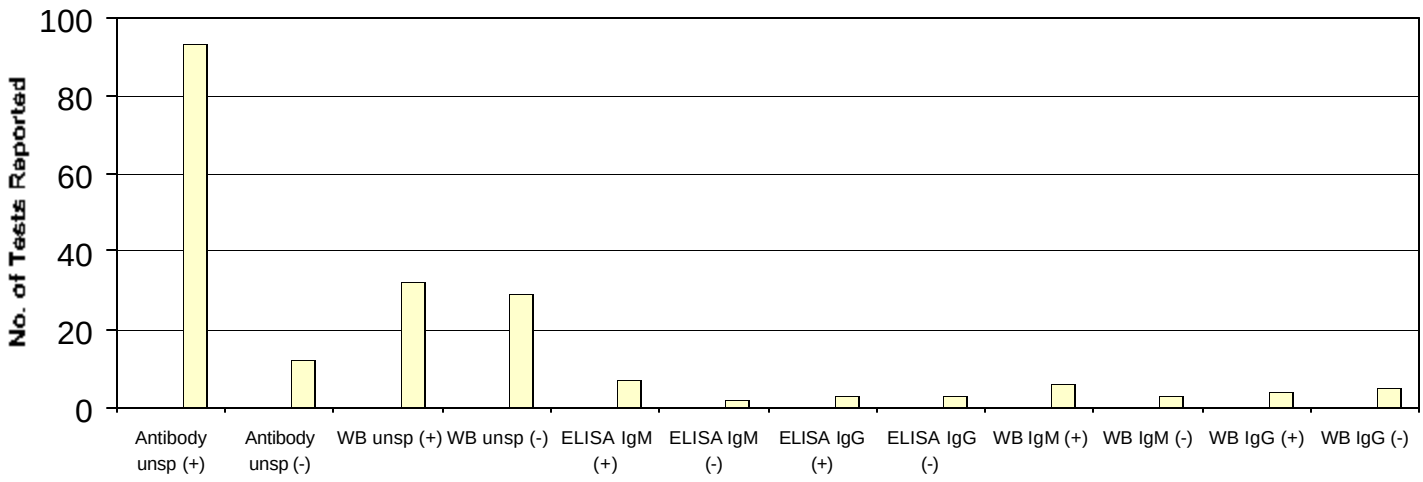
Table 2 presents information on clinical history and physical findings, as reported in the NDRS database, which may have been less informative than the patient's health record. A history of tick bites was not commonly reported, and neither were the characteristic skin lesions. Laboratory results are presented in Figure 2.

TABLE 2. Lyme Disease: Table of NDRS Records Reporting Lyme Disease Symptoms or History of Tick Bites Out of a Total of 223 NDRS Records for USN/USMC Active Duty, Dependent and Retired for January 1997 to December 2000

Patient History or Symptoms	Number	Percent of 223 cases Reported
Reported History of Tick Bites	53	23.8
Rash Unspecified or EM < 5 cms	34	15.2
Erythema Migrans >= 5 cms	29	13
Headache	11	4.9
Fever	11	4.9
Myalgias	10	4.5
Arthralgias	9	4
Neurologic Manifestations	5	2.2
Regional Lymphadenopathy	2	0.9
Cardiac Manifestations	0	0
Total	164	73.4

Key: EM = Erythema Migrans; cms = centimeters; < is less than; >= is greater than or equal to.

Figure 2: Lyme Disease Lab Results



Key: Antibody unsp = Antibody unspecified; WB unsp = Western Blot unspecified; ELISA IgM or IgG = Enzyme-linked immunosorbent assay IgM or IgG; WB IgM or IgG = Western Blot IgM or IgG.

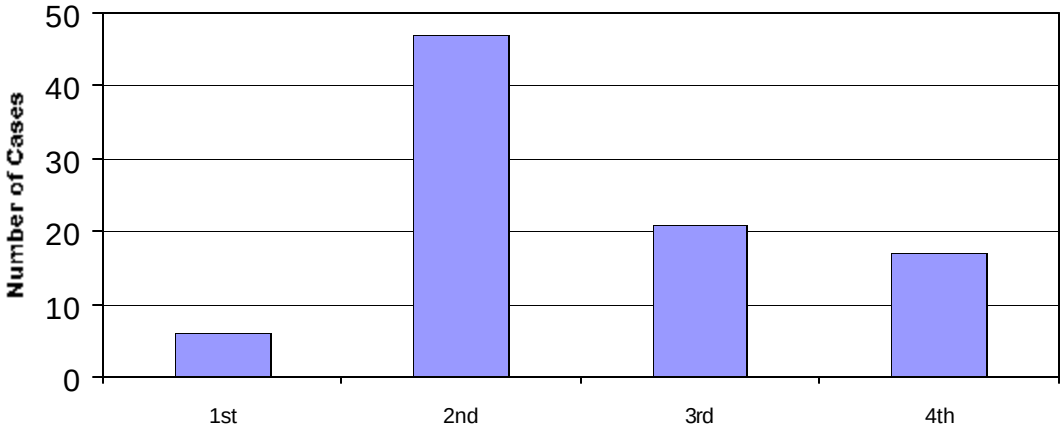
Documented treatment modalities are presented in Table 3, and indicated tetracycline or doxycycline were the most common treatment modalities listed in the NDRS. Seasonality of the cases is demonstrated in Figure 3, and demonstrates that most cases were reported in the second quarter of the calendar year.

TABLE 3. Lyme Disease: Table of Medication Given as Treatment for Lyme Disease by Stage of the Disease Reported in NDRS for USN/USMC Active Duty, Dependents and Retired for January 1997 to December 2000

Medication Given	Stage 1	Stage 3	unspec.	Totals
Doxycycline 50-200 mg PO	24	1	56	81
Tetracycline 250 mg PO			1	1
Vibramycin 100 mg PO			1	1
Amoxycillin 200-500 mg PO	10		24	34
Keflex 500 mg PO			1	1
Cephalexin 250 mg PO			1	1
Azithromycin 250 mg PO	1			1
Ceftin 250 mg			1	1
Ciprofloxacin 500 mg PO			1	1
Ceftriaxone 1-2 gm IV		3	3	6
Cefotaxime 2 gm IV			1	1
Totals	35	4	90	129

Key: mg = milligrams; gm = grams; PO = by mouth; IV = intravenous therapy.

Figure 3: Lyme Disease Cases per Quarter Out of 91 Cases USN/USMC AD/Dep/Ret 1-97 to 12-00



Discussion

This descriptive analysis presents the information from NDRS on Lyme Disease. The age distribution separated by status shown in Figure 1 demonstrates the following pattern. The active duty cases were predominantly male (88.3%) in the age group 21 to 50 years. The dependent cases were mostly female (68.5%) with the majority of female cases below the age of forty (67%). The retired persons were all male over the age of forty. In Table 1, the distribution of cases by state where tick exposure was presumed to occur showed 47.1% of the cases from Connecticut and 15.7% of the cases associated with North Carolina. In Connecticut, 67 of the cases were dependents, whereas 19 were active duty and 17 retired. In North Carolina, the split was about even between 19 active duty and 15 dependents, with no retirees. The third highest state was Rhode Island (9.4%), with 21 cases divided between 6 active duty, 10 dependents and 5 retirees. Virginia showed the fourth highest rate at 9.0%, with 15 active duty cases, 3 dependents and 2 retirees. The 1999 annual incidence for Lyme Disease reported by the Centers for Disease Control and Prevention (CDC) in these four states was 98.0 per 100,000 persons in Connecticut, 55.1 per 100,000 in Rhode Island, 1.8 per 100,000 in Virginia, and 1.0 per 100,000 in North Carolina, compared with the overall incidence for the United States of 6.0 per 100,000.[3] The CDC incidence rates in Virginia and North Carolina are lower than the rates in Connecticut and Rhode Island, but the high percentage of cases in North Carolina in the NDRS database (15.7%) may reflect the high tempo of field training and accompanying tick exposures at Camp Lejeune, NC. The same may be true for Marine Corps Base, Quantico, VA, where there were more active duty than dependents or retirees with the disease. Use of personal protective measures by Marines at Camp Lejeune, NC and Quantico, VA, including use of DEET insect repellent on skin and spraying Permanone™ containing permethrin on uniforms is standard procedure, but this personal protection should always be reemphasized for Marines training in the field especially during late spring and summer.

Table 2 listed the symptoms and history of tick bites recorded in NDRS for Lyme Disease between January 1997 and December 2000. The database recorded tick bites 53 times (23.8%), reported erythema migrans larger than 5 cms 29 times (13.0%), mentioned neurologic symptoms 5 times (2.2%) and reported regional lymphadenopathy twice (0.9%). Figure 2 shows additionally that positive Lyme antibody tests (unspecified) were mentioned 93 times (41.7%), and positive Western Blot tests (unspecified) were listed 32 times (14.3%). Specific ELISA or Western Blot IgM or IgG test results were included much less often. Supplemental notes in the database recorded the lack of a medical record for review in many cases, and the Preventive Medicine staff reporting in NDRS evidently did not always have full information to make out a complete report. It is evident,

however, that the database contains much missing data, and the Preventive Medicine community should improve the completeness of NDRS reporting.

This review shown in Table 3 found variable treatment for Lyme Disease in terms of dosage and duration, though these data were collected before recent literature on the topic was presented. Various treatment modalities and algorithms have been proposed.[9] A recent article based on a large-scale study of 482 subjects who had removed attached *I. scapularis* ticks from their bodies within the previous 72 hours identified a single 200-milligram dose of doxycycline as effective in preventing disease in those considered at risk due to a history of a tick-bite.[10] Whereas this recent scientific work has expanded our knowledge for treatment of this disease, good preventive medicine and personal protective measures remain the basis of our public health response to Lyme Disease.

The seasonal nature of Lyme Disease transmission with peaks in the late spring and summer months is shown in Figure 3. The vector ticks, *Ixodes scapularis* (also called *I. dammini*) are abundant in the northeastern and north central United States. A highly efficient transmission cycle with *Borrelia burgdorferi* occurs between the immature larval and nymphal *I. scapularis* ticks and white-footed mice, and this results in a high rate of infection in nymphal ticks. A high rate of human Lyme Disease infection most probably results when the nymphs feed on humans in the late spring and summer months.[4]

NDRS is a passive reporting system and thus many cases may not have been entered into the data collection system. Present efforts to include NDRS within the SNAP Automated Medical System (SAMS) should improve this reporting, especially for active duty personnel though it may conversely limit such reporting for non-active duty personnel. It will migrate with SAMS into the Theater Medical Information Program-Maritime (TMIP-M) to provide medical reporting for Navy and Marine Corps forces throughout the globe. It presently incorporates password-protected files for transfer of patient privacy protected information.

Conclusion :

The Naval Disease Reporting System (NDRS) recorded 223 cases of Lyme Disease from January 1997 to December 2000 in Navy and Marine Corps active duty, dependent and retired personnel. There were 111 dependent, 81 active duty and 27 retiree cases, centered predominantly in the states of Connecticut, North Carolina, Rhode Island and Virginia. Missing data for patient history of tick bites, for patient symptoms and for Lyme Disease laboratory antibody testing results indicate a need for more emphasis on complete reporting in NDRS.

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Compliance With Mosquito Bed Net Usage at Tandem Thrust 01

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Introduction

The U.S. military frequently deploys to regions of the world where mosquito and other insect-borne diseases pose potentially serious or life threatening health threats. While some diseases are vaccine-preventable or have an effective chemoprophylaxis available, for many, only personal preventive measures (PPMs), including DEET on exposed skin, wearing a permethrin-treated uniform, and sleeping under a properly installed, permethrin-treated bed net, are available. Unfortunately, compliance with the PPMs is often lax.

During the joint US and Australian Tandem Thrust exercise (TT01) in the Shoal Water Bay Training Area (SWBTA) in Queensland, Australia in May/June 2001, Ross River Fever (RRF) was the mosquito-borne health threat of most concern. Although not life threatening, RRF can cause significant and prolonged disability. To determine how well deployed military personnel were complying with PPMs, we conducted two surveys: a bed net usage survey and a general PPMs survey. The salient findings of the bed net usage survey are presented here.

Methods

Bed net usage surveys were conducted at two SWBTA camps in mid-May. Camp 1 was a combined US and Australia Defense Force (ADF) camp of medical and health support personnel; Camp 2 was an ADF communications support camp. All personnel were military and assigned to the respective camp for a period of at least two weeks. A three-person team from the combined US/ADF Preventive Medicine Unit conducted the surveys. Berthing tents were entered sequentially during the day. The number of occupied cots, number of cots with bed nets, mosquito domes or swags (self-contained sleeping bag with netting over the head area), number of correctly installed bed nets, and the number of correctly used bed nets, domes, or swags were noted. Because occupants were not interviewed, the following criteria were followed during the surveys:

1. "Occupied Cots" (Occ Cots) were those cots that appeared to be used for sleeping, such as having bedding visible. A mosquito dome or swag was considered an occupied cot. Cots that appeared to be used only to store personal gear were not included.
2. "Domes" are self-contained mosquito domes (tents) and were considered equivalent to a correctly installed and correctly used bed net.
3. "Bed Net in use" was identified if an occupied cot had a bed net visible on or near it.
4. "Bed nets installed correctly " were those bed nets that were suspended with the poles on the outside. For cots not accommodating poles, such as Australian cots, a setup that suspended the netting so it would not touch the recumbent occupant was accepted.
5. "Bed nets used correctly" were those bed nets that were tucked under the bedding on at least two and a half sides. The assumption was that if the occupant were tucking the net under the bedding on all sides at night, he/she would leave the sides tucked in that were not used for entrance/exit.
6. A swag was considered correctly used if the netting would not come in contact with the recumbent occupant.

Results

One hundred and sixty-nine occupied cots, representing 100% of ADF and US personnel assigned to Camp 1, and 91 occupied cots, assumed to be a representative sample of the approximately 173 ADF personnel assigned to Camp 2 were surveyed.

Table 1 shows that some type of netting (bed nets, mosquito domes, or swags) was present for 79% of the total occupied cots (84% (average) of ADF personnel, 63% of US personnel).

Table 1. Use of netting (bed nets, domes, or swags)* at Camps 1 and 2 during T T01

Occupied cots N	With netting # (%)	Without netting # (%)
US (Camp 1) n = 56	35 (63)	21 (37)
ADF (Camp 1) n = 113	94 (83)	19 (17)
ADF (Camp 2) n = 91	77 (85)	14 (15)
Total n = 260	206 (79)	54 (21)

* Does not imply correct installation or usage

Table 2 specifically describes bed net use (excludes mosquito domes or swags). Forty-six percent of all bed nets were installed correctly, but only 11% of all bed nets were installed and used correctly, indicating that 89% of all personnel using a bed net (90% (average) of ADF personnel, 87% of US personnel) were not optimally protected by it.

Table 2. Installation and use of bed nets at Camps 1 and 2 during TT01

Occupied cots with bed nets n	Bed nets installed correctly # (%)	Bed nets installed and used correctly # (%)	Bed nets installed and/or used incorrectly # (%)
US (Camp 1) n = 32	7 (22)	4 (13)	28 (87)
ADF (Camp 1) n = 74	47 (64)	11 (15)	63 (85)
ADF (Camp 2) n = 51	18 (35)	2 (4)	49 (96)
Total n = 157	72 (46)	17 (11)	140 (89)

Table 3 summarizes the results of installation and use of all types of netting, including bed nets, mosquito domes, and swags. Overall, 76% of all personnel (73% (average) of ADF, 87% of US personnel) were not optimally protected from nighttime feeding insects because of the absence, or incorrect installation and/or use of netting.

Table 3. Summary of correctly installed and used netting (bed nets, domes, or swags) at Camps 1 and 2 during TT01.

Occupied cots n	Netting correctly installed and used # (%)	Netting incorrectly installed/used or no netting present # (%)
US (Camp 1) n = 56	7 (13)	49 (87)
ADF (Camp 1) n = 113	31 (27)	82 (73)
ADF (Camp 2) n = 91	24 (26)	67 (74)
Total n = 260	62 (24)	198 (76)

Discussion/Conclusion

These surveys were limited, because bed net usage was derived using the criteria described in the Methods section rather than by interviewing personnel. Nonetheless, the validity of these results is supported by the consistency between the two camps, as well as among US and ADF personnel. Additionally, a survey of the same design conducted during Tandem Thrust 1997 (TT97) had similar results: 68% of occupied cots had a bed net present, but only 7% had bed nets that were installed and used correctly (CAPT Jeff Yund, unpublished data, TT97 After Action Report).

These data demonstrate important issues for improving nighttime protection against potential insect-borne diseases during future deployments. Firstly, 37% of US personnel were not using any type netting at all (Table 1). Secondly, among the US personnel who were using bed nets, 87% were not optimally protected, because the bed nets were not installed and/or used correctly (Table 2). Thirdly, by comparing Tables 2 and 3, we see that the proportion of personnel that correctly installed and used bed nets was 10% (average) of ADF personnel versus 13% of US personnel, whereas the proportion of personnel that correctly installed and used any type of netting (bed nets, mosquito domes, or swags) was 27% (average) of ADF, compared to 13% of US personnel. This difference indicates that better compliance with correct netting usage among ADF personnel was because of more widespread use of mosquito domes or swags in place of bed nets among ADF personnel.

These findings emphasize not only that bed net use needs to be better enforced among our deployed personnel, but also that they need better training on how to install and use bed nets correctly. The findings also suggest that improvement in nighttime protection against insects might be best achieved by "engineering out the problem;" that is, by issuing equipment such as mosquito domes or swags, which are inherently easy to correctly install and use, in lieu of the more cumbersome and easily misused mosquito bed net and poles.

Acknowledgements

Thank you to Jean M. Williams, LCDR, MSC, USN, NEPMU6 and Andrew Courtnell, Staff Sergeant, ADF, 1 HSB for their assistance in conducting the survey.

SURVEILLANCE FOR DISEASE VECTOR

Leishmaniasis in Sicily (Italy)
An Investigation On Phlebotomine Sandflies In Catania Province

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Abstract

Catania province, Sicily, is an important foci for human visceral leishmaniasis in the Mediterranean area. Current data indicates an annual average incidence of 10 registered cases of visceral leishmaniasis per year, over the past 3 years. Of the registered cases, >20% were HIV positive. Since the 1930's, no vector studies have been carried out in this area of Sicily. This study is intended to provide current data on the vector density and seasonally of the sandfly species from selected foci in the Catania area.

From May through November, 1996, sandflies were collected using sticky trap (oil paper) method. CDC light traps were also used for additional studies on sandfly infection with *Leishmania* parasites in September. Collecting sites were chosen throughout Catania and represented rural, semi-urban and sylvan areas. These sites represent the diversity of the region. Meteorological data, such as daily temperature averages and extremes, as well as precipitation, were recorded during the survey period.

With sticky traps, a total of 2,775 specimens were collected and identified. Of *Phlebotomus* genus collected, the most common species was *P. perniciosus* (23.3%), followed by *P. perfiliewi* (1.1%) and *P. neglectus* (0.2%); one specimen of *P.papatasi* was found in the site of Sigonella. *Sergentomyia minuta* (72.4%) was found at all sampling sites. None of 137 sandfly females, caught in Brucoli and Sigonella stations and dissected for natural transmission study, contained parasites.

This study demonstrated that at least three *Phlebotomus* species (*perniciosus*, *perfiliewi* and *neglectus*), that have been proven vectors of human leishmaniasis, are present in Catania, Sicily.

Introduction:

Leishmaniasis is a debilitating and complex infectious disease of the tropics and subtropics and presents as either cutaneous lesions or as visceral manifestations. Cutaneous leishmaniasis can present in a wide array of patterns in the skin. Visceral leishmaniasis or kala-azar, has a more typical presentation, usually affecting the spleen and liver (1).

The cutaneous presentation of this illness is sometimes mis-diagnosed and may resolve spontaneously. In some patients however, it can lead to severe tissue destruction and left untreated, results in the loss of appendages such as the nose or ear. Cutaneous leishmaniasis is often referred to as the "Oriental Sore." Visceral leishmaniasis is a significant public health problem in most countries bordering the Mediterranean Sea (2). The disease occurs in central and southern Italy, Sardinia and Sicily (3) and has been known to be endemic in Sicily since 1909 (4).

In Palermo, Sicily, during the period of 1963 to 1984, 86 patients were afflicted with visceral leishmaniasis as diagnosed for admission to the University Hospital in that city. Of these 86 cases, 28 cases were reported during the years 1963 to 1973. In the next decade, 1973 to 1984, the number of cases was 58, essentially a doubling of infected individuals (42 children and 16 adults). Children are most commonly afflicted by leishmaniasis in Sicily, and the infective agent is *L. infantum* (5).

In Sicily, especially Catania province, canine leishmaniasis is endemic. The insect vector for leishmaniasis, the sandfly, is ubiquitous, thriving in the warm, moist environment of Sicily (6). Estimates of prevalence range from 15 to 30% in the canine population. Approximately 10 to 15 cases of human leishmaniasis are reported to occur each year in Catania, Sicily, as evidenced by hospital admissions. It is not known how many more cases are incorrectly diagnosed or never brought to medical attention, and thus are never counted. The diagnosed and identified human cases may represent only the "tip of the iceberg," and many non-ill persons may harbour the trypanosome which causes visceral and cutaneous disease. The infection in humans is

often sub-clinical and not apparent as long as the host is in good health. This is demonstrated in the large proportion of immuno-compromised persons who are HIV positive and concurrently infected with leishmaniasis. Current reports in Italy place the number of AIDS/leishmanisis co-infections at about 27% of HIV infected persons (7).

The collection of sandflies by Maroli, et.al. (8) has indicated the wide distribution of many species of the insect vector in Sicily and southern Italy. This earlier work was done primarily in western Sicily. Adler and Theodor (9) reported five sandfly species at the periphery of Catania, Sicily in 1931. Multiple collection methods were used by these workers, including sticky traps and light traps. Both domestic and sylvatic habitats were surveyed. The distribution of sandfly habitat was found to be divided equally between both urban and sylvatic environments. The species identified were considered capable of spreading leishmaniasis to humans within the foci where they were collected.

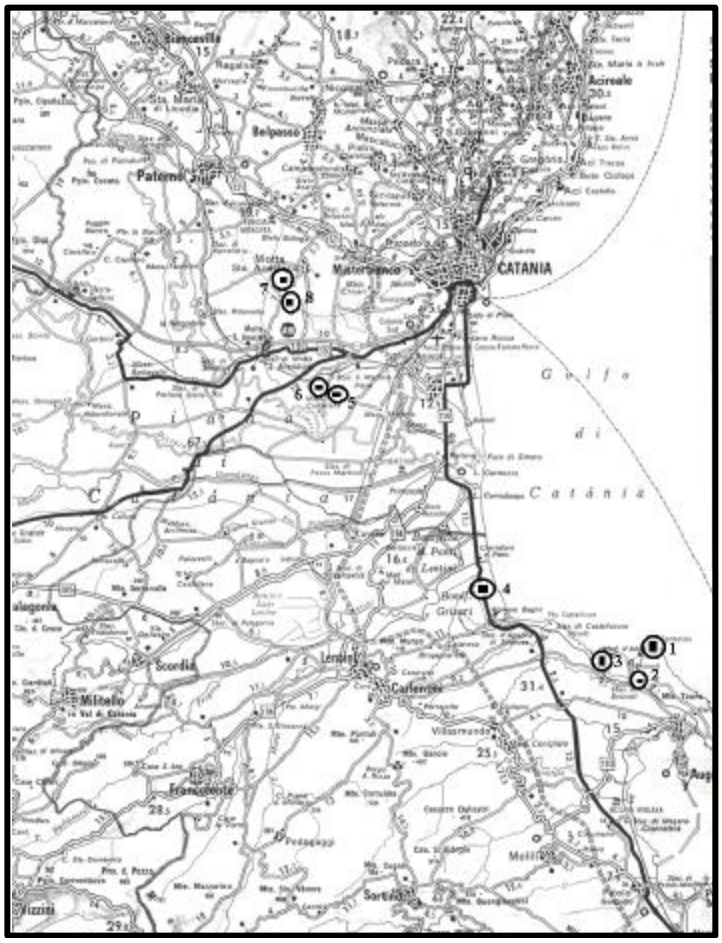
Since the 1930's however, no vector studies have been carried out in the Catania area of Sicily. It is important to evaluate the current level of sandfly infestation currently in Catania Province. Evaluation of the species present which are capable of disease transmission to humans is equally important in an area where leishmaniasis is well demonstrated.

It was the purpose of this study to determine the overall distribution of sandfly species in the Catania Province and determine the leishmaniasis vector potential by examining phlebotomine flies live captured and dissected from selected locations in the Catania study area.

Materials and Methods:

From May through September, 1996, sandflies were collected in selected areas of Catania province, Sicily. The areas were selected to provide a variety of sites, representing rural, urban, domestic and sylvatic habitats. The cooperation of the landowner and the ability to gain access to a site throughout the summer season was the only constraint placed on site selection. Passive (sticky trap-oil paper-method) and active (CDC light traps) trapping was done in the areas identified in Figure 1.

Figure 1. Map of collecting sites in Catania Province, Sicily (Italy)



Location of sites:

1. Brucoli Cement Wall
2. Brucoli Farm
3. Brucoli Retaining Wall
4. Siracusa Highway Wall
5. Sigonella Sheep Farm
6. Sigonella Cattle Farm
7. Motta Cement Wall (open field)
8. Motta Cement Wall (near house)

Sticky traps were placed at diverse sites representing rural, semi-urban, open plane, coastal and sylvatic locations in an effort to evaluate geographic variants. Meteorological data, such as daily temperature averages, high and low extremes, and precipitation during the study period, were recorded.

Sticky traps, described as 8 inch by 8 inch bond paper, soaked in mineral oil, were utilized to passively trap sandflies at all the selected sites. These traps were fastened onto the walls or animal pens near domestic animals and additionally, sticky traps were placed inside cracks, crevices, drainage holes, animal burrows or cave openings of suspected harborages located at each sampling site. The traps were left overnight or a period not to exceed 48 hours. Sites selected for live trapping were sampled every 15 days during the period of June to September 1996, the active phlebotomine season. The traps were placed and retrieved by U. S. Navy Environmental and Preventive Medicine Unit No. 7 (NEPMU-7) personnel in Catania, Sicily. The number of flies collected was recorded, and they were placed in 95% ethanol for preservation and forwarded to the Department of Entomology, Istituto Superiore di Sanita, Rome, Italy for species identification. Sites which yielded phlebotomine species, considered potential vectors for human disease, were additionally sampled using CDC light traps and aspirators at two sites (Brucoli area and Sigonella farm). This collection method was done during a two week period in September, 1996. Light trapping was done in September as an attempt to trap flies most likely to be infected after having the summer months for repetitive feedings on parasitized and re-parasitized animals. Female sandflies were dissected and evaluated for parasites within their mid-gut in an attempt to establish vertical transmission for each species collected.

Results:

A total of 2,775 sandflies were trapped during the study. A summary of the number of sandflies trapped and the corresponding locations is presented in Table 1.

Table 1. Number of phlebotomine sandflies captured in each collecting station from June through September, 1996.

NO	LOCALITY	HABITAT INSPECTED	NO. SPECIMENS CAUGHT
1	Brucoli	Cement wall	696
2	Brucoli	Farm	190
3	Brucoli	Retainer wall	47
4	Siracusa	Cement wall	413
5	Sigonella	Sheep farm	35
6	Sigonella	Cattle farm	12
7	Motta	Cement walls	952
8	Motta	Cement wall	408
Total			2,775

The density of sandflies at each collecting site (as flies / sq. meter), the date of collection and weather data (mean daytime temperature and periods of measurable rain fall on the dates of collection) are presented in Table 2. Four species were identified at all of the collecting sites. One specimen of *Phlebotomus papatasi* was identified during the study and only at the Sigonella sheep farm, indicating its presence in the area.

The distribution, by species, of these sandflies from all the collecting sites was as follows:

Sergentomyia minuta, 2,008 (72.4%);
Phlebotomus perniciosus, 730 (23.3%);
Phlebotomus perfiliewi, 29 (01.1%);
Phlebotomus neglectus, 7 (0.2%)

Table 2. Density of phlebotomine sand flies collected (count / sq. meter) for each of the dates indicated and meteorological data from June to October, 1996

Site Number	Dates of Sandfly Collections								
	1	2	3	4	5	6	7	9	Total
	19-27 Jun	1-3 Jul	14-15 Jul	30-31 Jul	7-8 Aug	5-6 Sep	11-13 Sep	7-8 Oct	
1	15	8	n.d.	-	5	6	7	-	41
2	24	13	n.d.	17	4	n.d.	11	20	89
3	15	12	n.d.	5	n.d.	-	-	-	32
4	10	11	n.d.	4	5	5	6	n.d.	41
5	6	7	n.d.	5	4	4	4	n.d.	30
6	11	14	n.d.	5	7	5	8	n.d.	50
7	21	14	5	10	8	6	9	-	73
8	8	9	n.d.	8	6	7	9	-	47
Total	110	88	5	54	39	33	54	20	403
Daily Ave. temp (^{o}C)	23^{o}	24.7^{o}	25.9^{o}	25.9^{o}	26.5^{o}	24.5^{o}	24.1^{o}	23.6^{o}	
Rainfall (cm)	0.12		0.81	0.24		0.8		0.14	

The distribution of each of the four species encountered in Catania Province at each of the collecting sites is presented in Table 3. The predominant species in all of the sites was *Sergentomyia minuta*, which is not a vector for human disease.

Table 3. Prevalence of the sandfly species identified in each collecting station, reported as flies / sq. m and (per cent).

No.	Locality	Total	P. perniciosus (%)	P. perfiliewi (%)	P. neglectus (%)	S. minuta (%)
1	Brucoli	424	185 (43.6)	10 (2.4)	<1 (0.2)	229 (54)
2	"	53	37 (70)	-	<1 (1.7)	15 (28.3)
3	"	36	18 (50)	1 (2.1)	1 (2.5)	15 (41.7)
4	Siracusa	251	40 (16)	<1 (0.4)	<1 (0.4)	210 (83.7)
5	Sigonella	29	10 (34.5)	10 (34.5)	-	9 (31)
6	"	7*	-	-	-	6 (86)
7	Motta	350	37 (10.6)	-	<1 (0.3)	311 (88)
8	"	217	38 (17.5)	-	-	178 (82)
	Totals (%)	1352	365 (27)	>21 (1.6)	>4 (0.3)	961 (71.1)

* One specimen of *P. papatasi* was trapped at this site.

Light traps were placed in two locations for collection of live flies from 16 September to 20 September, 1996. A total of 137 live females were trapped, identified and dissected to look for parasites within the gut. No parasites were identified in any of the sandflies. The results of the light trapping are presented in Table 4, indicating the number of each species caught during the sampling period at each sampling location.

Table 4. Number of dissected flies for the research of natural infection with *Leishmania* parasite.

Station	Total	P. perniciosus (%)	P. perfiliewi (%)	S. minuta (%)
Brucoli 2	114	88 (77.2)	14 (12.3)	12 (10.5)
Sigonella 6	23	-	20 (87.0)	3 (13.0)
Total	137	88 (64.2)	34 (24.9)	15 (10.9)

Female sandflies were caught by using CDC light traps during the period 16-20 September 1996 in Brucoli 2 and Sigonella 5

Discussion:

This work has identified three proven vectors for human leishmaniasis in Catania Providence. And while the number of flies trapped at each location is small, it is clearly evident that the species proven to be capable of transmitting leishmaniasis to man (*Phlebotomus perniciosus, Phlebotomus perfiliewi*, and *Phlebotomus neglectus*) exist over a wide variety of habitat in eastern Sicily.

The species of sandfly in greatest abundance at all of the sites is not a vector for human leishmaniasis. Light trapping produced a different ratio of species than did the passive, sticky trap method. Each individual species has different characteristics with respect to phototropism. However, this difference alone does not appear to account for the greater number of *Sergentomyia minuta* identified throughout the area. It is possible that environmental conditions may have influenced the prevalence of *Sergentomyia minuta* more than the three *Phlebotomus* species identified. All four species exhibited 3 cycles of maturation and emergence during the period of this study. However, *Sergentomyia minuta* displayed a more pronounced increase in emergence during the warmest portion of the season (mid-July).

This current study has filled the gap in information about species distribution in Eastern Sicily since the last study more than 50 years ago. The work will be continued during the summer of 1997 with more sites selected for passive trapping. No infected sandflies were identified with live trapping. Proof of vector competence has not been completed. More live trapping is needed at more sites and will be part of the 1997 study, in order to verify vertical transmission of infection among the species indigenous to this area of Sicily.

Editor's Note:
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NAVY DISEASE REPORTING SYSTEM (NDRS)

Summary Of 2001 Data

Tables 1 and 2 display the Medical Event Reports (MERs) received at Navy Environ-mental Health Center (NEHC) as of 24 Sept 2001. Interested readers may calculate rates by dividing the frequencies by estimated mid-year strength of 374,774 for USN and 172,652 for USMC. Table 1 shows active duty only. Table 2 shows non active duty beneficiaries.

Table 1. Reportable Medical Events, Combined Navy & Marine Corps Active Duty, Case Frequencies, 01 Jan - 30 Sep, 2001

Disease	Total	USN	USMC	Disease	Total	USN	USMC
Amebiasis*	2	2	0	Lyme Disease	4	3	1
Anthrax*	0	0	0	Malaria (specify type) *1	2	2	0
Biological warfare agent exposure	0	0	0	Measles*	0	0	0
Bites, rabies vaccine & human rabies immune	16	13	3	Meningitis (aseptic, viral)	7	7	0
Bites, venomous animal	0	0	0	Meningitis (bacterial other than Meningococcus)	2	1	1
Botulism*	0	0	0	Meningococcal disease*	3	3	0
Brucellosis	0	0	0	Mumps	1	0	1
Campylobacteriosis*	8	3	5	Occupational exposure to blood borne pathogens	2	2	0
Carbon Monoxide poisoning*	0	0	0	Onchocerciasis	0	0	0
Chemical warfare agent exposure	0	0	0	Pertussis*	0	0	0
Chlamydia	1763	1359	404	Plague*	0	0	0
Cholera	0	0	0	Pneumococcal pneumonia	5	1	4
Coccidioidomycosis	4	3	1	Poliomyelitis*	0	0	0
Cold injuries	0	0	0	Psittacosis (Ornithosis)	0	0	0
Cryptosporidiosis*	1	1	0	Q Fever*	0	0	0
Cyclospora*	0	0	0	Rabies, clinical human*	0	0	0
Dengue fever*	2	2	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	2	1	1
Ebola	0	0	0	Rubella*	0	0	0
Ehrlichiosis	1	0	1	Salmonellosis*	6	6	0
Encephalitis*	0	0	0	Schistosomiasis	0	0	0
Filariasis	0	0	0	Shigellosis*	1	1	0
Giardiasis	11	8	3	Smallpox*	0	0	0
Gonorrhea	496	389	107	Streptococcal disease, Group A	3	2	1
Haemophilus influenza, type b	1	0	1	Syphilis	14	12	2
Hantavirus infection*	0	0	0	Tetanus	1	1	0
Heat injuries	38	8	30	Toxic shock syndrome	0	0	0
Hemorrhagic fever*	0	0	0	Trichinosis	0	0	0
Hepatitis, A (acute, symptomatic only)	0	0	0	Trypanosomiasis	0	0	0
Hepatitis, B (acute, symptomatic only)	10	8	2	Tuberculosis, pulmonary active*	10	9	1
Hepatitis, C (acute, symptomatic only)	3	2	1	Tularemia*	0	0	0
Influenza (confirmed)	22	1	21	Typhoid fever*	0	0	0
Lead poisoning	0	0	0	Typhus*	0	0	0
Legionellosis*	0	0	0	Urethritis (non gonococcal)	222	127	95
Leishmaniasis	0	0	0	Varicella	12	8	4
Leprosy (Hansen's disease)	0	0	0	West Nile	0	0	0
Leptospirosis*	1	1	0	Yellow fever	0	0	0
Listeriosis	1	0	1				

*Reportable within 24 hours

Table 2. Reportable Medical Events, Combined Navy & Marine Corps Beneficiaries, Case Frequencies, 01 Jan - 30 Sep, 2001

Disease	Total	USN	USMC	Disease	Total	USN	USMC
Amebiasis*	2	1	1	Lyme Disease	10	10	0
Anthrax*	0	0	0	Malaria	0	0	0
Biological warfare agent exposure	0	0	0	Measles*	1	0	1
Bites, rabies vaccine & human rabies immune	45	39	6	Meningitis (aseptic, viral)	9	7	2
Bites, venomous animal	4	0	4	Meningitis (bacterial other than Meningococcus)	6	6	0
Botulism*	0	0	0	Meningococcal disease*	1	1	0
Brucellosis	1	1	0	Mumps	1	1	0
Campylobacteriosis*	7	3	4	Occupational exposure to blood borne pathogens	0	0	0
Carbon Monoxide poisoning*	0	0	0	Onchocerciasis	0	0	0
Chemical warfare agent exposure	0	0	0	Pertussis*	5	5	0
Chlamydia	509	417	92	Plague*	0	0	0
Cholera	0	0	0	Pneumococcal pneumonia	2	1	1
Coccidioidomycosis	6	5	1	Poliomyelitis	0	0	0
Cold injuries	0	0	0	Psittacosis (Ornithosis)	0	0	0
Cryptosporidiosis*	1	1	0	Q Fever*	0	0	0
Cyclospora*	0	0	0	Rabies, clinical human*	0	0	0
Dengue fever*	2	2	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
Ebola	0	0	0	Rubella*	3	3	0
Ehrlichiosis	0	0	0	Salmonellosis*	50	43	7
Encephalitis*	0	0	0	Schistosomiasis	1	1	0
Filariasis	0	0	0	Shigellosis*	3	3	0
Giardiasis	12	11	1	Smallpox*	0	0	0
Gonorrhea	97	85	12	Streptococcal disease, Group A	12	8	4
Haemophilus influenza, type b	0	0	0	Syphilis	14	12	2
Hantavirus infection*	0	0	0	Tetanus	0	0	0
Heat injuries	0	0	0	Toxic shock syndrome	0	0	0
Hemorrhagic fever*	0	0	0	Trichinosis	0	0	0
Hepatitis, A (acute, symptomatic only)	3	1	2	Trypanosomiasis	3	2	1
Hepatitis, B (acute, symptomatic only)	3	3	0	Tuberculosis, pulmonary active*	12	11	1
Hepatitis, C (acute, symptomatic only)	3	3	0	Tularemia*	0	0	0
Influenza (confirmed)	4	4	0	Typhoid fever*	1	1	0
Lead poisoning	0	0	0	Typhus*	0	0	0
Legionellosis*	0	0	0	Urethritis (non gonococcal)	0	0	0
Leishmaniasis	0	0	0	Varicella	0	0	0
Leprosy (Hansen's disease)	0	0	0	Yellow fever*	0	0	0
Leptospirosis*	1	1	0				
Listeriosis	0	0	0				

*Reportable within 24 hours

ANNUAL TB REPORT FOR CY-2000

CDR Mark Malakooti, MC, USN
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Navy Environmental Health Center

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. We present the results of the CY-2000 screening program in tables 1 through 10: first the overall summary; then from each NEPMU, the larger ship, MTFs, and Marine Units. These tables contain a great deal of information, and are presented in detail so the reader can see data from submitting unit level. A few figures highlight important percentages of program: percent positive for (+) PPD.

Table 1. Summary of 1999 Reports by NEPMUs

SHIP/Station	Total Personnel	Number Test Given	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified
NEPMU 2	185603	134881	1358	1238	4772	7	72.67	1.01
NEPMU 5	212,886	173,480	2710	1560	9419	10	81.49	1.56
NEPMU 6	42791	18462	489	288	1643	6	43.14	2.65
NEPMU 7	13288	6893	90	73	472	2	51.87	1.31
Summary	454568	333716	4647	3159	16306	25	73.41	1.39

Table 2. Details of 2000 Reports Sent to NEPMU2, Norfolk, VA

Ship/Station	Total Personnel	Number Test	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
USS ALBANY (SSN 753)	135	140	0	0	5	0	103.70	0.00	0
USS ALEXANDRIA (SSN 757)	138	138	0	0	5	0	100.00	0.00	0
USS ANNAPOLIS (SSN 760)	140	136	1	1	4	0	97.14	0.74	100.00
USS ARLEIGH BURKE (DDG 51)	307	304	0	0	15	0	99.02	0.00	0.00
USS AVENGER (MCM-1)	87	79	0	0	2	0	90.80	0.00	0.00
USS AUGUSTA (SSN 710)	140	128	0	0	0	0	91.43	0.00	0.00
USS AUSTIN (LPD 4)	373	369	0	0	0	0	98.93	0.00	0.00
USS BARRY (DDG 52)	313	273	0	0	16	0	87.22	0.00	0.00
USS BATAAN (LHD 5)	1152	586	8	8	96	0	50.87	1.37	100.00
USS BLACK HAWK (MCH-58)	55	55	0	0	6	0	100.00	0.00	0.00
USS BOISE (SSN 764)	135	132	0	0	3	0	97.78	0.00	0.00
USS BOONE (FFG 28)	181	181	0	0	13	0	100.00	0.00	0.00
USS CAPE ST GEORGE (CG 71)	356	195	3	3	18	0	54.78	1.54	100.00
USS CARDINAL (MHC 60)	59	56	0	0	3	0	94.92	0.00	0.00
USS CARON (DD 970)	343	327	0	0	10	0	95.34	0.00	0.00
USS CARTER HALL (LSD 50)	319	303	0	0	16	0	94.98	0.00	0.00
USS CHIEF (MCM-14)	81	76	0	0	5	0	93.83	0.00	0.00
USS CITY OF CORPUS CHRISTI (SSN 705)	156	156	0	0	4	0	100.00	0.00	0.00
USS CONNECTICUT (SSN 22)	140	137	0	0	3	0	97.86	0.00	0.00
USS CORMORANT (MHC 57)	56	52	0	0	1	0	92.86	0.00	0.00
USS DEFENDER (MCM 2)	89	79	0	0	8	0	88.76	0.00	0.00
USS DEVASTATOR (MCM 6)	85	67	0	0	7	0	78.82	0.00	0.00
USS DEWERT (FFG 45)	0	0	0	0	0	0	0.00	0.00	0.00
USS DEYO (DD 989)	0	0	0	0	0	0	0.00	0.00	0.00
USS DONALD COOK (DDG 75)	322	376	0	0	14	0	116.77	0.00	0.00
USS DOYLE (FFG 39)	0	0	0	0	0	0	0.00	0.00	0.00
USS DWIGHT D EISENHOWER (CVN 69)	2681	2759	4	4	141	0	102.91	0.14	100.00
USS ELROD (FFG 55)	211	191	1	1	20	0	90.52	0.52	100.00
USS ENTERPRISE (CVN 65)	3200	2683	25	25	153	0	83.84	0.93	100.00
USS ESTOCIN (FFG 15)	205	228	1	1	14	0	111.22	0.44	100.00
USS FALCON (MCH 59)	48	35	0	0	2	0	72.92	0.00	0.00
USS GEORGE WASHINGTON (CVN 73)	2943	3120	22	22	174	0	106.01	0.71	100.00
USS GETTYSBURG (CG 64)	348	333	4	4	22	0	95.69	1.20	100.00
USS GONZALEZ (DDG 66)	298	249	2	2	15	0	83.56	0.80	100.00
USS GRASP (ARS 51)	111	85	0	0	6	0	76.58	0.00	0.00
USS GRAPPLE (ARS 53)	0	0	0	0	0	0	0.00	0.00	0.00
USS GUARDIAN (MCM 5)	95	67	0	0	14	0	70.53	0.00	0.00
USS GUNSTON HALL (LSD 44)	300	300	8	0	11	0	100.00	2.67	0.00
USS HALYBURTON (FFG 40)	206	213	1	1	9	0	103.40	0.47	100.00
USS HAMPTON (SSN 767)	148	145	0	0	6	0	97.97	0.00	0.00
USS HARRY S TRUMAN (CVN 75)	0	0	0	0	0	0	0.00	0.00	0.00
USS HARTFORD (SSN 768)	135	145	0	0	1	0	107.41	0.00	0.00
USS HAWES (FFG 53)	207	190	0	0	17	0	91.79	0.00	0.00
USS HAYLER (DD 997)	316	297	4	4	15	0	93.99	1.35	100.00

Table 2. Details of 2000 Reports Sent to NEPMU2, Norfolk, VA (continued)

Ship/Station	Total Personnel	Number Test	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
USS HELENA (SSN 725)	0	0	0	0	0	0	0.00	0.00	0.00
USS HYMAN G RICKOVER (SSN 709)	130	142	0	0	1	0	109.23	0.00	0.00
USS JOHN HANCOCK (DD 981)	0	0	0	0	0	0	0.00	0.00	0.00
USS INCHON (MCS 12)	678	329	3	3	42	0	48.53	0.91	100.00
USS JACKSONVILLE (SSN 699)	141	133	1	1	4	0	94.33	0.75	100.00
USS JOHN F KENNEDY (CV 67)	2890	2440	29	45	172	0	84.43	1.19	155.17
USS JOHN L HALL (FFG 32)	0	0	0	0	0	0	0.00	0.00	0.00
USS KAUFFMAN (FFG 59)	200	187	0	0	13	0	93.50	0.00	0.00
USS KEARSARGE (LHD 3)	1081	1052	107	29	78	0	97.32	10.17	27.10
USS KENTUCKY (BLUE) (SSBN 737)	160	125	1	1	3	0	78.13	0.80	100.00
USS KENTUCKY (GOLD) (SSBN 737)	165	157	0	0	8	0	95.15	0.00	0.00
USS KINGFISHER (MHC 56)	0	0	0	0	0	0	0.00	0.00	0.00
USS KLAKRING (FFG 42)	185	173	0	0	12	0	93.51	0.00	0.00
USS L MENDEL RIVERS (SSN 686)	0	0	0	0	0	0	0.00	0.00	0.00
USS LABOON (DDG 58)	293	191	0	0	10	0	65.19	0.00	0.00
USS LAJOLLA (SSN 710)	162	143	8	0	8	0	88.27	5.59	0.00
USS LEYTE GULF (CG 55)	370	370	2	2	20	0	100.00	0.54	100.00
USS LOUISIANA (SSBN 743) (GOLD)	162	159	0	0	7	0	98.15	0.00	0.00
USS MAHAN (DDG 72)	309	296	0	0	13	0	95.79	0.00	0.00
USS MAINE (GOLD) (SSN 755)	164	156	6	2	4	0	95.12	3.85	33.33
USS MAINE (SSBN 741) (BLUE)	153	145	0	0	7	0	94.77	0.00	0.00
USS MAINE (SSBN 741) (GOLD)	168	159	2	2	7	0	94.64	1.26	100.00
USS MARYLAND (BLUE) (SSBN 738)	160	160	1	1	7	0	100.00	0.63	100.00
USS MARYLAND (GOLD) (SSBN 738)	154	151	0	0	3	0	98.05	0.00	0.00
USS MCFAUL (DDG 74)	302	272	2	2	28	0	90.07	0.74	100.00
USS MEMPHIS (SSN 691)	136	134	0	0	2	0	98.53	0.00	0.00
USS MIAMI (SSN 755)	139	145	0	0	3	0	104.32	0.00	0.00
USS MINNEAPOLIS-SAINT PAUL (SSN 708)	144	132	1	1	16	0	91.67	0.76	100.00
USS JOHN HANCOCK (DD 981)	0	0	0	0	0	0	0.00	0.00	0.00
USS JOHN L HALL (FFG 32)	0	0	0	0	0	0	0.00	0.00	0.00
USS KAUFFMAN (FFG 59)	200	187	0	0	13	0	93.50	0.00	0.00
USS L MENDEL RIVERS (SSN 686)	0	0	0	0	0	0	0.00	0.00	0.00
USS MITSCHER (DDG 57)	290	290	1	1	16	0	100.00	0.34	100.00
USS MONTEREY (CG 61)	359	367	1	1	21	0	102.23	0.27	100.00
USS MONTPELIER (SSN 765)	140	151	0	0	1	0	107.86	0.00	0.00
USS MOUNT WHITNEY (LCC 20)	536	485	5	4	0	0	90.49	1.03	80.00
USS NASHVILLE (LPD 13)	342	282	0	0	32	0	82.46	0.00	0.00
USS NASSAU (LHA 4)	1046	983	18	18	57	0	93.98	1.83	100.00
USS NEWPORT NEWS (SSN 750)	150	113	0	0	9	0	75.33	0.00	0.00
USS NICHOLAS (FFG 47)	217	211	1	1	8	0	97.24	0.47	100.00
USS NICHOLSON (DDG 982)	308	308	0	0	22	0	100.00	0.00	0.00
USS NIMITZ (CVN 68)	2830	2555	3	3	147	0	90.28	0.12	100.00

Table 2. Details of 2000 Reports Sent to NEPMU2, Norfolk, VA (continued)

Ship/Station	Total Personnel	Number Test	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
USS NORFOLK (SSN 714)	141	135	0	0	3	0	95.74	0.00	0.00
USS NORMANDY (CG 60)	362	337	3	3	22	0	93.09	0.89	100.00
USS OAK HILL (LSD 51)	0	0	0	0	0	0	0.00	0.00	0.00
USS O'BANNON (DD 987)	320	238	6	6	15	0	74.38	2.52	100.00
USS ORIOLE (MHC 55)	56	49	0	0	1	0	87.50	0.00	0.00
USS OSCAR AUSTIN (DDG 79)	316	295	0	0	16	0	93.35	0.00	0.00
USS PELICAN (MHC 53)	54	60	1	1	4	0	111.11	1.67	100.00
USS PENNSYLVANIA (BLUE) (SSBN 735)	158	158	1	1	4	0	100.00	0.63	100.00
USS PENNSYLVANIA (GOLD) (SSBN 735)	154	154	0	0	2	0	100.00	0.00	0.00
USS PETERSON (DD 969)	309	348	0	0	20	0	112.62	0.00	0.00
USS PHILADELPHIA (SSN 690)	140	138	3	3	1	0	98.57	2.17	100.00
USS PONCE (LPD 15)	348	468	1	1	31	0	134.48	0.21	100.00
USS PORTER (DDG 78)	325	313	0	0	12	0	96.31	0.00	0.00
USS PROVIDENCE (SSN 719)	137	137	0	0	1	0	100.00	0.00	0.00
USS RAMAGE (DDG 61)	0	0	0	0	0	0	0.00	0.00	0.00
USS RHODE ISLAND (BLUE) (SSBN 740)	164	157	0	0	2	0	95.73	0.00	0.00
USS RHODE ISLAND (GOLD) (SSBN 740)	161	160	0	0	5	0	99.38	0.00	0.00
USS ROBIN (MHC 54)	54	51	1	1	5	0	94.44	1.96	100.00
USS RONALD REAGAN (CVN 76)	300	18	0	0	3	0	6.00	0.00	0.00
USS ROOSEVELT (DDG 80)	325	332	1	1	21	0	102.15	0.30	100.00
USS ROSS (DDG 71)	286	121	1	1	16	0	42.31	0.83	100.00
USS SAN JUAN (SSN 751)	140	176	0	0	1	0	125.71	0.00	0.00
USS SAN JACINTO (CG 56)	0	0	0	0	0	0	0.00	0.00	0.00
USS SCOUT (MCM 8)	85	82	0	0	3	0	96.47	0.00	0.00
USS SCRANTON (SSN 756)	141	152	0	0	1	0	107.80	0.00	0
USS SEATTLE (AOE 3)	578	218	3	1	21	0	37.72	1.38	33.33
USS SEAWOLF (SSN 21)	0	0	0	0	0	0	0.00	0.00	0
USS SENTRY (MCM 3)	88	82	0	0	6	0	93.18	0.00	0
USS SHREVEPORT (LPD 12)	0	0	0	0	0	0	0.00	0.00	0
USS SIMPSON (FFG 56)	210	191	0	0	19	0	90.95	0.00	0
USS SPRINGFIELD (SSN 761)	134	123	1	1	5	0	91.79	0.81	100.00
USS SPRUANCE (DD 963)	353	293	1	1	18	0	83.00	0.34	100.00
USS STEPHENS W GROVES (FFG 29)	191	179	0	0	12	0	93.72	0.00	0
USS STUMP (DD 978)	305	286	2	2	16	0	93.77	0.70	100.00
USS STOUT (DDG 55)	0	0	0	0	0	0	0.00	0.00	0
USS SUPPLY (AOE 6)	563	531	7	7	31	0	94.32	1.32	100.00
USS TENNESSEE (BLUE) (SSBN 734)	166	57	0	0	3	0	34.34	0.00	0
USS TENNESSEE (GOLD) (SSBN 734)	154	147	0	0	3	0	95.45	0.00	0
USS THE SULLIVANS (DDG 68)	318	276	0	0	9	0	86.79	0.00	0
USS THEODORE ROOSEVELT (CVN 71)	2927	2441	11	11	70	0	83.40	0.45	100.00
USS THOMAS S GATES (CG 51)	0	0	0	0	0	0	0.00	0.00	0
USS THORN (DD 988)	313	288	0	0	7	0	92.01	0.00	0

Table 2. Details of 2000 Reports Sent to NEPMU2, Norfolk, VA (continued)

Ship/Station	Total Personnel	Number Test	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
USS TICONDEROGA (CG 47)	350	331	0	0	19	0	94.57	0.00	0
USS TRENTON (LPD 14)	0	0	0	0	0	0	0.00	0.00	0
USS TORTUGA (LSD 46)	287	271	0	0	16	0	94.43	0.00	0
USS UNDERWOOD (FFG 36)	0	0	0	0	0	0	0.00	0.00	0
USS VELA GULF (CG 72)	348	331	0	0	17	0	95.11	0.00	0
USS VICKSBURG (CG 69)	356	368	0	0	25	0	103.37	0.00	0
USS WARRIOR (MCM 10)	86	83	1	1	2	0	96.51	1.20	100.00
USS WASP (LHD 1)	1095	1429	2	2	146	0	130.50	0.14	100.00
USS WHIDBEY ISLAND (LSD 41)	327	300	0	0	25	0	91.74	0.00	0
USS WYOMING (SSBN 724) (GOLD)	153	149	2	2	3	0	97.39	1.34	100.00
USNS BIG HORN (AO 198)	0	0	0	0	0	0	0.00	0.00	0
USNS LARAMIE (T-AO 203)	106	70	0	0	23	0	66.04	0.00	0
2ND MEF/SRG	2872	2660	18	15	103	0	92.62	0.68	83.33
AMBULATORY CARE CENTER GROTON CT	0	0	0	0	0	0	0.00	0.00	0
AMBULATORY CARE CENTER, NEW ORLEANS	0	0	0	0	0	0	0.00	0.00	0
AMPHIBIOUS SQUADRON – 6	0	0	0	0	0	0	0.00	0.00	0
ASSAULT CRAFT UNIT TWO (SEA)	236	158	0	0	9	0	66.95	0.00	0
ASSAULT CRAFT UNIT TWO (SHORE)	56	42	0	0	4	0	75.00	0.00	0
BMC ALBANY GA	751	151	1	1	2	0	20.11	0.66	100.00
BMC AMPHIBIOUS BASE LITTLE CREEK VA	7352	1042	26	24	36	0	14.17	2.50	92.31
BMC ATLANTA GA	1400	439	6	5	4	0	31.36	1.37	83.33
BMC NAS BRUNSWICK ME	4033	1455	7	6	12	0	36.08	0.48	85.71
BMC DAHLGREN VA	18	16	0	0	0	0	88.89	0.00	0
BMC EARLE NJ	32	27	0	0	5	0	84.38	0.00	0
BMC INDIAN HEAD MD	22	21	0	0	1	0	95.45	0.00	0
BMC KEY WEST, FL	632	636	10	9	43	0	100.63	1.57	90.00
BMC MAYPORT FL	3281	2367	24	24	12	0	72.14	1.01	100.00
BMC MECHANICSBURG PA	240	144	0	0	6	0	60.00	0.00	0
BMC NAF WASHINGTON DC	27	26	0	0	1	0	96.30	0.00	0
BMC NAS JRB FORT WORTH	4945	866	11	8	15	0	17.51	1.27	72.73
BMC NAS LAKEHURST NJ	25	22	0	0	3	0	88.00	0.00	0
BMC NAS MERIDIAN MS	2220	453	12	10	7	0	20.41	2.65	83.33
BMC NAS OCEANA	14000	11400	49	49	241	0	81.43	0.43	100.00
BMC NAS WHITING FIELD FL	1800	603	3	3	12	0	33.50	0.50	100.00
BMC NAS WILLOW GROVE PA	51	41	0	0	5	0	80.39	0.00	0
BMC NAVAL COMPUTER & TELECOMMUNICATION STATION ME	0	0	0	0	0	0	0.00	0.00	0
BMC NAV SECURITY GRP WINTER HARBOR, ME	0	0	0	0	0	0	0.00	0.00	0
BMC NAVAL CONSTRUCTION BATTALION CENTER GULFPORT MS	3400	1436	47	47	22	0	42.24	3.27	100.00
BMC NAVAL STATION NORFOLK	17000	8826	126	126	247	0	51.92	1.43	100.00
BMC NSA MID-SOUTH MILLINGTON TN	1850	121	2	2	35	0	6.54	1.65	100.00
BMC PANAMA CITY FL	188	174	4	4	11	0	92.55	2.30	100.00
BMC PASCAGOULA MS		163	0	0	1	0	40.15	0.00	0

Table 2. Details of 2000 Reports Sent to NEPMU2, Norfolk, VA (continued)

Ship/Station	Total Personnel	Number Test	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
BMC PATUXENT RIVER MD	2676	2009	7	7	28	0	75.07	0.35	100.00
BMC PENSACOLA FL	0	0	0	0	0	0	0.00	0.00	0
BMC PHILADELPHIA	0	0	0	0	0	0	0.00	0.00	0
BMC PORTSMOUTH SHIPYARD NH	123	44	0	0	0	0	35.77	0.00	0
BMC QUANTICO VA	6700	4768	36	34	20	0	71.16	0.76	94.44
BMC SUGAR GROVE WV	5	5	0	0	0	0	100.00	0.00	0
BMC WASHINGTON NAVY YARD, DC	33	33	0	0	0	0	100.00	0.00	0
BMC YORKTOWN VA	920	242	3	3	6	0	26.30	1.24	100.00
CRANE DIVISION NAVAL SURFACE WARFARE CENTER IN	47	26	1	1	3	0	55.32	3.85	100.00
MILITARY SEALIFT COMMAND ATLANTIC	1920	951	25	25	168	0	49.53	2.63	100.00
MOBILE CONSTRUCTION BATTALION 133	601	580	3	3	41	0	96.51	0.52	100.00
MOBILE CONSTRUCTION BATTALION ONE	583	549	2	2	30	0	94.17	0.36	100.00
NAVAL AMBULATORY CARE CENTER GROTON CT	13680	1207	12	12	27	0	8.82	0.99	100.00
NAVAL AMBULATORY CARE CENTER NEW ORLEANS LA	2762	963	5	5	21	0	34.87	0.52	100.00
NAVAL MEDICAL CENTER BETHESDA MD	3730	3178	125	65	46	1	85.20	3.93	52.00
NAVHOSP BEAUFORT, SC (MCRD)	2040	1032	25	24	70	0	50.59	2.42	96.00
NAVHOSP BEAUFORT, SC (NH STAFF)	423	251	3	2	4	0	59.34	1.20	66.67
NAVHOSP BEAUFORT, SC (RECRUITS)	16897	16216	357	336	29	0	95.97	2.20	94.12
NAVHOSP CAMP LEJEUNE NC	15431	11518	51	48	294	0	74.64	0.44	94.12
NAVHOSP CHARLESTON, SC	556	248	5	5	33	0	44.60	2.02	100.00
NAVHOSP CHERRY POINT, NC	1175	1695	49	40	75	0	144.26	2.89	81.63
NAVHOSP CORPUS CHRISTI, TX	3567	509	38	36	93	0	14.27	7.47	94.74
NAVHOSP GREAT LAKES, IL (RTC)	52881	51131	715	423	292	1	96.69	1.40	59.16
NAVHOSP GREAT LAKES, IL (STAFF)	3826	1108	10	10	93	0	28.96	0.90	100.00
NAVHOSP GREAT LAKES, IL (SERVICE SCHOOL)	5705	2498	22	14	155	0	43.79	0.88	63.64
NAVHOSP GUANTANAMO BAY CUBA	0	0	0	0	0	0	0.00	0.00	0
NAVHOSP JACKSONVILLE	9355	4871	46	46	78	0	52.07	0.94	100.00
NAVHOSP KEFLAVIK	0	0	0	0	0	0	0.00	0.00	0
NAVHOSP PENSACOLA, FL	4575	3703	13	13	19	1	80.94	0.35	100.00
NAVHOSP PORTSMOUTH, VA	3032	1958	18	18	235	0	64.58	0.92	100.00
NAVHOSP ROOSEVELT ROADS	2816	2697	9	9	58	0	95.77	0.33	100.00
PCU VIRGINIA (SSN 774)	51	32	0	0	2	0	62.75	0.00	0
SEAL TEAM FOUR	0	0	0	0	0	0	0.00	0.00	0
SUBMARINE BASE KINGS BAY GA	0	0	0	0	0	0	0.00	0.00	0
US NAVAL MEDCLINIC LONDON	815	409	5	4	42	0	50.18	1.22	80.00
2ND FSSG, NC	5007	4250	40	40	207	0	84.88	0.94	100.00
2ND MARDIV, NC	12172	10944	88	87	286	0	89.91	0.80	98.86
2ND MAW CHERRY POINT	7870	4154	59	47	286	0	52.78	1.42	79.66
SUBMARINE NR-1	39	39	0	0	0	0	100.00	0.00	0
Summary	294212	19796	2442	1931	5931	3	75.55	1.09	79.07

Table 3. Details of 1999 Reports Sent to NEPMU5, San Diego, CA

Ship/Station	Total Personnel	Number Tested	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
1ST MARDIV / 48139	15,910	13,321	120	0	0	0	83.73	0.9	0
3RD MAW / 46623	3828	1987	3	12	119	0	51.91	0.2	400
USS ABRAHAM LINCOLN 21297	2594	2477	31	31	96	0	95.49	1.25	100
USS ALABAMA (BLUE) / 41580	164	161	0	0	3	0	98.17	0	0
USS ALABAMA (GOLD) / 41581	162	155	0	0	7	0	95.68	0	0
USS ALASKA 42255/42256	310	246	4	1	3	0	79.35	1.6	25
USS ANCHORAGE / 07203	329	511	1	1	42	0	155.32	0.2	100
USS ARRO (ARDM 5) POINT LOMA / 20036	99	104	0	0	12	0	105.05	0	0
USS BENFOLD / 21940	303	258	0	0	27	0	85.15	0	0
BMC 52 AREA CAMP PENDLETON / 46365	37	30	1	0	6	0	81.08	3.3	0
BMC BANGOR / 68095	4,941	2,021	8	7	88	0	40.90	0.4	88
BMC BRIDGEPORT / 46384	12	11	0	0	1	0	91.67	0	0
BMC CHINA LAKE / 41425	743	209	1	1	16	0	28.13	0.5	100
BMC EVERETT / 47430	2771	482	16	14	32	0	17.39	3.3	88
BMC MCRD SAN DIEGO / 3226	1800	20677	232	219	64	0	1148.72	1.1	94
BMC MIRIMAR / 32547	1437	1296	57	56	92	0	90.19	4.3	98
BMC NAVAL STATION / 45020	5500	3220	87	44	423	0	58.55	2.7	51
BMC NORTH ISLAND / 35246	9678	2424	50	38	180	0	25.05	1.5	76
BMC PSNS BREMERTON 32587	560	205	3	3	45	0	36.61	1.5	100
USS BON HOMME RICHARD 22202	1,105	995	1	0	110	0	90.05	0.1	0
USS BOXER / 21808	1149	1206	9	8	169	0	104.96	0.7	89
USS BREMERTON / 20882	143	138	1	1	3	0	96.50	0.7	100
USS BRIDGE / 21979	448	300	0	0	0	0	66.96	0	0
USS BUNKER HILL / 23145	355	354	0	0	21	1	99.72	0	0
USS CAMDEN / 05833	544	479	35	34	49	0	88.05	7.3	97
USS CARL VINSON / 20993	3344	2117	11	10	173	0	63.31	0.5	91
USS CLEVELAND / 07181	403	371	3	3	56	0	92.06	0.8	100
COMPSRON THREE 46404	21	18	0	0	3	0	85.71	0	0
USS COMSTOCK / 21452	306	271	1	1	34	0	88.56	0.4	100
COMSUBDEVRON FIVE / 55522	45	54	0	0	0	0	120.00	0	0
USS CONSTELLATION / 03364	2789	1936	15	15	176	0	69.42	0.8	100
USS CORONADO / 07194	584	509	0	0	59	0	87.16	0	0
CSSD-16, YUMA / M28357	98	93	2	2	5	0	94.90	2.1	100
USS DAVID R RAY / 20591	323	298	2	2	20	0	92.26	0.7	100
USS DECATUR / 21947	334	327	12	3	12	0	97.90	3.7	25

Table 3. Details of 2000 Reports Sent to NEPMU5, San Diego, CA (continued)

Ship/Station	Total Personnel	Number Tested	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
USS DENVER / 07183	370	392	4	4	38	0	105.95	1	100
USS DOLPHIN / 05072	48	47	0	0	1	0	97.92	0	0
USS DUBUQUE / 07182	383	345	0	0	35	0	90.08	0	0
USS DULUTH / 07177	372	331	41	2	39	0	88.98	12	5
USS ELLIOTT / 20587	349	321	0	0	28	0	91.98	0	0
EOD MOBILE UNIT 11 55569	132	119	0	0	13	0	90.15	0	0
EOD MOBILE UNIT 17 47150	35	34	0	0	0	0	97.14	0	0
USS ERICSSON / N21524	104	62	0	0	45	0	59.62	0	0
USS FIFE / 20838	355	0	0	0	23	0	0.00	0	0
USS FITZGERALD / 21824	296	334	10	10	25	1	112.84	2.9	100
USS FLINT / N20113	151	38	0	0	18	0	25.17	0	0
USS FLORIDA (BLUE) / 35957	164	163	0	0	1	0	99.39	0	0
USS FLORIDA (GOLD) / 35958	167	153	0	0	4	0	91.62	0	0
USS FORD / 21235	209	197	4	4	8	0	94.26	2	100
USS GEORGE PHILIP / 20965	183	165	4	4	14	0	90.16	2.4	100
USS GEORGIA (BLUE) / 35959	161	153	0	0	3	0	95.03	0	0
USS GEORGIA (GOLD) / 35960	159	129	0	0	4	0	81.13	0	0
USS HARPERS FERRY / 21582	316	291	2	2	21	0	92.09	0.6	100
USS HENRY M JACKSON (BLUE) 39356	161	161	0	0	1	0	100.00	0	0
USS HEWITT / 20586	334	0	20	2	0	0	0.00	**	10
USS HIGGINS / 21950	338	301	37	4	33	0	89.05	12	11
USS HOUSTON / 20994	138	131	1	1	7	0	94.93	0.8	100
USS JARRETT / 21058	215	180	0	0	13	0	83.72	0	0
USS JEFFERSON CITY / 21605	137	119	0	0	5	0	86.86	0	0
JOHN C STENNIS / 21847	3057	1678	6	6	162	0	54.89	0.4	100
JOHN PAUL JONES / 21313	312	290	0	3	22	0	92.95	0	0
KISKA / N20245	151	85	0	0	28	0	56.29	0	0
LAKE CHAMPLAIN / 21428	371	351	3	3	20	1	94.61	0.9	100
MARINE AIR GROUP 13 YUMA / 31055	2700	1032	6	5	61	0	38.22	0.6	83
MARINE MOUNTAIN WARFARE TRN / 33610	210	182	3	3	16	0	86.67	1.6	100
MCCLUSKY / 21108	205	205	0	1	14	0	100.00	0	0
MERCY / 46245	68	47	4	4	17	0	69.12	8.5	100
MICHIGAN (BLUE) / 35955	159	132	0	0	5	0	83.02	0	0
MOBILE BAY / R21346	382	360	13	13	8	0	94.24	3.6	100
MOUNT VERNON / 20014	328	315	2	2	29	0	96.04	0.6	100
NAVAL AIR FACILITY EL CENTRO / 41432	262	321	21	1	19	0	122.52	6.5	5
NAVHOSP BREMERTON 68095	1204	1594	32	32	15	0	132.39	2	100
NAVHOSP CAMP PENDLETON / 68094	832	576	4	4	94	0	69.23	0.7	100
NAVHOSP OAK HARBOR 66097	8838	2500	50	50	126	0	28.29	2	100
NAVHOSP TWENTY NINE PALMS / 36949	3773	2654	21	21	176	0	70.34	0.8	100
NAVY MOBILE CONSTR BN FIVE / 55115	643	538	0	0	18	0	83.67	0	0
NAVY MOBILE CONSTR BN FOUR / 55114	572	526	46	2	44	0	91.96	8.7	4
USS NEBRASKA / 48567	156	151	0	0	5	0	96.79	0	0
USS NEVADA (BLUE) / 44422	154	154	0	0	3	0	100.00	0	0

Table 3. Details of 2000 Reports Sent to NEPMU5, San Diego, CA (continued)

Ship/Station	Total Personnel	Number Tested	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
USS NIAGARA FALLS / N22197	174	68	0	0	64	0	39.08	0	0
NMC SAN DIEGO / 00259	3095	2237	12	10	189	1	72.28	0.5	83
USS OGDEN / 07176	348	234	0	0	33	0	67.24	0	0
USS OHIO (BLUE) / 35953	162	157	2	2	3	0	96.91	1.2	100
USS OHIO (GOLD) 35954	164	134	0	0	8	0	81.71	0	0
USS OLDENDORF	344	344	6	5	26	0	100.00	1.7	83
USS PARCHE 20345/44901	185	185	0	0	0	0	100.00	0	0
USS PEARL HARBOR / 21959	348	318	5	5	25	0	91.38	1.6	100
USS PECOS / 21582	105	0	0	0	45	0	100.00	0	0
USS PELELIU / 20748	1102	762	13	13	137	0	69.15	1.7	100
PHIBGRU THREE / 52739	103	196	0	0	7	0	190.29	0	0
PORT HUENEME & POINT MUGU/	1790	728	219	11	133	0	40.67	30	5
USS PORTSMOUTH / 20883	136	69	0	0	4	0	50.74	0	0
USS PRINCETON / 21447	357	456	1	0	21	0	127.73	0.2	0
PUGET SOUND NAVAL SHIPYARD / 32587	560	205	3	3	45	0	36.61	1.5	100
USS RAINIER / 21872	500	470	13	13	42	0	94.00	2.7	100
USS RAPPAHONNOCK / 21871	99	54	0	0	11	0	54.55	0	0
USS RENTZ 21198	218	234	0	1	8	0	107.34	0	0
USS RODNEY M DAVIS / 21391	215	167	11	0	11	0	77.67	6.5	0
USS RUSHMORE / 21530	323	286	8	8	37	0	88.54	2.8	100
USS SALT LAKE CITY / 21023	130	115	0	0	5	0	88.46	0	0
USS SAN JOSE / N22196	171	2	2	2	54	1	1.17	100	100
SEAL TEAM FIVE	250	100	2	2	12	0	40.00	2	100
USS SHASTA / N20114	131	82	0	0	67	0	62.60	0	0
USS SHILOH / 21657	406	300	1	1	27	0	73.89	0.3	100
USS SIDES / 20967	188	161	0	0	17	0	85.64	0	0
USS SPICA / 21546	188	88	0	0	55	0	46.81	0	0
USS STETHEM / 21825	315	259	4	4	23	0	82.22	1.5	100
USS TARAWA / 20550	1036	983	5	5	145	0	94.88	0.5	100
USS TIPPECANOE / N21622	101	70	1	1	7	0	69.31	1.4	100
USS VALLEY FORGE 21296	354	38	4	4	38	0	10.73	10.5	100
USS WADSWORTH / 21033	181	154	4	4	5	0	85.08	2.6	100
USS WALTER S DIEHL / 46282	109	61	4	0	20	0	55.96	6.6	0
USS YUKON 21689/48889	79	37	0	0	17	0	46.84	0	0
USS ZEPHYR 91929	29	26	2	2	3	0	89.66	7.6	100
SUMMARY	212,886	173,480	2710	1560	9419	10	81.49	1.56	57.56

Table 4. Details of 2000 Reports Sent to NEPMU 6, Pearl Harbor, HI

Ship/Station	Total Personnel	# Test Given	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
12TH MARINES REG AID STATION	231	231	2	2	0	0	100.00	0.87	100.00
1ST BATTALION 3RD MARINES	841	819	4	2	18	0	97.38	0.49	50.00
1ST RADIO BN MARFORPAC	579	554	3	3	18	0	95.68	0.54	100.00
1STBATTALION 12TH MARINES	440	369	8	8	14	0	83.86	2.17	100.00
2 / 7 BAS	845	755	10	10	0	0	89.35	1.32	100.00
2ND BATTALION 3RD MARINES	856	853	3	3	32	0	99.65	0.35	100.00
3D MEDICAL BATTALION MC	430	425	2	2	40	0	98.84	0.47	100.00
3D RECON BN	237	253	0	2	8	0	106.75	0.00	0.00
3RD BATTALION 12TH MARINES	162	141	0	0	8	0	87.04	0.00	0.00
3RD BATTALION 3RD MARINES	780	774	7	7	30	0	99.23	0.90	100.00
4TH MARINE REG/3RD DIV	183	176	1	1	6	0	96.17	0.57	100.00
BLT 1/5	1035	742	10	10	15	0	71.69	1.35	100.00
BMC CHINHAE	100	98	0	0	15	0	98.00	0.00	0.00
BMC IWAKUNI	2713	1711	21	21	34	0	63.07	1.23	100.00
BMC SASEBO							0.00	0.00	0.00
COMBAT ASSAULT BATTALION	710		2	1	22	0	0.00	0.00	50.00
COMBAT SUPPORT CO 3D MARINES	137	136	0	0	1	0	99.27	0.00	0.00
COMDESRON 15	45	36	0	0	10	0	80.00	0.00	0.00
COMPSRON THREE	21	18	0	0	3	0	85.71	0.00	0.00
CSSG-3 MED CO	960	959	1	2	87	0	99.90	0.10	200.00
EODMU FIVE							0.00	0.00	0.00
EODMU THREE							0.00	0.00	0.00
HQ BATTALION	1050	1	51	7	12	0	0.10	5100.00	13.73
HQ CO 3D MARINES	395	336	3	3	19	0	85.06	0.89	100.00
MDSU-1	125	118	2	2	9	0	94.40	1.69	100.00
NAF ATSUGI (AD)	1400	763	23	22	70	0	54.50	3.01	95.65
NMC PEARL HARBOR	8263	2858	102	90	113	0	34.59	3.57	88.24
NMCB SEVEN							0.00	0.00	0.00
NSF DIEGO GARCIA							0.00	0.00	0.00
SDV TEAM 1	265	252	13	13	13	0	95.09	5.16	100.00
SUBGROUP 7	130	98	0	0	6	0	75.38	0.00	0.00
USNH GUAM	512	908	85	82	29	0	177.34	9.36	96.47
USNH OKINAWA	850	348	3	3	74	0	40.94	0.86	100.00
USNH YOKOSUKA	2197	889	11	9	97	0	40.46	1.24	81.82
USNS ERICSON	104	62		0	45	0	59.62	0.00	0.00
USNS FLINT							0.00	0.00	0.00
USNS NIAGARA FALLS	174	68	0	0	64	0	39.08	0.00	0.00
USNS OBSERVATION ISLAND							0.00	0.00	0.00
USNS RAPPAHANNOCK (T-AO204)	99	48	0	0	18	0	48.48	0.00	0.00
USNS SAN JOSE	171	92	2	1	54	1	53.80	2.17	50.00
USNS WALTER S. DIEHL	109	61	4	0	20	0	55.96	6.56	0.00
USS ASHEVILLE							0.00	0.00	0.00
USS BELLEAUWOOD							0.00	0.00	0.00
USS BLUERIDGE	868	753	0	0	117	0	86.75	0.00	0.00
USS CHANCELLORSVILLE	381	312	3	3	46	0	81.89	0.96	100.00

Table 4. Details of 2000 Reports Sent to NEPMU 6, Pearl Harbor, HI (continued)

Ship/Station	Total Personnel	# Test Given	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
USS CHICAGO (SSN 721)	145	143	0	0	2	0	98.62	0.00	0.00
USS COLUMBIA (SSN 771)	143	156	0	0	5	0	109.09	0.00	0.00
USS COWPENS	380	340	6	6	40	0	89.47	1.76	100.00
USS CROMMELIN	206	191	0	0	15	0	92.72	0.00	0.00
USS CURTIS WILBUR	320		0	0	31	0	0.00	0.00	0.00
USS CUSHING	355	330	0	0	40	0	92.96	0.00	0.00
USS DUBUQUE							0.00	0.00	0.00
USS ESSEX (LDH-2)	1056	931	8	8	112	0	88.16	0.86	100.00
USS FLETCHER							0.00	0.00	0.00
USS FORT MCHENRY	320	273	1	1	44	0	85.31	0.37	100.00
USS FRANK CABLE							0.00	0.00	0.00
USS FREDERICK (LST 1184)	245	233	0	0	12	0	95.10	0.00	0.00
USS GARY	202	135	0	0	22	1	66.83	0.00	0.00
USS GERMANTOWN	324	277	3	3	44	0	85.49	1.08	100.00
USS GREENVILLE	130	144	0	1	0	0	110.77	0.00	0.00
USS HAWKBILL							0.00	0.00	0.00
USS HONOLULU	134	131	0	0	3	0	97.76	0.00	0.00
USS HOPPER	308	290	6	6	18	0	94.16	2.07	100.00
USS JOHN MCCAIN	324	290	3	3	25	0	89.51	1.03	100.00
USS JUNEAU	373	315	5	5	28	0	84.45	1.59	100.00
USS KAMEHAMEHA	140	133	0	0	7	0	95.00	0.00	0.00
USS KEY WEST	150	167	0	0	2	0	111.33	0.00	0.00
USS KITTY HAWK							0.00	0.00	0.00
USS LAKE ERIE							0.00	0.00	0.00
USS LOS ANGELES	142	129	0	0	6	0	90.85	0.00	0.00
USS LOUISVILLE	142	146	0	0	3	0	102.82	0.00	0.00
USS MOBILE BAY							0.00	0.00	0.00
USS O'BRIEN	326	250	1	1	39	0	76.69	0.40	100.00
USS OKANE	330	278	2	2	30	0	84.24	0.72	100.00
USS OLYMPIA							0.00	0.00	0.00
USS PAUL HAMILTON							0.00	0.00	0.00
USS PORT ROYAL	390	354	11	11	25	0	90.77	3.11	100.00
USS REUBEN JAMES	212	188	0	0	24	0	88.68	0.00	0.00
USS RUSSELL	315	280	6	6	29	0	88.89	2.14	100.00
USS SAFEGUARD (ARC-50)	100	97	2	2	6	0	97.00	2.06	100.00
USS SALVOR	109	103	0	1	6	0	94.50	0.00	0.00
USS SAN FRANCISCO							0.00	0.00	0.00
USS SANTA FE (SSN763)	134	130	0	0	5	0	97.01	0.00	0.00
USS THACH							0.00	0.00	0.00
USS TUCSON	137	132	1	1	5	0	96.35	0.76	100.00
USS VAN DEGRIFT	215	213	3	3	36	0	99.07	1.41	100.00
USS VINCENNES							0.00	0.00	0.00
USS WM H BATES							0.00	0.00	0.00
WHITE BEACH BMC, OKINAWA	108	88	0	0	20	0	81.48	0.00	0.00
Summary	**42791**	**18462**	**489**	**288**	**1643**	**6**	**43.14**	**2.65**	**59**

Table 5. Details of 2000 Reports received NEMPU7, Sigonella, Italy

Ship/Station	Total Personnel	Number Tested	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
USNH SIGONELLA, ITALY	3493	1853	19	11	17	1	53.05	1.03	57.89
AS 39 SITE COMPONENT, LAMADDALENA IT	1244	1236	12	12	50	0	99.36	0.97	100.00
BRMEDCLINIC SOUDA BAY	415	431	2	2	0	0	103.86	0.46	100.00
BRMEDCLINIC ST MAWGAN	264	72	0	0	0	0	27.27	0.00	0
COMSIXTHFLT	0	0	0	0	0	0	0	0	0
HMM-261	0	0	0	0	0	0	0	0	0
NSA, BAHRAIN	2704	720	28	28	44	0	26.63	3.89	100.00
USNAVMEDCLINICS, UK	815	409	5	4	42	0	50.18	1.22	80.00
USNH NAPLES	316	3	0	0	0	0	0.95	0.00	0
USNH ROTA	3005	1708	14	14	248	0	56.84	0.82	100.00
BRMEDCLINIC LA MADDALENA, ITALY	196	72	0	0	11	0	36.73	0.00	0
USS LASALLE	747	308	2	0	54	1	41.23	0.65	0.00
USS ARDENT (MCM 12	89	81	8	2	6	0	91.01	9.88	25.00
Summary	13288	6893	90	73	472	2	51.87	1.31	81.11

Table 6. Details of 2000 Reports Received From Aircraft Carriers

SHIP	Total Personnel	Number Tested	New Reactors Identified	Reactors placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
USS CARL VINSON (CVN 70)	3344	2117	11	10	173	0	63.31	0.52	90.91
USS CONSTELLATION (CV 64)	2789	1936	15	15	176	0	69.42	0.77	100.00
USS DWIGHT D EISENHOWER (CVN 69)	2681	2759	4	4	141	0	102.91	0.14	100.00
USS ENTERPRISE (CVN 65)	3200	2683	25	25	153	0	83.84	0.93	100.00
USS GEORGE WASHINGTON (CVN 73)	2943	3120	22	22	174	0	106.01	0.71	100.00
USS HARRY S TRUMAN (CVN 75)	0	0	0	0	0	0	0.00	0.00	0.00
USS JOHN C. STENNIS (CVN 74)	3057	1678	6	6	162	0	54.89	0.36	100.00
USS JOHN F. KENNEDY (CV 67)	2890	2440	29	45	172	0	84.43	1.19	155.17
USS KITTY HAWK (CV 63)	3071	1244	8	8	386	0	40.51	0.64	100.00
USS NIMITZ (CVN 68)	2830	2555	3	3	147	0	90.28	0.12	100.00
USS RONALD REAGAN (CVN 76)	300	18	0	0	3	0	6.00	0.00	0.00
USS THEODORE ROOSEVELT (CVN 71)	2927	2441	11	11	70	0	83.40	0.45	100.00
SUMMARY	30032	22991	134	149	1757	0	76.56	0.58	111.19

Table 7. Details of 2000 Reports received from Large Deck Amphibious Vessels

SHIP	Total Personnel	Number Tested	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
USS BATAAN (LHD 5)	1152	586	8	8	96	0	50.87	1.37	100
USS BELLEA U WOOD (LHA 3)	1123	928	16	15	138	0	82.64	1.72	94
USS BOXER (LHD 4)	1149	1206	9	8	169	0	104.96	0.75	89
USS IWO JIMA	0	0	0	0	0	0	0.00	0.00	0
USS KEARSARGE (LHD 3)	1081	1052	107	29	78	0	97.30	10.17	27.1
USS NASSAU (LHA 4)	1046	983	18	18	57	0	94.00	1.83	100
USS PELELIU (LHA 5)	1102	762	13	13	137	0	69.15	1.71	100
USS SAIPAN (LHA 2)	0	0	0	0	0	0	0.00	0.00	0
USS TARAWA (LHA 1)	1036	983	5	5	145	0	94.88	0.51	100
USS WASP (LHD 1)	1095	1429	2	2	146	0	130.50	0.14	100
SUMMARY	8784	7929	178	98	966	0	90.27	2.24	55.06

Table 8. Details of 2000 Reports received from Major MTF Navy Wide

COMMAND REPORTING	Total Personnel	# Of Test Given	New Reactors Identified	Reactors Placed On INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
NAVAL AMBULATORY CARE CENTER GROTON, CT	13680	1207	12	12	27	0	8.82	0.99	100.00
NAVAL MEDICAL CENTER BETHESDA, MD	3730	3178	125	65	46	1	85.20	3.93	52.00
NAVAL MEDICAL CENTER PORTSMOUTH, VA	3032	1958	18	18	235	0	64.58	0.92	100
NAVAL MEDICAL CENTER, SAN DIEGO , CA	3095	2237	12	10	189	1	72.28	0.54	83.33
NAVHOSP BEAUFORT, SC (MCRD)	19360	17499	385	362	103	0	90.39	5.82	256.78
NAVHOSP BREMERTON, WA	262	321	21	1	19	0	122.52	6.54	4.76
NAVHOSP CAMP LEJEUNE, NC	15431	11518	51	48	294	0	74.64	0.44	94.12
NAVHOSP CAMP PENDLETON, CA	1204	1594	32	32	15	0	132.39	2.01	100.00
NAVHOSP CHARLESTON, SC	556	248	5	5	33	0	44.60	2.02	100.00
NAVHOSP CHERRY POINT, NC	1175	1695	49	40	75	0	144.26	2.89	81.63
NAVHOSP CORPUS CHRISTI, TX	3567	509	38	36	93	0	14.27	7.47	94.74
NAVHOSP GREAT LAKES, IL	5298	2452	92	81	201	0	46.28	3.75	88.04
NAVHOSP GUANTANAMO BAY, CUBA	0	0	0	0	0	0	0	0	0.00
NAVHOSP JACKSONVILLE, FL	9355	4871	46	46	78	0	52.07	0.94	100.00
NAVHOSP KEFLAVIK, ICELAND	0	0	0	0	0	0	0	0	0
NAVHOSP LEMOORE, CA	6318	1826	10	10	58	0	28.90	0.55	100.00
NAVHOSP PENSACOLA, FL	4575	3703	13	13	19	1	80.94	0.35	100.00
NAVHOSP ROOSEVELT ROADS, PUERTO RICO	2816	2697	18	18	235	0	95.77	0.67	100.00
NAVHOSP TWENTY NINE PALMS	3773	2654	21	21	176	0	70.34	0.79	100.00
US NAVAL HOSPITAL, GUAM	208	320	3	3	55	0	153.85	0.94	100.00
US NAVAL HOSPITAL, NAPLES, ITALY	316	3	0	0	0	0	0.95	0.00	0.00
NAVHOSP OAK HARBOR	8838	2500	50	50	126	0	28.29	2.00	100.00
US NAVAL HOSPITAL, OKINAWA, JAPAN	850	348	3	3	74	0	40.94	0.86	100
US NAVAL HOSPITAL, ROTA, SPAIN	3005	1708	14	14	248	0	56.84	0.819672	100
US NAVAL HOSPITAL, SIGONELLA, ITALY	3493	1853	19	11	17	1	53.05	1.03	57.89
US NAVAL HOSPITAL, YOKOSUKA, JAPAN	2197	889	11	9	97	0	40.94	.89	100
SUMMARY	97225	63734	1007	869	2154	4	65.55	1.58	86.30

Table 9. Details of 2000 Reports received from Reporting Marine Corps Units

COMMAND REPORTING	Total Personnel	# Test Read	New Reactors Identified	Reactors Placed on INH	Old Reactors	Active Cases	% Tested	% Reactors Identified	% Reactors Placed on INH
2ND FSSG, NC	5007	4250	40	40	702	0	84.88	0.94	100.00
2ND MARDIV, NC	12172	10944	88	87	286	0	89.91	0.80	98.86
2ND MAW CHERRY POINT	7870	4154	59	47	286	0	52.78	1.42	79.66
1ST MARDIV	15910	13321	120	0	0	0	83.73	0.90	0.00
3RD MAW	3828	1987	120	0	0	0	51.91	6.04	0.00
MAG 13	2700	1032	6	5	61	0	38.22	0.58	83.33
MARINE MOUNTAIN WARFARE TRN	210	182	3	3	16	0	86.67	1.65	100.00
SUMMARY	47697	35870	436	182	1351	0	75.20	1.22	41.74

Mycobacterium tuberculosis continues to be a worldwide threat, which infects approximately 1 billion people worldwide. The Navy's Tuberculosis control program is based on BUMED Instruction 6224.8 which describes testing, reporting and treatment requirements. The following summary is based on active TB cases reported to NEHC since 1988, in active duty Navy and Marine Corps personnel.

Table 10. Summary of all active Tuberculosis Cases submitted since 1998

Year Reported	Total Personnel	Total Active Cases	% Active cases
1988	592570	13	0.002193834
1989	592652	2	0.000337466
1990	579417	5	0.000862936
1991	570262	7	0.001227506
1992	541886	10	0.001845407
1993	509950	6	0.001176586
1994	468662	8	0.001706987
1995	434617	8	0.001840701
1996	416735	8	0.001919685
1997	387774	6	0.001547293
1998	500488	47	0.009390835
1999	377653	24	0.006355040
2000	454568	25	0.005499727
SUMMARY	6427234	169	0.002629436

COMMUNICABLE DISEASE

Does the Frequency/Quality of Food Safety Inspections Correlate to Frequency of Food-Borne Outbreaks?

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The Question:
"Can anyone identify a study whereby the frequency (and/or quality) of food safety inspections has been correlated with a reduction in food-borne illness?"

In an attempt to answer this question, the author spent five days searching, and ultimately exhausting: internet search resources (MedLine, PubMed, Grateful Med, NLM Gateway, Ovid, FDA, CDC, to name a handful), every generic internet search engine, professional journals and the Environmental Health ListServ at CDC. By far, everyone who participated in the ListServ discussion provided me with the most useful leads on published material.

There appear to be only two notably published studies that have been done relating to the questioned asked. Both articles were published in the American Journal of Public Health.

The first article by Irwin, et. al., attempted to analyze the association between the results of routine inspections and food-borne outbreaks in restaurants. Case restaurants had a significantly lower mean inspection score (83.8 on a 0 to 100 point scale) than control restaurants (90.9). Restaurants with poor inspection scores and violations of proper temperature controls of potentially hazardous foods were, respectively, five to ten times more likely to have outbreaks than restaurants with better results.[1]

The second article (Cruz, et. al.) sought to determine the usefulness of restaurant inspections in predicting food-borne outbreaks. Case and control restaurants did not differ by overall inspection outcomes or mean number of critical violations. Only 1 critical violation – evidence of vermin – was associated with outbreaks. This study concluded that the results of restaurant inspections did not predict outbreaks.[2]

Both studies attempted to answer the question (or a permutation of the question) with opposite results. What does that tell us?

The articles tell us a few things, and they pose many questions. They indicate that any attempt to study this question is going to be a huge undertaking. Finding control and study groups sufficient in size to draw a definitive conclusion from are going to be a monumental task. How many process controls need to be incorporated into the study? Can we safely study this question without putting the public at risk, i.e. discontinuing inspections at places x, y, and z (is that even ethical?)? Does a new system of evaluation and data collection need to be implemented in order to do this study? Can a valid study attempting to answer this question even be conducted on a regional/nationwide scale? Are there just too many variables to study? And ultimately, whose responsibility is it, to conduct this massive undertaking?

The question has been asked, many times, but essentially remains unanswered. As environmental health professionals, our gut feelings tell us that there has to be some correlation between frequency/quality of safety inspection and incidence of food borne illness, but concrete data are lacking.

References

1. Irwin K., Ballard J., Kobayashi J., "Results of Routine Restaurant Inspection Can Predict Outbreaks of Foodborne Illness: The Seattle - King County Experience," AJPH, May 1989, Vol. 79, No. 5

2. Cruz M., Katz D., Suarez J., "An Assessment of the Ability of Routine Restaurant Inspections to Predict Foodborne Outbreaks in Miami - Dade County, Florida," AJPH, May 2001, Vol. 9, No.5.

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 2001. The source of this data is the Army Medical Surveillance Activity (AMSA).

Table 1. Cumulative Data (date 28 Aug 1998 - 30 Sep 2001)

Service	VAERS Report Required		Classification				
			Local Reaction			Systemic Reaction	Cum. Totals
	Yes	No	Mild	Moderate	Severe		
USA	13	106	14	23	13	69	119
USN	4	69	6	7	8	52	73
USAF	30	418	31	49	30	338	448
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

The Science and Art of Navy Preventive Medicine

Becky C. Washburn, CHPD

In Navy Preventive Medicine, we employ various methods and tools for conducting our jobs efficiently and effectively.[1] Our jobs entail identifying health threats, assessing hazards, and evaluating risks by collecting, storing, analyzing and transmitting data - this is the science. We are the professionals called upon to communicate vital information, and recommend preventive measures to minimize the threats, hazards or risks to the health of our beneficiaries - this is the art.

The Naval Disease Reporting System (NDRS) is a tool developed by the Navy Environmental Health Center that can be accessed via a CD-ROM or may be downloaded from the Preventive Medicine website at http://www-nehc.med.navy.mil/prevmed/epi/ndrssreq.htm. The NDRS is used for medical surveillance and is in compliance with the mandated BUMEDINST 6220.12A - Medical Event Reports (MERs) http://navymedicine.med.navy.mil/instructions/external/6220-12A.pdf which requires reporting of specific medical events including selected communicable diseases, injuries and disease outbreaks. The NDRS enables users to track data on a continuing basis to determine trends. The data can be analyzed and used for effectively assessing health risks or threats to our forces. It can also be used for syndromic surveillance in support of the Department of Defense Global Emerging Infectious Disease Surveillance and Response System (GEIS), and as such can serve as an early warning system for detecting cases of illness resulting from the release of a biological weapon.

The NMSR is another tool developed by the Navy Environmental Health Center, for informing Navy Preventive Medicine colleagues and other medical professionals worldwide of public health and epidemilogic issues related to military preventive medicine, or to report unique and significant threats to Force Health Protection. The Naval Medical Surveillance Report (NMSR) may be viewed and downloaded from the Preventive Medicine website at http://www-nehc.med.navy.mil/prevmed/epi/nmsrpage.htm. Guidelines for NMSR publication for contributors may be downloaded from page 14 of NMSR Jul-Sep 1999 issue at http://www-nehc.med.navy.mil/downloads/prevmed/NMSRsubmission.pdf.

It is said that information is power, but *information sharing is more powerful.* The aim is to provide sound data that can be analyzed, and the results applied in the field or in the fleet. The complex, multidimensional, fast-paced nature of our jobs makes information sharing in a timely manner critical to Force Health Protection. Real-time information can now be relayed via computers or web sites. Being able to warn others of disease outbreaks, analysis of the consequences and recommendations for the best methods to prevent similar situations can certainly impact on operational readiness.

The scientific components of Preventive Medicine are professional knowledge and subject matter expertise. The management component includes both planning and budgeting as well as skills. On the other hand, Preventive Medicine is greatly dependent on the art of communication. It is essential to nurture positive interactions with the diverse community we serve, to be able to guide leaders and decision makers regarding the best ways to implement successful preventive medicine programs and interventions for the health of our troops. Effective communication enables leaders to understand the importance of Preventive Medicine as a vital component of Force Health Protection.

Reference:

1. Kenny, NP. 1997, "Does good science make good medicine? Incorporating evidence into practice is complicated by the fact that clinical practice is as much art as science," Canadian Medical Association Journal,157: 33. http://www.cma.ca/cmaj/vol-157/issue-1/0033.htm.

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