



DEPARTMENT OF THE NAVY
NAVY AND MARINE CORPS PUBLIC HEALTH CENTER
620 JOHN PAUL JONES CIRCLE SUITE 1100
PORTSMOUTH VA 23708-2103

3900
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From: Commanding Officer, Navy and Marine Corps Public Health Center

To: Commander, Navy Region Europe, Africa, Southwest Asia (CNREURAFSWA)

Subj: CANCER EPIDEMIOLOGICAL STUDY: ANALYSIS OF ENVIRONMENTAL EXPOSURES AND CANCER RISK FOR U.S. NAVY AND MARINE CORPS ACTIVE DUTY AND FAMILY MEMBERS LOCATED IN NAPLES, ITALY

Ref: (a) Naples, Italy - Public Health Evaluation Volume II: Phase I Screening Risk Evaluation, March 27, 2009

Encl: (1) Cancer epidemiological study, September 2009

1. Per reference (a), the following summary is provided.

2. Background. In 2006, Italian researchers suggested that an excess risk of cancer mortality in the Campania Region of Italy might be associated with a history of illegal dumping and disposal of hazardous wastes. Italian press interest in the article followed the 2007 trash collection strike and subsequent increase in illegal trash burning in the streets. As part of efforts to assess the public health risk to U.S. military and civilian personnel and their families living in the greater Naples area, the Navy and Marine Corps Public Health Center conducted this study to determine if there were any observable differences in cancer rates related to the chemicals that exceeded the recommended screening levels in outdoor air, tap water, and surface soil.

3. This study included Navy and Marine Corps active duty members and their beneficiaries who resided for at least six months in housing available through U.S. Naval Support Activity (NSA) Naples between January 1997 and May 2009. The study population included 16,134 people. Chemicals of concern were identified in the Phase I report of the Naples Public Health Evaluation and are listed in this study. The types of cancer selected for this study were based on the chemical of concern, the target organ, and the cancer latency period. Three cancers were identified for the study due to their relatively short latencies - acute myelogenous leukemia (AML), non-melanoma skin cancer and melanoma. Some cancers were not evaluated in this

study because they had latency periods longer than the study period. Incidence rates and 95 percent confidence intervals (95 percent CI) were calculated where appropriate.

4. The study found nine cases of non-melanoma skin cancer, less than five cases of AML, and less than five cases of melanoma. The unadjusted incidence rate for non-melanoma skin cancer was 14.4 cases (95 percent CI: 6.6 - 27.4) per 100,000 person-years. Because most cancer rates are highly influenced by age, rates should be adjusted to account for the distribution of age in a study population. The number of cases found in this study was too small to use the age adjustment methods recommended by the National Cancer Institute. Even though the study was unable to age-adjust the rates, the most conservative comparison was well below the incidence rates published in the professional literature. The incidence rates for AML and melanoma were not calculated due to the low numbers of cases.

5. Overall, the findings of this study did not suggest an excess of cancer and were consistent with cancer rates observed in populations with an average age less than 50 years old.

6. My point of contact for this study is Dr. Chris Rennix, ScD MS CIH, at (757) 953-0955 or christopher.rennix@med.navy.mil.

B. A. COHEN