



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
BOLLING AFB, D.C. 20332

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Dear Ranch Hander

During your annual meeting in October, I promised to send you a short summary of our findings on the mortality study and the status of our morbidity study. Attached are the summaries. We appreciate very much your participation and will keep you advised of their status.

We are preparing our contractual documents for the next phase of the physical examinations and anticipate starting the examinations in about 10-12 months. I will appreciate your continued participation.

Sincerely

MURPHY A. CHESNEY
Major General, USAF, MC
Deputy Surgeon General

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1. AF Health Study - Morbidity
2. AF Mortality Results

AIR FORCES HEALTH STUDY - MORBIDITY

The initial interpretation of the Air Force Health Study Morbidity data will be published in February 1984 and not in October 1983 as was originally planned. Technical aspects of the study were more numerous and more complex than had been anticipated. There was significantly higher participation in the study than was expected, resulting in delays in completing the examination portion of the study. Because of the increased participation, the Air Force expects a significant increase in the power of the statistical analyses. The Air Force firmly believes that the accuracy of the data, the validity of the statistical analysis, and the conclusions from the study must be unimpeachable; and has gone to great lengths to assure that the study is being conducted in the best scientific manner.

The number of participants significantly exceeded all expectations. The Air Force expected that approximately 1,600 of the 2,449 persons eligible for the study would complete the questionnaire. Actually, 2,325 participated. Similarly, of these 2,325 individuals, the Air Force anticipated 1,400 would participate in the physical examination. Ultimately, 2,272 participated.

This large number of physical examinations and questionnaires caused several extensions of the questionnaire and examination contracts, thus delaying the delivery of the collected data. The questionnaire contractor delivered data in November 1982 rather than in September, and the physical examination data was delivered in December 1982 rather than in October.

The morbidity report will consist of 26 chapters and major sections. The subjects of these chapters will be background, population description, questionnaire methodology, physical examination methodology, compliance, quality control procedures, statistical methods and bias, exposure index development, general physical health, malignancy, fertility and reproductive outcomes, neurological assessment, psychological evaluation, hepatic assessment, dermatologic evaluation, evaluation of other organ systems (cardiovascular, immunologic, hematologic, pulmonary, renal, and endocrine), individual health assessment, future commitments, and conclusions.

An information sheet will be prepared and distributed to you following the formal release of the report in February.

AIR FORCE MORTALITY RESULTS

The U.S. Air Force has released the first mortality report of its epidemiological study of the possible adverse health of Air Force members who served in Southeast Asia. The purpose of the study is to determine whether long-term adverse health effects exist and whether they can be attributed to occupational exposures during the Vietnam war.

The initial mortality analyses described in the report have not revealed any statistical excess in the deaths in the herbicide/dioxin-exposed group. At this time, there is no indication that herbicide-exposed personnel have experienced any increased mortality or any unusual patterns of death in time or by cause. They are not dying in increased numbers, at earlier ages or by unexpected causes.

Twelve hundred sixty-nine individuals who were assigned to Air Force units directly involved with defoliant chemicals were identified through extensive searches of military historical and personnel records. Most of these men were exposed to herbicides for up to 10-12 hours a day, five to six days a week for periods of at least one year. Thus, the Air Force considers them to be the most heavily herbicide-exposed group of U.S. military personnel in Southeast Asia.

For the purposes of statistical comparison, other Air Force personnel assigned to duty in Southeast Asia were compared to this group. Five comparison individuals were selected for each exposed individual to improve the ability of the study to detect a difference in the death experience. The death experience of the herbicide/dioxin-exposed group was contrasted with the death experience of this comparison group, as well as with three other groups external to the study: the 1978 U.S. white male population, a Department of Defense (DoD) retired population, and the 1956 graduating class of West Point.

Analyses showed that, to date, the mortality experience of the herbicide group is identical to that of the comparison group. The overall rates and causes of death are not significantly different between the groups. However, it does appear that officers are living longer than enlisted personnel in both groups.

The exposed group did show a relative decrease in cancer, but an increase in liver disorder deaths; however, both these findings are statistically nonsignificant. There were no soft tissue sarcoma deaths diagnosed in either group.

Analyses of both the exposed and comparison groups to the 1978 U.S. white male mortality experience showed highly significant findings of lower mortality rates among Air Force members. Most of these differences can be attributed to the healthy worker effect (due to the fact that individuals must be in good health upon entry into the military, while the general U.S. population is not subject to this form of "selection").

Attachment 2

The DoD retired and West Point data were used for further analyses in an attempt to correct for the healthy worker effect. The contrast with the DoD data again demonstrated significantly less mortality for herbicide-exposed officers, comparison officers and comparison enlisted men; however, there was not a statistically significant favorable mortality rate for exposed enlisted personnel. The West Point comparison had to be restricted to an analysis of the officer groups since all West Point graduates become officers. This analysis revealed no differences in mortality.

The fact that adverse effects have not yet been detected does not imply that an effect may not become manifest in the future. For this reason, further analyses are intended and mortality in the study population will be ascertained annually up to the next 20 years.



**RANCH HAND
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JOHN BRADY

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