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Since 1977 Vietnam veterans have been contacting the Veterans Administration about health problems which they believe were caused by exposure to herbicides in Vietnam. Problems in identifying personnel exposed to herbicides and determining the possible health consequences of such exposure have hampered VA efforts to resolve veterans' concerns. This report recommends that the Department of Defense, with the assistance and guidance of an appropriate interagency group, conduct a survey of any long-term medical effects on military personnel who were likely to have been exposed to herbicides in Vietnam. It also recommends several management actions VA and DOD should take.

Health Effects of Exposure to Herbicide Orange in South Vietnam Should Be Resolved

Reviewed
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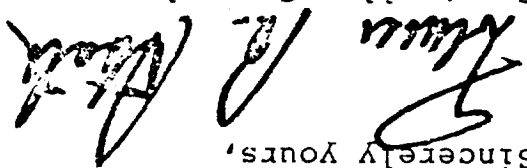
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REPORT BY THE
Comptroller General
OF THE UNITED STATES

personnel exposed to these chemicals, and (3) Defense-funded studies of the health effects of these chemicals. This report addresses primarily the Veterans Administration's response to veterans' concerns on herbicide exposure in South Vietnam and health effects studies of TCDD, a highly toxic contaminant of 2,4,5-T, a component of Herbicide Orange.

As arranged with your office, we will make the report available to other interested parties 2 days after the issue date.

Sincerely yours,



Comptroller General
of the United States

[Handwritten notes and scribbles]

The component, 2,4,5-T, contains a contaminant, TCDD (dioxin), that is highly toxic. TCDD's toxic effects have been reported by researchers investigating the effects of continued occupational exposure to chemicals contaminated by TCDD and also acute exposures resulting from industrial

Herbicide Orange, a 50:50 mixture of 2,4-D and 2,4,5-T, was the most widely used herbicide. Concentrations of 2,4,5-T used in South Vietnam were heavier than those used in the United States for various purposes.

--destroying food crops of hostile forces.

--defoliating trees and plants to improve observation and

The Department of Defense carried out military herbicide operations in South Vietnam from 1962 to 1971. Herbicides were used primarily for

In late 1977, Veterans Administration (VA) regional offices began receiving compensation claims from veterans who felt that some of their medical problems were caused by exposure to herbicides in Vietnam. These problems included such conditions as fatigue, nervousness, cancer, reduced hearing, and birth defects in offspring.

Vietnam veterans also began contacting VA health care facilities, expressing concerns over possible herbicide exposure. By September 1978 about 600 veterans had been examined at VA health care facilities and about 450 had submitted claims to regional offices.

D I G E S T

COMPTROLLER GENERAL'S REPORT TO THE HONORABLE BENNETT STEWART HOUSE OF REPRESENTATIVES

HEALTH EFFECTS OF ORANGE IN SOUTH VIETNAM SHOULD BE RESOLVED

accidents. Its effects on laboratory test animals have been studied; however, long-term health effects on humans remain largely unknown.

VA's actions have been hampered by this lack of information on long-term health effects of herbicides. VA has established an interagency advisory group to assist in evaluating the medical aspects of herbicide exposure. (See p. 13.)

VA has allowed no compensation claims solely on the basis of herbicide exposure. However, one veteran has received benefits for a skin condition existing while he was in the service which VA believes might be related to herbicide exposure. (See p. 11.)

Because there are no specific records on herbicide exposure, VA is having difficulty identifying veterans who were exposed to herbicides. Defense officials believe that those most likely to have been exposed were herbicide handlers and aircraft crews flying herbicide missions. Defense has identified about 500 of these crew members. (See p. 6.)

VA health care facilities have been instructed to examine any veteran concerned about herbicide exposure. Veterans currently being treated in VA facilities and those applying for care will be asked if they have been exposed to herbicides or other chemicals in Vietnam. The results will be included in a data base compiled by VA. (See pp. 11 and 12.)

VA regional offices have been instructed to evaluate herbicide-related claims as they would any other claim for service-connected compensation. However, no assurance is made that all veterans submitting such claims to regional offices are being referred to VA health

--In evaluating herbicide-related claims, regional offices obtain all information from military records pertaining to a veteran's possible exposure to herbicides in Vietnam.

The Administrator of Veterans Affairs should provide guidance to insure that:

The Secretary should also provide guidance to insure that Air Force, Army, and Navy medical facilities are uniformly monitoring and evaluating possible herbicide-related concerns of personnel who served in Vietnam. In addition, information developed through Defense medical facilities should be coordinated with the VA.

The Department of Defense, with the assistance and guidance of an appropriate interagency group, should conduct a survey of any long-term medical effects on military personnel who were likely to have been exposed to herbicides in South Vietnam.

RECOMMENDATIONS

Defense medical facilities may also be receiving patients who are concerned about exposure to herbicides. However, no system exists to determine the extent of these contacts. The Department of the Air Force is the only service to have developed any guidance for its medical facilities to evaluate personnel concerned about herbicide exposure.

In care facilities for examination. In addition, VA regional offices have not been instructed to obtain information from military records concerning the likelihood of an individual veteran's exposure to herbicides (for example, occupational specialty, duties performed, locations, and dates in Vietnam). (See p. 12.)

--All veterans submitting such claims to regional offices are encouraged to contact VA health care facilities.

AGENCY COMMENTS

Defense generally agreed with the need to provide guidance to all Defense medical facilities. However, officials doubted that a retrospective epidemiological study of Vietnam veterans would produce reliable results because of various data limitations. GAO recognizes that there would be limitations on a study of Vietnam veterans, but believes it would be desirable to obtain information related to the herbicides as used in Vietnam. (See pp. 27 and 28.)

VA agreed that all veterans submitting herbicide-related claims should be referred to VA medical facilities, and VA regional offices should obtain information on the veterans' possible exposure to herbicides. (See p. 16.)

PERSPECTIVE
Military use of herbicides and other
chemicals in South Vietnam
Personnel exposure to herbicides
Current concerns over effects of
2,4,5-T and TCDD

FEDERAL RESPONSE TO HERBICIDE CONCERNS
OF VIETNAM VETERANS
Scope and characteristics of veterans'
concerns
VA actions on the herbicide issue
Defense involvement in the herbicide
issue
Conclusions
Recommendations
Agency comments

HEALTH EFFECTS STUDIES OF TCDD
Toxic effects of TCDD in humans
Long-range health effects of TCDD in
humans have not been determined
Recommendation to the Secretary of
Defense
Agency comments and our evaluation

APPENDIX

The military use of herbicides in South
Vietnam
Applications of herbicides in the
Vietnam war

Letter from Department of Defense dated
February 8, 1979

Letter from Veterans Administration dated
January 25, 1979

Letter from the Environmental Protection
Agency dated March 22, 1979

ABBREVIATIONS

EPA	Environmental Protection Agency
GAO	General Accounting Office
IARC	International Agency for Research on Cancer
NAS	National Academy of Sciences
NIHNS	National Institute of Environmental Health Sciences
ng/kg	microgram (chemical) per kilogram body weight (animal)
ppb	parts per billion
ppt	parts per trillion
VA	Veterans Administration

--Herbicide Orange, a 50:50 mixture of 2,4-D and 2,4,5-T, was the most widely used herbicide in Vietnam. The component 2,4,5-T contains a

Defense field tested herbicides in Vietnam in 1961 and carried out military herbicide operations from 1962 to 1971. The herbicides were used primarily for (1) defoliating trees and plants to improve observation and (2) destroying food crops of hostile forces. The herbicides used were:

MILITARY USE OF HERBICIDES AND OTHER CHEMICALS IN SOUTH VIETNAM

This report addresses primarily VA's response to veterans' concerns on herbicide exposure in South Vietnam and health effects studies of TCDD. We conducted our review at the Washington, D.C., headquarters offices of the Department of Defense, Environmental Protection Agency (EPA), and VA; and at the VA regional office and Hines Hospital in Chicago, Illinois. We examined pertinent legislation, instructions, studies, reports, and other documents. In addition, we talked with officials of Defense, EPA, VA, the National Academy of Sciences (NAS), the National Institute for Occupational Safety and Health, and the National Cancer Institute.

By letter dated April 10, 1978, the late Representative Ralph H. Metcalfe expressed concern about possible long-range adverse health effects on individuals that were exposed to Herbicide Orange. He requested that we examine certain aspects of the Department of Defense's use of herbicides in Vietnam and the Veterans Administration (VA) handling of disability claims submitted by herbicide-exposed Vietnam veterans. As agreed with the Representative's office on June 28, 1978, we issued an interim report (CED-78-158, Aug. 16, 1978) which addressed (1) the extent of the Defense's use of herbicides and other chemicals in South Vietnam, (2) the number of military and civilian personnel exposed to these chemicals, and (3) the Defense-funded studies of the health effects of these chemicals.

PERSPECTIVE

CHAPTER 1

1/ Other herbicides used primarily during the 1962-1964 period included about 130,000 gallons of Herbicides Pink and Green. Both herbicides were formulations containing 2,4,5-T.

Herbicide Orange was sprayed undiluted in Vietnam at the rate of about 3 gallons (containing 12 pounds of 2,4-D and 13.8 pounds of 2,4,5-T) per acre. Civilian applications of this herbicide's components are usually diluted in oil or water. According to industry officials, the civilian application rate of 2,4,5-T varies from 1 to 4 pounds per acre. A Defense official said that the heavier application was needed to assure success of the herbicide operations. Defense officials also stated that due to the dense jungle canopy, the amount of herbicide penetrating the forest floor would have been similar to those normally applied to brush infested ranch land in the United States.

According to a Defense estimate, about 17.7 million gallons of herbicides were sprayed during the 1962 to 1971 period. From 1965 to 1971, Defense sprayed 10.65 million gallons of Herbicide Orange, 5.63 million gallons of Herbicide White, and 1.14 million gallons of Herbicide Blue. NAS estimated that of the 3.6 million acres sprayed, 66 percent was sprayed once, 22 percent was sprayed twice, 8 percent was sprayed three times, and 4 percent was sprayed four or more times. NAS estimates of the quantities sprayed annually and application rates are summarized in appendix II.

The military use of herbicides in Vietnam is detailed in appendix I.

--Herbicide Blue (cacodylic acid).

--Herbicide White (a mixture of 2,4-D and Picloram).

--Herbicide Purple (a similar mixture of 2,4-D and 2,4,5-T that contained a different form of 2,4,5-T--it was replaced by Herbicide Orange in 1964). 1/

contaminant, TCDD (2,3,7,8-tetrachlorodibenzo-para-dioxin) which is one of most toxic chemicals known.

1/ Since Herbicide Orange is a 50:50 mixture of 2,4-D and 2,4,5-T, an average TCDD contaminant level of 2 parts per million would indicate that the 2,4,5-T component, as manufactured, contained TCDD levels averaging about 4 parts per million.

According to NAS, TCDD is insoluble in water, slightly soluble in fats, slightly more soluble in hydrocarbons, and somewhat more soluble in chlorinated organic solvents. TCDD is stable to heat, acids, and alkali. Thermal decomposition requires a temperature of at least 1500° Fahrenheit. Studies have indicated that TCDD is immobile in soils and has a half-life in soil of about 1 year. TCDD exerts its biological effects at extremely low concentrations. This has posed serious limitations on analytical work with the substance.

TCDD has had the reputation of being very stable and persistent except when dissolved in organic solvents, such as methanol and benzene, and exposed to ultraviolet light. An experiment reported in March 1977 concluded, however, that despite the known persistence of pure TCDD, it is not stable as a contaminant in thin herbicide films exposed to outdoor light.

The fate of TCDD in the environment

In 1971 Defense directed the Air Force to dispose of all remaining stocks of Herbicide Orange. These stocks contained TCDD contaminant levels ranging from less than 0.02 to 47 parts per million and averaging about 1.98 parts per million. 1/ Current manufacturing standards for 2,4,5-T require TCDD levels to be less than 0.1 part per million. The Air Force reported that Herbicide Orange was disposed of by high temperature incineration at sea in 1977.

In October 1969 Defense restricted the use of Herbicide Orange to areas remote from population. This action was prompted by a National Institutes of Health report that 2,4,5-T could cause malformations and stillbirths in mice. Researchers later attributed similar problems to the contaminant TCDD, which is produced during the manufacture of 2,4,5-T. In April 1970 Defense suspended all use of Herbicide Orange in Vietnam. About the same time, the Department of Agriculture restricted certain domestic uses of 2,4,5-T because of its possible health hazards.

Scientists involved in measuring samples for TCDD have calculated that a sensitivity of about 1 part per trillion (ppt) is required for environmental monitoring of TCDD.

Studies at Eglin Air Force Base Reservation in Florida

The Air Force sprayed massive amounts of herbicides over approximately 1 square mile at Eglin to test aerial dissemination systems. The testing area was divided into four grids, three of which were sprayed with 2,4,5-T. Grid number one containing 92 acres, was sprayed with about 87,000 pounds of 2,4,5-T (947 pounds per acre) during 1962-64. Grids two and four were sprayed in 1964-66 and 1968-69, respectively, with substantially lesser amounts of 2,4,5-T per acre of grid area.

Between 1973 and 1978, the Air Force collected 54 soil samples from the test grids. It detected levels of TCDD in the range of less than 10 ppt (minimum detection level) to 1,500 ppt. The median concentration was 30 ppt, while the mean was 165 ppt. In an October 1978 report, the Air Force attributed the wide fluctuation in TCDD concentrations to the locations of the actual flight paths on the test grid. The Air Force also said that it was apparent that the herbicides applied during 1962 to 1964 contained very high levels of the TCDD contaminant.

The Air Force, in its October 1978 report, noted that its ecological survey documented the presence of more than 123 different plant species, 77 bird species, 71 insect families, 20 fish species, 18 reptile species, 18 mammal species, 12 amphibian species, and 2 mollusk species. At least 170 biological samples were analyzed for TCDD, including 30 species of animals. No TCDD was found of the plant species examined. However, TCDD was found in nine species of animals including two rodent species: beachmice (300 to 1,500 ppt, liver) and hispid cotton rat (less than 10 to 210 ppt, liver); three species of birds: meadowlark (100 to 1,020 ppt, liver) mourning dove (50 ppt, liver) and Savannah sparrows (69 ppt, liver); three species of fish: spotted sunfish (85 ppt, liver), mosquito fish (12 ppt, whole body), and sailfin shiner (12 ppt, whole body); and one reptile, the six-lined racerunner (360-430 ppt, muscle).

Other studies

1. Samples of fish, crustaceans, and human milk from areas of South Vietnam heavily treated with 2,4,5-T in the military herbicide program were analyzed for TCDD. Unconfirmed levels of 18 to 810 ppt in fish and crustaceans and 40 to 50 ppt in human milk were found in samples collected in 1970 shortly after large scale use of Herbicide Orange was ordered discontinued. (Reported by Dr. Robert Raughman and Matthew Meselson, Harvard University, 1973 and 1975.)
2. Thin layers of Herbicide Orange containing 15 parts per million of TCDD were exposed to California summer sunlight in glass petri dishes. Identical treatments, masked from sunlight, served as dark controls. Loss of the TCDD was rapid in sunlight, and less than half remained after 6 hours. Herbicide Orange also was applied evenly in droplets over leaves of a rubber plant and on the surface of loam soil and exposed to sunlight. TCDD was lost even more rapidly from the leaf surface than from glass while loss from soil was slower. According to the authors, their measurements indicated sunlight is the principal factor in TCDD disappearance from inert surfaces, plants, and soils treated with TCDD-contaminated pesticides. They also stated that in every experiment, light caused the TCDD content to decline sharply, while dark controls remained virtually unaffected. The authors concluded that there were three requirements for significant TCDD breakdown: dissolution in a light transmitting film; the presence of an organic hydrogen-donor such as solvent or pesticide; and ultraviolet light. According to the authors, all three conditions normally should have been met consistently during the practical application of 2,4,5-T and, consequently, their data

A Defense report shows that about 2.6 million military personnel served in South Vietnam from January 1, 1965, to March 31, 1973. Defense records indicate that the number of U.S. civilian personnel employed by Defense in South Vietnam ranged from 49 in March 1965 to 1,522 in September 1969. --cumulative data on civilians is not readily available. Defense has little information, however, on the number of personnel exposed to herbicides in Vietnam. Defense officials stated that (1) no such personnel records were maintained, (2) it would be difficult to estimate meaningful exposure data because the potential for exposure

PERSONNEL EXPOSURE TO HERBICIDES

A Defense official said that malathion and DDT were the other principal pesticides used in Vietnam; they were used throughout the war for mosquito control. Malathion was sprayed by aircraft, and DDT was applied by backpack and paint brush. Defense stated that ground forces were routinely exposed to aerially applied insecticides such as malathion and could have confused this with direct exposure to herbicides. An official said that no information is readily available on the quantities used in Vietnam. Malathion is still used domestically for insect control. However, in 1972 EPA canceled all except public health and quarantine uses of DDT because of its persistence, biomagnification, and toxicological effects.

Other chemicals used in South Vietnam

3. A 1977 study of the distribution, persistence, and mobility of TCDD found that once TCDD volatilized, it degraded in direct sunlight and apparently even in shade outdoors. However, the researchers did not find as rapid degradation on grass as Crosby found on excised leaves. In addition, they found that TCDD degradation in air was considerable but not as great as Crosby's data suggested. (Ralph G. Nash and M. Leroy Beall, Jr., 1977.)
- Wong, University of California, Davis, expected (Donald G. Crosby and Anthony S. will be considerably less than previously suggested environmental residues of TCDD often 1976).

varied widely among personnel, and (3) only a few military personnel would have been exposed directly to spraying. Some personnel could have been exposed indirectly to low levels of herbicides through ingestion of contaminated drinking water and food and by skin contact. However, Defense stated that indirect exposure through ingestion of food and water was unlikely because subsistence was not generally obtained from local sources.

According to Defense, military personnel did not enter areas treated with Herbicide Orange in most instances until 4 to 6 weeks after treatment, thereby greatly minimizing their chances of contacting or inhaling the herbicide. Personnel involved in actual "detrumping" of the herbicides and spraying missions (particularly crewchiefs and flight mechanics) were more likely to have been exposed than others. Defense has identified about 500 aircraft crew members involved in herbicide missions.

OF 2,4,5-T and TCDD
CURRENT CONCERNS OVER EFFECTS

Extensive media coverage has been given to purported adverse health effects of 2,4,5-T and TCDD. For example, in March 1978, a CBS-owned affiliate in Chicago aired a special report on Herbicide Orange.

In late 1977 veterans started making inquiries of the Chicago VA regional office on the possible effects of herbicide exposure. Some filed claims for VA compensation alleging that their medical problems were caused by herbicide exposure in Vietnam. As of September 1978 veterans had filed an estimated 450 claims nationwide, including about 255 at the VA regional office in Chicago.

In an April 12, 1978, news release EPA, which has the responsibility for regulating such pesticides as 2,4,5-T, said that about 450 letters had been received from citizens and environmental groups protesting the domestic use of 2,4,5-T. The herbicide 2,4,5-T was used domestically for brush control on livestock grazing land, on right-of-way areas and in forests, and for weed control in rice. Use of 2,4,5-T is prohibited around homes, recreational sites and aquatic areas; and in crops, except rice, used for human consumption. In a Federal Register notice dated April 21, 1978, EPA announced that it was reevaluating the registered uses of pesticides containing 2,4,5-T (43 FR 17116, et seq.).

EPA stated in its announcement that 2,4,5-T and/or its
contaminant, TCDD, exceed the risk criteria for oncogenicity
(the quality of being able to cause tumor formation) and
for teratogenic (causing congenital malformations) and/or
fetotoxic (causing harm to fetus) effects as set forth in
its regulations. The announcement invited interested parties
to submit rebuttals and other information on the findings and
to submit any other data on the risks and benefits of this
pesticide chemical.

On March 1, 1979, EPA announced emergency action to halt
the spraying of 2,4,5-T on forests, pastures, and rights-of-
way because of new information indicating its potential link
to human miscarriages. This emergency suspension action is
similar to a temporary restraining order issued by a court.
This action reflects EPA's belief that there is sufficient
evidence to stop further exposure to 2,4,5-T until health
questions can be resolved.

FEDERAL RESPONSE TO HERBICIDE
CONCERNS OF VIETNAM VETERANS

CHAPTER 2

VA began receiving herbicide-related compensation claims in late 1977. As of October 1978 VA has allowed no compensation claims solely on the basis of herbicide exposure in Vietnam. However, one veteran did receive benefits for a skin condition existing in service which VA believes may have been related to herbicide exposure. Actions to resolve individual herbicide claims and develop overall policy have been hampered by inconclusive information on the long-term health effects of herbicides and problems in identifying the veterans exposed to chemicals during military service. These medical and exposure uncertainties have made it difficult for VA to define the relationship between chemical exposure in Vietnam and health problems currently experienced by veterans.

SCOPE AND CHARACTERISTICS
OF VETERANS' CONCERNS

Fifty-eight VA regional offices are responsible for receiving and adjudicating service-connected compensation claims. As of September 1978 an estimated 450 herbicide-related compensation claims had been filed at regional offices within the contiguous United States. Over half of these claims (about 255) originated in the Chicago regional office. The New York and Seattle regional offices received the second largest number of claims--about 18 each. We reviewed about 120 of the herbicide-related cases at the Chicago regional office to determine the types of illnesses veterans are associating with herbicide exposure. The most commonly indicated concerns are categorized below as a percentage of total cases reviewed:

In response to concerns about herbicide exposure, VA has issued guidelines for its health care facilities and regional offices, initiated internal studies, and established various working groups to study herbicide related illnesses and formulate policy. However, VA action to resolve individual compensation claims and develop overall policy have been hampered by a lack of information in several areas. For example, VA officials stated that little data is available on what the long term health effects are of Herbicide Orange. Another official pointed out that some of the health problems associated with herbicide exposure, such as fatigue, are not unique enough to diagnose the problem's cause. Because of

VA ACTIONS ON THE HERBICIDE ISSUE

Officials at Hines Hospital told us that a large number of veterans contacting them about herbicide exposure were concerned about rashes, others were concerned about nervousness, and some said they were experiencing numbness. In addition, some veterans had no specific illness but were interested only in obtaining information on the possible ill effects of herbicide exposure.

VA actions on the herbicide issue have been hampered by a lack of information in several areas. For example, VA officials stated that little data is available on what the long term health effects are of Herbicide Orange. Another official pointed out that some of the health problems associated with herbicide exposure, such as fatigue, are not unique enough to diagnose the problem's cause. Because of

Less frequently cited concerns included miscarriages by spouse, impotency, respiratory problems, and gastrointestinal problems. In addition, about six cases associated with herbicide exposure. In about 10 percent of the cases, no specific concerns could be identified.

In addition to filing compensation claims at regional offices, veterans have also contacted VA hospitals or other VA health care facilities. As of September 1978 about 600 veterans had been examined by VA health care facilities concerning herbicide exposure. Of the 172 VA hospitals, Hines Hospital in Chicago, Illinois, examined the most veterans--84. Martinez (California) and Chicago Westside examined the second and third highest number--54 and 47, respectively.

Illness	Percent
Skin conditions	50
Fatigue and/or nervousness	32
Numbness of extremities	28
Vision and/or hearing impairment	17
Birth defects in offspring	13
Reduced libido	13

In examining veterans concerned about herbicide exposure, health care facilities have been instructed to pay particular attention to the kidneys, liver, thyroid,

headquarters.

Keeping systems and submitting quarterly reports to VA instructions also provide guidance for developing record exposed to herbicides or other chemicals in Vietnam. These or who apply for care will be asked if they have been veterans who are currently being treated in VA facilities to herbicides during the Vietnam War. In addition, all and treat all veterans claiming toxic effects from exposure September 1978 circular. VA's general policy is to examine care facilities is contained in a May 1978 teletype and Principal guidance for VA hospitals and other health

Instructions to VA health care facilities

As of October 1978 VA had evaluated about 90 compensation claims for herbicide exposure and awarded benefits in about 8 cases. However, only one of these awards, a service-connected skin condition, was linked to possible herbicide exposure. The remaining claims were awarded for reasons not related to herbicide exposure.

As with health effects information, little data is available to identify personnel exposed to herbicides in Vietnam. VA has been unable to find specific reference to herbicide exposure in individual military service records. As an alternative, VA is attempting to obtain information on the possibility of an individual veteran's exposure to herbicides in Vietnam. In a September 18, 1978, letter to the Department of Defense, VA requested complete maps of herbicide missions, dates they were carried out, units spraying the herbicides, and units in sprayed area at the time of the mission or entering afterwards. As a result of this request, Defense agreed to provide VA with the names of aircraft crew members involved in herbicide operations, and computer printouts and maps of the spraying missions in South Vietnam.

the medical uncertainties, it becomes difficult for VA to associate current illnesses with herbicide exposure in Vietnam. VA guidance to regional offices and health care facilities reflects these uncertainties and acknowledges that currently the only chronic illness known to be caused by herbicide exposure is a skin condition called chloracne.

VA regional offices have been instructed to send copies of completed ratings of herbicide-related claims to headquarters for review. In addition, regional offices have been instructed to request information from a veteran's service record to verify herbicide exposure. However, service records normally do not contain specific information on chemical exposure. As a result, responses to such requests are neither verified nor denied by military service records personnel. Currently, VA regional offices have not been instructed to obtain other information from military records which may assist in determining the possibility of exposure to herbicides (e.g. occupational specialty, duties performed, unit, locations, and dates while in Vietnam).

Under current procedures, a herbicide-related compensation claim can be administratively denied for two reasons. One is if the veteran does not claim a disability but is only concerned with possible exposure to herbicides. The second is if a veteran claims genetic damage which VA states is not provided for under the law.

In an April 1978 directive, VA instructed its regional offices to evaluate herbicide-related claims in the same manner as other claims for service-connected compensation. In general, disabilities can be service-connected for either immediate or delayed effects that are shown to be a direct result of incurrence while in service.

Instructions to VA regional offices

adrenals, gonads, skin, lungs, nervous system, blood-forming system, and immune system. In addition, medical histories are to include information on possible reduced libido, frequent abortions, sterility, congenital deformities among children, neoplasia, chloracne, and repeated infections. The health facilities also will solicit information on the time, place, and extent of possible exposure to chemicals regardless of when it took place. This and other information will be used in a data base being compiled on possible effects of herbicide exposure. VA has also arranged for the Armed Forces Institute of Pathology to receive and store specimens removed at VA medical centers from Vietnam veterans possibly exposed to herbicides.

In addition to committee activities, VA medical officials are reviewing past patient treatment files to determine if there is an increased cancer rate among Vietnam era veterans. As of September 1978 no conclusions have been

In October 1978 VA established a third committee to evaluate herbicide cases received by VA health care facilities. The committee is composed of specialists in various disciplines, such as internal medicine, neurology, and psychiatry. This committee and the interagency committee report through the steering committee.

VA has requested that an advisory committee composed of Federal and non-Federal members be formally chartered. The interagency committee will be absorbed by the new advisory committee if approval is granted for its establishment. As of January 1979 the group had not been formally chartered.

--approaches through which the VA might discover the prevalence of adverse effects of defoliants used in Vietnam on its patient population.

--methods for diagnosing and treating the adverse health effects of defoliants, and

--the potential adverse health effects of defoliants on Vietnam veterans, including symptoms associated with these effects,

The VA has formed three committees to deal with scientific and policy questions related to the herbicide issue. Policy guidance has been provided by an in-house steering committee which first met in June 1978. Assisting them is an interagency group known as the Interagency Committee on Herbicides. It functions as a factfinding, advisory group and was developed to explore:

VA herbicide committees' activities and internal studies

There are no special instructions to regional offices regarding it and when a veteran submitting a herbicide-related claim should be referred to a VA health care facility. About 33 percent of the 50 final ratings we reviewed had no indication of a recent VA physical examination.

