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# Issue Brief



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AGENT ORANGE: VETERANS' COMPLAINTS AND STUDIES OF HEALTH EFFECTS

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## ISSUE DEFINITION

From 1962 to 1971 the United States Air Force (USAF) sprayed various herbicides (chemicals that kill plants) in South Vietnam. The purpose of the spraying was to defoliate jungle growth and to destroy enemy crops. The most extensively used of these herbicide mixtures was known as Agent Orange, which is an equal mix of two common herbicides called 2,4,5-T and 2,4-D (2,4,5-trichlorophenoxyacetic acid and 2,4-dichlorophenoxyacetic acid). A contaminating chemical present in the mixture in small amounts was TCDD (2,3,7,8-tetrachlorodibenzo-para-dioxin), or simply "dioxin." Dioxin is a contaminant produced in the manufacture of 2,4,5-T. Its toxic effects to some laboratory animals are well known, yet its effects on humans are not fully understood.

Since 1977, veterans have attributed a number of illnesses to Agent Orange exposure, including skin conditions, cancer, fatigue, nervousness, numbness in the extremities, vision and hearing impairments, birth defects in children, and other ailments. Veterans have urged the Veterans Administration (VA) to provide for medical treatment of these disorders and many have filed for disability compensation.

Under P.L. 97-72, the Veterans' Health Care, Training, and Small Business Loan Act of 1981, Congress directed the VA to furnish medical care to Vietnam veterans, irrespective of age and financial status, for any condition which might possibly have resulted from exposure to Agent Orange. However, disability compensation for the veterans' illnesses has been denied unless it can be shown that the disabling condition began during the period of service. This criterion of "service connection" effectively denies claims for any latent disorder arising from military service. Until a rigorous scientific link between Agent Orange exposure and the health problems of the veterans can be established, the Veterans Administration will probably continue to deny the majority of veterans' requests for disability compensation.

The VA and other Federal agencies are sponsoring a variety of research efforts to investigate the connection between Agent Orange and veterans' health problems. Recent congressional interest has focused on the transfer of responsibility from the VA to the Centers for Disease Control for the legislatively mandated epidemiology study of Vietnam veterans' health problems.

The following questions continue to surround the debate over the health effects of exposure to Agent Orange:

- What are the adverse health effects of Agent Orange, and what studies are being conducted to answer this question?
- How much and what kind of scientific evidence is required to prove the right to disability compensation for the veterans?
- On whom does the burden of proof lie to establish the link between Agent Orange exposure and adverse health effects?

-- What constitutes fair treatment of the veteran until the scientific studies are concluded?

## BACKGROUND AND POLICY ANALYSIS

### History

The USAF operated its herbicide spraying program in South Vietnam until the late 1960s when the National Cancer Institute released animal studies which showed that the herbicide 2,4,5-T caused birth defects in mice. At the same time, newspapers in Vietnam began to report health problems, including birth defects, in rural populations which had been exposed to herbicides.

As the USAF was winding down its herbicide spraying program, it was also recognized that the military supplies of 2,4,5,-T contained amounts of dioxin suspected of being hazardous. The dioxin, which occurs as a contaminant in the manufacture of 2,4,5-T, has been found to be highly toxic to animals. In fact, the birth defects previously attributed to 2,4,5-T exposure are now thought possibly to be related to the contaminating dioxins. The average levels of dioxin in the military Agent Orange were about 2 ppm. There were even greater concentrations of dioxin in other military herbicides less frequently used in South Vietnam: approximately 32.8 ppm in Agent Purple, and 65.6 ppm in Agents Pink and Green.

In October 1969, the Air Force first restricted the use of Agent Orange to areas remote from populations; then it stopped all airplane spraying of Agent Orange in early 1970 and all helicopter spraying of Agent Orange by 1971. All remaining Agent Orange stocks were gathered and stored at naval facilities in either Gulfport, Mississippi, or Johnston Island in the Pacific until they were incinerated at sea in 1977 during the PACER HO project.

The total amount of herbicides sprayed in South Vietnam from January 1962 to February 1971 was about 107 million pounds, according to a USAF report. Approximately 276,000 gallons of Agents Green, Pink, and Purple were sprayed in South Vietnam prior to 1965 when they were replaced by Agent Orange. Approximately 11 million gallons of Agent Orange were then sprayed in South Vietnam -- making it the most widely used herbicide of the war. Ninety percent of Agent Orange was sprayed on 2.9 million acres of inland forests and mangrove forests for defoliation, 8% was sprayed on enemy crops for crop destruction, and the remaining 2% was sprayed around base perimeters, cache sites, waterways, and communication lines.

The Department of Defense initially maintained that only a limited number of U.S. military personnel could be positively identified as having been exposed to Agent Orange in South Vietnam (i.e., the crews of aircraft that were used to spray herbicides). However, following the publication of a 1979 General Accounting Office (GAO) report documenting ground troop exposure, the DoD has acknowledged that greater numbers of ground troops were exposed to Agent Orange through the USAF spraying program. Most recently, the DoD has attempted to arrive at an exposure index for individual ground troops.

The American Medical Association has reported that about 2.4 million Vietnam veterans may have been exposed to herbicides. This figure includes ground troops, 1,200 flight crewmen who were responsible for the spraying under Operation RANCH HAND, and 200 U.S. civilians who were involved in destroying the excess quantities of Agent Orange at sea. Details about U.S. personnel exposures are presented in the following section.

Following reports of various health problems in some Vietnam veterans widespread concern about the possible health effects of Agent Orange was expressed. Many veterans have filed claims for disability compensation with the VA, basing their claims on Agent Orange effects. In 1979, a group of veterans initiated a class action suit against herbicide manufacturers for negligence and product liability. The manufacturers include Dow Chemical, Monsanto, Hercules, Diamond Shamrock, and Thompson-Hayward. This litigation is still in progress depending, in part, on the outcome of federally sponsored studies of the health effects of Agent Orange. Chemical manufacturers filed a third-party suit in 1980 against the U.S. Government that was later dismissed by a New York Federal District Court.

Personnel Exposed to Herbicides. The early trials that were conducted in South Vietnam to improve aircraft spray systems were performed by the USAF Special Aerial Spray Flight Division at Langley Air Force Base, Virginia. During late 1962 and early 1963, the Crops Division at Fort Detrick and the USAF Armament Laboratory at Eglin Air Force Base, Florida, were also involved in efforts to improve spray system components in support of Operation RANCH HAND.

Most of the personnel involved in the actual handling of herbicide drums were Vietnamese. However, a USAF flight mechanic or crew chief was responsible for ensuring that each aircraft was properly loaded and that the spray systems were functional. Each herbicide aircrew consisted of a pilot and copilot, a flight mechanic, and a spray unit. The aircrews were frequently joined by South Vietnamese and U.S. observers. As noted in a USAF report: "within the aircraft, it was not uncommon to have herbicide leakage from around the numerous hose connections joining the spray tank and pumps with the wing and aft spray booms. In hot weather, the odor of herbicide within the aircraft was decidedly noticeable" (Young et al., 1978: I-18). It is also suspected that, due to destruction of the tanks by enemy fire, crew members were acutely exposed to herbicides.

In an effort to determine which ground units were exposed to Agent Orange after it had been deposited on the ground, the Army Agent Orange Task Force and the American Cancer Society are attempting independently to correlate ground unit location with the location of aerial spraying missions. The USAF has data on 6,542 herbicide spraying missions that took place between August 1965 and February 1971 on its HERBS computer tape. These data were compiled on a mission-by-mission basis from reports and files in various offices in the U.S. and South Vietnam. After evaluating the HERBS data in a 1974 report, the National Academy of Sciences (NAS) concluded that the data accounted for approximately 86% of all herbicide operations in South Vietnam, and that "despite certain recognized deficiencies," the HERBS tape is "a reliable source for an assessment of the major part of the herbicide operation in South Vietnam" and "is the best and in fact the only available comprehensive computation of the major part of the herbicide operations conducted in the Vietnam war." Since this NAS evaluation, the Army Agent Orange Task Force has been in the process of expanding the scope of the HERBS data to incorporate other herbicide sprays -- including perimeter base spraying and any unplanned dumping of herbicides from U.S. aircraft that were under enemy attack.

Despite this relative confidence in the location of the aerial and some ground spraying missions, it is difficult to determine which particular ground troops in a given location were actually exposed and to what extent they were exposed. Although aerial spraying apparatus was designed to



deliver the herbicide in a specified manner to reduce dispersion, no such standardized equipment was used for perimeter base spraying or other non-aerial delivery modes. Furthermore, additional troops may have been exposed in areas for which military records are incomplete. For example, not all information is available on helicopter operations flown by the Vietnamese Air Force before 1968. Thus, attempts to model the conditions of exposure in order to determine individual or group exposure levels are jeopardized by the lack of verifiable exposure information.

When the DoD suspended all use of Agent Orange in South Vietnam, the USAF was left with an inventory of 2.22 million gallons in two locations, in Vietnam and in Gulfport, Mississippi. In April 1972, the stocks in South Vietnam were transported to Johnston Island in the Pacific for storage. Problems began to arise in both U.S and Pacific locations concerning leakage from the drums. After exploring a number of options, the USAF decided to dispose of the Agent Orange by burning it at high temperatures at sea. This operation was performed in 1977 with permission from the EPA. About 110 USAF personnel from the Air Force Logistics command and about 100 civilian employees hired by a contractor were involved in the destruction process. Environmental monitoring of the transfer operations was performed by members of the USAF Occupational and Environmental Health Laboratory. Extensive environmental monitoring of the test incineration procedures was performed. Certain physical parameters of the actual incineration process were monitored. Physical examinations of personnel involved in the actual incineration procedures, administered both before and after these procedures, revealed no adverse health effects.

#### Health Effects of Dioxin and Phenoxyherbicides

There are as yet no conclusive scientific studies on the long-term human health effects of Agent Orange exposure. In their absence, an understanding of health effects must rely on animal and/or human occupational exposure studies of dioxin and phenoxyherbicides. The following paragraph summarizes what is known about the health effects of these constituents of Agent Orange.

Workers exposed to high concentrations of dioxin and/or 2,4,5-T (as well as other chemicals) are commonly found to have a painful skin condition known as chloracne. Chloracne can appear weeks to months after initial exposure and in some cases persists up to many years after exposure. Chloracne, however, can result from exposure to other chlorinated compounds besides 2,4,5-T. Studies of exposed workers have indicated a variety of other health problems; yet, there is not enough information at this time to establish a cause and effect relationship between phenoxyherbicides and these disorders. Soft-tissue sarcoma, a form of cancer, has been reported among Swedish workers who were exposed to phenoxyherbicides. Reports from a variety of sources associate dioxin and herbicide exposure with stomach cancer, neuromuscular weakness, liver enlargement, and liver enzyme abnormalities. Birth defects were first reported in South Vietnamese refugees living in North Vietnam, but, due to the difficulty of conducting studies in a war-torn country, the research on these reports was widely believed to be improperly executed. In animal studies, only certain strains of pregnant mice exposed to dioxin show fetotoxicity and birth defects in offspring. Exposed male mice do not have deformed offspring.

Current Use. The EPA has registered 2,4-D for widespread domestic use on such crops as corn, grain, and sugar cane, as well as on non-crop areas; 2,4,5-T is currently used on rangelands, rice fields, and industrial vegetation sites, whereas approval for its other domestic uses -- forests,

rights-of-way, pastures -- was suspended by the EPA in 1978. Future registered use of 2,4,5-T depends on negotiations that began in 1979 between Dow Chemical and the EPA.

Herbicides 2,4,5-T and 2,4-D are commercially available either alone or in combination. The combination mixture (under Dow's Trademark, Esteron) differs from Agent Orange primarily in the level of dioxin. Existing Dow inventories of 2,4,5-T contain less than 0.1 parts per million (ppm) dioxin, whereas previous formulations of 2,4,5-T used in Agent Orange contained about 2 ppm dioxin. Although standards for dioxin levels in 2,4,5-T have not been officially set by the EPA, the EPA's Science Advisory Committee recommended in 1971 a level of 0.1 ppm.

#### Veterans' Complaints and Veterans Administration Efforts

Veterans who believe they have been exposed to Agent Orange have complained of a variety of illnesses for which they seek medical treatment and disability compensation. These illnesses include: skin conditions, cancers, nervousness, numbness in extremities, vision and/or hearing impairments, birth defects in their offspring, and reduced libido. Veterans have also complained about the paucity of scientific information available on the health effects of Agent Orange and about the sluggishness with which the VA has responded to their concerns. Specifically, the General Accounting Office (GAO) has recently reported that over half of the veterans responding to their questionnaire were dissatisfied with the amount of information they had received from the VA about Agent Orange. To fill the perceived information gap, various State governments, including New York and New Jersey, have attempted to disseminate information on Agent Orange to State veterans.

The VA maintains that it has responded to veterans' concerns from the outset by initiating health programs to identify veterans who may have been exposed and by implementing research projects on health effects. A detailed description of the research projects is provided later in this brief.

Since 1978 the VA has provided a physical examination for Vietnam veterans who thought they were exposed to Agent Orange. The VA maintains a registry of all the veterans who have come to VA hospitals and health care facilities for the exam. The registry also contains information collected during the examination. As of Dec. 1, 1982, 101,721 veterans had received the initial exam, and about 80% of the records had been coded into the computer. The idea behind the registry is to determine whether veterans have a higher incidence of particular diseases.

GAO auditors have investigated the effectiveness of the Agent Orange examination program. The findings are summarized in an October 1982 report, "The VA's Agent Orange Examination Program: Actions Needed To More Effectively Address Veterans' Health Concerns." The report is critical of the exam for being incomplete, poorly designed, and for being administered by physicians who were not familiar with the reported health effects of Agent Orange. In an appendix to the report, the VA challenges these findings by citing improvements that have taken place since the evaluation; however, the GAO disagrees with the VA rebuttal in the same appendix. The GAO report is also critical of the registry because it cannot be used to determine the incidence of specific illnesses among veterans -- a major purpose for which the registry was supposedly designed.

Medical Treatment: P.L. 97-72. Before the enactment of P.L. 97-72 in



1981, veterans who complained of Agent Orange-related illnesses were in a ranking of the lowest priority for medical treatment at VA hospitals. This is because these illnesses were defined as not being "service-connected." To have qualified at all for this treatment at this low-priority level, the veteran had to be destitute. The "Veterans' Health Care, Training, and Small Business Loan Act of 1981" (P.L. 97-72) elevated Vietnam veterans' priority status for treatment at VA hospitals for any Agent Orange-related problem. Veterans who complain of such problems are now considered for treatment irrespective of age or finances with the same priority status as former prisoners of war and ahead of veterans with "non-service connected" conditions. The Vietnam veterans' contention of exposure is acceptable in the absence of evidence to the contrary. It is the duty of a "responsible staff physician (to) make a determination as to whether the condition resulted from a cause other than the specified exposure." To aid the staff physician, the VA has developed guidelines which identify conditions that are not considered to be related to Agent Orange exposure (Federal Register, Nov. 17, 1982). The VA contends that P.L. 97-72 is being implemented successfully, yet veterans' advocates and State Agent Orange commissions allege that veterans are uninformed about the new legislation and that treatment is still difficult to obtain at certain VA medical centers. The VA has initiated a new system to monitor the impact of P.L. 97-72 on Vietnam veterans' medical treatment.

P.L. 97-72 also extended the readjustment counseling program for Vietnam veterans for another three years. The counseling programs are currently located in "Vet Centers," which are distinct from VA medical facilities.

Disability Compensation. As of Jan. 3, 1983, veterans had filed 16,102 disability claims with the VA for disorders they attribute to Agent Orange exposure. The vast majority of these claims have been denied because they are not considered as being "service connected." The policy of the VA is that a disability is considered "service-connected" if it arises during or is aggravated by military service. "Service-connection" establishes temporal correspondence with military service, not causation, as the determinant for disability payments. Chronic conditions arising before discharge or within one year after discharge are presumed to be "service-connected."

The policy implies that for a veteran to receive disability payments for ailments possibly related to Agent Orange exposure, it must be proved that the condition first appeared during the service or within a year of discharge. This precludes disability for latent disorders because "service-connection" criteria cannot be met.

The VA acknowledges that the skin disorder, chloracne, is causally related to Agent Orange exposure. On Apr. 15, 1980, in a statement before the House Veterans' Affairs Subcommittee on Medical Facilities and Benefits, former VA administrator Max Cleland said that "the relationship between accidental human exposure to Agent Orange constituents and the development of long-term illnesses other than chloracne remains speculative at present." Even though the VA does view chloracne as an immediate effect (acute effect) of Agent Orange exposure, the basis for awarding disability stems from the occurrence of chloracne during the service. Temporal coincidence with active duty is the major criterion, irrespective of cause, for chloracne or any other veteran complaint.

The total of 1237 (15.3%) claims which were granted were awarded primarily for skin conditions (94%) and for cancer, psychiatric, and neurological conditions (6%), among others.

The VA denied 6,824 claims after there was a confirmed diagnosis of the disease for which the veteran had filed a claim. The denied claims fall into the following categories: 4091 for various skin conditions; 2432 for nervousness and headache, or fatigue; 907 for paralysis or numbness; 791 for gastrointestinal or genito-urinary conditions; 487 for malignancies which include leukemia, lymphoma, melanoma, and Hodgkin's disease; 359 for impaired sexual activity; 463 for eye, ear, nose, and throat pathology; 289 for lung conditions; 247 for cardiovascular conditions, and 146 claims denied for miscellaneous conditions. (Since each claim could fall into a variety of different categories, the category figures do not equal 6,824.)

The VA policy is that the resolution of disability claims for conditions that are now defined as "non-service connected" (and therefore denied) will depend on the results of scientific studies which are described below. Since it is expected that these studies will take years to complete, the Chief Medical Director of the VA, Dr. Donald Custis, has testified at a hearing of the House Veterans Affairs Subcommittee on Investigations and Oversight on Sept. 15, 1982, that "It may well be that the Congress cannot wait for scientific answers in the short term, in which case it may well be that the sociopolitical aspect of this problem will have to be addressed."

#### Current or Proposed Studies of Health Effects

Many branches of the Federal Government are conducting research on the health effects of Agent Orange and phenoxyherbicides. Research efforts range from large-scale epidemiology studies of Vietnam veterans to studies of cancer among Kansas residents exposed to herbicides. The following paragraphs provide an overview of research efforts at the Department of Defense, the Veterans Administration, and the Department of Health and Human Services. The impact of the following studies on VA disability policy is not clear; the VA has not established any formal criteria for how their policies might be altered by scientific findings.

Due to the recent transfer of the legislatively mandated epidemiology study of Vietnam veterans and to the interest which this study has generated all along, it will be discussed first.

Epidemiology Study. The large epidemiology study of Vietnam veterans exposed to Agent Orange, mandated by P.L. 96-151 in December 1981, has been the focus of much of the debate over the health effects of Agent Orange. P.L. 96-151 directed the VA to perform the study of long-term health effects among veterans using a protocol that was subject to approval by the congressional Office of Technology Assessment (OTA); in addition, the OTA director was given the task of monitoring the progress of the study. The protocol was reviewed by the OTA, the VA advisory group on the health-related effects of herbicides, the science panel of the Agent Orange Working Group, and the National Academy of Sciences. P.L. 97-72 allowed for future expansion of the scope of the study.

The implementation of the study was delayed until October 1982, at which time the responsibility for conducting the study was transferred from the VA to the Centers for Disease Control (CDC). The transfer was accomplished following letters to the VA from the Veterans Affairs Committees of the House and the Senate. The letters expressed concern over the lack of progress on the study and concern over the VA's credibility with the veterans; consequently, the VA was urged to relinquish the study to an independent research body. While the VA acceded to this request, former VA Administrator

Nimmo attributed the delay of the study to legal challenges and to the protocol review process.

On Jan. 18, 1983, the CDC formally accepted responsibility for the study in a written agreement with the VA. Under the agreement, the VA is to provide the CDC with \$3 million to fund the study, yet the CDC is assured of autonomy in its design and implementation. The project will actually consist of two studies, one on the health effects of Agent Orange and the other on the health effects of the Vietnam experience. The study designs are expected to be ready for OTA review in April 1983. Preliminary reports suggest that the veterans under study will be divided into three groups (cohorts) -- one group made up of those who were likely to have been exposed to Agent Orange, another group constituting those who were unlikely to have been exposed, and a final group of veterans who did not serve in Vietnam and who were not likely to have been exposed. The DoD is assisting the CDC in establishing criteria for assigning an individual veteran to a particular group. The selection process will depend on the use of DoD records of ground troop movements relative to herbicide spraying. Completion of the study is expected by the end of 1987.

Department of Defense. The Air Force is conducting "The Ranch Hand Study," an epidemiological study of personnel exposed to herbicides during the Air Force's aerial spraying program in Vietnam (Operation Ranch Hand). These personnel were members of flight crews involved in the handling and/or spraying of herbicides, and they were presumed to have been heavily exposed. This study population of 1,260 personnel is being compared to a control population consisting of unexposed flight crew members.

The purpose of the study is to determine whether Ranch Hand flight crews suffered adverse health effects compared to the control population. The study consists of three parts: a mortality study; a morbidity (disease) study which includes birth defects in offspring; and a follow-up period of physical examinations at specific intervals (up to 20 years) from the onset of the study. Information for the morbidity and follow-up portions is collected by questionnaires administered in the homes of the participants and by extensive physical and psychological tests. These data are collected by the independent contractors Louis Harris and Associates and Kelsey-Seybold Clinic, respectively. Before data collection began in 1980, the entire study protocol had been reviewed by the University of Texas School of Public Health, the U.S. Air Force Science Advisory Board, the Armed Forces Epidemiological Board and the National Academy of Sciences.

The initial phases of mortality and morbidity data collection were completed in December 1982. For the morbidity study, participation in the questionnaire and physical examination has been very high (greater than 95%) and an interim report is expected by the summer of 1983. The findings of the mortality study (due to be released early in 1983) suggest that there are no differences in the number of deaths between the Ranch Handers and controls. Periodic reassessment of the mortality findings are planned throughout the 20-year study by the Air Force School of Aerospace Medicine.

While the Ranch Hand Study is expected to provide some valuable information about the population of herbicide sprayers, the applicability of the Ranch Hand Study to the experience of ground troops has been questioned. For example, the herbicide exposure conditions are thought to differ between the two groups. The Ranch Handers were heavily exposed at sporadic intervals (repeated acute exposures) and the exposure was through the skin, through inhalation, and through ingestion. After the missions, the flight crews were

required to shower. While the extent and mode of ground troop exposure are less certain, it is likely that the mode of ground troop exposure was primarily due to skin contact and to inhalation. The duration of ground troop exposure was likely to be for longer periods due to operational movements through contaminated areas. Thus, because the exposure conditions of Ranch Hand personnel did not mimic those of ground troops, the general relevance of the Ranch Hand study is not certain. One of the criticisms raised by the National Academy of Sciences in their May 1980 review of the Ranch Hand protocol was that adverse health effects were not likely to be found because the sample size was too small and the follow-up period was too short. In response, the Air Force did extend the follow-up period to 20 years; nevertheless, the problem of sample size makes it unlikely that the study will detect certain cancers that are relatively rare. The impact of Agent Orange exposure on the incidence of these rare cancers (e.g., soft-tissue sarcoma and non-Hodgkin's lymphoma), may be most appropriately determined by the case control studies in New York State and at the National Cancer Institute.

Veterans Administration. The Veterans Administration intends to spend \$6.7 million of the total 1983 medical research budget of \$163 million for projects on the health effects of herbicide exposure and, more generally, the health effects of combat duty in Vietnam. The majority of these research dollars (\$4.2 million) is destined for the epidemiology study of Vietnam veterans, a mortality study, and an identical twin sibling study. Due to congressional pressure, responsibility for the conduct of the epidemiology study has been transferred from the VA to the CDC. Funding for the epidemiology study, however, will continue to be provided by the VA.

Both the mortality and the twin study address the impact of the Vietnam experience rather than Agent Orange in particular. The purpose of the mortality study is to examine the cause-of-death and the death rate in Vietnam veterans by comparison to veterans who did not serve in Vietnam. The idea is to determine whether military service in Vietnam has resulted in different death profiles since the end of the war. Computer records will provide the information, and this information will be collected and coded by contractors for the VA. The project is expected to be finished by 1985.

The Identical Twin Study, also sponsored by the VA, is designed to determine whether the current psychological and physical health of Vietnam veterans has been adversely affected by their service. In this study, a group of VA researchers in St. Louis is attempting to study 450 pairs of identical twins; one twin served in Vietnam during the period of herbicide exposure, whereas the other twin was not stationed in Southeast Asia. Initial findings of this study are expected by October 1984.

The VA has also established the Chloracne Task Force to identify veterans with skin conditions and then to see if there are bona fide cases of chloracne within this group. Thus far, a dermatologist who is serving as a consultant at the Washington VA office has found 12 tentative cases of chloracne which require further investigation.

Another VA research activity is a study of dioxin in the fat tissues of veterans. In conjunction with the EPA, the VA intends to find out whether Vietnam veterans have higher levels of dioxin in their fatty tissues than non-Vietnam veterans. Background levels of dioxin in the U.S. male population are also to be analyzed. To detect dioxin concentrations in the fat, tissue is removed surgically from the abdomen and the sample is analyzed on gas chromatography/high resolution mass spectrometry instruments.

Department of Health and Human Services: Centers for Disease Control/Birth Defect Study. An ambitious epidemiology study is underway in Atlanta to find out if Vietnam veterans show an increased risk of having children with birth defects. Using the case-control method, CDC researchers are interviewing 7000 parents of children with birth-defects and 3000 parents whose children are normal. The interview process is used to establish the military history of the parents. This information will be analyzed to determine whether parents who served in Vietnam are at greater risk of producing children with birth defects. Already one-half of the interviews has taken place, with initial findings expected by September 1983. Sponsors of the study are DHHS, VA, and DoD.

DHHS: National Cancer Institute/Cancer Study. Epidemiologists are investigating a Kansas population for the relationship between herbicide exposure and various cancers. The research question is: do such cancers as soft tissue sarcoma and various lymphomas result from herbicide exposure? Kansas residents are considered a good population for studying herbicide exposure because in this wheat-growing State herbicides are used much more often than insecticides. In other States, herbicides are frequently used in combination with insecticides, which are also implicated in producing cancer. Insecticide exposure would confound the results of such a cancer study. Preliminary results of this study are anticipated by the fall of 1983.

DHHS: National Institute of Occupational Safety and Health/Dioxin Worker Registry. NIOSH is compiling a registry of workers involved in the manufacture of 2,4,5-T and related compounds because these compounds contain dioxin as a contaminant. Worker exposure records on 3000-5000 individuals, compiled from all 12 U.S. sites of production, will go back to the 1940s. The purpose of the registry is to establish whether the mortality rates are higher in this population of exposed workers than in a comparable group in the U.S. population. The protocol has been reviewed by an independent university-affiliated group of scientists, and the analysis of the findings is due by 1985.

#### Role of State Commissions or Advisory Groups

Several States have established their own agencies in response to veterans' complaints of Federal inactivity on the Agent Orange question. Although these organizations vary in structure, their functions are essentially similar: to identify State Vietnam veterans and to provide and coordinate various social services for these veterans. For example, various State commissions disseminate information on Agent Orange and assist in scheduling Agent Orange examinations at VA medical centers. Those States which have commissions or programs on Agent Orange are as follows: California, Connecticut, Georgia, Hawaii, Illinois, Kansas, Maine, Massachusetts, Minnesota, New Jersey, New York, Oklahoma, Ohio, Pennsylvania, Texas and West Virginia. (Wisconsin's program has been discontinued.)

Some of these States are funding their own research programs aimed at answering questions on the health effects of Agent Orange. In the spring of 1983, New York is due to release findings of a study on the incidence of soft-tissue sarcoma among State veterans relative to other State inhabitants. Soft-tissue sarcoma has been implicated as a possible long-term health effect of herbicide exposure. New York State has also undertaken a mortality study to see if death rates are higher among Vietnam veterans than other State residents of the same age group.

The New Jersey State Commission on Agent Orange has a variety of projects underway. One task has been to assemble information on a bacterial infection called Melioidosis, which may have afflicted veterans who were exposed to the bacterium while in Vietnam. The Commission is beginning a project to determine whether blood tests can be reliably used to measure dioxin levels. Blood tests would obviate the need for more expensive and painful surgical procedures now performed for this purpose. In addition, the New Jersey Commission on Agent Orange distributes pamphlets on how to fill out VA disability claims forms.

The role of the State commissions is growing to include advocacy for State veterans. State representatives have testified at congressional hearings and at the VA advisory committee meetings to bring attention to veterans' complaints. At the Nov. 30, 1982, meeting of the VA advisory committee on the health-related effects of herbicides, the spokesperson for State agencies endorsed legislation that would establish the presumption of a "service-connection" for chloracne and soft tissue sarcoma so that veterans' disability claims for these disorders would be awarded.

Because of the lack of State funds, some of the State commissions are no longer active and others are in jeopardy. State commissions have requested Federal funds on the grounds that they assist in the administration of VA programs such as the scheduling of Agent Orange examinations and informing State veterans about Agent Orange exposure.

#### Previous Congressional Action

As previously discussed, two major pieces of legislation have been enacted in the 96th and 97th Congresses to provide for Vietnam veterans' medical care and to mandate studies of the health effects of Agent Orange: P.L. 96-151, The Veterans' Health Programs Extension and Improvement Act of 1979; and P.L. 97-72, Veterans' Health Care, Training and Small Business Loan Act of 1981.

The legislative proposals of the 96th and 97th Congresses were generally directed to the status of disability claims that are now denied by the VA because they are not considered as "service-connected." In Representative Daschle's proposed 97th Congress bills, H.R. 7146 and H.R. 7110, the presumption of service connection would have been legislatively established for soft-tissue sarcoma and chloracne, respectively. The presumption of service connection would have permitted veterans with these disorders to collect disability payments because the conditions were presumed to have arisen during the service. Two other 97th Congress bills, H.R. 523 (Rep. Roe) and H.R. 2297 (Rep. Downey), were designed to provide a presumption of service connection for all chronic conditions specifically related to Agent Orange exposure which appear later than one year after discharge. Existing law requires that disabling conditions only appearing before discharge or within one year after discharge are presumed to have arisen during the service. Finally, a number of bills were introduced to transfer the conduct of the epidemiology study from the VA to the Department of Health and Human Services. This was accomplished -- although non-legislatively -- with the transfer of responsibility to the Centers for Disease Control in the DHHS.

#### LEGISLATION

H.R. 209 (Long)

Requires the Secretary of Health and Human Services to arrange for an



independent epidemiological study of persons exposed to the chemical dioxin, used in the herbicide known as Agent Orange. Introduced Jan. 3, 1983; referred to Committee on Energy and Commerce.

H.R. 212 (Long)

Amends Title 38, United States Code, to waive the one-year limitation on claims for compensation from the Veterans Administration for disabilities and diseases incurred in or aggravated by military service in the case of claims by veterans who served in Southeast Asia during the Vietnam era for compensation for disabilities resulting from exposure to the phenoxyherbicide known as Agent Orange or other phenoxy herbicides. Introduced Jan. 3, 1983; referred to Committee on Veterans Affairs.

H.R. 331 (Roe)

Amends Title 38, United States Code, to waive the one-year limitation on claims for compensation from the Veterans Administration for disabilities and diseases incurred in or aggravated by military service in the case of claims by veterans who served in Southeast Asia during the Vietnam era for compensation for disabilities resulting from exposure to the phenoxy herbicide known as "Agent Orange" or other phenoxy herbicides. Introduced Jan. 3, 1983; referred to Committee of Veterans Affairs.

H.R. 462 (Applegate)

Amends Title 38, United States Code, to waive the one-year limitation on claims for compensation from the Veterans Administration for disabilities and diseases incurred in or aggravated by military service in the case of claims by veterans who served in Southeast Asia during the Vietnam era for compensation for disabilities resulting from exposure to the phenoxyherbicide known as Agent Orange, or other phenoxy herbicides. Introduced Jan. 6, 1983; referred to Committee on Veterans Affairs.

H.R. 609 (Hammerschmidt)

Amends Title 38 of the United States Code to provide that progressive muscular atrophy or amyotrophic lateral sclerosis developing a 10 per centum or more degree of disability within seven years after separation from active service during a period of war shall be presumed to be service connected. Introduced Jan. 6, 1983; referred to Committee on Veterans' Affairs.

H.R. 1135 (Downey)

Amends Title 38, United States Code, to waive the one-year limitation on claims for compensation from the Veterans Administration for disabilities and diseases incurred in or aggravated by military service in the case of claims by veterans who served in Southeast Asia during the Vietnam era for compensation for disabilities resulting from exposure to the phenoxy herbicide known as Agent Orange, or other phenoxy herbicides. Introduced Feb. 1, 1983; referred to Committee on Veterans Affairs.

H.R. 1382 (Downey)

Provides that any award by the Veterans' Administration of compensation for a disease or disability in a veteran resulting from exposure to Agent Orange shall be retroactive to the date the veteran first applied to the Veterans' Administration for compensation for such disease or disability. Introduced Feb. 10, 1983; referred to Committee on Veterans' Affairs.

S. 374 (Specter)

Amends Title 38, United States Code, to provide a presumption of service connection for the occurrence of certain diseases in veterans who were exposed to phenoxy herbicides while serving in the Armed Services in Southeast Asia during the Vietnam era. Introduced Feb. 2, 1983; referred to Committee on Veterans Affairs.

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- U.S. Congress. House. Committee on veterans' Affairs. Ad Hoc Subcommittee on Hospitals and Health Care. Legislation to improve medical programs administered by the Veterans Administration (H.R. 2157, H.R. 2953, and H.R. 2999). Hearing, 97th Congress, 1st session. Apr. 28, 1981. 54 p.
- U.S. Congress. House. Committee on Veterans' Affairs. Subcommittee on Medical Facilities and Benefits. Herbicide "Agent Orange." Hearing, 95th Congress, 2d session. Oct. 11, 1978. 62 p.
- Oversight hearing to receive testimony on Agent Orange. Hearing, 96th Congress, 2d session. Feb. 25, 1980. 121 p.
- Oversight hearing to receive testimony on Agent Orange. Hearing, 96th Congress, 2d session. July 22, 1980. 459 p.
- Scientific community report on Agent Orange. Hearing, 96th Congress, 2d session. Sept. 16, 1980. 145 p.
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- Vietnam veterans' readjustment. Hearings, 96th Congress, 2d session. Feb. 21, Mar. 4, and May 21, 1980. Part 2. 595-2082 p.

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APPENDIX

A LISTING OF

FEDERAL ORGANIZATIONS ON AGENT ORANGE

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January, 1983

I. Cabinet Council on Human Resources

Agent Orange Working Group (AOWG)

Chairman: James Stockdale (HHS) Alternate: Bart Kull

Members: HHS, VA, DoD, Dept. Agriculture, Dept. Labor, EPA, ACTION Agency, OMB, OSTP, Council of Economic Advisors, Dept. State (OTA- Observer Status)

Activities: Monitor and coordinate Federal Research activities on health effects of Agent Orange.

Science Panel: Dr. Vernon Houk (CDC)

II. Veterans Administration

Advisory Committee on Health Related Effects of Herbicides

Chairman: Dr. Barclay Shephard (VA)

Members: VA, Veterans Groups, FDA, CDC, EPA, Army Medical Corps, Dept. Agriculture, NIH, private universities

Activities: Advise Administrator of VA on health effects of Agent Orange

Agent Orange Projects Office

Acting Director: Dr. Barclay Shephard (VA)

Members: In-house administrative and research staff, Dept. of Medicine and Surgery, VA

Activities: Coordinate and monitor epidemiology projects at VA on Agent Orange and related research efforts.

Agent Orange Policy Coordinating Committee

Chairman: Everett Alvarez, Jr. (VA)

Members: In-house staff involved in medical information and medical claims.

Activities: Review VA policy to make recommendations on Agent Orange issues to the administrator of the VA.

III. Department of Defense

Army Agent Orange Task Force (AAOTF)

Chief: Richard Christian (Army)

Members: Army, Navy, Air Force, Marines, and civilian staff

Activities: Provide VA with information from military records for the research projects on Agent Orange.