

STATEMENT OF
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Mr. Chairman and Members of the Committee:

In March 1978 the Veterans Administration Department of Medicine and Surgery was informed of increasing public concern, particularly on the part of Vietnam veterans, over the possible long range effects of exposure of American military personnel to herbicides during the Vietnam War. Veterans Administration Central Office (VACO) staff learned that a television documentary had been prepared by CBS and was due for public release. A copy of this documentary was reviewed by VACO officials. At this time it was also learned that the Department of Veterans Benefits Chicago office had received several claims from veterans in the area alleging adverse health effects from exposure to Agent Orange. Agent Orange was one of the chemical combination types of herbicides used over several years during the Vietnam War. Its use was terminated early in 1971. All residual stock of Agent Orange was destroyed by the U. S. Air Force during 1977.

The Veterans Administration Department of Medicine and Surgery (DM&S) staff immediately took steps to inquire into this

matter and to initiate the necessary actions. This has proved to be a very complex and time consuming effort. However, I wish to emphasize as strongly as I can that no health care has been deferred or denied any veteran alleging adverse health effects as a result of exposure to herbicides in Vietnam because of this complexity and the magnitude of the task.

A vigorous effort was launched to review pertinent literature pertaining to herbicides. It was found that a large number of scientific treatises and research studies had already accumulated in the world literature since the herbicides were first brought into public use during the early nineteen forties. One of the most authoritative publications was the investigation and report of the National Academy of Sciences, released during 1974. This report covered health and environmental issues devolving on the use of herbicides during the Vietnam War. The report suggested that the likelihood of long term, serious adverse health effects among persons other than the North Vietnamese or the South Vietnamese Montagnards is highly remote. The report did refer to allegations of serious health consequences for North Vietnamese and Montagnard women and children, but there was no real possibility of verification of these claims because of the military situation at the time of the NAS study. Later publications appeared under authorship of North Vietnamese physicians alleging significant infertility, abortion, fetotoxicity, teratogenesis and carcinogenesis among Vietnamese who had been exposed to Agent Orange.

Veterans Administration Department of Medicine and Surgery staff immediately initiated inquiries about adverse health effects of herbicides from other federal agencies known to have had experience with the military, agricultural, or industrial use of these chemicals. These agencies included DOD, USDA, EPA, NCI, NIOSH, NIEHS, and FDA. Polarized points of view were uncovered ranging from the persuasion that Agent Orange was essentially innocuous for human beings to the conviction that herbicides may have long range adverse health effects for animals and man.

During the Vietnam War the defoliants were known as Agent Orange, Agent White, Agent Blue, and Agent Purple. Agent Orange was used predominantly during the latter phase of the war. These agents were mixtures of known herbicidal chemicals. Agent Orange was a mixture of 2,4-D and 2,4,5-T. A contaminant of 2,4,5-T was 2,3,7,8-tetrachlorodibenzo-para-dioxin, also known as TCDD or dioxin. This chemical substance is highly toxic and the effects are best known from animal experiments. The main effects are tissue edema, liver necrosis, gastric mucosal hypertrophy, gastrointestinal erosion, thymic and lymphatic atrophy. Fetal toxicity, teratogenesis and tumor production have been reported in animals. Human studies include industrial workers exposed to the chemicals during production, agricultural and railroad workers who utilized the herbicides, industrial accidents occurring within the United States and Europe, and Vietnamese citizens exposed to the chemicals following defoliation. The only human disorder which can be linked to herbicide exposure is chloracne. The lesion may heal completely or result in scar tissue. Temporary symptoms can be produced after heavy exposure, including nausea, diarrhea, fatigue, anorexia, headaches, backaches, cutaneous sensory deficiency, impaired olfactory or gustatory sensation, tremors, and temporary focal muscle paralysis. These symptoms disappeared after a short period of time.

Many statements regarding chronic adverse effects of the herbicides in man are unsubstantiated at this time. Because of this confusing scientific evidence, DM&S staff established an informal group whose purpose was to bring together pertinent known evidence concerning the health effects of herbicides and to formulate a factual base on which the VA could develop health care policies. This group included representatives of all federal agencies with regulatory functions and expertise concerning toxic chemicals, plus consultants from the chemical manufacturing industry and university medical centers, and has held

three meetings so far. Since it has become evident that the group's deliberations may be of interest to both the federal agencies and nongovernmental bodies, permission has been requested to reconstitute this group as a formal Federal Advisory Committee.

Meanwhile it was judged important to start immediately with formulation of administrative processes to manage health care issues for individual veterans at all the VA medical centers. A brochure covering the broad issues pertaining to herbicides was developed and mailed to all Medical Center Directors and Chiefs of Staff. The original copy of the brochure was prepared on March 12, 1978. It has been updated periodically as new perceptions of the problem emerged. Next a "hotline" discussion with all Medical Center Directors and Chiefs of Staff was held on April 7, 1978. During this conference call detailed explanations were given concerning the main issues and guidance was provided on how to manage individual claims by veterans who express concern over possible long term effects of exposure to the herbicides. This "hotline" conference was followed up with a telegram which provided direction to the VA medical centers staffs on appropriate management of claims for health care.

Investigation of the problem revealed that the main scientific concern is whether a highly toxic contaminant of herbicide 2, 4, 5 - T, namely TCDD, or dioxin, may persist in body tissues for protracted periods and thus serve as an indicator of prior exposure. Inquiry into the possibility of identifying specialized laboratory facilities within the VA or in another federal agency which would be able to demonstrate the presence of dioxin in body tissue was made. No such laboratory could be found. To create such a facility would cost approximately \$80,000 and would take about a year. A qualified federal laboratory is

located at Wright Patterson Air Force Base. Another laboratory which does reliable government contract work at the University of Nebraska was also identified. It was then decided to conduct a brief, controlled investigation of twenty, age and service matched veterans, ten being individuals who have had unquestionable exposure to Agent Orange during the Vietnam War and ten being veterans who have not knowingly had any exposure to this agent during their military service. The objective of the study is to determine whether dioxin does persist in body fat for as long as eight to ten years, at the level of concentration which is capable of instrumental identification with the present state of the art (roughly one part per trillion). Another objective is to discover whether persons who have never been exposed to Agent Orange during the Vietnam War also carry in their body fat dioxin or other chemicals which cannot be differentiated from dioxin by currently available laboratory methods. A third objective would be to correlate symptoms and levels of exposure with amounts of dioxin found in fat after eight to ten years. If dioxin is found only in the Vietnam veterans who have been exposed to Agent Orange, a biopsy approach to diagnosis may prove valuable. If dioxin is found in persons never exposed to Agent Orange, or if no dioxin is found in the tissues of Vietnam War veterans who have persistent symptoms stemming from the time of their exposure to Agent Orange, the biopsy approach would obviously be of no value.

Review of the literature and consultation with knowledgeable scientists have also suggested that dioxin may affect chromosomes and other body defense mechanisms (receptor sites, enzyme systems, immunity mechanisms), so that remote adverse health consequences may be mediated even though the dioxin may disappear. There is considerable animal experimentation indicating that such effects can be created by dioxin-type chemical moieties. Since the effects achieved on animals some-

times are mimicked by human ill health, VACO DM&S staff have taken further steps to ensure that all parameters of health management of Vietnam veterans are inquired into by the medical staff of the field medical centers. A detailed administrative document was developed, therefore, to ensure proper present and future surveillance of Vietnam veterans for possible remote adverse health effects relating to toxic chemicals. VA Department of Medicine and Surgery Circular 10-78-219 dated September 14, 1978, has been delivered to all medical centers. This circular should ensure that each veteran who alleges exposure to herbicides or complains of symptoms believed to be due to exposure to herbicides will immediately receive proper administrative and health care management. These services are directed specifically to resolving the issue of whether or not verified symptoms can be professionally attributed to herbicide poisoning or attributed to some other etiologic agent or process. This will immediately provide the veteran with two benefits. The first of these is a diagnosis and appropriate therapy. The second benefit will be that a medical basis will be established for the processing of a claim which any veteran may make for veterans benefits. However, emphasis is on medical care. Veterans will receive appropriate treatment for whatever condition is discovered at the time they report for medical examination.

The Circular also provides for quarterly reporting of statistics on the numbers of veterans who requested medical examination for alleged herbicide-related symptoms and the numbers professionally attributed to herbicides. These statistics will enable VA Central Office staff to evaluate the magnitude of the herbicide problem with more precise knowledge. Steps are currently being taken to develop a complete Central Office registry for all veterans with proven exposure to herbicides during the Vietnam War. The purpose of this registry is to ensure that there will be a follow-up on every case in the event that future scientific research shows that

delayed adverse health effects may be a sequel to remote one-time exposure to herbicides. It is also possible that other disease entities may later be discovered to have an etiologic relationship to exposure to herbicides. The registry will take cognizance of this eventuality, including the possibility of adverse health effects on the families of Vietnam veterans.

To ensure completeness of information, DM&S staff have arranged with the Armed Forces Institute of Pathology to receive pathologic specimens removed at VA medical centers from Vietnam veterans with possible exposure to herbicides. Circular 10-78-234 dated September 29, 1978, was written and sent to all VA medical centers. Tissues thus referred to the AFIP will be retained perpetually to facilitate research and reinvestigation of individual cases in the light of new knowledge concerning the biological properties of herbicides.

To ensure impartiality in assessing the validity of professional attributions of individual health problems to herbicide exposures, DM&S has proposed the creation of an Evaluation Committee. Members will be derived from appropriate specialists in the various disciplines of relevance (Internal Medicine, Neurology, Psychiatry, Pathology, etc.). This committee will be activated in the near future as information will be forwarded to VACO in accordance with Circular 10-78-219.

The Veterans Administration has maintained a detailed computerized file over the past two decades on all medical diagnoses of veterans who have been admitted to bed care sections of VA medical centers. It is possible, therefore, to review retrospectively whether any particular disease has increased over the past fifteen to twenty years in any age group of veterans. Since the possibility of cancer is the most alarming prospect for any individual, VA DM&S staff have commenced a review of the prevalence of cancer of the principle body organs such as liver, pancreas, lung, etc. in all age groups of veterans from a time preceding the use of herbicides in Vietnam through to the most recent time. If an increased incidence of cancer is discovered.

in any year for veterans of the age group which may be representative of the Vietnam veterans, the individual case files will be reviewed for the possibility that the veteran may have been exposed to herbicides.

The VA DM&S staff have been advised, both through its review of the medical literature and through its consultations with knowledgeable resources, that the development of a rather distinctive skin eruption, chloracne, occurs characteristically in persons known to have significant exposure to dioxin. This chloracne type lesion has also been evoked in experimental animals by feeding experiments involving minute quantities of dioxin. Field staff have been specially alerted to the significance of this sign, so that veterans who have had chloracne will be studied very thoroughly for confirmatory evidence of exposure to herbicides. DM&S staff will also commence a review of prior diagnoses of skin diseases which have come to the attention of the VA through the mechanism of veterans benefits adjudication. VA Department of Veterans Benefits fortunately maintains a computer file on decisions regarding skin disease rating for benefits. DM&S staff may be able to identify appropriate cases by review of this file. This work has been started. It should be emphasized, however, that this approach is merely to gain access rapidly to likely cases of herbicide poisoning. It is known that exposure to dioxin does not invariably evoke chloracne, although there is a high correlation between the two.

DM&S staff discovered that during 1949 an industrial accident occurred in a Monsanto Chemical Factory at Nitro, West Virginia, during which a total of 289 employees were significantly exposed to 2,4,5-TCP. Subsequent analysis of this revealed it to contain dioxin. All exposed became ill. Families of the factory employees also were exposed and became ill, since the employees carried the chemicals home on their clothes. The

Veterans Administration is most anxious to obtain epidemiological data showing the outcome of this episode of exposure for individual victims, since this may be anticipated to provide elucidation of the problems of the Vietnam veterans who were exposed to herbicides. VA has identified an Institute for Environmental Health Sciences at the State University of Colorado, which is willing to undertake such an epidemiological analysis. VA DM&S staff are also inquiring into the outcome of other industrial accidents.

It should be noted that there is a significant difference between the numbers of veterans who have reported to VA medical centers for examination and the large numbers claimed in public media to have been exposed to or to have become ill from the effects of herbicides. During the period 1962 through 1971 approximately 18.85 million gallons of herbicides were sprayed over the combat zones of Vietnam. During this time it was theoretically possible that about 4.2 million American soldiers could have made transient or significant contact with the herbicides because of this operation. By contrast, no complaints referable to this use of herbicides reached the VA before 1978. By close of business June 30, 1978, fewer than 300 veterans had presented at VA medical centers for health problems they believed had been caused by exposure to the herbicides. Matters are made much more difficult by the fact that eight years have elapsed since the use of the herbicides was terminated in Vietnam. In addition, it is known now that prior to, during, and subsequent to the Vietnam War, equally large quantities of the same herbicides have been used in the United States of America without a deluge of concerns over adverse health effects. Herbicides of the 2,4,5-T type have been used by millions of Americans in agriculture, horticulture and forestry operations. Undoubtedly,

millions of Americans, including Vietnam veterans, have encountered dioxin in this non-military fashion. The Environmental Protection Agency has just this year filed the first Rebuttable Presumption injunction against the continued use of 2,4,5-T. However, despite this injunction, dioxin containing chemicals will not disappear from domestic use very soon. If later proof is produced that human health is significantly impaired by dioxin, the VA's task will be to distinguish harm which veterans may have encountered through the use of the herbicides during the war from harm which may have come to them through non-military domestic exposures to chemicals. We do not anticipate that this will be easy.

From the information and data presented, it is clear what a complex and difficult task the thorough and complete investigation and evaluation of this whole herbicide problem is. We pledge, however, that the Veterans Administration, working in close cooperation with other concerned government and private organizations, will continue to pursue it to its proper resolution.

Mr. Chairman, I am attaching for your information a copy of the rating practices and procedures to be used in handling claims for service-connected benefits arising out of alleged exposure to defoliants and statistical data on the claim for service-connection received by the Department of Veterans Benefits to date.

Mr. Chairman, that concludes my statement. Mr. Peckarsky and I will be glad to respond to any questions you or other members of the Subcommittee might have.