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GULF WAR ILLNESSES

Research, Clinical
Monitoring, and Medical
Surveillance

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Mr. Chairman and Members of the Committee:

I am pleased to be here today to discuss two recent GAO reports that responded to congressional mandates¹ regarding health care issues of military personnel deployed for military operations overseas. In the first, we reported on the government's clinical care and medical research programs relating to illnesses suffered by Gulf War veterans.² For the second, we assessed the medical surveillance³ of military personnel in Bosnia.⁴ Based on these two reports, I will discuss four issues:

- the adequacy of the mechanisms used by the Department of Defense (DOD) and Veterans Affairs (VA) to monitor the quality, appropriateness, and effectiveness of Gulf War veterans' care and to follow up on their clinical progress over time;
- the government's research strategy for studying Gulf War veterans' illnesses and the methodological problems posed in its studies;
- the consistency of key official conclusions with available data on the causes of Gulf War veterans' illnesses; and
- the extent to which DOD's efforts for Operation Joint Endeavor in Bosnia were successful in overcoming the medical surveillance problems encountered during the Gulf War.

We are currently working on several related studies requested by other congressional committees. For example, we are looking at the incidence of tumors among Gulf War veterans; the possible presence of antibodies for synthetic squalene⁵ in blood samples of Gulf War veterans; the processes, methods, and criteria used by the Persian Gulf Veteran's Coordinating Board (PGVCB),⁶ DOD, and VA to approve or disapprove research protocols; and the extent to which ongoing research can provide information on what caused Gulf War veterans' illnesses. We will be happy to share the results of this work with you once it is completed.

¹National Defense Authorization Act for Fiscal Year 1997 (P.L. 104-201, sec. 744, Sept. 23, 1996).

²Gulf War Illnesses: Improved Monitoring of Clinical Progress and Reexamination of Research Emphasis Are Needed ([GAO/NSIAD-97-163](#), June 23, 1997).

³Medical surveillance involves the regular or repeated collection, analysis, and dissemination of uniform health information.

⁴Defense Health Care: Medical Surveillance Improved Since Gulf War, but Mixed Results in Bosnia ([GAO/NSIAD-97-136](#), May 13, 1997).

⁵Squalene is an acyclic hydrocarbon that is widely distributed in nature but is unhealthful to humans in synthetic form.

⁶The PGVCB, which comprises the Secretaries of Defense, Veterans Affairs, and Health and Human Services, was charged with coordinating the federal response to Gulf War veterans' illnesses.

Results in Brief

I will first summarize our findings on the four issues and then provide detailed information on them. In our report on Gulf War veterans' illnesses, we noted that while DOD and VA had provided care to eligible Gulf War veterans, they had no system for following up on their health to determine the effectiveness of their care after initial treatment. Also, because of methodological problems and incomplete medical records on the veterans, research has not come close to providing conclusive answers on the causes of the illnesses. Given the data needed versus what is available, which is primarily anecdotal, it will be very difficult, if not impossible, to determine the causes of the illnesses. Finally, the support for some official conclusions regarding stress, leishmaniasis (a parasitic infection), and exposure to chemical agents was weak or subject to other interpretations.

Regarding our report on the medical surveillance of servicemembers deployed in Bosnia, while we found that DOD had improved its capability to monitor and assess the effects of deployments on servicemembers' health since the Gulf War, certain problems remained: the database containing deployment information was inaccurate, not all troops received postdeployment medical assessments, and many of the medical records we reviewed were incomplete.

After I have provided details on the findings of our reports, I will discuss our reports' recommendations, the relevant agencies' comments on them, and our evaluation of those comments.

Background

Before providing you details on the results of our work, let me briefly provide some background information. During service associated with the Gulf War, many of the approximately 700,000 veterans might have been exposed to a variety of potentially hazardous substances. These substances include compounds used to decontaminate equipment and protect it against chemical agents, pesticides, vaccines, and drugs to protect against chemical warfare agents (for example, pyridostigmine bromide). Following the postwar demolition of Iraqi ammunition facilities, some veterans might also have been exposed to the nerve agent sarin.

Over 100,000 of the approximately 700,000 Gulf War veterans have participated in DOD and VA health examination programs established between 1992 and 1994. Of those veterans examined by DOD and VA, nearly 90 percent have reported a wide array of health complaints and disabling conditions, including fatigue, muscle and joint pain, gastrointestinal

complaints, headaches, depression, neurologic and neurocognitive impairments, memory loss, shortness of breath, and sleep disturbances. Some of the veterans fear that they are suffering from chronic disabling conditions because of exposure during the war to substances with known or suspected health effects.

In 1992, VA established a program through which Gulf War veterans could receive medical examinations and diagnostic services. Participants received a regular physical examination with basic laboratory tests. In 1994, VA established a standardized examination to obtain information about exposures and symptoms related to diseases endemic to the Gulf region and to order specific tests to detect the “biochemical fingerprints” of certain diseases. If a diagnosis was not apparent, veterans could receive up to 22 additional tests and additional specialty consultations. In addition, if the illness defied diagnosis, the veterans could be referred to one of four VA Persian Gulf referral centers.

In 1994, DOD initiated its Comprehensive Clinical Evaluation Program, through which it used a clinical protocol and provided diagnostic services similar to those of the VA program.

In examining the causes of Gulf War veterans’ illnesses, the Presidential Advisory Committee on Gulf War Veterans’ Illnesses and the Institute of Medicine confirmed the need for effective medical surveillance capabilities. They found that research efforts to determine the causes of the veterans’ illnesses were hampered by incomplete data on (1) the names and locations of deployed personnel, (2) the exposure of personnel to environmental health hazards, (3) changes in the health status of personnel while deployed, and (4) immunizations and other health services for personnel while deployed.

Subsequently, in May 1997, we reviewed the actions DOD had taken since the Gulf War to improve its medical surveillance capabilities. Specifically, we determined what medical surveillance procedures DOD had used in Operation Joint Endeavor, which was conducted in the countries of Bosnia-Herzegovina, Croatia, and Hungary, and whether DOD had corrected the problems that surfaced during the Gulf War.

DOD and VA Had No Systematic Approach to Monitoring Gulf War Veterans' Health After Initial Examination

DOD and VA officials claimed that regardless of the cause of Gulf War veterans' illnesses, the veterans had received appropriate and effective symptomatic treatment. Both agencies tried to measure or ensure the quality of veterans' initial examinations by training health care specialists and maintaining standards for physicians' qualifications. However, these mechanisms did not ensure a given level of effectiveness for the care provided or help to identify the most effective treatments.⁷

Beyond the initial examination, neither DOD nor VA had mechanisms for monitoring the quality, appropriateness, or effectiveness of these veterans' care or clinical progress, and they had no plans to establish such mechanisms. VA officials told us that they regarded monitoring the clinical progress of registry participants as a separate research project, and officials from DOD's Clinical Care and Evaluation Program made similar comments.

We noted that such monitoring was important because (1) undiagnosed conditions were not uncommon among ill veterans, (2) treatment for veterans with undiagnosed conditions was based on their symptoms, (3) veterans with undiagnosed conditions or multiple diagnoses might see multiple providers, (4) follow-up could provide a better understanding of the clinical progression of the illnesses over time, and (5) the success or failure of physicians' treatments of Gulf War veterans could be identified. Without follow-up of their treatment, DOD and VA cannot say whether these ill veterans are any better or worse today than when they were first examined.

Most of the Federally Funded Research Was Ongoing, and Some Hypotheses Were Not Initially Pursued

Federal research on Gulf War veterans' illnesses and factors that might have caused their problems was not pursued proactively. Although these veterans' health problems began surfacing in the early 1990s, the vast majority of research was not initiated until 1994 or later, and much of that responded to legislative requirements or external reviewers' recommendations. This 3-year delay complicated the researchers' tasks and limited the amount of completed research available. Of the 91 studies receiving federal funding, over 70 had not been completed at the time of our review. The results of some studies will not be available until after 2000.

⁷See VA Health Care: Observations on Medical Care Provided to Persian Gulf Veterans (GAO/T-HEHS-97-158, June 19, 1997).

While research on exposure to stress was emphasized in earlier studies, research on low-level chemical exposure was not pursued until legislated in 1996. The failure to fund such research could not be traced to an absence of proposals. According to DOD officials, three recently funded proposals on low-level chemical exposure had previously been denied funds because, at the time, DOD did not believe that U.S. troops had been exposed to chemical warfare agents.

We found that additional hypotheses were pursued in the private sector. A substantial body of this research suggests that low-level exposure to chemical warfare agents or chemically related compounds, such as certain pesticides, is associated with delayed or long-term health effects. For example, animal experiments, studies of accidental human exposures, and epidemiological studies of humans offer evidence that low-level exposures to certain organophosphorus compounds,⁸ including sarin nerve agents to which some of our troops may have been exposed, can cause delayed, chronic neurotoxic effects.

It was suggested that the ill-defined symptoms experienced by Gulf War veterans might be due in part to organophosphate-induced delayed neurotoxicity. This hypothesis was tested in a privately supported epidemiological study of Gulf War veterans.⁹ The study clarified the patterns among veterans' symptoms through the use of statistical factor analyses and demonstrated that vague symptoms of the ill veterans were associated with brain and nerve damage compatible with the known chronic effects of exposures to low levels of organophosphates. It further linked the veterans' illnesses to exposure to combinations of chemicals, including nerve agents, insect repellents, and pyridostigmine bromide tablets.

Toxicological research indicates that pyridostigmine bromide, which Gulf War veterans took to protect themselves against the immediate, life-threatening effects of nerve agents, may alter the metabolism of organophosphates in ways that activate their delayed, chronic effects on the brain. Moreover, exposure to combinations of organophosphates and related chemicals like pyridostigmine bromide has been shown in animal

⁸Organophosphates are used in many pesticides and chemical warfare agents, and sarin has been used as a chemical warfare agent since World War II, most recently during the Iran-Iraq war and by terrorists in Japan.

⁹This research, conducted at the University of Texas Southwestern Medical Center, has been supported in part by funding from the Perot Foundation.

studies to be far more likely to cause morbidity and mortality than any of the chemicals acting alone.

Aside from the hypotheses being emphasized in the research being done, we found that the bulk of ongoing federal research on Gulf War veterans' illnesses was focused on the epidemiological study of the prevalence and cause of the illnesses. It is important to note that to conduct such studies, investigators must adhere to basic, generally accepted principles.

First, investigators must specify diagnostic criteria to (1) reliably determine who has the disease or condition being studied and who does not and (2) select appropriate controls (people who do not have the disease or condition). Second, they must have valid and reliable methods of collecting and relating data on past exposure(s) of those in the study to possible factors that may have caused the symptoms. The need for accurate, dose-specific exposure information is particularly critical when low-level or intermittent exposure to drugs, chemicals, or air pollutants is possible. It is important not only to assess the presence or absence of exposure but also to characterize the intensity and duration of exposure.

The epidemiological federal research we examined had two methodological problems: the lack of a case definition (that is, a reliable way to identify individuals with a specific disease) and the absence of accurate exposure data. Without valid and reliable data on exposures and the multiplicity of agents to which the veterans were exposed, researchers will likely continue to find it difficult to detect relatively subtle effects and to eliminate alternative explanations for Gulf War veterans' illnesses. Prevalence data can be useful, but it requires careful interpretation in the absence of better information on the factors to which veterans were exposed. While multiple federally funded studies on the role of stress in the veterans' illnesses have been done, basic toxicological questions regarding the substances to which they were exposed remain unanswered.

The ongoing epidemiological research cannot provide precise, accurate, and conclusive answers regarding the causes of veterans' illnesses because of these methodological problems as well as the following:

- Researchers have found it extremely difficult to gather information about exposures to such things as oil-well fire smoke and insects carrying infection.

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- Medical records of the use of pyridostigmine bromide tablets and vaccinations to protect against chemical/biological warfare exposures were inadequate.
 - Gulf War veterans were typically exposed to a wide array of agents, making it difficult to isolate and characterize the effects of individual agents or to study their combined effects.
 - Most of the epidemiological studies on Gulf War veterans' illnesses have relied only on self-reports for measuring most of the agents to which veterans might have been exposed.
 - The information gathered from Gulf War veterans years after the war may be inaccurate or biased. There is often no straightforward way to test the validity of self-reported exposure information, making it impossible to separate bias in recalled information from actual differences in the frequency of exposures. As a result, findings from these studies may be spurious or equivocal.
 - Classifying the symptoms and identifying veterans' illnesses have been difficult. From the outset, the symptoms reported have been varied and difficult to classify into one or more distinct illnesses. Moreover, several different diagnoses might provide plausible explanations for some of the specific health complaints. It has thus been difficult to develop a case definition.

Support for Key Government Conclusions Was Weak or Subject to Alternative Interpretations

Six years after the war, little was conclusively known about the causes of Gulf War veterans' illnesses. In the absence of official conclusions from DOD and VA, we examined conclusions drawn in December 1996 by the Presidential Advisory Committee on Gulf War Veterans' Illnesses. In January 1997, DOD endorsed the Committee's conclusions about the likelihood that exposure to 10 commonly cited chemical agents contributed to the explained and unexplained illnesses of these veterans. We found the evidence to support three of these conclusions to be either weak or subject to alternative interpretations.

First, the Committee concluded that stress was likely a contributing factor to Gulf War veterans' illnesses. While stress can induce physical illness, the link between stress and these veterans' physical symptoms has not been firmly established. For example, a large-scale, federally funded study concluded that stress and exposure to combat or its aftermath bear little relationship to the veterans' distress. The Committee also stated that "epidemiological studies to assess the effects of stress invariably have found higher rates of posttraumatic stress disorder (PTSD) in Gulf War

veterans than among individuals in nondeployed units or in the general U.S. population of the same age.”

Our review indicated that the prevalence of PTSD among Gulf War veterans might be overestimated due to problems in the methods used to identify it. Specifically, the studies on PTSD to which the Committee referred did not exclude other conditions, such as neurological disorders that produce symptoms similar to PTSD and can also elevate scores on key measures of PTSD. Also, the use of broad and heterogeneous groups of diagnoses (e.g., “psychological conditions”—ranging from tension headache to major depression) in data from DOD’s clinical program might contribute to an overestimation of the extent of serious psychological illnesses among Gulf War veterans.

Second, the Committee concluded that “it is unlikely that infectious diseases endemic to the Gulf region are responsible for long-term health effects in Gulf War veterans, except in a small known number of individuals.” Similarly, the PGVCB concluded that because of the small number of reported cases “the likelihood of leishmania tropica as an important risk factor for widely reported illness has diminished.” While this is the case for observed symptomatic infection with the parasite, the prevalence of asymptomatic infection is unknown. Such infection could reemerge in cases in which the patient’s immune system becomes deficient. As the Committee noted, the infection could remain dormant up to 20 years. Because of this long latency, the infected population is hidden, and because even classic forms of leishmaniasis are difficult to recognize, we noted that leishmania should be retained as a potential risk factor for individuals who suffer from immune deficiency.

Third, the Committee concluded that it is unlikely that the health effects reported by many Gulf War veterans were the result of (1) biological or chemical warfare agents, (2) depleted uranium, (3) oil-well fire smoke, (4) pesticides, (5) petroleum products, and (6) pyridostigmine bromide or vaccines. However, our review of the Committee’s conclusions indicated the following:

- While the government found no evidence that biological weapons were deployed during the Gulf War, the United States lacked the capability to promptly detect biological agents, and the effects of one agent, aflatoxin, would not be observed for many years.
- Evidence from various sources indicated that chemical agents were present at Khamisiyah, Iraq, and elsewhere on the battlefield. The

magnitude of exposures to chemical agents has not been fully resolved. As we reported in June 1997, 16 of 21 sites categorized by Gulf War planners as nuclear, biological, and chemical (NBC) facilities were destroyed. However, the United Nations Special Commission found after the war that not all the possible NBC targets had been identified by U.S. planners. The Commission investigated a large number of the facilities suspected by the U.S. authorities as being NBC related. Regarding those the Commission had not inspected, we determined that each was attacked by coalition aircraft during the Gulf War.¹⁰

- Exposure to certain pesticides can induce a delayed neurological condition without causing immediate symptoms.
- Available research indicates that exposure to pyridostigmine bromide can alter the metabolism of organophosphates in ways that enhance chronic effects on the brain.

Success in Improving Medical Surveillance Was Mixed for Servicemembers Deployed to Bosnia

In 1994, DOD began developing a directive and implementing instruction to address the problems experienced in the medical surveillance of Gulf War veterans. Although DOD had not issued this guidance when Operation Joint Endeavor began, it did develop a comprehensive medical surveillance plan in January 1996 for the Bosnia deployment. The plan included establishing a system to identify which servicemembers deployed to the theater, assessing environmental health threats, monitoring diseases and nonbattle injuries, and conducting postdeployment medical assessments.

In examining medical surveillance in Bosnia in late 1996 and early 1997, we found many remaining problems, despite DOD's attempts to implement its plan. These problems are as follows:

- First, DOD had not developed a system for accurately tracking the movement of individual servicemembers in units within the theater. Such a system is important for accurately identifying exposures of servicemembers to health hazards where they are located.
- Second, predeployment blood samples were not available for many servicemembers who deployed to Bosnia, and of the blood samples that were available in the repository for servicemembers who deployed, many were quite old.
- Third, many Army personnel did not receive required postdeployment medical assessments. Moreover, when the assessments were done, they were done much later than required.

¹⁰Operation Desert Storm: Evaluation of the Air Campaign (GAO/NSIAD-97-134, June 12, 1997), p. 2.

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- Fourth, the centralized database for monitoring the extent to which required medical assessments were done was incomplete for the 618 servicemembers whose medical records we reviewed. More specifically, it omitted 12 percent of the in-theater medical assessments and 52 percent of the home unit medical assessments.
 - Finally, many of the medical records that we reviewed were incomplete regarding in-theater postdeployment medical assessments done, servicemembers' visits to battalion aid stations for medical treatment during deployment, and documentation of personnel being vaccinated against tick-borne encephalitis (a health threat in the theater).

Methodology

To address our first objective—the extent of DOD's clinical follow-up and monitoring of treatment and diagnostic services—we reviewed literature and agency documents and conducted structured interviews with DOD and VA officials. We asked questions designed to identify and contrast their methods for monitoring the quality and outcomes of their treatment and diagnostic programs and the health of the registered veterans.

To examine PGVCB's research strategy, we conducted a systematic review of pertinent literature and agency documents and reports. We also interviewed representatives from PGVCB's Research Working Group and officials from VA, DOD, and the Central Intelligence Agency. We surveyed primary investigators of ongoing epidemiological studies.

Because different methodological standards apply to various types of research and because the overwhelming majority of federally sponsored research is categorized as epidemiological, we limited our survey to those responsible for ongoing epidemiological studies. With the help of an expert epidemiological consultant, we devised a questionnaire to assess critical elements of these studies (including the quality of exposure measurement, specificity of case definition, and steps to ensure adequate sample size) and to identify specific problems that the primary investigators might have encountered in implementing their studies. We interviewed primary investigators for 31 (72 percent) of the 43 ongoing epidemiological studies identified by PGVCB in the November 1996 plan. We also reviewed and categorized descriptions of all 91 projects identified by April 1997, based on their apparent focus and primary objective. Finally, to review the progress of major ongoing research efforts, we visited the Walter Reed Army Institute of Research, the Naval Health Research Center, and two of VA's Environmental Hazards Research Centers.

To address the third objective, we reviewed major conclusions of the PGVCB and the Presidential Advisory Committee on Gulf War Veterans' Illnesses to determine the strength of evidence supporting them. The purpose of this review was not to critique the efforts of PGVCB or the Presidential Advisory Committee but rather to describe the amount of knowledge about Gulf War illnesses that had been generated by research 6 years after the war. We reviewed these conclusions because they were the strongest statements that we had found on these matters by any official body. The Presidential Advisory Committee's report was significant because the panel included a number of recognized experts who were assisted by a large staff of scientists and attorneys. In addition, the Committee conducted an extensive review of the research. Thus, we believed that evaluating these conclusions would provide important evidence about how fruitful the federal research had been. We addressed this objective by reviewing extant scientific literature and by consulting experts in the fields of epidemiology, toxicology, and medicine.

Because of the scientific and multidisciplinary nature of this issue, we ensured that staff conducting the work had appropriate backgrounds in the field of epidemiology, psychology, environmental health, toxicology, engineering, weapons design, and program evaluation and methodology. In addition, we used in-house expertise in chemical and biological warfare and military health care systems. Also, medical experts reviewed our work. Moreover, we held extensive discussions with experts in academia in each of the substantive fields relevant to this issue. Finally, we talked to a number of the authors of the studies that we cited in our report to ensure that we correctly interpreted their findings and had independent experts review our draft report.

Finally, regarding our fourth objective, we interviewed key agency officials, examined relevant information from the DoD Deployment Surveillance Team's database, and reviewed the medical records of active duty servicemembers in selected Army units in Germany who were deployed to Operation Joint Endeavor.

Our work was completed between October 1996 and April 1997 in accordance with generally accepted government auditing standards.

Appendix I contains a bibliography of research material referred to in our testimony.

Recommendations to the Secretaries of Defense and Veterans Affairs

Because of the numbers of veterans who have experienced illnesses that might be related to their service during the Gulf War, we recommended in our report that the Secretary of Defense, with the Secretary of Veterans Affairs, (1) set up a plan for monitoring the clinical progress of Gulf War veterans to help promote effective treatment and better direct the research agenda and (2) give greater priority to research on effective treatment for ill veterans and on low-level exposures to chemicals and their interactive effects and less priority to further epidemiological studies.

We also recommended that the Secretaries of Defense and Veterans Affairs refine the current approaches of the clinical and research programs for diagnosing posttraumatic stress disorder consistent with suggestions recently made by the Institute of Medicine. The Institute noted the need for improved documentation of screening procedures and patient histories (including occupational and environmental exposures) and the importance of ruling out alternative causes of impairment.

While DOD agreed with the thrust of our recommendations, VA believed they “reflected a lack of understanding of clinical research, epidemiology, and toxicology.” The Presidential Advisory Committee disagreed with our findings, particularly that the support for some of its conclusions was weak. Despite these disagreements with our report, none of the comments we received provided evidence to challenge our principal findings and conclusions.

In response to our recommendation regarding the treatment of Gulf War veterans, in December 1997, DOD and VA asked the Institute of Medicine to establish a committee to assess the appropriate methodology for monitoring the health outcomes and treatment efficacy for Gulf War veterans. On February 2, 1998, PGVCB informed us that it had initiated a joint program with DOD to conduct multicenter treatment trials for fibromyalgia and chronic fatigue syndrome in Gulf War veterans. It is anticipated that such a protocol will begin in late 1998 or early 1999.

In response to our recommendation on research programs, as of January 1998, according to the research working group of PGVCB, 23 studies had been added to the research portfolio, including research on the toxicology of low-level exposures to neurotoxins such as pyridostigmine bromide, insecticides, and chemical warfare nerve agents, with an emphasis on interactions among them.

In our report on the deployment and medical records for servicemembers deployed to Bosnia, we recommended that the Secretary of Defense direct the Assistant Secretary of Defense for Health Affairs, along with the military services, the Joint Chiefs of Staff, and the Unified Commands, as appropriate, to

- expeditiously complete and implement a DOD-wide policy on medical surveillance for all major deployments of U.S. forces, using lessons learned during Operation Joint Endeavor and the Gulf War;
- develop procedures to ensure that medical surveillance policies are implemented, to include emphasizing (a) the need for unit commanders to ensure that all servicemembers receive required medical assessments in a timely manner and (b) the need for medical personnel to maintain complete and accurate medical records; and
- develop procedures for providing accurate and complete medical assessment information to the centralized database.

In response to our recommendation, DOD established a new policy and implementing guidance in August 1997 and has emphasized to field commanders the importance of the system. The guidance mandated medical surveillance of servicemembers before, during, and after military deployments and specified procedures for conducting such surveillance.

It is important to note that GAO has not evaluated DOD's, VA's, and the PGVCB's proposed plans regarding the treatment and research for Gulf War veterans' illnesses. Also, while we have reviewed DOD's new medical surveillance guidance, we have not evaluated the implementation of it. Nonetheless, we believe that if the guidance is properly implemented, DOD's medical surveillance system would be greatly enhanced.

A number of other actions—particularly legislative actions—have taken place to help ailing Gulf War veterans. In a law sponsored by this Committee (P.L. 105-114, sec. 209, Nov. 21, 1997), the Secretary of Veterans Affairs is required to set up a program, by July 1, 1998, to test new approaches to treating those veterans suffering from undiagnosed illnesses and disabilities. Also, recent defense authorization legislation (P.L. 105-85, Nov. 18, 1997), requires DOD and VA to (1) prepare a plan, by March 1, 1998, for providing appropriate health care to Gulf War veterans and (2) establish a program of clinical trials at multiple sites to assess the effectiveness of protocols for treating the veterans.

In addition to the legislation, on October 31, 1997, the Presidential Advisory Committee issued a special report in which it noted that (1) VA should move quickly to incorporate Gulf War veterans into its case management system and (2) DOD should place a higher priority on medical surveillance to ensure that the health data problems that occurred during the Gulf War do not recur in future military operations.

Mr. Chairman, that concludes my prepared remarks. I will be happy to answer any questions you or members of the Committee may have.

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